



Faculty of Education  
University of Florina



Faculty of Education and Philology  
University of Korça



Faculty of Education  
University of Bitola

**2<sup>nd</sup> INTERNATIONAL CONFERENCE**

**EDUCATION ACROSS BORDERS**  
**“CRITICAL THINKING IN EDUCATION”**

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**KORÇË**

**BOOK OF PAPERS**



**CRITICAL THINKING**

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**Prof. dr. Bardhyl MUSAI**

### **Critical Thinking as a learned skill**

Critical thinking is a learned skill that requires instruction and practice. Teachers at school and university teachers at Higher education institutions can enhance students’ critical thinking skills by using instructional strategies that actively engage them in the learning process rather than relying on lecture and rote memorization; focusing instruction on the process of learning rather than solely on the content, and using assessment techniques that provide students with an intellectual challenge rather than memory recall. To think critically means to be curious, and to use strategies of inquiry: framing questions and searching systematically for answers. The critical thinker thinks open-mindedly within alternative systems of thought, recognizing and assessing, as need be, their assumptions, implications, and practical consequences, and communicates effectively with others in figuring out solutions to complex problems. Critical thinking is “deeper” than memorization and recall of factual information. When students think critically, they think deeply; they not only know the facts, but they take the additional step of going beyond the facts to do something with them. Critical thinking works on many levels, not only settling for facts, but pursuing the causes for and the implications of facts. Critical thinking means to use polite skepticism, to posit alternatives to stated positions; to ask "what if...?" Critical thinking means to reach a position on an issue and to defend it rationally. It means to consider carefully the arguments of others, and to examine the logic of those arguments. If the base line is a traditional passive-learning classroom, then the kind of active learning that results from the traditions resulted for the old model of teaching: teacher centered. Critical thinking implies that students sometimes go beyond the active search for information and do something more: associate what they have learned with their own experience, compare it to other works, question its veracity or authority, examine the logic of its argument, derive implications from it, construct new examples of it, imagine solutions to problems it poses, examine the causes and effects it demonstrates, and so on. Students in a critical thinking environment, after communicating their ideas, either orally via group discussions or in writing via minute papers, the teacher periodically ask them to reflect on what type of critical thinking his or her question was designed to promote and whether they think they demonstrated that critical thinking in their response. The teacher typically ask them to record their personal reflections in writing, either working individually or in pairs; in the latter case, their task is to listen and record the reflections shared by their partner.

**Prof. dr. Andrew Goodspeed**  
**„...live honorably“**

The quotation, of course, is from Immanuel Kant. He stated that it was not necessary to live happily, but that it was absolutely necessary to live honorably. Similarly, he argued that with any lie, one „annihilates“ one’s own dignity.

These quotations form the basis of the argument proposed in this address. It is that the premier challenge in higher education is to produce not necessarily knowledge or vocational skill, but instead to foster habits of thought that are self-critical. This, however, must first begin with the instructor questioning himself or herself, and encouraging students to differ, disagree, and dissent. Pedagogically, this proves easy to state, but more difficult to implement. It certainly requires the relinquishing of some forms of professorial authority and control, most notably in assessment (grading).

This lecture argues that it is by collegial approaches to the structuring of student development, particularly in terms of lecturing and assessment, a collective approach among colleagues produces far superior development of critical thinking skills than does the eclipsed models of individualized lecturing and grading.

## LANGUAGE & LITERATURE

**STRATEGY BASED INSTRUCTION;  
A TOOL TO ENHANCE CRITICAL THINKING  
OF LEARNERS OF ENGLISH AS A FOREIGN LANGUAGE**

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**Abstract**

Strategy Based Instruction (SBI) is a term that is being mentioned often in the literature of TEFL. Researchers have drawn the attention of teachers, learners, but most importantly of curriculum makers about the urgent need there is to include the learning strategies into the daily lesson plan and the text books of the EFL. The aim is not merely to help the students learn a new language in a foreign context; in fact, lately introduced textbooks have been trying to set up learning environments similar to the natural acquisition context. SBI aims to make the teachers aware that the more learning strategies they introduce in the classroom, the more likely it is for their students to think critically about their learning needs, the tools available for them to acquire the new language skills and the ability they should train on their own to use the language in the appropriate context. This paper will try to explain why teachers should not consider SBI as an extra burden of their daily work in the classroom; what forms are there to introduce it as a normal activity in their lesson plan; how should this be facilitated by the use of the textbooks which already introduce activities that enhance critical thinking through the space they give to the language learning strategies. If up to now there has been much talk on the learner centered classes, it is high time teachers started to handle their classroom management so as to create more space for analytical language students.

**Keywords:** Strategy Based Instruction, language learning strategies, critical thinking activities

*“We confuse classroom organization with Methodology. (...) A teaching methodology is about how the subject matter is arranged and presented. Teaching organization is about how the participants in the learning situation are arranged.” (Victor P. Maiorana, 1992:31)*

Strategy Based Instruction is a relatively new topic which has attracted the attention of the policy makers concerning the teaching and learning methodology of English as a foreign language. In the research literature it is being considered as an issue, relevant enough to be paid as much attention as the learner-centered teaching. In order to understand the point of its relevance, it is important to define it in a methodological perspective.

Strategy Based Instruction (SBI) defines the kind of foreign language teaching procedures in which the teacher gives enough space to the teaching of language learning strategies. In other words, *SBI requires the teacher not merely to teach the language, but also to introduce in the classroom strategies that promote the learner’s effective acquisition of the*



*language*; the teacher thinks of the teaching methods and styles and at the same time, tries to induce knowledge about learning strategies available for the learners to use in order to assist the acquisition of the subject matter that is presented to them. Initially, the debates arouse about whether to include it as a new subject in the curricula that taught the learning strategies that could be used for different linguistic skills. It would have the form of a training course for learners, similar to the training modules teachers receive to enrich their corpus of teaching methods and tool kits. Experience showed that this was quite difficult for both teachers and pupils. On the one hand, the curricula of the foreign language should be adapted to give space to this new course, while the research showed no exact age limit or linguistic level for the appropriate set of learning strategies to use.

As a result, the learners were equipped with a full set of language learning strategies at a certain stage of their linguistic development and then they would need to select appropriate learning strategies for them to use in the acquisition of different linguistic skills, various learning contexts and other variables of age, gender and attitudes that were unconsciously involved in his acquisition. Furthermore, it was quite impossible to give the learner the possibility to test whether the strategy worked for him/her and whether he/she would be able to transfer the strategy in the acquisition of different language skills. In one word, teaching the learning strategies separately would not incite their self-evaluation and therefore would result in a mechanical use of the strategy that with the passing of the time was meant to go out of the learner's use.

Later research introduced the idea that the learning strategies were all dependent on a number of teaching and learning variables (like: intelligence, aptitude, attitude, age, gender, personality, ect.) that should utterly be taken into consideration when they were given or suggested to the learners for use. This is why *SBI came to be used as an integrated element of the foreign language teaching classes when the teachers could chose the learning strategies that suited the age, gender, personality or attitude of the learners*. The learners would be given time enough to practice the strategy during explanation of the linguistic skill or knowledge and the activities that followed in the class. In that respect the classroom became a place in which the teacher did not worry just about what to teach, but also how to make the pupils learn. This way the learners did not receive essential information without being able to give their input, or decide for themselves whether it was appropriate for them to use and why it was important to remember; therefore learners were unable to involve critical thinking in order to form a conclusion. (Walker, 2003:265)

Due to the fact that the linguistic performance is directly related to the active and creative participation of the learners, it is important for the teacher to master the course content in such a way that it conveys the linguistic content by involving the critical thinking of the students and by making them able to judge whether the information is necessary so as not to “divorce the process from the product”. (Maiorana, 1992: 45)

The learning strategies should not be confused with the teaching activities that the teachers uses in the classroom to convey information. The teacher explains the learning strategies as a tool to make the learners aware of the ways that could facilitate the acquisition of vocabulary and grammar, the comprehension of reading and listening texts as well as the writing performance on the behalf of the learner. In other words, the teacher does not simply think how to explain new vocabulary, but also how to make the learner store the new words easier and longer. *The range of the learning strategies is long and the teachers should not aim to explain them all at the same time neither to impose strategies that have proved to work well for proficient language users.*

Not all the learning strategies work the same for all pupils. After the strategy explanation and modeling, it is important that the learner tests the strategy and the feedback, the teacher receives at the end of the activity, by means of a test, exercises and written papers will assist both to understand whether the strategy has worked for the particular student (in that case the student should be encouraged to use it often or transfer it even in other linguistic contexts), or it did not fit the personality or attitude of the particular learner (and the teacher should give up asking the learner to use or think of other possible strategies that would be closer to the learner’s particular needs). In both cases, the learner will only be able to judge whether the strategy is good or not after he has had the chance to test it. Through testing it, he /she will be able to measure the degree of linguistic benefit and his/her acquisition comfort. This process involves his metacognitive process of evaluation. *Through thinking critically about his/her learning, the learner is able to self-evaluate; the learner is able to understand the subject matter, judge what it is worth remembering and assess the value of the learning strategy that he/she used during this particular acquisition; he/she will be able to “create internal mental models”* (Nikoopour at al. 2011: 196) *that will be available for later use.* In this way the learner is able to think critically about future pathways of linguistic progress and has the opportunity to involve him/herself in designing the plans to reach the course objectives (which should never be designed once and for all by the teacher alone).

- *Need to include language learning strategies in the lesson plan*

When the linguistic material is presented to the learner, the later should see some meaningfulness in it in order to get the reason why to carry on. Shirkhani (2011) suggests that content based material engages the student’s interest and sets conditions for future independent learners. If the material is not analyzed, synthesized, discussed or argued about, it cannot be classified in different ways (113). Therefore, there is very little freedom for the learner to select information or the process through which he/she will acquire the information.

In the case of the linguistic learning strategies the aim of the teacher should be that of introducing a number of strategies that he/she thinks are appropriate for the subject matter acquisition and for the students’ age or linguistic level. It is also very important to encourage the learners to test for themselves the relationship between the linguistic strategies and the language proficiency in the contextual use. *It is important for the teachers to understand that the sooner they start with the above procedures of the SBI, the more independent learners they will educate, the easier it will be for them to manage the language teaching classrooms. If the learners learn to think critically about ways they learn, they gain a goal of learning; it is the main requisite to help the teacher to reach the curricula goals,* (Nikoopour at al. 2011:195) or to make *“the language more meaningful to them”.*(Shirkhani &Fahim, 2011: 112) Research shows that the ability the learners gain “to take charge of their own thinking and develop appropriate criteria and standards for analyzing their own thinking” is an ability to “achieve understanding, to evaluate the perspectives and to solve problems” (Ibid.:111) What could better than the SBI would make learners think critically of their acquisition and linguistic performance? In the traditional classroom context, when a teacher has to use the same textbook and the same teaching methods for more than twenty learners, there is need to create possibilities for learners to assess their own learning processes by using the learning way that they find more suitable. The best way of doing this is *“learning by doing”.*

- *Learning needs and new linguistic skills*

Research on the language learning strategies shows that the motivated learners tend to focus more on the subject task that they have to perform in the classroom or at home. In the linguistic

perspective, motivation refers to a reason, an aim or an inspiration source that enhances the learner’s commitment to the task. The result is positive linguistic performance.

*In the perspective of SBI, motivation refers to the reason why a learner may choose to use a learning strategy continuously, based on the results of its first application.* The learner is likely to assess his own linguistic performance positively, by involving a particular learning tool. It is comparably possible that the experience of the learning strategy was uncomfortable and therefore the linguistic performance was not good. In both cases, it means that mental processes of the critical thinking have been involved and the learner is able to measure the presented subject matter in an individual perspective. This is the moment when a teacher should interfere. Since “textbooks are made to make the readers logical thinkers, rather than critical thinkers, teachers should adapt them to their own teaching methodology” (Maiorana, 1992:-33) A SBI teacher studies the textbook subject matter on his pupils’ perspectives. Teaching the content and making the classroom discussion interesting is not always enough. The classroom management becomes easier if the teacher involves critical thinking in the early stage of language acquisition. The more knowledgeable the teacher is in this respect, the more avoid readers and good listeners will his students be. (Shirkhani &Fahim, 2011: 114)

The most important issue in this respect is that neither the teacher nor the learner consider the classroom as a place where the language of the textbooks should be presented carefully and consequently be acquired as close to the objectives of the course as possible. If they do this, then the real purpose of the classroom activities is removed and the students can simply understand the subject matter, but not able to transform or to reconstruct it critically. (Maiorana, 1992:18) Through using the appropriate learning strategies, they can do it in an innovative way, therefore they are trained to jump from the large scope of the theory or teaching objective, into a narrower one that fits the particular learning needs of each individual in the classroom. *Teachers cannot do it for everyone in the class, but learners can think critically for themselves if they are guided to handle the subject matter individually.*

- *Textbook activities and learning strategies*

In order to reach the above objective, the teacher should take care of the preliminary observation of the lesson plan and reconstruct it from another focus, that of the SBI. It means that the teacher will need to look through the activities of the unit, draw the objectives of the linguistic matter, think of the right learning strategies that he/ she might need to explain or to supply to his/her pupils and then reconstruct the lesson plan so as to give space to the strategy explanation, modeling and practice in the classroom or as a homework activity. In this way the teacher is still a teacher, but the learner gets the opportunity to participate in his acquisition process by manipulating the information he receives.

In a SBI class the learner is equipped with knowledge about the objectives of the subject matter before the explanation starts. The teacher is suggested to start the class with introducing the topic by asking questions about it. If the focus of the class is reading comprehension, and the teacher is aware of the fact that his pupils do not know how to use “think aloud” as a learning strategy, he should precede with care and organize the class so as to integrate it naturally in the classroom communication. Below there is a model suggested by A. Cohen and E. Macaro (2011) which stands as an example of strategy integration and transfer in a reading comprehension class. After the teachers introduces the focus of the lesson and finishes with the warm-up activities of the reading text, he introduces the learning strategy (this may be done as an integrated part of the warm –up activities). Then he carries on with a descriptive statement of the kind “*When I am reading, I like to visualize what is happening in the story.*” The learners may benefit from the

teacher providing simple, concrete, personalized examples such as, *“Visualizing is a learning strategy. It helps me make a sense of the story. If what I visualize doesn’t make sense in the story, then I know that I need to check what I just read, because I probably misread something.”* In this way the students can attach a name to a strategy and can understand when, why and how it is used. Then the teacher proceeds with the *“think aloud”* modeling.

He draws the attention of the pupils on the reading text on the book and says: *“I am going to show to you what I do when I read. I am going to describe my thinking. The first thing I do is to look at the title; and I think: “What is this story going to be about? What do I already know about this topic?”*

He makes a guess about the topic and also describes some personal prior knowledge related to the topic and then continues: *“Now that I have made a prediction about this story, I am ready to start reading.”* The teacher reads aloud, pointing at the words as he goes through the lines. *“Oh, here’s a word I don’t know! What shall I do? Maybe if I read the next sentence it will give me a clue”*. And he carries on by making an inference about the meaning of the difficult word. Depending on the awareness the teacher has of the learners, he may choose to have the text read by himself to the end, or ask the learners to describe the inner thought while reading aloud sections of the text.

In the end, the teacher summarizes the activity, recalls the steps one by one and asks the students to provide examples of when they have used a strategy and whether it worked for them. This is done to make sure that the strategy has been acquired and the learners are apt to use it on their own the next time there is a reading section of the kind.

A. Cohen and E. Macaro suggest a very practical set of questions that the teacher needs to answer at the end of a SBI class. The checklist will assist the evaluation of the success in teaching by integrating learning strategies in a lesson plan like the above.

TOPIC:		RESULTS
1.	What were your goals?	
2.	What were your evaluation criteria to know you have reached your goals?	
3.	What teaching strategies did you use to reach the goal?	
4.	How much time did you need to reach the goal?	
5.	What problems arouse while presenting the strategy knowledge?	
6.	Identify any problem sources (your goals, teaching strategies, emotions, amount of time of the presentation, ect).	
7.	Identify all problem solutions (adjust goals, teaching strategies, teaching pace, your emotions, inappropriate learning strategy, ect).	
8.	Type the revisions you will make the next time you teach strategic knowledge.	

By measuring the results in the end of the class (which can be done through engaging the pupils in answering post-reading questions, in compiling a writing paper about the main topic of the text, in writing a cinquain about the main character, ect), the teacher gets a tool of evaluation about the acquisition degree of the learners and is able to see if the objectives of the lesson plan have been reached. The learners, on the other hand, are also able to judge if the “think aloud” strategy worked for them, whether they found themselves comfortable with it, or it made them understand the text better than if they had used different colour underlining, note-taking, paragraph summarizing, paraphrasing or even translating the sentences in the mother tongue.

*Whatever the result, if a learner is encouraged to go through this process, he has been encouraged to think critically of his own acquisition. The class has become a tool to develop metacognitive strategies along with the cognitive strategy instruction; the learner has had the opportunity to self-reflect on how well he has been learning and managing his learning process, and the teacher is clear on how well he has facilitated the learner’s ability to manage his own learning.* The sooner this starts in the linguistic acquisition phases, the easier it will be for the teachers to create learners who think critically about their learning and are able to build their own approaches for the future by becoming independent managers of their own linguistic acquisition.

No doubt analyzing the textbook from this point of view seems a very difficult step for the teacher who tends to induce SBI skills in his classrooms. Yet the textbooks offer a range of activities that (if considered carefully) may be a source of learning strategy application and acquisition; activities that incite the critical thinking of the learners about the subject matter.

Trying to summarize them, V. Maiorana suggested in 1992 that all “activities that get the child to ask “Why?” (22) may be considered ideas that give green light to the critical thinking. This could be applied for all subjects and all teachers could find textbook information and classroom activities that prompt the learners to reflect and want to learn more.

In the case of foreign language learning the range of activities can be narrower if the teacher classifies the critical thinking learning strategies according to some more specific criteria while going through the textbook material. According to Shirksam and Fahim (2011) every subject matter that helps the learner perform the following, can be considered a safeguard to critical thinking. Based on their main classification, a number of textbook activities fitting this main purpose are presented below:

- a. *Identifying and understanding the relation between the mother tongue and the foreign language:* grammatical structure acquisition like the usage of “there is/are” or the function of the “possessive ‘s’”; using translation of terms of a specified nature like the names of plants or tool kits components; tolerating the usage of the mother tongue for particular words but not structures in class discussions and group- work; encourage learners to train themselves in using the second language in the thinking processes that are involved in writing.
- b. *Drawing interferences from unfamiliar language unexpected responses:* using project based learning for activities that have to do with the new word acquisition and spoken skills in the class; paraphrasing reading text and listening comprehension exercises; using picture description as an activity to enhance speaking and writing skills.
- c. *Using grammatical knowledge to guess the meaning of new words and structures:* contextual guessing of the meaning of the new words; paraphrasing as a learning strategy for the new vocabulary; asking learners to write definitions for the words they already have a clue about or for realia brought in the classroom.
- d. *Using language creatively to express ideas and attitudes* is mainly used in writing and

speaking activities like picture description; using sequence connectors in descriptions; use free writing in warm-up activities; group-work on internet-based projects, note-taking.

*e. Adopting language for the learner’s own purpose:* this is a fundamental criteria that should guide the work of the teacher in assisting the strategy acquisition for the learners. The idea ‘one size fits all’ is wrong and the teachers need think about introducing alternate strategies that fit the linguistic level and background of the learners. Imposing one or two strategies that have proven to be correct in the teaching experience or that have been useful to successful learners, is not the way out to the shortage of time and the range of personalities in the classroom. The teachers should not extend the level of the presented learning strategy further than the learner’s real acquisition needs and possibilities.

- *Conclusions*

Traditional classrooms are no longer the main problem of the discussion among methodologist and researchers. Teachers of EFL have already become aware of the fact that their classes need to be learner-centered and that they should give more space to the learner’s work in the classroom. This is of course not just up to the will of the teacher; it also depends on other factors like: the relation between the curricula and the textbook, the classroom management and facilities; the number of the pupils or students in the class; and, the various particularities of their background. The teacher cannot satisfy all of the above in the course of the foreign language teaching no matter how various the teaching styles are. The more space is given to the analytical linguistic students, the more independent the later will be and the easier it will be for the teacher to manage the scope of the lesson plan.

In the SBI classes there is not just a teacher who thinks of several learners, but there is a teacher who supplies several learning ways and the learners think critically about what to choose. In this way, the classroom becomes a context in which everyone fit his own space within the subject matter framework. Step by step, in the linguistic progress, this independent judgment of the learning strategies used makes them able to build clear and precise pathways of development. By doing this learners appreciate the real nature of the subject and commit themselves to its acquisition. If learning tools like the ones mentioned above are introduced in the classroom with care, the teacher (without giving up his role, because he will still be guiding the learners in the acquisition) trains them to distinguish the relevant classroom activities and subject matters from the irrelevant ones. When the learner is approached in the classroom with this aim, it can be said that the teacher could train a learner able to “predict important implications and consequences of assumptions” (Walker, 2003: 264); in other words, the teacher has trained a critical thinker of the learning process that does no longer try to absorb passively the subject matter out of the teacher’s explanation, but who tries to select ways that make the acquisition of that information easier, more comfortable and longer stored for future use. As long as the learning strategies are introduced in contexts when there is need to solve a learning problem, they will always be a good training tool for analytical learners. Learners who are given enough space to “know, understand, apply, analyze, evaluate” will always be able to “create”.(Maiorana, 1992) *Foreign language acquisition more than any other field of application needs creative users of language who know how to be selective with the range of information they have and to give appropriate responses and reaction in the contextual use of the second language.*

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## CREATIVE TEACHING OF ENGLISH

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### **Abstract**

With the English language being a lingua franca, the teaching of the language has become more and more challenging for teachers. Regardless of whether it is teaching of English as a second or as a foreign language, the challenge remains. The already established methods proved to be fruitful but when used in isolation, they may not give the expected results. Nowadays, it is necessary that teachers try using materials as teaching resources. In order to encourage students to concentrate and participate in the class, teachers need to be creative and innovative. A wide variety of materials and methods of teaching should be explored as students come in different packages with different learning styles and capabilities. The innovative teacher can extract information from texts, audio and visual sources of information for teaching purposes. A creative teaching follows the creative process which involves: *preparation, incubation, illumination, elaboration, and verification*. And the teacher, who prefers creativity in teaching, plays the role of an explorer, an artist, a judge, and a warrior in the creative process.

The aim of this paper is firstly to present some of the most common creative teaching techniques. After having said them, the paper will go on to show one particular method used in one of the English Drama lessons, *The Storyline method*.

What is expected to happen and for the paper to show, is that these techniques can and are as productive as the already existing ones and that, what is more important, they develop a pleasant classroom climate for both students and teachers. The paper will show that, although it is a relatively new teaching method, it fosters learning on all levels: linguistic, literature, and even more, psychological and social.

**Keywords:** Creative teaching, methods, EFL/ESL, classroom climate

### **Introduction**

With the English language being a lingua franca, the teaching of the language has become more and more challenging for teachers. Regardless of whether it is teaching of English as a second language or teaching the English language as a foreign language, the challenge remains.

Nowadays, it is necessary that teachers try using materials as teaching resources. In order to encourage students to concentrate and participate in the class, teachers need to be creative and innovative. A wide variety of materials and methods of teaching should be explored as students come in different packages with different learning styles and capabilities. But problems plague both the novice and the experienced teacher. The innovative teacher can extract information from texts, audio and visual sources of information for teaching purposes.

Great teachers have certain traits and attributes that leave gratitude and endearing moments in their students. They have many essential virtues and the most important one being creativity. An English language teacher should possess the ability of creative teaching. A creative teacher will not be afraid to take risks. He / she will be willing to experiment and will try to be innovative by attempting new things. A creative teacher “thinks out of the box”. The creative teacher uses numerous activities which include experiments, role plays, simulations,



cooperative learning activities, group projects, technology (Internet Research and PowerPoint presentations). He / she do not stick to the syllabus but would rather prefer teaching for the betterment of the student’s life. This type of teacher would consider himself /herself as a facilitator who facilitates and makes English a fun to learn.

As a facilitator, the creative teacher propagates learner autonomy. He / she help the student to explore and learn new things. For example, in an ESL/EFL class when a student asks a question like-“What is a blind person?” an ordinary teacher would reply, “A person who cannot see”. But a teacher who facilitates learning and believes that creativity develops multi-sensory approaches of the student, closes his/her eyes and tries to find a piece of chalk or pencil on the table. These actually help the student feel the situation emotionally and intellectually. The learner would have been put into a real blind situation and would have derived the meaning of the word „blind“ from a direct experience. Through this, the teacher would have helped the student to explore the hidden meaning of a given word.

A creative teaching follows the creative process which involves: *preparation, incubation, illumination, elaboration, and verification*. And the teacher, who prefers creativity in teaching, plays the role of an explorer, an artist, a judge, and a warrior in the creative process. These roles enable the teacher to study the psychological mindset of the students in the class. In a class, a teacher may come across various students. Some would be quick learners, some slow learners, and a few would be poor learners.

### **The creative teacher**

What makes a person creative? Why are some people more creative and others less so? We often think that the creative people are the ones who have some rare and unattainable ability, but it is not so. Creative people are ones who make a decision: They decide to buy low and sell high in the world of ideas.

Creativity requires a balance among synthetic, analytic, and practical abilities. The person who is only synthetic may come up with innovative ideas, but cannot recognize or sell them. The person who is only analytic may be an excellent critic of other people's ideas, but is not likely to generate creative ideas.

### *Balancing Analytic, Synthetic, and Practical Abilities*

Creative work requires applying and balancing three abilities that can all be developed (Sternberg 1985; Sternberg & Lubart, 1995; Sternberg & Williams, 1996).

**Synthetic ability** is what one typically thinks of as creativity. It is the ability to generate novel and interesting ideas. Often the person called creative is a particularly good synthetic thinker who makes connections between things that other people do not recognize spontaneously.

**Analytic ability** is typically considered to be critical thinking ability. A person with this skill analyzes and evaluates ideas. Everyone, even the most creative person you know, has better and worse ideas. Without well-developed analytic ability, the creative thinker is as likely to pursue bad ideas as to pursue good ones. The creative individual uses analytic ability to work out the implications of a creative idea and to test it.

**Practical ability** is the ability to translate theory into practice and abstract ideas into practical accomplishments. An implication of the investment theory of creativity is that good ideas do not sell themselves. The creative person uses practical ability to convince other people that an idea is worthy. For example, every organization has a set of ideas that dictate how things, or at least some things, should be cloned. To propose a new procedure you must sell it by

convincing others that it is better than the old one. Practical ability is also used to recognize ideas that have a potential audience.

Encourage and develop creativity by teaching students to find a balance among synthetic, analytic, and practical thinking. A creative attitude is at least as important as are creative thinking skills (Schank 1988). The majority of teachers want to encourage creativity in their students, but they are not sure how to do so.

### **Teaching for creativity**

In education, “creativity” is a term well understood in everyday speech, though we may have little knowledge of the scientific research associated with it. Creativity connotes, as previously stated, originality, imagination and expressiveness. While it is often associated with fine arts and literature, it has come to be very relevant to every aspect of research, teaching and learning process. “Creativity” requires flexibility and divergence in thinking- new ways of thinking or expressing oneself; pursuing questions for which there is no single, correct answer. It implies a stretching and expansion of the students’ thoughts and ideas and the development of original insights. Teaching for creativity is an approach to teaching that promotes students' independent thinking and creative abilities, "encouraging individuals to construct understandings that are new to them" (Peter Knight).

There are several characteristics attributed to the creative person: strong motivation, endurance, intellectual curiosity, deep commitment, independence in thought and action, strong desire for self-realization, strong sense of self, strong self-confidence, high sensitivity, high capacity for emotional involvement in their research. Creativity has been explained as the highest level of cognition, defined as “putting elements together to form a coherent or a functional whole”.

The explanation for teaching creativity goes further on to stating some of the characteristics of the creative students. According to Craft, creative students:

- are challenged by their goals, operations, and tasks;
- take initiatives and find relevant actions;
- interact with others;
- meet new ideas with support and encouragement, and put forward new ideas and views;
- debate in a status-free, open environment; and
- tolerate uncertainty and take risks.

The distinction and relationship between teaching creatively and teaching for creativity identified in the report from the National Advisory Committee on Creative and Cultural Education (NACCCE, 1999) is examined by focusing on empirical research from an early years school known for its creative approach (Jeffrey & Craft, 2004). The examination uses four characteristics of creativity and pedagogy identified by Peter Woods (1990) relevance, ownership, control and innovation, to show how the two distinctions are closely related, in this research site, and how interdependent they are. For teachers, an understanding of creativity allows the development of activities and experiences that require students to assemble, disassemble, and transform their prior learning, and to combine it with new knowledge and skills to form unique conceptions or products. One advantage of collaborative learning as a tool for developing creative capacities is that in collaborative tasks, students must exchange ideas about how to carry out the assignments and they must also debate the merits of proposed ideas.

### **Creative techniques**

A teacher that strives to be thought as a creative one might ask himself/herself: What must be done to generate interest among students? How can everyday objects be made to bring

fun in the classroom? How can a teacher behave to encourage students and to give them opportunity for them to be active participants in the tasks during the lessons? What are the teacher’s expectations and how can they be best communicated? When can the teacher move forward from “simply” teaching the four basic skills?

It should be noted that when the students enjoy the class activities, their affective filter is low and they learn a lot more. New and different activities also lower learner affective filters. Giving students something new does wonders in making them interested and lowering the affective filter of learners.

Some of the suggested techniques include: using technology- iPad, iPod, letting the learners create their own lessons materials, using computers to enhance the classroom and many more.

Some of the general techniques that are being characterized as creative techniques are:

**Assumption busting-** an unquestioned, assumed truth. Assumption busting is particularly effective when one is stuck in current thinking paradigms or has run out of ideas.

**Brainstorming-** a useful tool to develop creative solutions to a problem, is a lateral thinking process by which students are asked to develop ideas or thoughts that may seem crazy or shocking at first. Participants can then change and improve them into original and useful ideas. Brainstorming can help define an issue, diagnose a problem, or possible solutions and resistance to proposed solutions.

**Negative or reverse brainstorming-** analyzing a short list of existing ideas, rather than the initial massing of ideas as in conventional brainstorming. Examining potential failures is relevant when an idea is new or complex or when there is little margin for error. Negative brainstorming raises such questions as: "What could go wrong with this project?"

**Concept maps-** knowledge graphic form. Networks consist of nodes, which represent concepts, and links, which represent relationships between concepts. Concept maps can aid in generating ideas, designing complex structures, or communicating complex ideas. Because they make explicit the integration of old and new knowledge concept maps can help instructors assess students' understanding.

**Role-playing-** each student takes the role of a person affected by an issue and studies an issue or events from the perspective of that person. Role plays should give the students an opportunity to practice what they have learned and should interest the students.

**Storyboarding-** Story-boarding can be compared to spreading students' thoughts out on a wall as they work on a project or solve a problem. Story boards can help with planning, ideas, communications and organization.

**DO IT-** Define problems, be Open to many possible solutions, Identify the best solution and then Transform it into effective action. DO IT accelerates and strengthens one's natural creative problem-solving ability and stimulates a large number of good, diverse ideas.

**Decision tree-** a visual and analytical decision support tool, often taught to undergraduate students in schools of business, health economics, and public health.

### **Questioning activity**

**Slip writing-** Participants are given slips of paper and asked to write down ideas which are discussed or evaluated. This method collects a large number of ideas swiftly and creates a sense of participation or ownership at the same time.

**Laddering-** the "why method" involves toggling between two abstractions to create ideas. Laddering techniques involve the creation, reviewing and modification of hierarchical knowledge.

**Brain-sketching-** solving a specific problem, by making sketches, and then passing them evolving to peers.

**Reversal-** Looking at a familiar problem or situation in a fresh way can suggest new solutions or approaches. It doesn't matter whether the reversal makes sense or not.

**Fishbone-** This technique uses a visual organizer to identify the possible causes of a problem.

**The mystery spot-** setting up a mystery story that evolves a key concept such as DNA. Students try to solve the mystery by applying their knowledge. Meanwhile, the story evolves as students investigate on the problem, allowing the instructor to incorporate different knowledge/concepts, and different knowledge depths.

#### THE STORYLINE METHOD

This method is also called “active learning”. The main feature that differentiates this approach from other learning and teaching strategies is that it recognizes the value of the existing knowledge of the learner. Thus, through key questioning, the pupils are encouraged to construct their own models of what is being studied, their hypotheses, before testing them with real evidence and research. The key questions are used in a sequence that generally creates a context within the framework of a story. Together, learner and teacher create a scenario through visualization. But even though the teacher is planning a sequence of activities through the designing of key questions, he or she does not know the details of the content, because these are created by the students. So the traditional role of the teacher, who had power because of superior knowledge, is changed. It is no longer her job to pass on information to the students - a body of knowledge to be learned and assimilated. Storyline is rather about process and not merely about content. The teacher’s role is mainly that of a facilitator.

A key feature of the approach is the very positive way in which it depends on and builds on pupils’ existing experience and knowledge. Also significant is the degree of pupil involvement, both imaginatively and in practical problem solving. The Storyline method poses problems and asks questions of pupils rather than giving them answers to questions they have never asked. The pupils and the teacher explore ideas together. It draws the curriculum together using the environment and social subjects as a stimulus to explore, using expressive arts and language as a means of discussing, describing and explaining. Communicative competence is determined and achieved by diverse and interwoven processes when individuals interact with each other. In foreign language teaching we need approaches that encourage such development.

#### *Drama and role-play*

The Storyline method provides a lot of opportunities to drama activities. In fact, the whole Storyline is actually a drama, consisting of separate acts and acting out roles. Some of the role-plays have scripts; others are free and open for the students’ creativity. The more guided role-plays follow the principles of communicative language teaching, such as realistic context, authentic language, learning language for use outside the classroom, and processing whole texts on-line. The whole storyline is actually a drama, consisting of separate acts and acting out roles. Some of the role-plays have scripts; others are free and open for the students’ creativity.

The Storyline itself is not a method that would cater for the entire teaching of a second language. The method does not incorporate effective teaching of formal features of language, such as grammar, and it does not provide focused instruction in accuracy training. The language input is primarily created by the learners, so there is little or no input from outside sources, such as native speakers, textbooks and other written material, which would allow for implicit learning to take place. On the other hand, second language learners have access to ample amounts of the second language outside the school and they can learn a lot from it if they want to.

The strengths of the Storyline method are the flexible framework that it provides for many kinds of language learning.

#### LESSON PLAN

**Used methods:** The Storyline method

**Forms of work:** frontal, work in groups, discussion,

**Topic:** “*Macbeth*” by Shakespeare

**Target Group:** III year students, Macedonian- English department

**Subject language:** English

**Length of Class:** 45 minutes

**Number of Students:** 30

**Materials:** copies of the play

**Objectives:** Students will be able to:

- 1-Become familiar with the plot summary, themes, motifs and symbols of the play
- 2-Able to read different critics in order to form their thinking and conclusions.
- 3-Work with their peers.
- 4-Practice the social skills of sharing responsibility and encouraging each other.
- 5-Draw their own conclusions that will show if they agree or disagree with given statement

**Vocabulary:** special vocabulary for the English language of the time when the play was written, specialized vocabulary of Shakespeare’s plays, vocabulary that was contributed by Shakespeare to the English language

Time Frame

2 minutes

Stages of the Lesson

Introduction of the Teacher (T).

T tells the students (Ss) what the purpose of the class is and what they will learn during the class, what are the activities that they will have to do and what will they know after the class.

T asks Ss if they have read the play *Macbeth* which was given as a home assignment for reading from the previous lesson.

10 minutes

Introduction:

Introduction to the play *Macbeth* (historical background) and the author.

- T asks some questions to check if the Ss have read the play.
- T present with a short summary of the plot of the play.
- T presents the themes, motives, symbols and some critical approaches to the play.
- T tries generating some questions and eliciting answers from the Ss to check if the Ss understood the introduction to the play and the plot of the play
- T gives several discussion topics to the Ss about the play, the characters, themes and symbols that are formulated as statements.
- T explains to the Ss how they will continue to work in the remaining time of the lesson.

5 minutes

Procedure:

- T divides the Ss in 5 groups- one group for each act from the play.
- T assigns each group an act from the play.
- T tells students that each group should read their own act.
- T tells students that they have to find evidence in each act that would prove “pro” and “con” to the previously given statements.
- T poses the statements as *problems* that have to be explored in each act by each individual group.

5 minutes                      Procedure:

- Ss are played 2 short movie trailers for movies made based on the play *Macbeth*, in order for the Ss to see the different standpoints and points for their discussion.

10 minutes (for the Ss to do the assignment) Procedure:

- Ss are divided into 5 groups
- \*\* In each group, included are: a very good student, creative student, shy student and unmotivated student.
- T gives every group their own statement that they need to explore.
- Ss start the task
- T gives the students enough time to do the assignment.
- T controls and monitors the Ss.

8 minutes                      Procedure:

- T asks the Ss if they are finished doing the task.
- One student from each group first of all tells the other groups what is happening in the individual act from the play.
- Another student explores the symbols, themes, motives and characters from the individual act.
- T asks questions to check if the students from the group understood the act and the play as a whole.
- T asks the Ss to start asking the given statement; to state the “pro” and “con” facts, or to simply give their opinion.
- T together with the students continues to question the given statements, that will eventually develop into separate conclusion reached and made by the Ss, drawn on their own experience

3 minutes                      Procedure:

- T continues to ask questions, giving examples and making comparisons with other plays by the same author
- T encourages Ss to continue making questions until they reach a final conclusion to negate or adopt the given statement
- T asks students to make a parallel to a current, modern situation that they could assign the development of the act to.
- Ss continue questioning the given statement until they finally agree or disagree. A representative of each group presents the final conclusion that has been drawn by the whole group.

2 minutes                      Procedure:

- T assigns homework to the students; T asks Ss to stage each act into contemporary scene, timeline;
- T explains Ss that they need to work in groups again for the homework, and they should assign themselves a role

- T explains to the Ss that they should stick to the final conclusion they drew, based on the exploration of the statements given at the beginning.

### **Conclusion**

Creativity, understanding and encouragement will go a long way towards establishing rapport with our students and towards learning the English language. Teaching English as a Second or Foreign Language is a great challenge. As discussed, if this language is offered in a creative manner it will develop the multi-sensory approaches of the students. The learning of the English language would have also become fun because of the various creative teaching methodologies adapted by the teacher. Creative teaching is something novel and useful. And all that is useful stays for life. As English has become the language for business and global communication it is high time that, as teachers of English language, we took necessary steps to change the way we teach this funny language in a fun-filled way.

The different approaches offered, traditionally, alternative or combined methods, are always subject to change and modification. The benefits from the diverse methods, techniques and strategies are that they can be very popular, widely used and the feedback about the gained results can be discussed, reviewed and assessed. It is beneficial that with the new generation of students, these new “merits” can be considered the “only way out” to a fruitful learning. The downfall can be seen in that, with gifted and talented children, it might be hard to maintain their attention. Another downfall is their usage by the older generations of teachers; the absence of the grammar section in some of them; the teaching and developing of all four skills is not being taken care of.

At the end, it all comes down to the teacher to decide which method will be used, according to the curriculum and the class. Because the students are the ones that should benefit the most from the creativity and the ability for incorporating innovations of the teacher.

## IMPLEMENTATION OF STRATEGIES FOR CRITICAL THINKING IN THE TEACHING OF ALBANIAN LANGUAGE AND LITERATURE

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### **Abstract**

In all current practices available nowadays regarding pedagogy and didactics, teaching is considered as a process that connects art to science. Teaching as art is concerned with the teacher's profession itself, his intuition, passion and desire to convey the scientific side in a more attractive, livelier way, and more loveable to the student. It is for this reason that through the current practices of teaching and learning, a variety of techniques and strategies are being implemented successfully, which are focused on the development of students' critical thinking. These techniques and strategies create opportunities for schools to process the competence in order to prepare students to become the citizens of tomorrow. Through them the students are provided with a set of knowledge, skills and values that individuals need for their overall development.

In pedagogical terms, the implementation of such strategies *nurses Albanian school practice with new ideas and techniques which, chewed properly, do not have to look like "the thorn in the flesh" or "the black sheep" of the Albanian school* (Jashari, 2000). Application of the techniques of critical thinking development creates opportunities for interactive, open and dynamic teaching. The power source for this type of teaching is the whole social, regional, and a wider context, which conveys, considerable, fast and new information, which should be positioned as soon as possible and as close as possible in support of the school curriculum and the large family of the teaching methods. Use of these methods in class, naturally enables the students' preparation for the society of knowledge.

**Keywords:** critical thinking, teaching, interactive methods, learning, implementation

### **Introduction**

*People, who have an undertaking spirit, exploit innovations. -Peter Drucker (1985)*

The primary goal of the school is to teach students to think. Thinking constitutes the basics of the learning process. Learning as a process that includes the acquisition, modification and processing of knowledge, abilities, skills, and students' mastery needs thinking. At this point we should distinguish between simple thinking as a psychological and physiological process and critical thinking as a process that goes beyond ordinary thinking. Critical thinking is related to the ability to think clearly and rationally. Through it, the student reflects on a problem. At this point, we are dealing with consciousness while meditating. Thinking consciously means thinking on a higher level, being ready to challenge irrational thoughts, arguing our ideas and others, assuming the solution to a problem etc. Thinking, language and learning subjects at school have a symbiotic relationship with each other. They strengthen each-other and depend on each-other, so teaching through techniques that encourage critical and creative thinking becomes more effective when students engage in such reflective and creative activities.



Today we live in such a society where skill is more than anything else required. Problem solving requires skills, skills are required to cope with different situations, and skills are required to debate convincingly and arguably. Based on this point, attention is drawn on the school, the very place designed to prepare the future generations, the very place designed to prepare the citizens of tomorrow in order to become able to provide for themselves the ethical, intellectual, physical, social, cultural, economic maximum development. The ever increasing demands forcing the development of our society have also influenced the school and the institution of school. In this regard, it is necessary that this institution becomes the very place in which this possibility becomes a reality in step with the requirements dictated by time and social development.

Various critics are of the opinion that the work of schools today must focus on the skills of critical thinking, especially in this era of information technology and computerization of information. These critics and education scholars have emphasized and continue to insist on the fact that students are able to organize ideas, analyze problems, demonstrate creativity and think logically. This is achieved and must be implemented in the classroom as an interaction between actors. Such teaching promotes thinking skills and enhances students' intellectual abilities. This kind of thinking is not left to chance. This is creative thinking, which being connected to the experience creates such links which realize understanding and shape the future experiences. This kind of thinking enables the student to classify and categorize ideas, judge righteously, but reasonably and convincingly, to predict hypotheses, understand self and others, since the latter affects the development of consciousness and attention (AEDP, 1998).

The two most important factors and processes of achieving these goals, respectively, the teacher and the student, teaching and learning are related to school. They are not only two important processes, but also very closely related to each - other because they are both influenced and dictated by the factors mentioned above. The multiple opportunities to get informed today are a tangible reality. Today no one can learn everything he needs to know; moreover, if the knowledge is learned by heart, it is easily forgotten; it is also easily outdated as the information grows and renewed speedily. Nowadays, school and teaching, unlike the traditional, demands "ecology" in respect of use of strategies, teaching methods and techniques that produce it and which ensure quality learning.

Success in school today requires an active learning process; renewed as regards content and form, and of a practical expression as regards the use and application of contemporary methods and strategies. In all current pedagogical and didactical practices available today teaching is viewed as a process that connects art with science. Teaching as art is concerned with the teaching profession itself, his intuition, passion and desire to make the presentation of the scientific more attractive, more lively, more loveable to the pupil. It is for this reason that through the current practices of teaching and learning, a variety of techniques and strategies are being implemented successfully, which are focused on the development of students' critical thinking in reading and writing. These techniques and strategies create opportunities for schools to process competencies in order to prepare students to become the citizens of tomorrow. Through them, the students are provided with a set of knowledge, skills and values that individuals need for their overall development.

In pedagogical terms, the implementation of such strategies *nurses Albanian school practice with new ideas and techniques which, chewed properly, do not have to look like "the thorn in the flesh" or "the black sheep" of the Albanian school* (Jashari, 2000). In didactics, all critical thinking process is included in a three-stage structure called Evocation-Realization of

understanding-Reflection structure (abbrev. ERR), through which progress towards development of critical thinking in reading and writing is ensured.

Application of the techniques of critical thinking development creates opportunities for interactive, open and dynamic teaching. The power source for this type of teaching is the whole social, regional, and a wider context, which conveys, considerable, fast and new information, which should be positioned as soon as possible and as close as possible in support of the school curriculum and the large family of the teaching methods. Use of these methods in class, naturally enables the students’ preparation for the society of knowledge.

These methods become a means for creating an environment for critical thinking and interactive learning.

To meet this goal, the schools and the classrooms must create an environment that encourages opinion, supports the thoughtful discussion and discussion of ideas, convictions and philosophies, thus becoming a center of intellectual stimulation for thinking and learning (KEC, ARA, 1998).

Using these methods and modeling teaching under this model, another important fact should be kept in mind: all-inclusiveness. Application of these methods creates opportunities for involvement of all students by not making differences in being active according to levels. All students feel equal in the process and in turn, an important indicator is evidenced, respectively, evaluation and teamwork, except for the evaluation and individual work.

Critical thinking skills are useful not only in school but in almost every situation of daily life and it is for this reason that many teachers are trying to change their teaching practices. There is a hope that this change of teaching practices will support the development of critical thinking by the students, not allowing them become mere reproducers, but enabling them to become critical examiners, interpreters and debaters, suspecting what they have been learning so far. (B. Musai, 2014).

Some of the principles of critical thinking can be illustrated through practical applications in language and literature classes in a school curriculum.

**Class: XII**

**Subject:** Albanian language and literature

**Line:** Albanian Literature

**Topic:** The plum beyond the wall (Analysis - E. Koliqi)

**Objectives:** at the end of the lesson the student should be able:

- To identify the elements of the description of the garden
- To identify the Keywords of the description as riches of the Geg dialect lexicon
- To list the details which describe the character’s feelings
- To find the cause of Lec Gurmolla’s “conceived inner desire”
- To interpret the symbolism of the rapport between the lyrical ego and the forbidden world
- To give arguments supporting the modernity of this prose in Albanian literature

Nr	Phases of the structure		Learning techniques	Time
1	Evocation	E	Guided imagination	10 minutes
2	Realization of understanding	R	GRA – Guided Reading Activity	20 minutes
3	Reflection	R	Joint review	15minutes

## Lesson workflow

### Evocation (guided imagination)

In order to prepare the students for use of guided imagination, I provide them with the following image:

A man comes back home after ten years. His uncles' garden, which he had visited a lot of times, seemed unfamiliar, uncultivated, full of dense vegetation grown up spontaneously, some light, it looked like the place of the missing princesses under whose feet there was a virgin land. In the midst of the garden, a wall. Beyond the wall, a plum. He was tempted to pick the plum fruits, but the wall ... The wall once white, now old and stained seemed to hinder him. Why?

I ask my students to start imagining for a while and give their opinion:

- ***What was this wall that hindered him? Was it a true wall or was it the wall of reason and social norms and ethics?***

Students will give their opinions based on imagining that flows out of the given image. I hear all of their thoughts, since this will serve as the basis for a comprehensive analysis of the work in the next phase of the class.

### Realization of meaning (GRA)

The textbooks are opened. The story is read in paragraphs. After each paragraph is read, questions related to it are discussed.

#### **Paragraph 1: It happened to Lec Gurmolla... up to ... far back childhood.**

Questions which will be discussed:

- Is the start of the story a schematic one, as in all other stories?
- What question comes to your mind?
- How old is the character now?
- What did he do? Why?

#### **Paragraph 2: Garden ... up to ... beyond the wall.**

- How does the author describe the garden?
- What colors predominate in the garden?
- How would you interpret Leci's desire to want a plum beyond the wall?
- What does the wall really symbolize?

#### **Paragraph 3: It was 10 years ... up to ... forgotten taste.**

- What changes did he notice?
- Why is wall described in these very colours?
- Why did the author use the antithesis: a white flower - jasmine - Presbytery of the wall?
- Why were Leci's eyes filled with worship for the plum that hung beyond the wall?

#### **Paragraph 4: The garden contained ... up to... returned**

- What is the desire burning inside Leci's spirit?
- What caused that burning desire?
- Why are those small, yellow plum fruits coloured in wax and not the colour of the sun?
- Who is that **desperate** princess?

#### **Paragraph 5: Only when he found himself... up to ... approached the house**

- What was that place which he could but vaguely recall?
- What was the reason he felt attracted to it?

- What had been stolen him by the garden?
- What had he lost there and what would he find there?

**Paragraph 6: Hey, you guy ... the end.**

- Why was ashamed to give explanations?
- Why did he feel better inside that fresh room?
- What did the old woman perceive?
- Why were the woman’s eyes shining brightly even though in tears?

All the answers are discussed upon and commented upon **provided with** the relevant interpretation as well.

**Reflection (Joint Review)**

As the story poses a greater difficulty than the other stories, the joint review technique is applied, to enable the students to go through a deeper analysis. Each student will give her/his opinion on every question under discussion. I hear their opinions and I do not grade, but I write **the relevant** notes on the "scheme"

Questions that will be addressed are:

- 1-If the garden is figuratively speaking, the being or self, what is the figurative meaning of the wall?
- 2-How important is the fact that the author has been abroad for a long time? Why does he say that the color of the wall is not the same? What is Leci dreaming about?
- 3-Why does jasmine appear even beyond the garden? What is the symbol between the antithesis "wall" and "jasmine"?
- 4-It is a shame to be seen nowadays. Why now? Why a shame? Why should I be seen?
- 5-He did not want to think ... In which area of being does everything happen and why is the cause related to the grey colour of the shadow? What is that cause (according to you and according to Freud)?
- 6 Our hero wants to try the plums on the tree, but he is served jam made of them instead. How do you interpret this kind of solution?

Every opinion given by the students is reviewed by me.

Homework: Write a short composition entitled: "*A place somewhere, lost in memory*"

**Class: XI**

**Subject:** Albanian language and literature

**Line:** Morphosyntax

**Topic: Determinant**

**Objectives:** At the end of the lesson the student should be able to:

To identify the components of the nominative group

To show what the determinant is represented by

To find the determinants in a text pointing showing what the determinant is represented

by

To discern between the determinant and the defining word

To make sentences using different types of determinants

To argue the adaptation of the determinant to the nucleus word

**Class structure: ERR**

Nr	Phases of the structure	Learning techniques	Time
1	Evocation	E Brainstorming	10 minutes
2	Realization of understanding	R Definition map	25 minutes

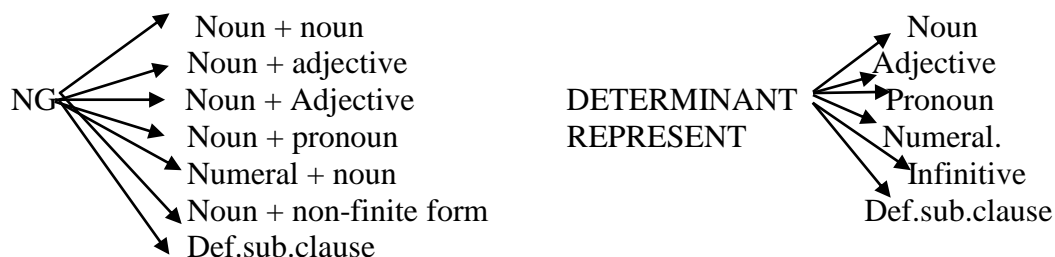
<b>3</b>	<b>Reflection</b>	<b>R</b>	<b>Analysis of semantic features</b>	<b>10 minutes</b>
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Lesson workflow

**Evocation (brainstorming)**

I present the new topic to my students.

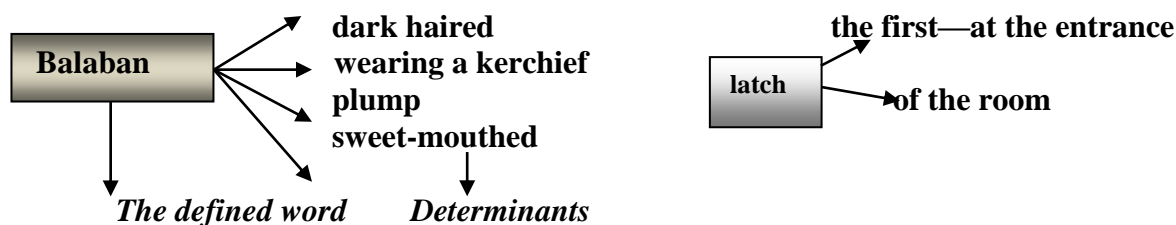
I ask my students to recall previous knowledge on the nominative group and its components as well as the determinant. The students’ responses are structurally summarized on the board. For example:



The two concepts are compared providing an example for each case.

**Realization of meaning (Definition, concept map)**

The textbooks are opened. A student reads a given fragment on top of the page. A short discussion on the examples presented in bold. I write an example on the blackboard in order to make a clear distinction between the determinant and defining word. For example:



We move to another phase. Once the above explanation is provided, the students discuss on the given examples presenting the types of determinants. I ask my students to identify all links related to the determinant and then give a definition for it. The students take turns to answer and they conclude giving a final definition of this concept.

The determinant is the second part of the sentence

The determinant is syntactically related to the part on which it depends.

The determinant (“**përcaktor me përshtatje**” in Albanian) is represented by: an adjective, a pronoun, a numeral.

The determinant (“**përcaktor me drejtim**” in Albanian) is represented by a noun in the genitive case, in the ablative case without a preposition, in the accusative case without a preposition, a noun or a pronoun in the nominative case.

The determinant (“**përcaktor me bashkim**” in Albanian) is represented by an interrogative pronoun and an indefinite pronoun, by numerals, by the infinitive or the participle of a phrase.

The whole information gathered from the students is summarized in a concept map.

How can such a map be designed in cooperation with the students?

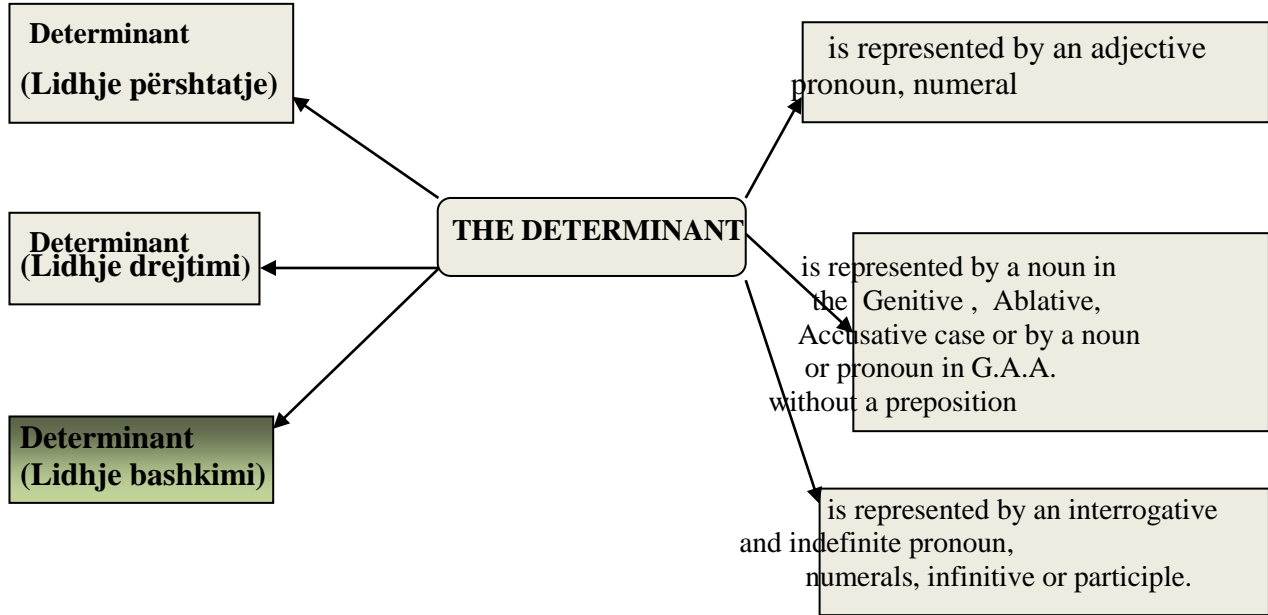
**The determinant**

*What is it?*

*Its syntactical relations?*

the second part of the sentence

*How is it expressed??*



**Reflection (analysis of semantic features)**

The students are presented sentences in index cards; they are required to identify the determinants, their types and fill in the semantic features on the chart. The students will work in pairs. The following cards contain the sentences the students are required to work with:

His boyish face looked very loving.  
 The three friends met after an hour.  
 I hadn't expected such a response.  
 There were guests in Miri's house.  
 Human voices were heard.  
 Some of the guests were there for the first time.  
 The idea to celebrate was not incidental.  
 Will you order anything or shall we leave?  
 Words spoken against him are untrue.

Determinant	Type	Adjective	Pronoun	Numeral	Noun without a preposition	Noun without a preposition	Pronoun with a preposition	Non-finite form
Boyish	Përshtatje (Albanian)	+						
The three	Përshtatje (Albanian)			+				
Such	Përshtatje (Albanian)		+					
Miri's	Drejtım (Albanian)					+		
Human	Drejtım (Albanian)				+			
Of the guests	Drejtım (Albanian)					+		
To celebrate	Bashkim (Albanian)							+
Anything	Bashkim (Albanian)		+					
Against him	Drejtım (Albanian)						+	

At the end, students' answers are corrected, discussed upon and arguments are given.

Homework: Students are to write an assignment on a free topic using as many different types of determinants as possible.

### Conclusions

Teaching is not simply a set of methods. Good teaching means achieving a certain number of objectives for a particular group of students, in a certain moment or time, using certain resources. Good teaching means to find the balance between direct teaching and directing the activities of students who work on their own or in a group. It means that the student is able to develop skills and learning strategies while learning the subject matter. (CDE, KEC, 2006, p.10)

So in this respect, it is the teacher's mastery, the teacher's passion, the teacher's skills, that make it possible that the subject be not only appreciated by the student, but also be considered useful by the student, since the student learns by being motivated, hence, gaining sustainable knowledge and skills. A teacher's expertise - what they know and they are able to do - affects all the essential tasks of teaching

It is precisely the methods of teaching and interactive learning, which make teaching more attractive, which motivate the student to work harder and to reflect more, to be open to opinions, and become a co-author in structuring the class. These methods being used in the classroom, in different classes, provoke a higher level of thinking on the part of the students and help them get

involved. Based on the activities the students get involved in, during the class, the respective methods perform a variety of functions. Through them vocabulary is enriched, writing is promoted and perfected, research skills are developed, ideas are discussed, interaction and cooperation is promoted, etc.

As highlighted above, due to the teacher's mastery the class turns out to be successful and the students get involved. The teachers are "moral agents of change" in the sense that in case they are committed to creating better opportunities for the students, they can create and make art in the classroom by giving priority to the higher-level communication, inclusiveness, reflection (Fullan, 2001) The structure of the class itself, designed in three phases, makes it possible that the educational (instructional) information provided, be predicted, processed and reinforced by reflecting on it. Structuring the class based on this strategy and these techniques involves all levels of students, and makes the low-level students more active participants. The opportunities these methods pose are so diverse and spacious that they really create a strong foundation for learning based on objectives for students according to their respective levels.

We have already made the experience of applying these methods in our schools. Through these methods such teaching and learning approaches are being implemented in our schools, that achieve the goals of the school curriculum; teaching and learning approaches which enrich the student's experience; teaching and learning approaches which enable the student to implement and make use of knowledge gained; teaching and learning approaches which consider the student both, the subject and the object of the class; such teaching and learning approaches which make possible that everyone in class gets involved. Such teaching and learning approaches are planned based on learning objectives, which create opportunities for the student to gain such competence that will influence her/his lifelong learning.

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## APPLYING KEY CONCEPTS TO PSYCHOANALYTICAL AND FEMINIST CRITICISM WITHIN THE PROCESS OF READING AND TEACHING KATE CHOPIN'S THE AWAKENING. A CASE STUDY

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### Abstract

The present article aims at analyzing and measuring the undergraduate students' capacity to apply some of the main concepts in psychoanalytical and feminist criticism during the process of reading closely Kate Chopin's 'The Awakening', as part of the American Literature Course Syllable. The analysis and measuring have been done by means of assessing students' seminar portfolio, containing their written papers on topics such as: pleasure and death drives (Eros and Thanatos), double, schizoid personality, daydreams and their connection to the unconscious (within the psychoanalytical frame of thinking), as well as feminine writing (l'écriture féminine) and the female body, a Creole woman's novel as a subversive critique of patriarchal power in the 19<sup>th</sup> American society (within the feminist frame of thinking).

The results of the analysis have shown that most students demonstrated a better understanding and handling of the psychoanalytical concepts, mainly because they had previously been trained in this type of critical approach to literature, already having a strong theoretical support. Feminist criticism to them was roughly confined to the critique of the patriarchal power. The application of such theoretical frames to the analysis of literature in general and not only clearly contributes to students' and instructors' continuous shaping and reshaping of their critical thinking.

**Keywords:** theoretical approach, close reading, psychoanalysis, feminism

From the very beginning we would like to mention that the teaching method consisted of the course instructor's selection of several critical essays from the fields of psychoanalysis and feminism. Drawing on the reading and classroom discussions of several influential essays on literature written by Freud, such as *The Relation of the Poet to Daydreaming* (1908), *The Uncanny* (1919), a provocative psychoanalytic reading of E. T. A. Hoffman's supernatural tale 'The Sandman', as well as on Freud's seminal work *Beyond the Pleasure Principle* (1920), in which he revises his theory on the pleasure principle, the papers written by the students from the 3<sup>rd</sup> year English branch focused in their analyses on topics such as pleasure and death drives (Eros and Thanatos), double/schizoid personality of the main character, daydreams and their connection to the human unconscious in Kate Chopin's *The Awakening*.

During our preliminary discussions, the students were already aware of the fact that the psychoanalytic approach to literature not only rests on Freud's theories, but it may even be said to have begun with Freud, who was particularly interested in writers, especially those who relied heavily on symbols. This is why students were ready to face the challenge according to which writers choose to cloak or mystify ideas in figures that make sense only when interpreted, much as the unconscious mind of a neurotic disguises secret thoughts in dream stories or bizarre actions that need to be interpreted by an analyst.

While dealing with the first two topics: pleasure and death drives, from the very beginning, most of the students provided arguments and examples from the novel supporting ideas ranging from Edna Pontellier’s split personality to her psychic disintegration, stating that ‘in some sense there are two Ednas’: one of them is public, conventional, a social construct, for the most part, whereas the other one, by contrast, is a passionate one, prone to fantasies and daydreams. According to most of the students, the actions of the public, conventional Edna are meant to keep her passionate, fantasizing self hidden. The main argument supporting this idea is Edna’s marriage to Leonce, a man chosen by her outward self, a prosaic and unperceptive man who seems not to suspect the existence of Edna’s hidden self and its fantasy life. And this is how the argument develops itself around the idea that Edna’s hidden, fantasizing self gradually takes control of her personality, exactly the way in which instincts take control of the whole human psyche unless they are repressed. In other words, Edna’s deserting her husband and children, her affair to Alcée Arobin, as well as her infatuation with Robert Lebrun are interpreted as her unconscious pursuit of the pleasure principle. Nevertheless, within this interpretation frame, Edna’s final suicide appears incomprehensible, paradoxical, shocking as most of the students admit.

Only after we had read and discussed the famous *fort-da* game interpreted by Freud in *Beyond the Pleasure Principle*, did they begin to look upon this act as Edna’s attempt to become reunited to a primordial state of being, to an original lost object – the mother’s body- ‘which drives forward the narrative of our lives, impelling us to pursue substitutes for this lost paradise in the endless metonymic movement of desire. For Freud, it is a desire to scramble back to a place where we cannot be harmed, the inorganic existence which precedes all conscious life, which keeps us struggling forward: our restless attachments (Eros) are in thrall to the death drive (Thanatos).’ (Terry Eagleton 1983: 185). So, using Freud’s revision of his theory on the pleasure principle as a starting point, students’ analyses have now managed to come up with an answer, to solve the enigma of the suicide by discussing in detail Edna’s final image, as a child, as an infant again (‘and for the first time in her life she stood naked in the open air, at the mercy of the sun, the breeze that beat upon her, and the waves that invited her. ’Chopin 136) going and deliberately drowning into the sea, focusing on the complex symbolism of the sea in this respect (the sea standing for the mother’s womb, the amniotic fluid etc.). Enlarging their analysis from this perspective, some of the students paid special attention to Edna’s relationship with Adele Ratignolle and Mademoiselle Reisz, who initiates her into the world of art. They have highlighted that, in some respects, the motherless Edna seeks a mother surrogate in Adele and looks to her for nurturance. Adele is indeed the one who provides maternal encouragement for Edna’s painting and tells her that ‘her talent is immense’ (75; chapter 18) According to their conclusions, Adele becomes a surrogate for Edna’s dead mother and the intimate friend she never had as a girl, the main arguments being that Adele is the one who initiates her into the world of values and laws of the Creole community, whereas Mademoiselle Reisz appears to play a totally different role: she is the opposite-the renegade, the nonconformist whose music has a very strange effect on Edna; it seems to set her free from repressions.

The theoretical discussion on psychoanalysis during seminars was extended to the psychoanalytic philosopher J. Lacan and the importance of the linguistic turn psychoanalysis takes, when he identifies human language with the unconscious. Students’ understanding of the relation between language and gender increased when they read that the oedipal stage roughly coincides with the entry of the child (particularly the male child) into the language (the symbolic order). For the linguistic order is essentially figurative or ‘symbolic’; words are not the things

but are substitutions of those things. Hence boys, who in the most critical period of their development had to submit to what Lacan calls the “Law of the Father”-a law that prohibits direct desire for and communicative intimacy with what has been the boy’s whole world-enter more easily into the realm of language and the Symbolic order than girls do, who have never really had to renounce that which once seemed continuous with the self: the mother.

From here, we continued the discussion with the impact of Lacan’s developments and revisions of Freud’s theories: first, his sexist-seeming association of maleness with the Symbolic order, together with his claim that women cannot therefore enter easily into this order, has prompted feminists not to reject this theory but, rather, to look more closely at the relation between language and women’s inequality. This is how we touched upon the French feminists, who believe that language is associated with the separation from the mother and that women can develop a feminine language and thus a women’s writing (*l’écriture féminine*). In this context, Julia Kristeva’s theory on feminine language, which is derived from the pre-oedipal period of fusion between mother and child, proved to be very helpful in the sense that students could more easily understand why, according to Kristeva, feminine language is not only threatening to culture, which is patriarchal, but also a medium through which women may be creative in new ways. As a result, students started looking upon the literary text under discussion as a proof of such type of writing which has as a main character a woman who undergoes a deep change: at the beginning of the novel, in the middle of the bustling social world of Grand Isle, Edna is caught in her domestic roles of wife and mother, whereas, by the end, she turns out to be totally independent (including financially) and self-reliant, but alone. Solitude appears thus to be a defiantly feminine characteristic and Edna’s final plunging into the sea’s embrace is interpreted by most of the students as her triumphant embrace of solitude.

Following our discussion on feminine language, students managed to look upon Kate Chopin’s *The Awakening* not so much as a subversive critique of patriarchal power in the 19<sup>th</sup> American society, as they were tempted in their first analyses and discussions, but rather as a woman’s struggle for sexual freedom and personal emancipation. In addition, students have enlarged even further their analyses by associating Edna Pontellier’s awakening in terms of the nineteenth-century women’s culture, with Kate Chopin’s dissatisfaction with it. Thus, Edna’s discontent with her life of money, fine clothes and furnishings, her status as her husband’s valuable possession, may be seen as metaphors of the author’s (also a woman) discontent with 19<sup>th</sup> century reality she lived in. Nevertheless, some critics claim that interpreting the book „ solely as a Victorian woman’s futile attempt to break society’s bonds confines Chopin’s book to the ‘problem novel’ she sought to transcend.”, concluding that: ”This is certainly a tale of women’s changing self-perception –Edna’s husband attributes her vagaries to ‘some sort of notion ... concerning the eternal rights of women’”. But in resolving “never again to belong to another than herself” and casting off “that fictitious self which we assume like a garment with which we appear before the world”, Edna confronts the wider ambiguities of Emersonian self-discovery. She is caught between self-realization and existential inner solitude, between a sense of human divinity and regression. This is her tragedy and the book’s compelling mystery.” (Ruland. R& Bradbury M., 1991:233-234)

The results of the analysis have shown that most students demonstrated a better understanding and handling of the psychoanalytical concepts, mainly because they had previously been trained in this type of critical approach to literature, already detaining a critical apparatus. On the other hand, by reading Freud’s revision of the pleasure principle, as well as Jacques Lacan’s revisions and reinterpretation of the oedipal stage in the psychic development of

the child, students revised and enhanced their critical and theoretical background which enabled them to go deeper with their analyses of the literary text and find answers, solutions to some issues raised by the literary text.

As far the feminist criticism is concerned, to them it was roughly confined to the critique of the patriarchal power. By discussing Lacan and his contribution to both psychoanalytic and feminist criticism, the students were able to make the connection between the two critical approaches particularly because of the centrality of the language.

The application of such theoretical frames to the analysis of literature in general and not only clearly contributes to students’ and instructors’ continuous shaping and reshaping of their critical thinking and to the instructors’ shaping and reshaping of their methods of introducing, filling in the gaps, strengthening and applying these critical concepts to various kinds of literary texts within an interpretative coherent framework

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## THE PROCESS OF INDIVIDUATION IN MAX FRISCH'S 'HOMO FABER' (A MYTH CRITICISM APPROACH)

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### **Abstract**

The aim of this article is to provide a model to undergraduate students from the second and third year, having English as their major, for analysing and interpreting a novel from the perspective of myth criticism. We have started with a short theoretical presentation of the main concepts in archetypal criticism: collective unconscious vs. personal unconscious, archetypes (anima, persona, shadow etc.), the process of individuation, the self (das Selbst), as discussed by Jung in ‘The Archetypes and the Collective Unconscious’ (1953), and continuing with their application to the novel ‘Homo Faber’ (1957) by Max Frisch. What we hope to achieve by this analysis is that in the seminars of literature, students having English as their major, but not only, will be provided with a critical apparatus, which will enable them to analyse certain pieces of fiction within a certain critical framework, avoiding thus impressionistic criticism. For this reason, besides the theoretical introduction, we have also added an appendix with the main Jungian terms.

**Keywords:** archetypes, individuation process, anima, identity

### **Introduction**

Walter Faber’s journey, the protagonist of Max Frisch’s *Homo Faber*, and his experiences during this journey may be seen as corresponding to the stages of the individuation process described by Carl Gustav Jung and many of his followers (Jung 1953, 1958, 1960, 1968 Campbell 1972, Adler, as an editor, 1960) Walter Faber searches unknowingly for himself, for union with those darker aspects of his psyche that will make him whole and aware of his inner Self. At the end of this process he will experience and integrate his Anima (the feminine side of his personality) symbolised by one of the female characters, Sabeth. Blindly, he undergoes a psychic transformation and, in order to understand the nature of this transformation and its significance, one must turn to the concepts Jung uses.

While Freud believed in the *personal unconscious*, Jung, once an associate of Freud, accepted the concept of the personal unconscious but also postulated the concept of the *collective unconscious*. In it there are the archetypes, tendencies to form universal images; these can be images of animals, people, anthropomorphic beings (such as the vampire or the gods and goddesses), objects (a tree, a house, a cross or a mandala, for example), abstract ideas (made concrete by the images), and patterns such as the **hero’s journey**, as discussed in Joseph Campbell’s *The Hero with a Thousand Faces* (1972). More than that, Jung noticed that there were many similarities between mythic stories and archetypal characters and images across nearly all cultures. He believed that all these pointed to a common source of all these myths, which, in his opinion, was the collective unconscious. Jung believed that we all, at an unconscious level, have access to the collective unconscious and absorb archetypal stories, characters and images from it. The American scholar Joseph Campbell combined Jung’s ideas

with his own investigations in comparative mythology and, in his book *The Hero with a Thousand Faces*, he argued that there was a common pattern to hero myths from around the world. The model he presents is a cyclic one: the hero ends up back where he started. His journey or process of initiation and individuation may be summarised in three stages: departure; initiation; return.

Walter Faber may be looked upon as an archetypal hero that goes on a both physical and emotional journey. On this journey, he overcomes obstacles, goes through various experiences which lead him to important revelations (like the revelation of death, for example, he experiences in Campeche and Palenque), travels to sacred grounds (the Mayan pyramids in Mexico). During and especially at the end of the journey, he gradually changes from a spiritual point of view. As a result of this inner change, he is ready to experience and integrate his anima in his inner Self, balancing both the conscious and the unconscious dimensions of his psyche.

### **The Collective Unconscious. Jung’s Contribution to Myth Criticism**

In order to make clear the meaning and the role of the collective unconscious within Jung’s theoretical system, it is important to mention that Jung’s primary contribution to myth criticism is his theory of **racial memory and archetypes**. In developing this concept, Jung expanded Freud’s theories of the personal unconscious, asserting that beneath it, there is a primeval, collective unconscious shared in the psychic inheritance of all members of the human family. As Jung himself explains in *The Structure and Dynamics of the Psyche* (Jung 1960, vol. 8: 340-350): ‘If it were possible to personify the unconscious, we might think of it as a collective human being combining the characteristics of both sexes, transcending youth and age, birth and death, and, from having at its command a human experience of one or two million years, practically immortal. If such a being existed, it would be exalted over all temporal change; the present would mean neither more nor less to it than any year in the hundredth millennium before Christ; it would be a dreamer of age-old dreams and, owing to its immeasurable experience, an incomparable prognosticator. It would have lived countless times over again the life of the individual, the family, the tribe, and the nation, and it would possess a living sense of the rhythm of growth, flowering, and decay.’ Just as certain instincts are inherited by the lower animals (for example, the instinct of the baby chicken to run from a hawk’s shadow), so more complex psychic predispositions are inherited by human beings. Jung believed, contrary to eighteenth-century Lockean psychology, that ‘Mind is not born as a *tabula rasa* (a clean slate). Like the body, it has its pre-established individual definiteness; namely, forms of behaviour. They become manifest in the ever-recurring patterns of psychic functioning.’ (Jung 1958: xv) Therefore what Jung called ‘myth-forming’ structural elements are ever present in the unconscious psyche; he refers to the manifestations of these elements as ‘motifs’, ‘primordial images’, or ‘archetypes’.

Jung was also careful to explain that archetypes are not inherited ideas or patterns of thought, but rather that they are predispositions to respond in similar ways to certain stimuli: ‘In reality they belong to the realm of activities of the instincts and in that sense they represent inherited forms of psychic behaviour.’ (Jung 1958: xvi) In *Psychological Reflections*, he maintained that these psychic instincts ‘are older than historical man. . . . have been ingrained in him from earliest times, and, eternally living, out-lasting all generations, still make up the groundwork of the human psyche. It is only possible to live the fullest life when we are in harmony with these symbols; wisdom is a return to them.’ (Jung 1961: 42)

### **Some Special Archetypes (shadow, persona anima) and the Process of Individuation**

In *The Archetypes and the Collective Unconscious*, Jung discusses at length many of the

archetypal patterns like for example, water, colours, and rebirth. In this way, although his emphasis is psychological rather than anthropological, he had a major influence in the growth of myth criticism. First of all, he provided some of the favorite terminology now current among myth critics. The term ‘archetype’ itself, though not coined by Jung, enjoys its present widespread usage among the myth critics primarily because of his influence. Also, like Freud, he was a pioneer whose brilliant flashes of insight have helped to light our way in exploring the darker recesses of the human mind.

One major contribution is Jung’s **theory of individuation** as related to those archetypes designated as **the shadow, the persona, and the anima**. Individuation is a psychological growing up, the process of discovering those aspects of one’s self that make one an individual different from other members of the species. It is essentially a process of recognition- that is, as one matures, the individual must consciously recognize the various aspects, unfavorable as well as favorable, of one’s total self. This self-recognition requires extraordinary courage and honesty but is absolutely essential if one is to become a well-balanced individual. Jung theorizes that neuroses are the results of the person’s failure to confront and accept some archetypal component of the unconscious. Instead of assimilating this unconscious element to their consciousness, neurotic individuals persist in projecting it upon some other person or object. In Jung’s words, projection is an ‘unconscious, automatic process whereby a content that is unconscious to the subject transfers itself to an object, so that it seems to belong to that object. The projection ceases the moment it becomes conscious, that is to say when it is seen as belonging to the subject’ (Jung 1968: 60)

**The shadow, the persona, and the anima** are structural components of the psyche that human beings have inherited. We encounter the symbolic projections of these archetypes throughout the myths and the literature of humankind. In melodrama, for example, the persona, the anima, and the shadow are projected respectively in the characters of the hero, the heroine, and the villain. The shadow is the darker side of our unconscious self, the inferior and less pleasing aspects of the personality, which we wish to suppress. ‘Taking it in its deepest sense’, writes Jung in *Psychological Reflections*, ‘The shadow is the invisible saurian (reptilian) tail that man still drags behind him’ (Jung 1961: 217). The most common variant of this archetype, when projected is the Devil, who, in Jung’s words, represents the ‘dangerous aspect of the unrecognized dark half of the personality.’ (Jung 1953:94) In literature we see symbolic representations of this archetype in such figures as Shakespeare’s Iago, Milton’s Satan, Goethe’s Mephistopheles, and Conrad’s Kurtz.

The anima is perhaps the most complex of Jung’s archetypes. It is the ‘soul-image’, the spirit of a man’s *élan vital*, his life force or vital energy. In the sense of ‘soul’ says Jung, anima is the ‘living thing in man, that which lives of itself and causes life. . . . Were it not for the leaping and twinkling of the soul, man would rot away in his greatest passion, idleness’ (Jung 1968: 26-27). Jung gives the anima a feminine designation in the male psyche, pointing out that the ‘anima-image is usually projected upon women’ (in the female psyche this archetype is called the *animus*). In this sense, anima is the contra-sexual part of a man’s psyche, the image of the opposite sex that he carries in both his personal and his collective unconscious. As an old German proverb puts it, ‘Every man has his own Eve within him’- in other words, the human psyche is bisexual, though the psychological characteristics of the opposite sex in each of us are generally unconscious, revealing themselves only in dreams or in projections on someone in our environment. The phenomenon of love, especially **love at first sight**, may be explained at least in part by Jung’s theory of the anima: we tend to be attracted to members of the opposite sex

who mirror the characteristics of our own inner selves. In literature, Jung regards such figures as Helen of Troy, Dante’s Beatrice, Milton’s Eve, and H. Rider Haggard’s She as personifications of the anima. Following his theory, we might say that any female figure who is invested with unusual significance or power is likely to be a symbol of the anima. One other function of the anima is noteworthy here. The anima is a kind of mediator between **the ego** (the conscious will or thinking self) and the unconscious or inner world of the male individual. This function will be somewhat clearer if we compare the anima with the persona.

**The persona** is the obverse of the anima in that it mediates between our ego and the external world. Speaking metaphorically, the ego is a coin. The image on one side is the anima; on the other side, the persona. The persona is the actor’s mask that we show to the world- it is our social personality, a personality that is sometimes quite different from our true self. Jung, in discussing this social mask, explains that, to achieve psychological maturity, the individual must have a flexible, viable persona that can be brought into harmonious relationship with the other components of his or her psychic makeup. He states, furthermore, that a persona that is too artificial or rigid results in such symptoms of neurotic disturbance as irritability and melancholy.

### **The Voyage in Max Frisch’s Novel *Homo Faber* and its Stages**

Walter Faber’s voyage with its first and second stops should be interpreted not so much as a voyage into some strange exotic places as into the depths of his own psyche. What he encounters in these depths are archetypes of the collective unconscious.

According to Joseph Campbell, the archetypal hero’s journey has several stages (Campbell : ordinary everyday life; the call to adventure; refusal of the call; advice and encouragement from a helper; crossing the threshold of adventure; barriers, tests, revelations; journey back; re-crossing the threshold (resurrection).

His voyage starts like a normal one, like one of the many voyages he has undertaken in his ordinary life, especially ever since he started working as an engineer employed by UNESCO. Nevertheless, Walter feels tense and anxious apparently without any reason, waiting for the plane, the Super-Constellation, to take off. Soon afterwards his state of anxiety is heightened by a newspaper article accompanied by pictures about an air crash in Nevada. In addition, he admits being very intrigued by the face of one his neighbours, a German, who reminds him of somebody from his past. The hero’s states of unexplainable anxiety, as well as the images of the air crash and the slightly familiar face of his German neighbour are stimuli which bring about the manifestation of his personal unconscious. The presence of the unconscious is signalled also by Walter’s permanent state of irritation (‘I don’t know why he got on my nerves, there was something familiar about his face’) and exhaustion (‘I was dead tired’) which bring about fissures in his consciousness. More than that, it is metaphorically suggested by *the mist* surrounding the plane, which makes the hero feel like a blind man: ‘... for seconds at a time even this flashing green light vanished in the mist and I felt like a blind man.’ (Frisch 1959:7) Yet, the hero reacts against this gradual intrusion of his personal unconscious into his consciousness: he is unable to remember his neighbour’s name, he does not want to get better acquainted with him as if he understood the strange influence that person had on him, he forgets things. Despite all these efforts, the invasion of the unconscious cannot be stopped, it is irreversible: the familiar face of his neighbour brings about a whole process of anamnesis, of remembering gradually, in flash-backs, important moments and figures from his past, a past he has been trying to forget, and consequently to repress into his personal unconscious.

This is why one may draw a parallelism between the actual flight of the plane and Walter Faber’s gradual plunging into the realm not only of his personal but also collective unconscious.



In fact the plane, the Super Constellation, may be considered a psycho-pomp symbol, suggesting the role played by such a means of transport in the hero's journey into this realm (like Charon's boat in ancient Greek mythology). It is not by chance that the hero feels glad when the plane lands in Huston, Texas. In addition, this psychological process is accompanied by physical responses like pain in the stomach (which is also a warning about his illness which he refuses to accept), sweating attacks accompanied by dizziness.

If until he gets to the airport of Huston, Walter Faber has only symptomatic experiences of his personal unconscious, his first true experience of both his personal and collective unconscious takes place in the airport of Huston, in the bathroom, where he goes to freshen up. Once again, this moment is charged with symbolism: the symbolism of the act of seeing yourself in the mirror. What Walter Faber sees in the mirror is not his **mask** or in Jungian terms **persona** (what somebody thinks society thinks and expects of him/her; the characteristic roles one adopts in relating to others): the technologist Walter Faber who works for UNESCO, whose role is to supervise the installation of industrial turbines, who was born and educated in Switzerland, but now lives in America, in an apartment in Manhattan and has never been married. What he sees in the mirror is a 'the face of a corpse': 'I saw myself in the mirror, as white as wax with patches of grey and yellow and purple veins, a horrible sight, like the face of a corpse.' (Frisch 1959:7) The presence of the **corpse** is full of symbolism and can be immediately associated to a funeral ritual. In other words, Walter Faber's journey into the realm of his personal and collective unconscious may be looked upon as **the journey of the psyche into the other world** (or **the world of the Otherness** in psychoanalytical terms) followed by its resurrection (spiritual rebirth). More than that, the hero's vision has another symbolic meaning: he has crossed **the threshold of adventure** and it is not by chance that this is the moment when he hears for the first time the repeated announcements in the airport, which may be interpreted as **the call to adventure**: 'ATTENTION PLEASE. ATTENTION PLEASE... THE PLANE IS READY FOR DEPARTURE... ALL PASSENGERS FOR MEXICO- GUATEMALA-PANAMA...' (Frisch 1959: 8) In addition, this repeated call to adventure, which at a closer analysis comes from his unconscious, is accompanied by his encounter with his **shadow**, whose projection is the 'fat black woman' who suddenly shows up in the toilet and whose presence Walter Faber is not aware of at the beginning: 'All I knew was that when I came to, a fat black woman was bending over me, a cleaner whom I hadn't notice before.' (Frisch 1959: 8) The hero (who is also the narrator of the events) describes her as being physically very close to him and having almost grotesque features: '... she was only a few inches away, I could see her enormous mouth with black lips and her pink gums...' (Frisch 1959: 8) And finally her last description seem to create a portrait similar to that of an African witch, taking part in a ritual involving black magic or the guidance of the dead man's soul into the other world: '... I couldn't understand why the black woman suddenly burst out laughing- it made her breasts shake like a jelly; that was how she had to laugh with her enormous mouth, her frizzy hair, her white and black eyes, a close-up from Africa.' (Frisch 1959: 9) This role of the Shadow of guiding the dead man soul into the other world becomes more evident and is emphasised by the black woman's refusal to accept money (from ancient myths and funeral rituals we know that dead people are supposed to pay money in order to enter the other world). Her refusal to take the money as well as her words expressing gladness that Walter Faber is alive and that God heard her prayer hint at the hero's spiritual journey followed by a transformation and not at his spiritual death.

The unconscious call to adventure and the first experience of the shadow are followed by the hero's refusal of the call: once again without understanding himself why, he has reactions he

cannot control or account for, which suggest the reign of the unconscious. He refuses to return to the plane and continue his flight and this refusal is accompanied by a feeling of shame: 'I don't really know why I was hiding. I was ashamed of myself...' In spite of his refusal to continue the adventure into the unconscious, he cannot escape it, there is no return from it. After returning to the plane his German neighbour turns out to be a kind of a **guide** and **helper** during this journey: he is the possessor of a map of a strange land in Guatemala, a map where the only names marked are the Maya ruins: 'He unfolded a map... You couldn't see anything on his map (1:500 000) anyway, no man's land white with two blue lines, rivers between green state frontiers, the only names (in red and unreadable without magnifying glass) referred to Mayan ruins.' (Frisch 1959: 12) This detail is not without significance since the Maya ruins are sacred places charged with symbolism related to the collective unconscious. More than that, Walter finds out that his German neighbour has a brother who lives and works in that unknown area represented by the map. Soon after all these revelations, all these details find an echo (a response) in the hero's psyche: he has a strange dream. According to Freud, dreams are the best way in which one's personal unconscious manifests itself. Nevertheless Jung shows that dreams also contain elements of the collective unconscious. In the protagonist's dream, there are elements belonging both to his personal and collective unconscious. The faces he sees in his dream (Ivy, Professor O.) as well as the places (The Swiss College of Technology, Las Vegas, the poolroom) hint at memories from a repressed past. More than that, his dream has the power to foretell the future. The fact that in his strange dream Walter Faber is married to the Düsseldorf announces in a Sibylline way his experiencing of his anima at the end of a process of self-discovery. Undoubtedly a whole chain of unconscious associations is hidden behind the Düsseldorf's face: behind his face there is Joachim's face and behind Joachim's face there is Hanna's face and behind her face, his anima which later on will be projected onto Sabeth. It is worth mentioning here the symbolism of the 'poolroom' which appears in his dream: the pool implies the presence of water, which in Jungian criticism represents the mystery of creation as well as birth-death-resurrection, purification and redemption; fertility and growth. According to Jung, 'water' is also the commonest symbol for the unconscious, whereas the room is a symbol of the human psyche.

The emergency landing of the plane in the desert of Tamaulipas, Mexico, described from the protagonist's point of view, symbolises crossing the threshold of adventure into the unconscious: 'I lost my nerve, so that the landing- all I saw were the agaves racing past on either side, both hands over my face- was nothing but a blind bump, a crashing forward into the unconsciousness. Then silence.' (Frisch 1959: 18) Once this threshold crossed and after the first manifestations of his personal unconscious, the next step the hero needs to take is the deeper experiencing of the collective unconscious. This new and deeper experience takes place on the first night spent in the desert, when the moon light acts more like a catalyst in an alchemic process. In fact, in Jung's criticism, the process of individuation was compared to an alchemical process. Jung believed that alchemy represented the process of psychic transmutation which he called individuation, whereby unconscious contents are crystallized and synthesized into consciousness, so the self is made a whole. To this symbolism contribute to a great extent both *the moon light*, which plays the role of a catalyst in the transformation, and the sand of the desert, which resembles water or even mercury (an important element in alchemy charged with the symbolism of the psychic transformation): 'I see the moon over the Tamaulipas desert- it is more distinct than at other times, perhaps, but still a calculable mass circling round our planet, an example of gravitation, interesting, but in what way an experience?' (Frisch 1959: 18) From this description one comes to realise that the protagonist has undergone a fundamental change: he no

longer considers himself or feels like a blind man as he did before. On the contrary, he perceives things in a totally different way now, in a new light (not by chance *the moon light*). His perception is different now, because it no longer stops at the surface of things and it no longer confines itself to the scientific point of view of the technologist as it did before, but it tries to find out how each thing can be an experience in itself. Consequently, the things surrounding him are no longer what they seem to be, their essence changes in the moon light like metals in an alchemical process. (‘... sand lit up by the moon and made undulating, like water, by the wind...’) The most important proof of the hero’s experiencing the collective unconscious is the way he perceives the rocks in the desert: he compares them to ‘the backs of prehistoric monsters’ and finally to ‘the souls of the damned’. In other words, Walter Faber seems to acquire a sixth sense, he becomes more perceptive spiritually: ‘I see the jagged rocks, standing out black against the moonlight; perhaps they do look like the jagged backs of prehistoric monsters.’ (Frisch 1959: 22) This does not mean that he loses or gives up on the way he used to perceive things or on the logic of the scientist, on the contrary, but at the same time, he develops, unconsciously, this sense: ‘...but I know they are rocks, stone, probably volcanic, one would have to examine them to be sure of this. Why should I feel afraid? There aren’t any prehistoric monsters any more. Why should I imagine them? I’m sorry, but I don’t see any stone angels either, nor demons; I see what I see- the usual shapes due to erosion and also my long shadow on the sand, but no ghosts.’ (Frisch 1959: 22) At the beginning he is surprised by this inner change, by his new imaginative way of thinking and tends to reject it and consider it a woman’s attribute (‘Why get womanish?’; ‘Why get hysterical?’), but his monologues, interspersed with repeated rhetorical questions, contain more and more associations and comparisons like these: ‘Mountains are mountains, even if in a certain light they may look like something else, but it is the Sierra Madre Oriental, and we are not standing in a kingdom of the dead, but in the Tamaulipas desert, Mexico, about sixty miles from the nearest road, which is unpleasant, but in what way an experience?’ (Frisch 1959: 22) Paradoxically, even when he denies the existence of something beyond the world of appearances, the world he perceives with his senses, he implicitly asserts this existence, especially in his rhetorical questions: ‘There aren’t any prehistoric monsters any more. Why should I imagine them?...An airplane to me is an airplane, I can’t see it as a dead bird, it is a Super-Constellation with engine trouble, nothing more, and it makes no difference how much the moon shines on it. Why should I experience what isn’t there? Nor can I bring myself to hear something resembling eternity; I don’t hear anything, apart from the trickle of sand at every step ... What is all this about the end of the world? I can’t imagine a lot of nonsense in order to experience something. I see the sandy horizon, whitish in the green night, twenty miles away at a guess, and I don’t see why there, in the direction of Tampico, the Other World should begin.’ (Frisch 1959: 22) The hero senses that this is the beginning of an adventure, of discovering a new world, which not by chance he associates with the ‘Other World’, ‘the kingdom of the dead’ or with a mythical Flood. But the ‘Other world’ was an early projection of the unconscious, so the desert and the events that take place there become a projection of Walter Faber’s unconscious. Furthermore all these three images carry with them the symbolism of a spiritual journey, of spiritual purification and transformation.

Nevertheless, at the level of his consciousness, which includes the cold logic of the scientist, he does not accept this transformation, even if along the way he becomes more and more aware of it: ‘I refuse to feel afraid simply because of an overactive imagination, or to start imagining things simply because I feel afraid. It was all together too mystical for me.’ As a result of entering this process of transformation, he becomes fearless and uninhibited. He asks

questions he would never have dared to ask before and this is accounted for as a slip of the tongue: <<’By the way’’, I said,’’ are you any relation to a Joachim Hencke, who once studied in Zurich?’’ It just slipped out ...>> ( Frisch 1959: 23)

In this world time no longer has the usual dimension it has in everyday life: ’I took out my calendar. April 3<sup>rd</sup>, assemble turbines at Caracas.’ More than that, there is absolutely nothing to film for the hero who is used to filming the places he visits.

The same call to adventure (which seems to act like a hypnotizing call) like the one he hears at the airport in Huston determines the protagonist to make a detour via Guatemala to see his old friend Joachim, and consequently to continue his journey: ’I was already standing at the barrier, shaking hands all over again and asking Herbert to give his brother my best wishes, if he remembered me at all, when the usual announcement came over the loudspeaker: ATTENTION PLEASE, ATTENTION PLAEASE, WILL ALL PASSENGERS FOR PANAMA-CARACAS-PERNAMBUCO...I just couldn’t face the prospect of climbing into another airplane, fastening another safety belt.’’ (Frisch 1959:31-32)

During his stay at Campeche, the hero gets a deeper insight into the meaning of death. Death is a common trope in the novel- from the zopilotes that seem to dog Walter’s footprints, to multiple violent deaths, to everyday objects that take on morbid aspects (Hanna’s bathtub as a coffin, for example). Walter’s fear of death both creates and responds to such images. One way of understanding death in the novel is to consider the fact that human beings have always feared death, so as Walter begins to accept his fear, he also begins to more easily see the importance of making connections with others before it is too late.

In Palenque he meets a sort of a **spiritual guide**, a ‘ruin –lover’, Marcel, who introduces him to the sacred world of the Mayas, whose traces are still to be found in their pyramids and hieroglyphs. He is the one who initiates Walter into the Mayan history and astrology, revealing him the spiritual values of this ancient people. He forbids Walter to photograph ‘these hieroglyphs and grinning deities’ because, according to his theory, taking photographs would imply their death This character seems to embody ancient philosophies and religions existing in the collective unconscious, according to which gods or deities continue to exist in a spiritual world whose presence Walter experienced for the first time in the desert. When visiting the Maya ruins, the protagonist keeps analysing them from the point of view of the technologist, considering them ‘extremely primitive’, deprived of functionalism. Still, that does not prevent him from wondering how the Mayan civilisation had achieved so much without the help of any technology. So he comes to question values he has never questioned before: ’I tried to picture what it would be like if there were suddenly no more engines as in the days of the Mayas...I felt a rather childish amazement at the way in which they had shifted these blocks of stone: they simply built ramps and then dragged the blocks up them with an idiotic expenditure of manpower, that was what had made it so primitive.’(Frisch 1959: 43)

The protagonist’s deeper plunge into the personal and collective unconscious is suggested also by his state of forgetfulness (‘You forget everything here’), passivity (described as laziness: ‘I was even too lazy to take films’), drunkenness (‘I drank and slept’) and dizziness (‘I lay down, dizzy from the heat’). The leitmotif of the full moon reappears, carrying with it the same symbolism of the catalyst in the process of individuation as well as that related to fertility, growth, and spirituality.

In Palenque, Walter and Herbert seem suspended in time; they cannot remember why they have come, and when they do, they cannot see any way to overcome the obstacles to action. There are obvious parallels between Walter’s and Herbert's stay in Palenque and the Lotus-

Eaters episode in Homer's *Odyssey*. Walter narrates: 'For five days we were suspended in Palenque. We were suspended in hammocks, with beer within reach all the time, sweating as though sweating was our purpose in life, incapable of coming to any decision, quite contented actually.... We lay suspended in our hammocks, and drank, so that we could sweat better, and I could think what we really wanted.' (Frisch 1959: 36) Similarly, after Odysseus's crew had partaken of the lotus flowers, they were unable to remember their homes or why they wanted to leave. They thought only of the lotus flowers and of ceasing to strive for anything. Just as Odysseus was able to avoid the lotus flowers and work to return to his homeland, Herbert is able to overcome their ennui and search for his brother.

The most difficult barrier the hero needs to overcome, which represents a crucial experience at the same time, is the journey from Palenque to the plantation where he and Herbert are supposed to find Herbert's brother, Joachim. There is something of a fairy-tale scheme in the development of their journey: they need to cross rivers and swamps, go through many trials. They lose their way in the deep jungle and when they are on the point of giving up and returning, they come across the plantation and Joachim's corpse. The sight of Joachim's corpse, as well as that of a dead donkey torn to pieces by the zopilotes lead the hero to deeper reflections on the significance of life and death. On this new journey he has Marcel as a spiritual guide and helper. Marcel represents the opposite of the western technologist spirit embodied by Walter Faber himself: 'Marcel either sang *Il était un petit navire* or chattered all night long about Cortez and Montezuma ... or about the decline of the white race ... about the disastrous pseudo-victory of the western technologist (he called Cortez a technologist, because he possessed gunpowder!), about the Indian soul and a lot of other rubbish, a whole lecture about the return of the old gods (after the H-bomb had been dropped) and about death becoming extinct (his very words!) thanks to the penicillin, about the retreat of the soul from all the civilised regions of the earth, the soul in the *maquis* and so on.' (Frisch 1959: 50) The hero's attitude regarding Marcel's way of thinking is one of rejection and disregard. He even looks on Marcel as a communist, this way sticking to his pattern of thinking. Despite his refusal to accept Marcel's point of view and values, the protagonist has undergone a clear change which he is still unaware of or, in other words, it has not reached the level of his consciousness yet.

Nevertheless, after his return to New York, when he remembers and narrates his and Marcel's journey from the plantation back to Palenque-Campeche-Mexico, it is obvious that this change has already become effective: he has remorse regarding Joachim's burial and admits that Marcel was right when he suggested burning him. Suddenly the hero seems to have changed his opinion on burial and values more the purifying power of the fire (beliefs which can be found in many ancient religions). Obviously such reflections hint at a change in the hero's axiological and philosophical system too, change which would have been impossible without his experience of the collective unconscious and Marcel's help and spiritual guidance: 'We shouldn't have buried Joachim in the earth, we should have cremated him. But that couldn't be altered now. Marcel was absolutely: fire is clean, earth is mire after a single storm (as we found out on our return journey), decay filled with seed, as slippery as vaseline, pools in the red of dawn like pools of filthy blood, menstrual blood, pools full of newts, nothing but black heads with jerking tails like a seething mass of spermatozoa, just like that-horrible' (Frisch 1959: 69)

The recurrent archetypal images associated with the hero's change are that of the purifying fire, as well as the image of the Flood which both symbolise spiritual purification and transformation as well as transition from a spiritual and psychological stage into another. Another archetypal image, which appears as a result of one of Marcel's revelations, is that of the

Earth possessing the attributes of a woman- the **Earth Mother archetype**, as it is known in archetypal criticism: << 'Tu sais que la mort est femme !' I looked at him ''Et que la terre est femme!''', he said, and I could understand the latter, because that's it what it looked like...>> (Frisch 1959: 70)

On his return to New York, Walter Faber needs to face his mistress Ivy, who seems to be the projection of the **Shapeshifter** archetype known also the *femme fatale* or **Seductress archetype**. This archetype is usually represented as a female who is beautiful, sensuous, manipulative and destructive. Ivy undoubtedly embodies all these attributes and, more than that, her name symbolises another attribute of the 'femme fatale' archetype: she has clutches the archetypal hero needs to evade (Even Walter Faber himself admits that she sticks to him, just like the plant with the same name). Actually Ivy makes several attempts to stop Walter Faber from his journey. Her insistence to marry him as well as her temper tantrums may be interpreted as other examples of attempts to catch him in her clutches. After his return, the hero is changed and consequently up to the task of avoiding her traps. He manages to see through her, through her intentions and plans, and finally to escape from her clutches, thing which is evident from the way he describes her: 'I knew she was tough. That was about all I did know about Ivy. She was a Catholic, a model, she could take a joke about anything except the Pope, perhaps she was Lesbian, perhaps frigid, she felt the urge to seduce me because she thought I was an egoist, a monster, she wasn't stupid but a bit perverse, it seemed to me, a bit queer, and yet she was a good kid when she didn't get sexy...' (Frisch 1959:65)

At the end of this voyage, Walter Faber gets to know first of all the unconscious contents of his psyche, his shadow. According to Jung, the most decisive qualities in a person are often unconscious and can be perceived only by others, or have to be laboriously discovered with outside help. From the analysis of Walter Faber's transformation, it is obvious that the hero, benefiting of help from outside, has become conscious of his shadow, recognizing the dark aspects of his personality as present and real. This act, in Jung's theory, is the essential condition for any kind of self-knowledge, and it therefore, as a rule, meets considerable resistance especially from the ego's side, as we have seen in the protagonist's monologues. Nevertheless, only after experiencing his shadow, is the hero ready to experience fully the most important aspect of his collective unconscious, which is the anima.

### **Anima Projection and the Process of Individuation**

In Jung's theory, the un-individuated man identifies himself with those personal qualities that are symbolically masculine (e.g. logic, leadership, need for independence). However, he does not recognize qualities that are symbolically feminine (e.g. emotion, need for relatedness) as part of his own personality but rather projects them onto women. He will project his anima—those particular characteristics and potentialities that are significant components of his personal unconscious and therefore carry a special emotional charge—onto a woman for whom he will then feel a strong and compelling emotion (usually positive but occasionally negative). Infatuation (an instant, powerful attraction for a woman about whom he knows little) is one of the signs of anima projection, as is a compulsive possessiveness. Furthermore, according to many other specialists, the anima leads a man into unexplored depths of feeling, relationship, and sensitivity.

From the analysis of Walter Faber's forced landing in the desert, we have seen that signs of emotions he has never experienced before appear especially in his rhetorical questions. Even if he rejects them, considering them 'womanish', this does not mean that they are not present. More than that, when he returns to New York and to Ivy, there is a clear desire with the hero to

overcome isolation. Throughout the evening, as Walter and Ivy enact a series of separations and reunions, it becomes clear that no matter how much Walter dislikes Ivy, he still craves the companionship that she offers him. To cut himself off from her, since he cannot send her away, Walter invites more people to the apartment. In an effort to escape Ivy, Walter books himself a passage on a ship to Paris, rather than waiting to fly a week later. Ironically, while travelling on the ship, Walter cannot rely on his efforts to distance himself from human interaction. To pass the time, Walter must rely on his relationships with those around him. Because of this isolation, and because of his relationship with Sabeth, Walter begins to question his own affinity for isolation. This internal conflict, this need for relatedness, reaches its climax when Walter asks Sabeth to marry him. Whether or not he is serious, this request suggests that Walter has begun to doubt the success of his previous lifestyle to the extent that he is willing to try living another way.

Infatuation is the first feeling that Sabeth inspires to Walter Faber the very moment he sees her; she draws his attention, he feels attracted to her: ‘I wasn’t in love with the girl with the reddish pony-tail, she attracted my attention...’(Frisch 1959:73) Yet, in his retrospective descriptions of her, it becomes obvious that the infatuation has grown into love. The first sign of his infatuation is his jealousy. On the ship, when Walter listens while Sabeth, Mr. Lewin, and a few others discuss the Louvre, he is not only jealous of Sabeth’s attention directed towards the others, but he is also irritated by the reminder of a divide between himself and persons who do appreciate art. Walter admits that he has never been to the Louvre, in order to demonstrate the unimportance he finds in their area of interest. At the same time Walter continues to act out of impulse, rather than reason. It is not by chance that when he first sees Sabeth, she reminds him of Hanna, but he rationalizes the similarity by deciding that any woman of that age would remind him of Hanna. Despite Walter’s belief in the power of coincidence, and despite his insistence that unlikely events can happen, he chooses to believe that Sabeth and Hanna share no connection. Walter refuses to believe in fate, but he also refuses to accept the fact that his own choices and misjudgements played a significant role in what happened.

Analysing Walter Faber’s relationship to Sabeth, the novel may be considered as illustrative of the Freudian Electra complex: it is the story of a man who sleeps with his daughter without knowing she is his daughter. According to Freud, boys are unconsciously sexually attracted to their mothers, whereas girls, to their fathers. Nevertheless, in the light of archetypal theories, the existence of a sexual relationship between the protagonist and his daughter is symbolical and not an example of the manifestation of their instincts: it symbolises the integration of the Anima, integration which is often termed **Androgyny**. It is symbolized in narratives through the achievement of a special bond (frequently sexual union/marriage) between the ego-bearer and the anima/animus figure. This union or marriage (actually Walter asks Sabeth if she will marry him but she cannot tell if he is joking) is known in archetypal terminology as ‘the marriage of opposites’ or the incestuous ‘*hieros gamos*’.

As stated previously, one of the main characteristics of the anima archetype is its relation to sensitivity and consequently to art. From the very beginning, Walter Faber’s inability to understand art suggests his inability to connect with his anima. Not only does he not understand and despises art but he is in favour of technology and functionalism. He sees value only in the useful or practical. Nevertheless, once initiated into the Mayan art and culture, the hero begins to undergo a deep change. In his first real conversation with Sabeth, he tells her about ‘navigation, radar, the curvature of the earth, electricity, entropy.’ Later, Walter realizes that he is ‘talking like a teacher’. As Walter teaches Sabeth about cybernetics, he unwittingly reveals elements of

his own emotional life, making his vulnerabilities clear to Sabeth. He rhapsodizes about the beauty of the calculating machine, ‘which feels no fear and no hope, which only disturb, it has no wishes with regard to the result, it operates according to the pure logic of probability. For this reason, I assert that the robot perceives more accurately than man, it knows more about the future, for it calculates it, it neither speculates, nor dreams, but is controlled by its own findings (the feedback) and cannot make mistakes; the robot has no need for intuition...’ (Frisch 1959: 76) With this speech, it is clear that while Walter consciously embraces the idea of technological omnipotence, he no longer represents it. Walter’s choices are constantly affected by fear and hope; while he embraces probability and logic, he makes absurd choices based entirely upon hunches.

One of the fundamental questions the protagonist needs to answer is whether or not art is an inherent human trait. Is Hanna right? Does everyone have an instinctive reaction to art? If so, Walter’s dislike of art may stem from the same kind of fear that undermines his sense of his identity. Walter pulled away from art because he feared the uncontrollable sense of connection that arose from being moved by a piece of art. Only after Sabeth’s death does Walter know what it is like to share such moments of mutual understanding and pleasure (and then to lose them forever). Only then is Walter able to appreciate the fleeting yet universal experience of responding to art. Consequently both Sabeth and Hanna represent variants of the anima archetype. It is not a coincidence that Hanna works at an art institute in Athens and she raised her daughter in the spirit of art.

Walter goes to the Louvre to look for Sabeth, and he seems to enjoy art especially because this will help him to connect with her. He also goes to the opera because he knows that Sabeth will want to go. As they travel together, Walter makes less of an effort to conceal his dislike for such things. Still, when he fears that his lack of appreciation for art is having an effect on the way that Sabeth views him (‘Sabeth, out of pure spite I believe, went all over the monastery. ... I didn’t know what a young girl like that might think. Was I her chauffeur?’), he makes a real attempt to share an artistic experience with her.

### **Conclusions**

Events in the novel constantly undermine Walter’s sense of identity. In this sense, Walter’s both journeys are journeys towards ‘making’ or ‘re-making’ his own self. Walter’s sense of his identity is bound closely with his profession as a technologist. He believes that being a technologist influences the way he sees the world. But as the events around him undermine his faith in technology, Walter begins to see that he cannot base his identity on what he does in the world. This transformation is completed when Walter gives Williams his notice. He no longer needs his job to define his identity.

The need to redefine himself goes deeper, too: Walter begins to doubt that he has any coherent self when he realizes how little anyone around him knows who he is. The crisis in this development occurs when Walter leaves Williams’ party. When he reaches someone living in Walter’s own apartment who does not know who ‘Walter Faber’ is, Walter realizes how few connections he has made in his life. In returning to Greece and to Hanna, Walter implies that Hanna is the only one who really knows him. She knows about Sabeth, and she knows about Walter’s mistakes. In some ways, Walter, at the end of the novel, has less of a social identity than he did at the beginning, although he has a clearer sense of the identity he has made for himself in his life. He has no job, no apartment, no girlfriend, no colleagues. But he has Hanna. He knows he will not die alone, and he knows that someone will remember him if he does die. For Walter, that is enough.



Nevertheless, the process of individuation is completed later on, probably during of the time of the narration, before his death. From this point of view the protagonist’s imminent death is also symbolic: it symbolises the beginning of a new life as a whole man, having integrated the conscious and the unconscious dimensions of his psyche.

The temporal disjunction in the novel is also significant: this temporal disjunction and the recursive style of writing emphasize that Walter’s perception and understanding have changed over time. From a stylistic point of view, the process of individuation is suggested by the technique of the first person narrative interspersed with flash-backs, self- reflection moments and hints of future consequence. They all suggest a better and higher understanding of himself and the world surrounding him.

## **APPENDIX**

### **JUNGIAN TERMS**

**Persona:** Over time, man develops a mask or stance. It is what one thinks society expects of him. The way one presents himself to the world is a result of this persona. The persona reflects the characteristic roles we individually adopt in relating to others.

**Shadow:** The aspect of the Self (see definition below) which remains unconscious because it is repressed by the ego. The shadow is the darker side of the personality. Never will it be shown consciously. The shadow should never be out of balance with the ego or persona. This archetype exhibits characteristics that are considered uncivilized. He or she is often antagonistic and attempts to hinder the hero in his journey.

**Wise Old Man/Helper:** The Wise Old Man/Helper is concerned with meanings and ideas rather than the actions and personalities of others. He is a scholar, teacher, wise man or a philosopher.

**Seductress/ Shapeshifter:** The Seductress, often referred to as the Bitch Goddess or ‘femme fatale’, is usually represented as a female who is beautiful, sensuous, manipulative and destructive.

**Mother:** This archetype is nurturing, life giving, creative and loving. She is known as the Great Mother and also as Mother Earth.

**Ego:** The ego is the part of the personality that one consciously recognizes as “I” or “me”. It is developed after birth. The ego should always remain in balance with the Self.

**Self:** The Self is the psychic centre of a human being. The entire archetypal system of the unconscious, the heart of the personality, and a person’s ego make up the Self. Jung states that the Self is not only the centre but also the whole circumference which embraces both conscious and unconscious; it is the centre of this totality, just as the ego is the centre of the conscious mind. The Self is synonymous with the psyche or soul of a person

**Anima:** The Anima is the feminine side of the personality. It is nurturing, loving, emotional, sensitive and vulnerable. There should be a balance between the Anima and Animus. This archetype is dominated by the feminine characteristics of the anima, and consequently represses the masculine characteristics of the Animus.

**Animus:** The Animus is the masculine side of the personality. It is aggressive, dominating, determined, cool thinking and sound in judgment. This archetype is dominated by the masculine characteristics of the Animus, and consequently represses the feminine characteristics of the Anima

**Archetype:** All human beings share a collective unconscious. Inside all human beings there are certain patterns of behaviour. These patterns are elements in the personality which are

innate and universal. Universal archetypes are the symbols that every child has the potential to create, regardless of race, creed or culture. Archetypes are aspects of the human personality and are frequently found in literature and myth.

**The Archetypal Hero:** The Archetypal Hero goes on a physical or emotional journey. While on that journey, he or she overcomes obstacles. Once he reaches the end of the journey, he or she will change. The change can be physical or emotional. The struggle or quest symbolizes the merging or balancing of the ego and Self.

**The Process of Individuation:** Individuation is a psychological growing up, the process of discovering those aspects of one’s self that make one an individual different from other members of the species. It is essentially a process of recognition- that is, as one matures, the individual must consciously recognize the various aspects, unfavourable as well as favourable, of one’s total self.

**The *hieros gamos*** (‘sacred wedding’) or ***coniunctio*** can symbolize the union of opposites that is achieved in the **Self**.

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## MOVING STUDENTS TO CRITICAL THINKING

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### **Abstract**

Critical thinking is defined as a reflective and reasonable thought process embodying depth, accuracy, and astute judgment to determine the merit of a decision, an object, or a theory (Alwehaibi, 2012). Creative thinking involves analysis, evaluation, and a synthesizing of facts, ideas, opinions, and theories. Possessing the capacity to logically and creatively exercise in-depth judgment and reflection to work effectively in the realm of complex ideas exemplifies a critical thinker (Carmichael & Farrell, 2012). More thinking might lead a student to engage in the offering personal opinions or life experiences to address a topic, yet the challenge for an instructor is to move students beyond offering personal opinions. Gaining additional thinking skills prompts a student to research the existing body of topical knowledge and respond by repeating the ideas and theories of experts in the subject matter. Quoting scholarly authors is a step above proffering personal beliefs and perceptions, yet regurgitating the thoughts of others does not equate to critical thinking. As teachers or instructors, the goal should be to create a learning environment that causes students to engage in critical reflection and evaluation of the existing literature to render judgment based on a compilation of synthesized evidence. Although a student’s opinion might be relevant and provide a bridge for additional discussion, the challenge is to prompt students to provide justifications and founded explanations of their views. What does a student learn if the only critters for the assignment is to read the textbook and tell to the teacher, or to the classroom, what the author said? An effective method for beginning to teach the critical thinking process is for the instructor to respond to students with research-supported replies. By the instructor setting the example, students at least have the opportunity to view a reflective, evaluative response.

**Keywords** : students, teachers, critical thinking, practice, theories

### **Introduction**

Critical thinking in classroom makes students reflect better as a well-educated person but requires going through the rigorous process of education. Education improves the lives of students. Synonymous to education is disciplined based teaching and conceptualization of ideas that helps the students to acquire abilities to think into the contents or logic of each subject using analytical reasoning skills. Asking students good questions, deep and analytical thinking question, enables them to implicate good thoughts not only in university classrooms but also at work and life. However, how far the university students make use of these deep, analytical reasoning abilities to acquire a culture of purposive and reflective thinking remains unnoticed by many academicians. Some employ lecture in the entire two hour class session where the students will attentively pay attention and comprehend in the first half of an hour. Along the class sessions, do we train the students to be critically minded?

Lecturers are the moderators in cultivating intellectual traits among students in classrooms through teaching approaches, identify students thinking, flaws and make them realize these defects.

### **Literature review**

Critical thinking is purposeful and reflective judgment about what to believe or what to do which requires skilled, active, interpretation and evaluation of observations, communications, information, and argumentation Fisher & Scriven (1997), self-guided, self disciplined thinking that aims to take the persons’ reasoning all naturally to a higher level Elder (2008), an art of analyzing and evaluating with the goal of improving thought where a person has to possess an attitude of being disposed, knowledge of the methods of logical enquiry and some skills of applying these methods Glaser (1941), a way of taking up the problems of life, a well cultivated critical thinker raises vital problem questions and problems, gather and assess relevant information, come with well-reasoned conclusions and solutions, testing them against relevant criteria and standards and communicate effectively with others in figuring out solutions to complex problems, without being unduly influenced by others thinking Summer (1940).The process involves the ability to recognize problems, gather pertinent information to comprehend and use language with accuracy, clarity and discrimination, to interpret data, appraise the evidence and evaluate the arguments, to recognize the existence or non-existence of logical relationship between propositions to render accurate judgments about specific things and qualities in everyday life. Along the process, willingness and ability to evaluate one’s thinking is imperative as it does not have all relevant information, making unjustified inferences, uses inappropriate concepts or fails to notice important implications. It focuses in developing the intention of truth-seeking, open-minded, systematic, analytical, inquisitive, confident in reasoning and prudent in making judgment. Those who are ambivalent on these aspects of the disposition toward critical thinking are more likely to encounter problems in their critical thinking skills. Failure to recognize the importance of correct dispositions can lead to various forms of self- deception and closed mindedness Summer (1940). It is based on concepts and principles, not on hard and fast, or step by step procedures Paul & Elder (2008).

### **Helping students think critically**

A student’s critical thinking skills can be strengthened when an instructor probes the student’s viewpoint on the discussion topic by seeking additional clarification, explanation, and justification from the student. Instructors should prompt students to gain proficiency in research skills to be able to move beyond using personal opinions as the sole basis for responses. Recognizing that critical thinking involves assessment, examination, and reflective reasoning of existing information, ideas, beliefs, and speculations, effective instructors encourage students to gain proficiency in the ability to locate and retrieve scholarly information on the assigned topic. Instructors should respectfully challenge a student’s viewpoint to elicit a deeper, more reflective response by:

- Setting the example: responding to the student with a reply supported by peer-reviewed literature
- Mandating the use of peer-reviewed sources in addition to the course textbook
- Asking questions directly related to the student’s response as opposed to posting an off-the-shelf, well-worn reply
- Asking for clarifications, deeper explanations, and justification
- Disallowing the use or, at a minimum, the overuse of direct quotes
- Teaching the technique of synthesis of sources instead of rewarding a quantity of words
- Not responding to students in such an authoritative manner that kills the discussion; the goal is to keep the discussion moving, and not cause students to assume the instructor always has the final word

- Soliciting opposing views; encourage students to make a justified argument for or against a topic
- Posting questions that cannot be answered with a yes or no answer

By stimulating a student’s reasoning process through probing and thought-provoking questions, instructors move students beyond being able to define a topic to possessing the ability to make an evaluative value judgment based on in-depth, sound interpretation of relevant information. Thinking skills are viewed as a crucial issue in education. The ability to engage in careful, reflective thought is viewed as paramount. Teaching students to become skilled thinkers is a goal of education in this fast-paced and competitive world. Students must be able to acquire and process information since the world is changing so quickly. Some studies purport that students exhibit an insufficient level of skill in critical thinking. There are students who do not score well on tests that measure ability to recognize assumptions, evaluate ideas, and scrutinize inferences. High-quality learning and thinking require more than the transmission of facts. We cannot assume that students will accrue critical thinking skills without explicit instruction. Research indicates that thinking skills instruction makes a positive difference in the achievement levels of students. Studies that reflect achievement over time show that students can learn to think better and that learning gains can be accelerated. These results indicate that teaching thinking skills can enhance the academic achievement of participating students. Furthermore, while it is possible to teach critical thinking as separate skills, these skills are developed and used best when learned in connection with content knowledge. Competency in critical thinking appears to be best developed when students use critical thinking skills across the disciplines. Students not only need to learn facts, concepts, and principles, they also must be able to effectively think about this knowledge in a variety of increasingly complex ways. When a student needs to think through an idea or issue or to rethink anything, questions must be asked to stimulate thought. When answers are given, sometimes thinking stops completely. When an answer generates another question, then thought continues. Connections in the brain can be made between new and previously learned information when questions are asked. Questions must be asked by students of themselves, by students of their peers, and by teachers of students. Too often, only questions that require memorization have dominated the teaching of content. Helping students learn how to process information at various levels of thinking is imperative in our schools today. If we, as educators, want students to think critically, we must stimulate and cultivate thinking with quality questions. Teachers need to ask questions of students to turn on their intellectual thinking engines. The questions should be asked purposefully to require students to use the thinking skills that the teacher is trying to develop. Students can generate questions from teachers' questions to get their thinking to move forward. Thinking is of no use unless it goes somewhere, and again, the questions we ask determine where our thinking goes. There are some questions, at the lower level of thought, that imply the desire not to think but merely to recall information from memory. Although it is essential to build a knowledge base by using questions the lower level, questions at higher levels must be asked to drive students' thinking to a deeper level and lead them to deal with complexity, rather than just searching through text to find an answer. Studies suggest that the classroom environment can be arranged to be conducive to high-level thinking. Teachers need to plan for the type of cognitive processing they wish to foster and develop learning experiences accordingly. The teacher's role is to provide stimulating and supporting activities that engage learners in critical thinking. With consistent modeling and encouragement by the teacher in a risk-free environment, students increasingly take responsibility for asking questions of themselves and of their peers. Students improve their

thinking skills by learning how to ask questions that enable them to process information. While many students might learn how to ask questions naturally, others need to be taught the questions that help them learn how to think. A focus of schools must be on developing students who value knowledge and learning, who can and will think for themselves, who know how to ask questions when more information is needed, and who know how to evaluate the value of ideas, products, or situations. With the integration of critical thinking skills into instruction, students gain a deeper understanding of the content they are learning, which results in meaningful and transferable knowledge. We must ensure that students learn to critically interact with content, think independently, make decisions, and solve problems. Critical thinking helps students form meaningful connections with what they learn and is recognized as an important element for success in life.

### **The role of school and university in critical thinking**

The role of schools and universities before the elective-based system became prominent was not necessarily to teach students a certain skill, but instead it was to teach students to find the truth for themselves, thus naturally developing the student’s critical thinking ability. Today’s generation of college undergraduates seem to need a lot more direction than those who came before them. Students today not only thrive in an environment where they are free to dialogue with their instructor and fellow students, but they also achieve greater success when they are provided with formative assessments and regular feedback. These techniques promote good performance by not only clearly defining what type of work is expected in class and how to achieve high standards, but they also show students that high performance standards are achievable. The student’s critical thinking skills have been declining across the nation because many, if not most, students are simply exposed to lectures and Power-Point presentations that only promote rote memorization. Students who are held to the expectation of reading the assigned material and partaking in Socratic dialogue will have their invaluable critical thinking skills naturally awakened when they are free to dialogue with each other and have the opportunity to analyze primary documents and theories from various angles. Developing critical thinking skills requires instructors to move away from simply presenting information in a lecture format and to, as described by Hativa (2000), act more as a chairperson, guide, listener, observer, monitor, initiator, summarizer. Instructors need to quit simply talking to their students and start listening to and talking with their students as they discover their own learning process.

Classroom assessment techniques (CATS) are formative assessments that truly assess a student’s progress, as well as the instructor’s capacity to teach, while offering an instructor the opportunity to provide students with constant feedback. There are many instructors, both full-time and adjunct, who are notorious for assigning a paper or project with little guidance and little feedback, which can lead to instructor heartache when those final papers and projects are graded. Providing grading rubrics is a simple solution that establishes benchmarks and serves as a way to monitor student progress and to provide feedback at critical points as students engage in the writing or research process. With rubrics, no longer is there a guessing game where the student attempts to figure out what an instructor is looking for because, as mentioned in Schmoker (1999), the rubric nails the criteria down... while providing clear direction and focus Rubrics also provide better feedback by requiring more precision and clarity about criteria for evaluating student work (O’Neil, 1994 in Schmoker, 1999, p. 79). Furthermore, rubrics are student friendly and can motivate students to take responsibility for their own learning after the student reflects on the feedback from their instructor. Developing a culture of being careful, purposive, deliberate determination of the most appropriate judgment or decision, to make or whether to

withdraw from any given line of thinking are highly commendable in a classroom that are worth persevering. This mirrors the seriousness of the faculty towards teaching and learning effectiveness that would ultimately enable the students to build intellectual confidence in classrooms and in real life to becoming well-educated persons in the society.

### **OK, but what is critical thinking?**

Critical thinking is the ability to think clearly and rationally. It includes the ability to engage in reflective and independent thinking. Someone with critical thinking skills is able to do the following :

- understand the logical connections between ideas
- identify, construct and evaluate arguments
- detect inconsistencies and common mistakes in reasoning
- solve problems systematically
- identify the relevance and importance of ideas
- reflect on the justification of one's own beliefs and values

Critical thinking is not a matter of accumulating information. A person with a good memory and who knows a lot of facts is not necessarily good at critical thinking. A critical thinker is able to deduce consequences from what he knows, and he knows how to make use of information to solve problems, and to seek relevant sources of information to inform himself. Critical thinking should not be confused with being argumentative or being critical of other people. Although critical thinking skills can be used in exposing fallacies and bad reasoning, critical thinking can also play an important role in cooperative reasoning and constructive tasks. Critical thinking can help us acquire knowledge, improve our theories, and strengthen arguments. We can use critical thinking to enhance work processes and improve social institutions. Some people believe that critical thinking hinders creativity because it requires following the rules of logic and rationality, but creativity might require breaking rules. This is a misconception. Critical thinking is quite compatible with thinking "out-of-the-box", challenging consensus and pursuing less popular approaches. If anything, critical thinking is an essential part of creativity because we need critical thinking to evaluate and improve our creative ideas.

### **Importance**

#### *How to improve??*

Critical thinking is a **meta-thinking skill**. It requires thinking about thinking. We have to reflect on the good principles of reasoning and make a conscious effort to internalize them and apply them in daily life. This is notoriously hard to do and often requires a long period of training. The mastery of critical thinking is similar to the mastery of many other skills. There are three important components: theory, practice, and attitude.

### **Theory**

If we want to think correctly, we need to follow the correct rules of reasoning. Knowledge of theory includes knowledge of these rules. These are the basic principles of critical thinking, such as the laws of logic, and the methods of scientific reasoning, etc. Also, it would be useful to know something about *what not to do* if we want to reason correctly. This means we should have some basic knowledge of the mistakes that people make. First, this requires some knowledge of typical fallacies. Second, psychologists have discovered persistent biases and limitations in human reasoning. An awareness of these empirical findings will alert us to potential problems.

### **Practice**

However, merely knowing the principles that distinguish good and bad reasoning is not enough. We might study in the classroom about how to swim, and learn about the basic theory, such as the fact that one should not breathe under water. But unless we can apply such theoretical knowledge through constant practice, we might not actually be able to swim. Similarly, to be good at critical thinking skills it is necessary to internalize the theoretical principles so that we can actually apply them in daily life. There are at least two ways One is to do lots of good-quality exercises. Exercises include not just exercises in classrooms and tutorials. They also include exercises in the form of discussion and debates with other people in our daily life. The other method is to think more deeply about the principles that we have acquired. In the human mind, memory and understanding are acquired through making connections between ideas.

### **Attitudes**

Good critical thinking skills require not just knowledge and practice. Persistent practice can bring about improvements only if one has the right kind of motivation and attitude. To improve one's thinking one must recognize that the importance of reflecting on the reasons for belief and action. One must also be willing to engage in debate, to make mistakes, to break old habits, and to deal with linguistic complexities and abstract concepts.

### **Conclusion**

Teachers can be instrumental in honing their student's critical thinking skills by moving away from simply assessing a student's ability to quickly memorize a few facts and terms before an exam. It is imperative to continually monitor every student's progress through classroom discussions, formative assessments and regular feedback. Of course, moving beyond rote memorization also requires instructors to move beyond lectures and Power-Point presentations. Instructors should use Socratic dialogue to encourage students to step back from their own thoughts on a topic and examine the topic creatively in comparison to the thoughts of other students in the class. Instructors need to reexamine their goals and set their sights on promoting the true understanding of concepts through continuous classroom assessment and by providing regular feedback to their students as they work on papers and projects. These three instructional techniques are rather simple and require little or no training; however, instructors who employ these techniques will undoubtedly have a great impact on their student's lives. Similarly, this survey proves that critical thinking enables the students to assess the appropriateness of their own reasoning, train them to analyze and evaluate situations as well their own beliefs prior to answering or making decision. Fostering critical thinking in classroom mirrors the seriousness of the faculty and the university as a whole towards teaching and learning effectiveness that would ultimately enable the students to build intellectual acuity as well as confidence not only in classrooms but also in real life to becoming well-educated persons in the society. Generalization of outcome may be to some extent differs from the rest of the courses' outcomes. Fostering disciplined-based critical thinking culture in university classroom brings about rewarding academic excellence among students that would be mutually beneficial in the real world perspectives. However, this culture can bring sounder fundamentals when adopted in the early stage of education i.e. elementary and secondary levels. Good critical thinking skills require not just knowledge and practice. Persistent practice can bring about improvements only if one has the right kind of motivation and attitude. To improve one's thinking one must recognize that the importance of reflecting on the reasons for belief and action. One must also be willing to engage in debate, to make mistakes, to break old habits, and to deal with linguistic complexities and abstract concepts.



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## VOCABULARY AND LANGUAGE THINKING IN ELEMENTARY EDUCATION

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### **Abstract**

Language and thinking as two interrelated notions, together with speech form one inseparable unit, whose adoption is of exceptional value, both in terms of the theoretical and practical aspect of the subject Mother language. These three notions occur parallel in the consciousness of the human beings. They complement and do not contradict each other. The development of thinking inevitably requires language development and expression through clear speech with the use of coded signs, i.e. words. Three stages are important in the realization of this process: forming of the notion in the consciousness of the human being, relating it to a concrete image from reality and expression through an adequate language mark, i.e. word. The objective of our paper is to demonstrate the importance of this language mechanism in the instruction of the subject Mother language, bearing in mind that the language occurs simultaneously as a means and a content of the instruction and to analyze how much the adoption of the content aspect of the language contributes for proper acquisition of the words by the children and for the enrichment of their vocabulary, knowing that the modern creative instruction should encourage and develop the critical thinking of the students.

**Keywords:** language, cognition, notion, education.

Language and thinking as two interrelated notions, together with speech, form one inseparable unit, whose adoption is exceptionally valuable, both in terms of the theoretical and the practical aspect of the subject Mother language. These three notions occur parallel in the consciousness of the human beings. They complement and do not contradict each other. The development of thinking inevitably requires language development and expression through clear speech with the use of coded signs, i.e. words. People cannot express their thoughts without thinking about their speech and the use of language signs, i.e. words, as symbols of speech, which are comprehensible for them and their community. Language and speech are not only related to thinking as notion categories, but also as thinking processes, which emerge from the notion of thinking. They enable not only understanding and communication among people, but also expression of their thoughts, feelings, opinions, beliefs, intentions, wishes, through many different, individual connections of the language signs from the predetermined codified system of words and rules. The choice and combination with the use of the language code as a process, which unites language and speech is characterized as an endless diversity of thinking and its expression, as well as inconsistency in the thinking combinations. Hence, the need arises not only for inevitable language stratification and meeting the needs for communication among people with the use of different forms: idiolects, sociolects, dialects, situational and thematic styles, etc., but also for coded diversity, in the form of a defined standard language, which unites the language diversities and is the official means for communication in the given social community. The standard language, as a synonym for the prestigious cultural uniformity of the language code in a language environment implies use in all areas of modern social communication, of course including the use in the frames of the education practice in schools.

Bearing in mind the fact that at the same time it is both a means and a subject of study, the language of the instruction, or the didactic speech in the education process for the subject Mother language, should become a powerful means for expression, development, communication and enrichment of the language culture of the students. Starting from the characteristics and functions of the didactic speech and its important properties, such as: the clarity and comprehensiveness of speech, the content or sense of the speech, the orientation of speech towards a particular goal, the correctness of speech, the vocal expression of speech, the attractiveness of speech, etc. (Petkovska 2008: 42), in this paper we will elaborate the content and attractiveness of speech, which includes a rich language register, i.e. well-chosen word fund.

It is impossible to transfer the notions to the students, not only when presenting content from the subject Macedonian language, but also from other subjects, only through the words of the teacher. They are formed gradually through different thinking operations and processes in the frames of their overall activity in the instruction. The words, as the smallest units of meaning of speech and language, represent the external side of a notion, language sign or symbol of the notion, which represents the inner, meaningful side of the word. The essence of forming word signs is that their realization should result in the same representation of a specific notion, in the frames of a collective, when using a general sign system. Learning words by the students is not a simple process, not because the students do not comprehend the word, but because they do not always know the notion, expressed through the word. In the realization of this language process, understood as an imminent integration of the three interrelated notions, thinking – language – speech, three stages are very important: forming the notion in the consciousness of the human being, relating it to a concrete image from reality and expression through an adequate language mark, i.e. word. Essentially, this process is concretization of the objective world, and conversion of the material in the mental. This means that the real material object is separated from the set of other objects, generalized in a concrete image and named with an adequate word.

Bearing in mind the fact that at the same time it is both a means and a subject of study, a question arises whether and to what extent the adoption of the content aspect of language contributes for the proper learning of the words by the students, and the enrichment of their language register. Relating a notion to a word implies processing the language information, starting from the assumption that the perception of the notion and its production into a language sign is based on the creation of a representation or an association related to the notion, which will completely include the content aspect of the word. For this purpose, we can use several lexical-semantic mechanisms, one of them being the theory of the prototype. According to this theory, the relations which connect the notions and words, by grouping them into a single language category, is based on a web of similarities, which connect them to objects from real life, by using a typical representative called a prototype, to discover the relations and define the notions (Dragicevic 2001: 80-81). The essence of the prototype is a comparison in terms of similarity to something real and concrete from the objective reality. The understanding of similarity is of subjective character, and is a notion subject to gradation. This means that we start from similarity in the understanding and categorization of reality, but we should bear in mind the language community and its understandings and beliefs. The connection of the prototype to experience, allows it to change according to specific time and place, and to vary in different language communities. This language mechanisms can be easily used in Mother language instruction, and contribute for correct learning of the words by the students, as well as for expanding the language register. The correct learning of the words, together with the notions they represent, is the primary tasks of the Mother language teacher. Observed not only from the aspect of modern

education, but modern life as well, the realization of this task is made easier because today the students, when joining the education process, come with particular prior knowledge from different areas and with a particular language register, containing not only domestic lexis, but also internationalisms. By using their prior knowledge and many of the words from the general lexis, it is realistic to expect the students to form the notion in the consciousness, relate it to a concrete image and express it through an adequate word without problems. This specifically refers to the words, which belong to a concrete lexis and can be easily formed as notions in the consciousness of the students through the process of visualization, for example: *house, tree, cloud, apple, glass, book, sparrow, arm, airplane, dress, etc.* Through association and visualization with the use of a prototype, we could explain and bring in the consciousness words, which are less familiar or foreign in terms of their time and space marking, for example: *fairy, dragon, king, rose, penguin, giraffe, kangaroo, kiwi, banana, etc.* However, it is more complex, when we deal with words from the abstract lexis. Introducing them to the consciousness of the students, and rendering them easy to recognize and use, requires exceptional skills and abilities by the teacher and adequate language exercises. Specifically, we will discuss the adjectives as an integral and irreplaceable part of many forms and techniques of modern instruction, especially in the subject Mother language. For example, in the explanation and learning of adjectives, which describe the physical appearance of people and objects, it is very important to create prototypical situations and to compare them to the prototypes. Therefore, if we say that a person is *good-looking, tall* or *fat*, we make this conclusion, not on the basis of a comparison to other people in terms of beauty, height or weight, but with the prototype, which represents a normal and typical person. In this way, we make a description of an observed person on the grounds of our individual concept for matching or differentiating that specific person to the prototype and assessment of the degree of difference by comparing two measurable quantitative values, one of which is real and belongs to the observed person, and the other one, which is imagined and belongs to the prototype. The adjectives of the type *cheerful, courageous, happy, and cunning* are characterized by a high degree of abstractness. In the mentioned adjectives, we can find feelings, which are described by comparison to other feelings that we know from before, and which can be imagined and described by description and reproduction of the situations in which they occur. Depending on the acceptance and behavior in terms of the moral and social norms, the specific person, which is being described, can be characterized as a positive or a negative one in a particular situation in terms of the degree of occurrence of the same characteristic in the same situation by the prototype.

The adjectives denominating colors, in terms of this theory, are especially interesting for language analysis, as well as for the critical thinking of the students. It is desired their learning both as a notion and a word to be carried out by compassion with a clearly separated concrete object from real life with the same color, because they have a high degree of concretization. The denomination of each color and nuance of a color is carried out according to a certain prototype which has the so-called local color, which is defined as a general color of the object in nature, for which the color is the dominant and recognizable characteristic. For example, the local color of snow / milk is a prototype according to which white color is defined in language; the local color of grass is a prototype according to which green color is defined in language; the local color of coffee is a prototype according to which brown color is defined in language; the local color of blood is a prototype according to which red color is defined in language, etc. There are many possibilities for creating language exercises for learning many new words, both domestic and

foreign, by discovering the system of colors and their nuances by finding the notions, which served as prototypical models for their denomination.

The development of the thought in students, both in spoken and written expression, implies stimulation of the creativity and research actions, as well as directing the students towards methods and activities, which will enrich their language register. The lexical fund of the students needs to be enriched with words, both from the domestic and foreign lexis, as well as old and new words, more or less familiar, which cover the basic semantic domains: actions and processes, parts of the human body, names of people; living beings; plants; names of characteristics; clothes; food and drink; time; natural phenomena; names of colors, etc., through well-chosen language exercises. Only in this way, the students can have clear thoughts and speech, as well as a rich language register.

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## THE ROLE OF CRITICAL THINKING AND ETHNIC, LINGUISTIC, RELIGIOUS TOLERANCE IN ALBANIAN LITERATURE

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### **Abstract**

In turbulent times and tense political situations, writers are those, who with their works carried strong and important messages for national, linguistic, religious tolerance, cosmopolitanism etc. Their mission is worth mentioning especially for its role in the National Renaissance and later with its political and social views and some objectives conclusions that derive from their creation.

In many European countries, social circumstances were key to enormous changes in arts and sciences and vice-versa. One must consider what was the inspiration of the French Revolution, without doubt Victor Hugo, with his literary work. Likewise the Albanian renaissance writers with their works paved the way for change and prosperity in the Albanian society.

In this study I will apply two research strategies

Firstly: the analysis and critical thinking of philosophical-political treaties and the views of many Albanian writers and thinkers concerning changes in the Albanian society of the time.

Secondly: artistic creations in the Albanian literature that impacted the intellectuals and the masses the most.

This study challenges the argument that literature does not have influence in creating a new mentality and new historic, social and political circumstances.

This study takes a look at the influences of social, political, and cultural movements in Albanian life through a detailed research from the National Renaissance until this day. Taking this historically important issue into consideration I have explained the process of how the literature of the time influenced the cultural, educational, economical, moral and political transformations

**Keywords:** critical thinking, new Balkan circumstances, new ideals, conservatism, tolerance, independence, monarchy, social-political reality, despotism, sacrifices, wars etc.

In troubled times and tense political situations, it was the writers with their works who conveyed strong and important messages for national, linguistic, religious tolerance and cosmopolitanism. Knowing first hand the problems of the people and misery of the unrestrained rulers, they became the ones to offer guidance. Their mission was particularly important during the national renaissance and later, with their political and societal viewpoints and some rather spot on conclusions we can deduce from their works.

Jeronim de Rada, Naim Frashëri, Sami Frashëri, Zef Serembe, Zef Skiroi, Naum Veqilharxhi, Asdreni, Filip Shiroka, Jani Vreto, Georg Gordon Bajron, Elena Gjika, Dhimitër Kamarda, Gavrill Dara, Konstantin Kristoforidhi, Pashko Vasa, Gjergj Fishta, Faik Konica etc. Are the authors who, with their works, had the greatest influence on national awareness, took on the role of the guide of the people to confront the five century long rule and influenced in a particular way the national, linguistic and religious diversity, the respect of human liberty etc.

Taking the geographic location of Albania into account, a space between east and west, and the role it had as a land among this great cultural, political and religious diversity we ought to pose the question to what significance was the work and message conveyed through their literary works. The central position that Albania and the Albanians had and have to this day, played an important role in the exchange of ideas, cultural and scientific novelties between these

important parts of Europe. This influence becomes apparent when we look at the works of Naim and Sami Frashëri and others, where we see the influence of the orient without losing their authentic Albanian value.

During the period of the National renaissance, titanic political, cultural and national movements took place.

Literary work through the integration of extratextual elements like: Intertext, context, metatext, paratext, palimpsest, as well as other elements, expressed the cosmopolitanism, national, linguistic, religious, cultural tolerance while at the same time preserving national pride, national, linguistic and religious dignity, integrity, against attacks and politics of assimilation, deportation and genocide committed to Albanians. The national goal of the renaissance intellectuals was to create an Albanian state among the ruins of the Ottoman empire, that ruled and exploited the country for five centuries. In an effort to let the Europe and the Balkans know more about Albanians and their ancient culture the Albanian intellectuals of the renaissance wrote philosophical-political treatises like: “The truth about Albania and Albanians” from Pashko Vasa, “Albania what it was, what it is and what it will be from Sami Frashëri, Encyclica from NaumVeqilharxhi, their artistic works and metaphorical narrative techniques, with biblical subject, with dynamic and static motives, allegorical and inversive forms of narration are a great contribution in this direction.

Sami Frashëri in his work “Albania what it’s been, what it is and what it will be” among other things depicts the real situation of Albanians at that time:

*“Shqipëria gjendet nën një paqeveri të keqe... Varfëria, paqeveria, padituria sjellin grindjenë, ndarjenë, të ndarë, armikë njeri me jatinë, po vritenë në mest të tyre po derdhinë gjakn, e tyre kot e kote, sa venë po humbasinë! Kanë rënë në një gjumë të rëndë.Fqinjët e tyre ditë me ditë po xgjuhenë, po ndritohenë, po shtohenë, e po hedhinë gjurma të mbëdha brenda në Shqipëri, të cilën janë gati ta copëtojnë fare !*

*Kështu është sot Shqipëria !”* (S.Frashëri 1978)

The national mission had to be achieved through the education of the young, through establishing new schools in Albanian language, writing school books, the formation of national literature and politically through the emerging of the Albanian national state. Beginning from the old albanian literature, that is religious in its content and was written for the needs of the time, a part of which were translations from Latin, Italian, Slavic or Greek. But the works of Cuneus Prophetarum of Pjetër Bogdani, the Latin-Albanian vocabulary of Frang Bardhi, works of Lek Matëranga, Jul Varibobaetc, were original though religious in their content. The authors of the Alamiada poured the ink on paper with poetic mastery, writing about life, religion, language, love for the fatherland, but their works too were to some extent religious. The literature of the national renaissance was more concentrated on the national, cultural aspect concerned with the past, a reminiscence of the ancient and medieval times and concerned with the deeds of heroism of Skenderbeg. Although suffering the tyranny of a foreign rule for centuries, Albanians, like the uneducated masses as well as the intellectual elite and well-known patriots managed to preserve the tolerance and co-existence with Vllachs, Slavs and others while at the same time preserving their keeping their national, religious, linguistic integrity, and preserving their integrity and identity. The suffering turned into a metaphor, allegory, metonymy, where life was not the greatest treasure and that it had no meaning without freedom. This ugly reality the authors of the national renaissance portrayed in their works and took on the task of bringing the wars, battles, and other tragic histories immigration to neighboring countries like Sicily, Turkey, Serbia, Greece etc, as well as the economic and political migrations of intellectuals to Bucharest,

Istanbul, Sofia, Egypt, etc, to the literary stage. The political aims of the ottoman state in the Balkans indirectly helped the spreading of a new religion that of Islam. And this was carried out by colonizing the Albanian lands with janissaries, juruks, and Turkish families that came from other parts of the empire. Two great authors, both belonging to the romantic period, de Rada in Italy and Naim Frashëri in the heart of Istanbul, wrote the most beautiful poems and literary works of Albanians and Albania. Influenced by European literature especially French literature, with their works they brought European elements with an oriental touch (Naim), and de Rada European Christian elements but both retained their Albanian elements within their works.

In the work of “Qerbelaja” the religious character of the work is intentionally written, to emphasize the red line between religion, language and nation is, the author acknowledges the holiness of imam Ali and his sons imam Hasan and Husein, but here, as noticed by Eqrem Çabej, “Naimi, then doktrinën e huaj” that proves the national identity. (Çabej 1994)

In 1886 in Bucharest the lyrical poem “*Dëshir e vërtetë e Shqiptarëve*”. As Naim’s soul was righteous and pure, with the same sensitivity and purity he portrayed his ideas in his lines that reflect vivid figures, objectivity and direct language concerning the relations with the neighboring countries.

*Dëshir e vërtetë e shqiptarëve*

*Duam me fqinjët gjithnjë të rrojmë, të jetojmë*

*Me sllavë, grekë e këdo, me dashuri të shkojmë*

*Po me një fjalë, një vështrim thellësisht të kuptohet*

*Q, e drejt e tjetrit gjithënjë të respektohet*

(N. Frashëri 1978)

During a period of one century, the emblematic figure of de Rada begins the romantic period and Naim lives and works at the end of the XIX century and ends the romantic period. Between these authors we have many authors, writers and poets that committed their whole life to the cause of the fatherland, the nation, the language, the culture. In addition the great diversity of the poetic, prosaic genres, narrative forms, the formal and substantial aspects, in their works the authors of the national renaissance of the romantic period convey messages with universal values.

De Rada established the journal “Fjamuri i Arbërit” that was a stage of Arbreshi literature, with the publications of arbreshi intellectuals and with an illuministic European spirit, it promoted the aesthetic and artistic ideas of the romantic literature, it was a spark of hope for everyone, a cultural institution of the Arbreshi and beyond.

The difficult existential situations that mark this period, also had their effect on de Rada, Jani Vreto, Serembe etc. In the writings of Migjeni we find characters that lack the most basic conditions to live a normal life, he describes their psychological world and uncovers their suffering and wishes of basic things as joy of life. These characters, Migjeni sculpts with his pen and poses a moral question of his epoch, people should analyze their human consciousness...

At a later point Migjeni will write: “*Në qytetin tonë asht një lagje ...E n’at lagje asht një kishë. Mrenda në kishë asht një lyps, në të cilin jeton një dëshirë: me jetue*” (Migjeni 1972)

Migjeni feels an empathy for his characters in his reality and sculpts them in his works to make them immortal, like the paintings of da Vinci and of Rembrandt, to put them in the historic museum of the epoch of misery. Mitrush Kuteli wrote about his Kosovar brothers, for their continual suffering, genocide from foreigners. The historic injustices from the greater powers that sealed the fate of the Albanians, had and still have dire even tragic consequences... These are the topics of the authors where the empathy and pain is portrayed for the people who was separated from the motherland and politically lived in another country:



*Ma thonë emrin Asim Qerimi,  
Mbetur jetim, që në vegjëli  
Jam si më sheh, e si më njeh  
kësulëbardhë e kryelidhur,  
kryelidhur me një shami  
me tri shami për trimëri!  
Jam eshtërmadh, i vrazhdë jam, e bojalli  
Dhe sytë e mi, janë plotë shkëndi, si batërdi.  
Dhe kam uri si s'ka njeri  
Për drejtësi, e për liri.  
se babën tim ma vranë,  
naçallnikët, podporuçnikët edhe gllavnikët  
Të gjithë, u bënë tok  
si sorrat, për kërrmë (...)  
Oborrin ma morën, gjer në shtëpi.  
(Kuteli 1995)*

Fishta and his epic literary creations raise optimism in the spirit of every Albanian, with vivid figures and assonances, his works are erudite creations that have their value in particular concerning the old principles and habits of the highlanders, the moral consciousness, which is always dominating and careful, for such patriotic virtues. The main motive in his works are the love for the fatherland, presented in grotesque ways, parodying, denouncing, advising, provoking. The grotesque form is the best critique for the servile and greedy traitors who sell their fatherland, religion and nation for gold and a position in the administration.

He goes further even making sacrilege, when in the end he prays to god for the inconsequent, servile charlatans, who gamble the fate of the fatherland, as lawyers and jealous guards of this treasure called fatherland! This love detaches and attaches him with the land, a conflict between danger and salvation where a lightning of tragedy and irony strikes that flame of desire that calls to god for the salvation of the fatherland.

*O Perëndi a ndjeve,  
Tradhtarët na lanë pa Atdhé.  
E Ti rrin e gjuen me rrfë  
Lisat n'për male kot !  
(Fishta 1999)*

In the lines we see the contrast between the honorable figure of the poet and the desire of self-sacrifice for the nation and the fatherland!

On the first solemn conference as an academic in Kinema Rozafat, to take a position before the world, speaking of the similarity between the roman conquest of Illyria and the fascist occupation of Albania, Fishta said:

“ ... *Rezistenca që romakët hasën ndër fiset dhe mbretëritë ilire të gjitha ndodhen sepse ilirët e panë menjëherë se trupat romake po sillnin robërinë në vend të lirisë ...*”

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*Lpifshin kryet e xjerrshin syt  
Ti haj dreqi Turq e Shkje...(...)  
se e kemi festen e Bajrakut  
e duhet një herë me shkue në shtëpi ,  
e me shtrue petlla e raki.*

*Unë zotni n'ushtri kam dalë  
Jo me Turq, por me Shqyptarë,  
Turq a t'kshtenë, si janë gjith marë  
Pse si t'kshtenë, si muhamedan  
Shqypnin s'bashkut t'gjith e kanë.  
(Fishta 1999)*

In his play “Juda Makabej”, Fishta alludes to the Albanian reality at the time, when the foreign propaganda had divided Albanians among themselves, but excessive pride and individualism had turned into their greatest enemy.

Another form of the enemy within appears in the elegy of Noli for the assassination of Luigj Gurakuqi from the hand of an Albanian. In his poem “the anthem of the flag” Noli mentions different historical figures and enemies within a timespan of more than a thousand years:

*Fortesë shkëmbi, tmerr tirani  
s'të trëmp romani as veneciani  
as sërp Dushani as turk Sulltani  
flamuri madh për vegjëli  
flamur që lind shën Konstandinin  
pajton islamin e krishterimin  
çpall midis feve vëllazërimit  
flamur bujar për njerëzi  
(Noli 1963)*

Ernest Koliqi writer, critic, political figure who has put a lot of energy and effort to open albanian schools beyond the political borders of Albania, especially in Kosovo and Macedonia, thus fulfilling one of the holiest of duties to the nation and fatherland, the publishing of school books and dispatching teachers, holy missionaries, who not only taught the children to read and write but also awakened patriotic feelings, taught them about alexander the great and Scanderbeg as well as other important national historical figures. His literary works are pearls that reveal within themselves greatness and a myriad of characters, with carefully written aesthetic and artistic language, unimaginable before.

*Mysteri i vjetër qi mbërthen fjal`t t`ueja,  
Zanin na e dridh` me nji krenit`pashoqe,  
O gjuhë e folun për trimij pranvera,  
E tok na mbajte nder pushtime t`hueja  
Sepse prej gojve arbnore nuk u hoqe  
As kur u ndam n`besime e doke tjera, (...)  
Si n`mot qi Ilirt Shqipnis ia ruejshin bregun.  
Thue buza e kangatarve të paemën  
Qi gzim e idhnim me ty knduen maje mali  
ju qi n`mesime fisnike t`lahutës jeni rritun,  
ju qi burrnin jetike e patët si mësuese,  
ju qi lirin kreshnike zgjedh` e kishi per nuse,  
ju qi n`mprojen e nderit botën keni çuditun,  
sot n`murra t`harrueme kërkoni kot pushim  
ju qi epopet t`panjoftun shkruet me gjakun e kuq, (...)  
Mue trashiguesit unë n`dhet`Kastriotit?  
N`kthjelltin e ditës s`sotit*

*Kang` ndoshta t`knduem e qi vorroi kalesa  
Këndoi, o gjuh` lulzuen`shkreti, dh`asht goja  
E e më ahmarrse e gojve qi harresa  
N`terr mbylli, kur ti s`kishe as sheje as shkroja.  
(Koliqi 1999)*

Nuances for The poetry of Ali Asllani known for its satire, topic of love and patriotism, was and remains to this day eagerly read by the reader, lines that were memorized. The poetic language has mocking the low life of idleness and lust, while his nationalistic poetry was filled with an endless amount of poetic figures, with inspiring effects and pride for the origin of the albanian people, that incite the awakening of national awareness as such. Although poor, but known for their bravery in defending their homeland, Albanians know how to hold the enemy at bay with whatever means are at their disposal.

*I pabesi ta dij', pra  
Ndër kasolle me një tra  
Që nga Shkodra gjer në Dropul  
Rron ai që i thon' popull!  
Ajo dor' që rreh dybekun  
Di ta mbush edhe dyfekun  
Në se ditën çan ugar  
Edhe natën thur litar  
Thur litar e kalit grushtin  
Dhe e var nga këmbët pushtin.  
(Asllani 2014)*

Aware of the reality of the time and the instability of peace in the Balkans, the greed of the other countries for the albanian lands, often being object of bartering of the superpowers that did not recognize Albania as a sovereign state, these circumstances became topics of poetry and poems, as well as prose of the national renaissance and modernism. Poetic language with a vivid and direct figuration, that mentions the virtues of the Albanian and the vices which are foreign to him, raises optimism for the past and the future. The dialectics of poetry in this case suits the dialectics of moral consciousness that is careful about its power, before material temptation, the poet calls to Vlora with direct figures to keep the well-deserved shield.

*Rrotull fqinjët sa fuqi  
sa mënyra nuk përdorin,  
me pahir që të na korrin  
çdo send, Vlorë, mban në gji!  
Mund e bij ke pas' armiq,  
me syt' katër gjith' pas arit,  
jasht' zakonit të shqiptarit,  
që s'shet besën për ca fiq.  
Por ti, Vlorë, mos u dro!  
Mbaj mburojën me qëndresë,  
se kush vetes i zë besë,  
e mat grushtin me këdo.  
Se dhe Deti mik kur fle,  
n'ëndrrat kryen një dëshirë  
mbret të jet' e zot i lirë*

*veç për tokën q'i dha bër.*  
(Asdreni 2000)

Except intertextual topics based on the reality of the time, the common history of the Albanians and other peoples knows also alliances for the liberation from Turkish rule.

In 1885 Macedonian migrants to Bulgaria together with some Albanians formed the revolutionary Macedonian-Albanian league, and as main representative the Bulgarian major Panica and the albanian Jusuf Ali Beu. The common goal of theirs was the organization of an uprising to liberate the two countries from the Turkish feudalists and create independent states. This league between the two peoples proves the cooperation existed in both political and historic aspects. The appeal that they had written was this: “*Në veprën tonë për çlirim me shqiptarët tok me maqedonët do ta realizojmë duke vepruar në marrëveshje sipas një statute dhe do të luftojmë për vendosjen e vetëqeverisjes në krahinat tona...*,” and later they state the main objective of this league: “*...Ne nuk kërkojmë as mbretëri, as principatë, ne nuk duam që Shqipëria dhe Maqedonia të hyjnë nën sundimin e Bullgarisë, Serbisë apo Greqisë. Ne duam që Maqedonisë dhe Shqipërisë t'u jepet autonomia madje edhe në rast se mbeten nën pushtetin e Sulltanit, me një fjalë ne duam që të kemi gjyqin dhe qeverinë tonë.*” This kind of cooperation is not the only one throughout the years and centuries. (I. Dermaku 1987)

We cannot ignore the Albanian clerics of all faiths, who became martyrs and did not sell their country, their nation, their language, their culture for personal gain. Like Naum Veqilharxhi, who was poisoned in Istanbul for his patriotic and literary work, Papa Kristo Negovani, intellectuals and known patriots: Hafiz Ali Korça, Etëhem Haxhiademi and many other intellectuals had this tragic end from foreigners and later from Albanian authorities as well.

The literary and patriotic work of Papa Kristo Negovani, had many patriotic values as well as educative and very audacious. He used the Albanian language in the church for services, and he held his final mass in 10 February 1905.

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The period between the two world wars has a great density in artistic, political and religious works. The work of the Albanian clerics focuses in favor of the national cause, as spiritual leaders they saw communism as the next great plague. The Albanian cleric and patriot Hafiz Ali Korça wrote among others the work *Bolshevizma është çkatërrim i njerëzisë, Bolshevism is the end of humanity*. As a visionary he described accurately this red plague, telling and retelling parts from the history of the peoples that followed this system. The Hafiz came from a patriotic family. Influenced by his healthy family education, he besides the duty as a cleric he will make a great contribution to the national cause as well, taking part in demonstrations and uprisings that took place all around Albania, beginning with the formation of the Albanian Alphabet as a first step towards freedom and independence, proves his intentions.

He was a member of the Literary committee of Shkodër and from this experience he expresses his respect for Fishta:

*“Me këmbënguljen e tij gjuha jonë e lashtë gjeti sintetizim të shkruar...Nuk kam si t'a harroj me sa dashuri më përqafoi dhe më përgëzoi, (kur qemë takuar shumë vite më vonë me Fishtën), që në demonstratën e madhe të Korçës më 1910 kundër shkruarjes së gjuhës shqipe me shkronja arabe, unë bekova shkronjat latine të abecesë shqipe të Kongresit të Manastirit dhe thashë edhe një lutje për to “*

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When we tell details from the life and work of writers we get a clearer understanding of their spiritual structure and their critical stand they take against injustices, greed, deception, and the

occupation of the Albanian lands from foreigners.

In a general, aesthetic, artistic and ethic regard, the works of Albanian authors, touch on topics of cultural and social misery of the XVIII-XIX, XX centuries, topic of emigration, nostalgia for the homeland, the tragic fate of man, wars for freedom, independence, dignity, general societal and individual dramas, where among the generous nature of the Albanian emphasis is also pun on critical thinking and a sense for justice. The dire situation under the rule of the Turkish empire is depicted in the works of Naim, Çajupi, de Rada, Fishta etc, as well as the intrigues and treacheries of neighboring countries, honor and besa (promise) as holy national symbols, around which a lot of topics, themes of novels and poems revolve, the dire situation under anti-democratic regimes, the communist system, violence, modern slavery, the real war and the psychological one, hopes and dreams for a better future, freedom in the most essential sense and the freedom to think and act, are the multifaceted topics and themes that are treated artistically, realistically and critically by the authors, contribution If we take the work and sacrifice of these titans of literature into account, we can't not make them national symbols. With their lines the truth of past times becomes clearer, about the man who fought and suffered a lot, who fought for his freedom, against the tyrant who always tried to subjugate him.

*Mbi ato male e bjeshkë kreshnike  
Léjn mande' ata djelm si Zâna,  
Armët e t' cillvet, përherë besnike,  
Janë përmendë ndër fise t' tana  
Atje léjn, po Toskë e Gegë,  
Si dý rreze n' flakë t' nji dielli:  
Si dý rrfé, qi shkojn tue djegë,  
kúr shkrepë rêja nalt prej qielli (...)  
Shkundu pluhnit, prá, Shqypní,  
Ngrehe ballin si mbretneshë,  
Pse me djelm, qi ngrofë ti n' gjí,  
Nuk mund t' quhesh, jo, robneshë.  
Burrë Shqyptár kushdo i thotë vetit,  
Qi zanát ka besë e fé,  
Për Lirí, për fron të Mbretit  
Me dhânë jetën ka bâ bé.  
Sy për sy, po, kqyr anmikun;  
Përse djemt, qi ti ke ushqyue,  
S' i ka pa, jo, kush tue hikun:  
Friga e dekës kurr s' i ka thye (...)  
Po, edhë hâna do t' a dijë,  
Edhë dielli do t' két pá,  
Se për qark ksaj rrokullije,  
Si Shqypnija 'i vend nuk ká !  
Rrnosh e kjosh, prá moj Shqypní,  
Rrnosh e kjosh gjithmonë si vera,  
E me dije e me Lirí  
Për jetë t' jetës të rroftë tý ndera.  
(Fishta 1991)*

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## CRITICAL READING OF A DISSIDENT AUTHOR - “ODIN MONDVALSEN” OR THE OVERTHROW OF FLASE BELIEFS

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### Abstract

The research focuses on the critical reading of Kasem Trebeshina’s novel “Odin Mondvalsen”. After the 90s, Albanian literature’s interest took shape outside the Socialist Realism schemes. During this period, critics start to be interested in Trebeshina’s literature which seemed significant and beyond the schematic limits of the period. “Philosophers, the natural enemies of poets and the fixed representatives of critical thinking, claim that poetry and all the other arts, as well as the other work of nature, do not change. All this, a futile illusion...” stated the poet Salvatore Quasimodo. However, if it happens, how long is it necessary for the critics of a literary work or author to be transformed?

The reading itself could be qualified as “critical” when it provokes to the reader the expression of a judgment of verity, credibility or value on what is read. Trebeshina’s literature possesses this provocation, for example:

Critical reading of the novel, since the writing of the literary work till its publishing (37 years). Settling of an evaluative code on the role of critical thinking over the work’s reading and interpretation. Allegoric outlook of the literary work and the nuances of modern surrealism.

The novel takes the status of a representative literary work of the dissident school, as long as the author presents the tragedy of the regime and all the dictatorial persecution in the realm of the speech. The doubt raised in the literary work is the basic element of its critical reading. The questions that would take an answer in the research are:

Does created doubt breed irritation to the reader and if this is a cause to establish a credibility situation? Does the battle begin with doubt and end with its disappearance? Is critical thinking transformed to a rationale and is it possible to “truthfully” read without thinking per se?

All these questions pretend to find answers throughout the research work, attempting to give its full shape to the novel’s critical reading.

**Key words:** literature, critical reading , novel, interpretation, Trebeshina

### Introduction

Critical reading of a literary work is a long and complex process, it can be realised through three time ramifications that are:

- a- The moment where the literary work was written
- b- The time where it is read
- c- Artistic incoherence that every literary work must bear in time.

But what is the obtained thinking from this critical reading that has this time coordination? On this point, the opinion of mathematician Blais Paskal helps us as an initial point of our research:

*“Man is only a reed, the weakest in nature, but he is a thinking reed. There is no need for the whole universe to take up arms to crush him: a vapour, a drop of water is enough to kill him. But even if the universe were to crush him, man would still be nobler than his slayer, because he knows that he is dying and the advantage the universe has over him. The universe knows none of*

*this. Thus all our dignity consists in thought. (Peter Kreeft, Christianity for Modern Pagans, 200)*

Blais Paskal expresses something very rational and deeply emotional: the human strength lies to the belief that he recognises limits, his weaknesses, and every perfect system from outside can reflect the inner sad appearance of a failed universe. If we accept such a reading and if we stand in the XX century, at dictatorial communist Albania, the situation becomes more interesting.

The case of Trebeshina is a strange example of an artist that gave up freedom with a brave persistence, by accepting the punishment. Twenty three years of prison, but not twenty three years of silence. On the contrary, in Albanian dictatorship, Trebeshina developed his artistic thinking, poetic credo, and shaped human and writer ego.

### ***1. How is realised the critical reading of the literary work?***

The novel describes the tragedy and persecution of dictatorial regime against the innocent individual. Is it enough to get the status of a representative literature of the dissident school? The analysis begins with suspicion and the main idea is to argue the transformation of critical reading in reasoning, and how impossible is "Real" reading without the use of rational thought but also instinctive feelings.

Trebeshina himself suggests a kind of response in the work: "Dried laurels. The first book of memories "1988:

**"There were moments in which I doubted even myself! Maybe I was a man of the past and I was not able to navigate with joy towards the fantastic islands of communism! "**

And *Odin Mondvalsen* is the apotheosis of this attitude. Through reading, we can make a parallelism of critical analysis and proceeded events in the literary work:

*-To choose a small, strange place for self-isolation, typical places like communist Albania after the Second World War. A typical example of the state that refuses to communicate with anyone else, a place that would resemble to a suburb lonely apartment, with the inscription on it "the entry is strictly prohibited".*

*-The inhabitants of this place abandoned by hope must be sceptical, afraid of the fraud that dazzles the judgement. Everyone should believe in preaching, imposed by the inquisitors called saviours.*

*- In a controlled society by the strings of terror, it is better to be closed in a place where people move in white coats. It is better to meet investigative officers and ancient pharaohs of antic Egypt. It is better to be called Odin Mondvalsen and above all, to come from Denmark.*

### **1.1 "The king is naked"! Dissident and distorted world in the mirror**

The personality of Kasem Trebeshina has always been accompanied by a polemical atmosphere of his biography, with a life filled with interesting and painful things. Trebeshina human choices are always accompanied by those of the Creator, but also of the ideologist who sees the establishment of a regime that aims silence and deafness of the individual. Is this author dissident or not? It must be said that the dissident debate after the years 90s, has been very critical, many authors were called dissidents without any reason.

If we analyse Trebeshina based on literary and documentary sources, its literature does not give a full explanation of the personality of the author. Most of his works were published after the 90s, they were written, but were not allowed to be printed in their time. The confrontation of Trebeshina was critical and ideological at the same time.

To make a comparison, while the Italian neo-realists adopted a literature dimension where the schemes lost their importance, they were not followed and when needed they were



overcame, in the Satellites of Soviet Union including Albania, there were experimented the effects of doll- literature, where many ready models were in circulation.

Trebeshina wrote his accusation and send it as memorandum to the supreme political leader, the dictator Enver Hoxha:

*"The name 'socialist realism' becomes a guarantee for terrible distortions that even today have begun to look clear in their form and content."*<sup>3</sup>

The history of this memorandum is valid and important to understand the author's creativity. Consequences came immediately into his life. Trebeshina was deprived from writing and living in normal conditions. But the political influence, the poisoning of ideas and art as the embodiment of renaissance and spiritual birth of a nation can be called a critical analyse, an approach of thinking and perception that combines the real with surreal and mixes literature with everyday life.

*"Let's go back in history and let's see the life at the time of Louis the Fourteenth. The works were separated very clearly. Kings and princes had assured their participation in more serious literary works. They were part of tragedies, while people, all those who were below kings and princes, had their place in ridiculous works. "*

Kasem Trebeshina expresses his authority and pain provided by persecution and prison, in the independence of anti-regime writer. This role comes through paradoxes in which Trebeshina involves himself, who at the very beginning had been part of this system which he believed and after the political and cultural circumstances of the Second World War, he opposes it. His life was reflected in artistic creativity. The dictator Enver Hoxha was compared to Louis XIV, while in "Odin Mondvalsen" the image was extended to the pyramids of Egypt and the Pharaohs.

So, before having a critical reading of the work, we need to read the critical thinking, of meditative, human and artistic life of the author. From one sentence to another, the exclusion of Trebeshina is deepen as a process against his literature, which in the years after the war, takes the form of a literature that materializes and comes in all other dimensions compared to the official literature of the time of the communist regime. An interesting detail comes from an article published on the days of investigation and prison. Investigators question if he had included in his books anti-regime spirit, he responds:

*"You don't have to be afraid of books. I've written literature. Everyone must draw conclusions. Who likes it lets read it, someone else can throw it...(Dervishi, 2007).*

This approach excludes any kind of ideological responsibility of the author. But at the same time it is a kind of critical attitude to genuine art and literature. And if we take in consideration Trebeshina literature work, what we mentioned above, it holds two different dates that of writing and publishing. The delay with about 36 years of publishing comes as a result of censorship, but also because of the author's desire not to publish them. The novel "Odin Mondvalsen" for its theme and discourse can be read as a new unknown attempt to the Albanian literature. It is a unique work based on its conception and structure, resulting from the lack of censorship, by giving to the literary work a breath, as it was not taken into account if it will be published or not.

But how does the critical reading take into consideration the period between the time of writing and publishing a literary work? Trebeshina, the author, has numerous similarities with the dreamer, rebel, romanticist, and desperate Odin, the main character of the novel.

## 1.2 The critical reading of the novel.

The phenomenon of madness is found everywhere in the world literature, used in many different ways: from the sad clowns of antiquity, to the Pirandelos novels, and the madness of Dostoyevsky's characters. Madness has done nothing more than scream to the world about the truth, has accused and punished it and has undertaken sins that haven't committed.

Going through it, the reader's attention is focused on a point on universal literature: Ego, desires, and more lucid expressions of itself. It is not more than annoyance expressed in a loud voice, without mediation, the words of a full man. Is this the language of emotions, a dreamer's mind that avoids distortion of reason?

The Novel begins with the chapter: "Where it is shown who I am and who I am not."

Written in the form of a dream, the reader can lose the notion of the border between the real and unreal world. The language sounds like a laughter, reflection, sadness, grimace, accusation, yell, scream, silence and at the end sorrow. We're in a prison. No, in a hospital that sounds like prison. Against his desire. Or by his volunteer, in order to avoid the punishment of the regime. The protagonist shows that he has existed. But he doesn't know who he is now. Or better, it is called Odin, a Nordic name, from Denmark and he is expecting what kind of direction will take his life.

*"Yes, sir, Danish, because my grandfather was Italian and was married to a French woman, while Odini's mother was married to a Danish. And I came here from another planet."*(Trebesina, 1999).

His origin resembles to stupidity, but also with the courage to involve within a single person, all the people of the world, races and places, at different times, from the past to the future. Then the world can take a meaning, and the pain of a single a man can be considered as a loss for humanity.

### **For what is Odin Mondvalsen accused?**

Odin's crime is the impossible coexistence with the new regime. Odin speaks, reflects and says aloud his disappointment. The freedom of spirit is a risk and danger to the progress of the new dictatorship, so it is better to be in silence. In contrary it will be declared insane.

Confused mind of Mondvalsen, another character, helps the author to express philosophical opinions for everything, because only a madman is not afraid when telling the truth. Only a naive and honest man that doesn't know what danger could be, dares to speak openly to investigators, judges, things that no one would even dare to think.

Through him, Trebesina identifies all his inner thoughts against the regime and system that ignored the people personality, against oppression and slavery, collectivization and loss of human identity.

This kind of delirium, to say the whole truth in one breath, is obvious even in the chapter's names. Where there should be something more schematic and scheduled we read flights of the type: "*Chapters from the sixth to the eighteenth*" and later "*chapter that comes after the twelfth*".

So the time in the book, is cyclic and never linear. A careful reading of the author's life, allows us to stop in another aspect, verified in 1980, when accusation and arrest of Trebesina was prepared. His file investigator, who had a kind of respect for Trebesina, asked a doctor to do a medical expertise in which Trebesina resulted "mentally ill." This would give to the author the possibility to be free. To make it more realistic, Trebesina was sent for two weeks in a psychiatric hospital. This is one of those strange cases when life imitates art. Odin character

resembles physically and spiritually to the author. And through him the author was the voice of all the rebellions and dissents of free minds, against regimes.

Odin Mondvalsen plays with time, which as it flows, horizontally, can turn back. Between the seriousness and the laugh, the logical and not logical, is history, politics, feelings, love, science, culture, all slaves of a suffocating regime with malformed people, that want to transform every free spirit in "collectively".

The madness described in the book is something more than that. Critical reading of the work allows us to talk about a "serious madness", which has the difficult task to express anguish, the feeling of living the last days of life under torture. In this way madness gives sustainability and value to a rebel model, that faces himself the whole regime. In this way we distinguish Odins strength and the importance of delirium for a free life.

Apart from this serious face, we can see another side of madness: "Madness that laughs", that wants, desires, dreams and imagines beyond the walls and time.

Not accidentally the subtitle of the novel is: "A love story". But this is seen in the schematic aspect as an experience that shines the emerald crystals of the hospital, intended to be the light and unreal sparkle for only some time.

This madness hurts more after the tragically end. Odini's face was transformed in clowns mourn and his tears are not recognized, are not considered as real, that expresses within personal tragedy, controversies of the first and last days on earth.

### **1.3 Surrealism makes you dream**

Beyond words, beyond reason and logic, is the dream, the unconscious and imagination. To create a surreal work, the process of avoiding reason and occasional combination of words, actions and attitudes of the characters, is the first condition.

The novel "Odin Mondvalsen" was written in 27 short chapters where the protagonist speaks in the first person and describes his life in an absurd, fantastic and funny way.

It is similar, as it is mentioned above, to pure psychic automatism, without any kind of filters and controlled mechanism, typical for surrealists.

The confusing number of borders, the confession sometimes clear and sometimes confused as Mondvalsen is mind, makes the author to provide critical vision of the reality by using these tricks. The author presents historical images, Biblical figures, names of antiquity and the regime in the first steps of totalitarianism.

Everything seems to undergo a simple and absurd displacement by following and Odini's vision. It gives the impression that we are following the story of a genius mind; and then may arise doubts and regrets for Odini's visual deformation, to fill the space between books and readers; and soon the reader may feel to be part of an adventure without physical or temporal boundaries, and can penetrate within the sequences of events by being oriented by intuition; from actions carried out in totalitarian society, in the ancient times events.

And what are the features of surrealist work?

a-The story in the first person, the language used as a bridge between reality and dreams and the lack of a linear time; its replacement with a cyclic time;

b-Overlapping of different periods of time and placing of historical characters beside real ones;

c-Uncertainty, hesitation and doubt to anything that is called reality, but it isn't the same some moments later.

d-Distortions of events and characters that are at the same time in different events and characters.

Realistic lyricism, but also the pain in each consideration of the protagonist, gives to the novel a special unique form in Albanian literature. Trebeshina not only believes in his character,

but also makes unusual charges, against tyranny, abuse and collective dictate regime. The end of the novel is not just a cyclical conclusion of pain, but also a warning and unfortunate vision, of the beauty and the noble feelings in Albania:

*"It was rumoured that the dead will get alive ... my goodness! Who can endure it again in the pool of her blood?! ... Can he look again covered with a white sheet?! ... Oh! ... How far was Denmark! ..."*<sup>1</sup>

### Conclusions

Kasëm Trebeshina has a distinctive role in the independence of Albanian authors. This role comes through paradoxes and opposes where Trebeshina involves himself, who at the very beginning had been part of this system which he believed and after the political and cultural circumstances of the Second World War, he opposes it.

The literary work of Trebeshina is studied based on the date where it is published, without mentioning the date of writing it. The difference between two dates is 36 years. There are researchers that place Trebeshina in the history of Albanian novel of the 90s, because of the avangard features and the author between first ones who plays with madness and time.

*"Odin Mondvalsen"* was written immediately after the first communist jail and was published four decades later, describes an absurd history of a writer in totalitarianism. The reading itself can be considered as "critical" when it attempts to give to the reader the expression of a real judgement, reliability, and value of what has been said. The time from writing the literary work to publishing it, is very long and obviously the myth of Trebeshina, the creation of different interpretations, often contradictory, makes it impossible to maintain neutrality while reading the novel. But precisely this weakness to judge and analyse the work in a coherent manner, allows full reading and interpretation, in its allegory and modernity.

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<sup>1</sup>Kasëm Trebeshina, *"Legjenda e asaj që iku"*, Shtëpia botuese "Çajupi", Tiranë, 1992, f.154

## ANALYSIS (INTERPRETATION) OF A TEXT IN CLASS TEACHING (INTERPRETATION)

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### Abstract

The level of analysis of a literary work in the lower grades depends on the physical, mental, and intellectual abilities of students. It must be neither too studious and highly scientific, nor too simplified. It is better for a literary text to remain as an aesthetic creation in a student's mind at their level of experience, rather than be trivialized with bad and incorrect analytical procedures. Analytical requirements in grade I and II are much lower than in III, IV and V grade where they can be extensive and studious.

The greatest portion of time should be devoted to the analysis phase because students' understanding of a literary work depends on it. This is often overused, so the entire lesson turns into a lesson in education, which suppresses the artistic spirit of the work. By means of analysis we reveal the artistic values of a text - and this should be the ultimate goal, and we should afterwards realize the objectives related to the educational part of class.

We conditionally distinguish four types of analysis/interpretation of an artistic text from the theoretical-methodological aspect:

- Content Analysis
- Conceptual Analysis
- Ethical Analysis
- Psychological Analysis

Some methodologists define analysis as absorption in the content and the notional character of the text. Despite the different views and opinions, for analysis as a phase it is common to analyze the content and the reproduction of facts and occurrences, and to reveal the underlying concept of the writer, i.e. of the idea or the message of the literary text.

**Keywords:** analysis, text, practical work, lesson realization.

### Content analysis

In teaching methods literature analysis as a stage and as a whole is divided into three sub-stages by some researches: logical, ethical and aesthetic analysis. Others notice two structural elements: content structure and conceptual structure of the artistic text.

Content structure includes:

- 1. Thematic structure** (a snapshot of life that is recognizable in space and time);
- 2. Motives** (smaller thematic sections of material and spiritual nature or of spiritual nature that make the shown life event seem more concrete and more credible);
- 3. Poetic images** (meaningful interaction of several motifs with which sensory, cognitive and emotional representations of the phenomenon and its place in the context of the presented are achieved);
- 4. Various emotions** (writer's emotional reaction to certain emotional phenomena);
- 5. Characters** (their physical traits, personality traits and psychological states and relationships in specific life circumstances);
- 6. Conflict of heroes** (dramatic conflicts and reasons for their occurrence, detection of the problem and its resolution).

There are methodologists who define analysis as dwelling into the content and the ideological context of the text. Despite the different views and opinions, the common feature of analysis as a stage is the analysis of the text content, reproduction of facts and occurrences, and to reveal the writer’s underlying concept, i.e. the idea or the message of the literary text.

The word content means a set of events, situations, phenomena, feelings, facts, and details shaped by the power of the writer’s talent into a single artistic whole. Simply, the content is what a literary work is really about. Theorists of literature operate with the notion of content that covers everything from construction / material to its final cognitive and linguistic shaping of thought.

In methodological terms, content analysis means understanding the text as a complete artistic structure. It means understanding the words, expressions, sentences, understanding their relationships within smaller sections or motifs. During analysis, the student sees the logical order of the author’s presentation, discovers the plot and causal connections. The questions must be clear and unambiguous, logically derived from the text. The best are those questions that transform the immediate content into issues that inspire students to perceive, deduce and generalize. Questions should be encouraging and revealing.

The basic rule is: the teacher should not analyze the text while the students are passively listening. The dynamics and the quality of the lesson depend on the diversity of questions and on how they are asked (intonation, rhythm, etc.). Ever since the first grade students need to be educated about how to keep a conversation, how to communicate. It is wrong and harmful if the teacher asks questions, and the student responds in the course of the whole lesson. The teacher should continuously and gradually encourage students to equally ask and respond to questions.

Questions can be:

**Concrete** (*Where did he go? Whom did he meet? What did he do?*),

**Questions with which a student can independently make conclusions** (How did he do it? Could he have done something better? How would you have solved that situation?),

**Questions for discovering causal connections** (*Why did he act in such a manner? How do we conclude that it is good? What didn’t he understand?*),

**Stimulating-revealing questions** (pay attention, perceive, elaborate, validate, compare, explain, think, etc.),

**Questions about establishing a relationship with the text** (the text in the text! Find in the text! Compare in the text! Read what the writer says! How did the writer express it?),

**Questions to express their own views** (How do you think you would have solved that problem? Put yourself in the role of that character! How would you finish the short story/story?).

The question is *what questions to ask students?* The answer is both simple and complex: teachers should always ask questions that lead to profound and essential considerations that will encourage the development of critical thinking skills on a higher level.

The questions to which students need to answer only by stating a fact (example: Who is the main character in the text?) are not stimulating, creative and they do not encourage critical thinking. This does not mean that this type of questions should never be asked, but it indicates that their number needs to be reduced in teaching. In contrast, questions that require students to make a critical review (reflection), to discuss, imagine, create, etc., teach them that their thinking is on a more complex level and that in that way they can contribute to the community in terms of greater understanding and belief (example: *Which character did you like best and why?*).

There is an opinion that all forms of analysis (content, conceptual, ethical and psychological) should be processed simultaneously in a synchronized manner with their

interweaving. This is acceptable and applicable to the first grade, but analysis as a methodical stage is much more extensive and effective if it is differentiated into specific structural elements. These structural elements or sub-stages should not be taken as a strict educational rule, because an artistic text is experienced and interpreted as a whole.

Understanding of the text content is an essential prerequisite for understanding its overall value. In addition, retelling should not be equated with content analysis. In fact, content analysis always precedes the retelling. The approaches to teaching methods for processing the content structure of an artistic text are different. In the lower grades (I to V grade) four methodological approaches are mainly dominant:

- Content analysis of a text as a whole,
- Content analysis of a text by its logical wholes/parts,
- Content analysis of a text according to a previously given plan,
- Content analysis of a text by a series of pictures or slides.

### **Content analysis of a text as a whole**

The reproduction of a text is made by the method of conversation. This is done gradually, chronologically, line by line, taking into account the logical development of the action or the expressing of poetic images if it is a song. During the analysis it is important to distinguish between the essential and the irrelevant and not to let students to emphasize the unimportant as if it were the essential.

In prose (short story, tale) the analysis goes from part to part, and in poetry from stanza to stanza. Depending on the nature of the text, the sequence of content reproduction can also take place in a synchronized manner.

### **Content analysis of a text by its logical wholes/parts**

The logical whole is a part of an artistically homogeneous text. Discovering logical sections students are trained to think logically, to learn how to break down the whole into smaller structural segments. Methodological procedure for the analysis of a text by logical parts can take place as follows:

1. Expressive reading
2. Student's reading of a particular logical whole (one student reads the logical whole aloud, and other students, previously directed towards certain tasks, monitor the reading),
3. Interpretation of new words and phrases from the whole that is read,
4. Content reproduction of the read logical whole,
5. Formulating subheadings for the analyzed logical wholes.

In the course of analyzing each logical whole it is necessary to write every subtitle for each logical whole on the board in correct order, thus composing the plan of the text. For certain logical groups the teacher can prepare illustrations to demonstrate them during the conversation, and, according to the given subheadings, the students can determine the logical units in the text by themselves.

### **Content analysis of a text according to a previously given plan**

Long texts are usually processed according to a plan given in advance. The teacher divides the text into certain logical, thematic and motive units and familiarizes the students with the plan during the previous lesson so that they could prepare for the lesson in time. The plan motivates students for an independent and responsible approach to work.

### **Content analysis of a text by a series of pictures and slides**

Photos and slides must be made by a professional person - artist. They can form logical groups. During the analysis care should be taken that these teaching tools do not dampen the

interest in the artistic text and turn the students’ attention away from the basic tasks of the analysis. So all kinds of illustrations should be applied cautiously, and priority should always be given to the word.

### **Conclusion**

The exhaustiveness of the analysis depends on the age of students. In class the analysis is partial, i.e. adjusted to the students’ overall abilities and this should not be exaggerated. The task of the analysis is to awaken the students’ aesthetic sense, to sharpen their powers of observation of a literary work, the critical spirit and to form their literary taste. These requirements/tasks are accomplished in the process of teaching with students’ full and thorough engagement. Literary analysis raises and propels students’ emotional, imaginative, intellectual and creative potential. The emotional component prevails at the beginning, but later it is enriched with reflective elements.

During the analysis, the questions must be encouraging, to induce students to think, associate and link literary facts. The worst is when the teacher suggests his/her own views and knowledge to students, load them with his/her teaching style, retells the contents of the text or reveals the idea / message, the nature of the characters etc. The analysis is successful if the questions are well designed and stimulating, if a dynamic conversation is conducted, and if clearly defined knowledge and attitudes are exposed.

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## ENCOURAGING STUDENTS' CRITICAL THINKING IN THE INTERPRETATION OF THE ALBANIAN LITERARY WORKS OF TRADITION

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### **Abstract**

One of the teaching competences is the stimulation of students' critical thinking and creativity in the respective curricula. Not only knowledge delivery but its evaluation and selection are of great importance in the modern world of technology. Critical thinking is a skill which needs to be encouraged and learned. It is the highest ability of the process of thinking that represents the sophisticated thought, which people try to defend by using different arguments and reasoning. Of course, critical thinking in exact sciences requires high scientific accuracy based on the principles of the respective sciences, but in the subjects of human education, because of their nature, critical thinking has a wider scope of interpretation and reasoning. Specifically, in the subject of literature the analysis of literary works naturally requires students' thoughts and their different interpretation not only as students of literature but as readers too. This article aims to bring in focus, through concrete examples the necessity and stimulation of students' creative critical thinking in the subject of Albanian literature of tradition through some teaching methods such as discussions, debates, selection and elaboration of the information, recommendation of additional literature, course projects, essay writing, and finally, the reflection of the results in the teaching and learning process in order to encourage students' creative and critical thinking in this subject.

**Keywords:** teaching, recognition, reflection, synthesis analysis, evaluation, argument, interpretation, creativity.

Teaching is not only an interesting process; it is also a difficult one, which in addition aims towards the transmission of knowledge as well as structures of thinking and interpretation to students. Today, the western schools encourage attitudes and programs that have the objective of promoting critical thinking and creativity. Besides that the methodology of teaching today is enriched with a range of new and contemporary methods regarding the enrichment of this methodology in order to develop students' critical thinking. Critics today are of the opinion that schools should leave programs and traditional ways of conveying knowledge and focus on 'skills and creative skills of students.

"Teaching for the development of critical thinking is not a simple task or a task that can be performed in a certain class and then forgotten. There is no recap of the final steps to be followed to lead to critical thinking. However there are some rules about classroom conditions and student reasoning which promote the development of critical thinking, thus turning students into critical thinkers "1. But what represents critical thinking?

Usually for the question, what does critical thinking entail; we get these answers:

Free expression of opinions about a problem, grounding our ideas, but also to others, thinking at a high level, creation of convictions based on proof of worldviews, etc. Of course, critical thinking is a very sophisticated way of thinking but it is a complicated process and the integration of ideas and resources creatively re-conceptualized and restructuring of the concepts

of information. It is a cognitive action and interactive process, which occurs simultaneously in many levels of thinking.

Critical thinking as a skill should be encouraged and taught. The ability of critical and creative thinking is not innate, but can be taught, encouraged and developed over time. Responsible for this process is the formal system of education, schools - where knowledge is promoted "The main purpose of education is to create men who are capable of doing new things, not simply repeating what other generations have done - men who create, invent, discover". (Piaget) This statement constitutes the main task of nowadays school. Develop critical thinking among students and students at all levels would constitute the backbone cord of the entire educational system.

Development of science and technology is so large today that the student needs to be able to keep pace with time. This requires from schools and universities to promote critical thinking, which enables generation walking in the same step with time. This means to teach students to solve problems and not to offer them readymade solution.

The combination of critical and creative thinking constitutes a necessity which leads to the development of students and pupils. Our main job as teachers is to teach students how to learn in an effective manner and think critically, making them to be able to independently review the information and make judgments. Critical thinking and its promotion is essential in any discipline that is part of the education system. But there is a difference in joint strategies in terms of promoting critical thinking in different subjects. That is why different methods and stimulating efforts are required in promoting this view in the exact sciences or humanities.

This paper will focus on some specific methods that may be used on the subject of literature, specifically Albanian tradition, that encourage and develop critical thinking in this discipline. "All efforts made in the literature classes of our school have intended, in a recent analysis, to gradually educate aesthetic sensibility of the students and to prepare them for a critical judgment by linking all the facts and problems of artistic expression and artistic forms with their spiritual principles and values in the world of beauty and art and all this could be achieved through their constant training of their abilities."

This statement proves the best opportunities this subject has regarding critical and creative thinking. To form the student as a critical thinker, we as teachers should know how ask questions which require logical answer, questions which encourage the student's judgment on the problems raised in different situations. In the taxonomy of Blum we could find 6 levels of learning, but only the last three ones belong to critical thinking (high level).

Albanian literature of tradition (exactly the period 1912-39) is a subject which is taught in the branch of Language and Literature and the students who analyze the works of these authors have extensive literary knowledge as a future literary specialists in this field but at the same time they also enjoys their individual competencies as readers, which enables connecting the interpretation of the work with their subjective experience. The correlation of these two aspects, namely competency specialist literature and readers, enables the interpretation of literary expression through individual student. Obviously this interpretation becomes much more comfortable; we mean the interpretation of the Albanian literary works compared to the works of world literature because Albanian students are well acquainted with the history of their country with which literature maintains old connections; they also know the psychology of their lifestyle as well as all other qualities characterizing our nation.

As mentioned above, the purpose of knowledge transmission, besides teaching, should encourage and propel the thinking structures of students. As the students of literature branch

have acquired considerable knowledge on authors and their works due to the wide scope of treatment in their previous level of education; i.e. in the 9-th grade and high school education, the information on the Albanian literature of tradition would overpass the general knowledge and some specific and professional interpretations would be methodologically offered to them. Providing knowledge through one or more lectures in relation to weight and volume of the works of these authors should foster intellectual curiosity and the desire of the student to seek more knowledge about the lectures given in their essence. Since critical thinking is built upon the basic knowledge of the students, the first step is carried out during the hours of lectures by testing students' memory about a particular author and his work. According to Blum's taxonomy teaching is based on two aspects; the cognitive and affective domain, the first relates to the acquisition of knowledge and the second with the attitudes, values and interests of the student. Cognitive domain is like the first level of recognition, which is related to that previously mentioned; so during the lecture class the student recalls his knowledge on the work and the author. "Critical thinking requires the ability to reason and to reflect what someone knows and thinks. Before that happens, students should first bring their knowledge and reasoning on the conscious level. To think critically is essential that students recognize what they know. Students are able to acquire new information because they have greater confidence in their ability; they are able to be involved in productive new knowledge on the basis of the prior knowledge. During the process of selecting the material given he recalls, fixes, writes, selects etc.. For example, in the case of an author as Migjeni, literature student has some prior knowledge of his life and work in poetry and prose. The information taken in the lecture regarding idiomatic analysis of his poetry focuses on the form and the modern visions of this poetry or prose. This certainly makes the student selectively store in his mind the prior and the general knowledge on this author by developing the existing knowledge in order to better understand the modern elements and innovations brought in Albanian literature by Migjeni”.

It is important for the student to set a basic level of information in his initial activity. The information presented without content or information that does not help students to connect knowledge they know is soon forgotten. In the case of the Albanian literature authors of 1912-39 as Konica, Fisher Noli, Kuteli, Koliqi etc. student has some basic knowledge about their life and work and it is easier for him to concentrate on the deep analysis of these works. Phase II and III of the cognitive domain are related to the understanding of the material given in the lecture, its mastery and application, which means the use of what they have learned. In a subject like Albanian literature which is held in the second level of studies at university, these two phases are automatically associated with 3 others that assume a high level of thinking; the analysis, synthesis and evaluation. Referring to my experience as a professor of the Albanian literature tradition, the teaching course is realized through classes of lectures and discussions. In the early classes of discussion the knowledge obtained is not a mere mechanical reproduction of the material presented but an interpretation of the works of authors based on the lecture, on the recommended literature and the issues recommended by the pedagogue, serving as a fundamental axis for the interpretation of the act, in order not to get dispersed. This course aims to deeply analyze and interpret the authors' works of this literature by students. Hence, it is natural that the process of the analysis and synthesis implementation takes place simultaneously. In this case, based on the issues raised for discussion, the student first refers to the lecture and its meaning and then its application, he uses the knowledge obtained by some research work, use and knowledge enlargement through the recommended literature opening up the way to analysis

and synthesis. For example, let us take the case of a well-known author of this literature such as Lasgush Poradeci. The issues on which the students would be assessed are:

- 1 L. Poradeci, philosophical poem, his concept of life and human development.
- 2.Characteristics of lyric and landscape poetry of Lasgush Poradeci.
- 3 L.Poradecit, erotic lyric , two divisions (trends) within it .Conceptual universal sense.
- 4 L.Poradecit poetic art (poetic vocabulary, figuration, rhythm, musicality, range, etc.)

The three issues are treated in the lecture in their essence, leaving room for further research. Additional recommended literature includes complete poetical works of the author, and an important series of critical articles of Lasgush poetry, related to the above issues. Literature references are recommended by the instructor, but today in terms of the developed technology the student may also refer to other materials stored in websites which will not only help the analysis of the work, but create the opportunity for new interpretation and trails. Through these issues, the student is already in the process of analyzing the work of L.Poradecit by diffracting, scrutinizing, approaching, commenting, illustrating and contrasting. After reading the work as a specialist, he accumulates, selects and structures the knowledge leaving space to his personal judgment as well. Thus, regarding the issue of erotic poetry of Lasgush, my students throughout this course, together with the interpretation, have attempted to bring their personal enjoyment and thoughts as readers. Thus, their discussions and debates are encouraged by listening thoughtful analyses of various students. For example questions such as: how autobiographical Noli's poetry with Biblical theme is; is Kuteli folklore collector or its reproducer, how many autobiographical elements contains the poetic prose or poetry of Koliqi; how the ideal beauty is unfolded in Fishta etc., are issues that have stimulated debate and bring valuable ideas to stimulate critical thinking and creative students.

The answers to the first three issues of course require idiomatic interpretation of the work viewed from the historic, cultural and literary context, its understanding, conceptual symbolism and the interpretation of the ideas. While the last issue targets a stylistic analysis of the work that has to do with aspects of the artistic principles of construction. This helps students gain confidence and justification of their opinions, be totally involved in the learning process and to listen and respect the opinions of their friends.

For the analysis of the works different methods can be used. Comparative method is the most applied as it consolidates some literary genres which are less developed or not until then in Albanian literature and since the essay, prose poetry, allegorical story, novel and dramaturgy was delivered by some authors of this literature, the artistic specifications of several authors can get better through the comparative method. Konica for example cultivated a special kind of writing essays or prose poetry. Pulling out the specifics of this writing, student of literature is naturally inclined to compare Konica poetic prose with that of other writers who disbursed it as such with poetic prose of Mithat Frasheri, taking on a detailed analysis, which requires literature search in support of his comparative method

If the literature discussion class will focus on the stories and the novels of Koliqi, who was the first to bring the psychology of characters and inner exploration in literature, student highlights the specifics of this prose, its elements of modernity as a novelty in Albanian literature of this period and at the same time can lead to an approach of Koliqi novel to Kuteli which although is on the other side, (models built on the popular story and also marks a modernism in the literature of this period) still allows the application of matching method which allows the student to develop his ability to interpret works of two authors trying to find similarities and differences. The same thing can be said about the application of the comparative method in terms

of the development of the Albanian novel. Albanian novel development in this period is a new phenomenon in our literature and first novels are very diverse from each other in terms of style, direction or creative approach. At first glance it looks impossible to contrast F.Postolit novels with that of Haki Stërmillit "If I Were a Boy" or the novel "Why" of S.Spases. Yet, by encouraging student to apply the comparative method, no matter how far their common aspects are, the student deepens more on interpretations of the works of these authors by opening new routes of research. These comparative methods are normally applied hours after the conclusion of the novel analyses, to specify problems of its birth and its development in this period.

Even in the cases of the poetry of different authors the comparative method can be well applied. For example landscape and love lyrics of Asdreni, Lasgush or Ali Asllani, may be compared by drawing this way their specific and common features as authors who brought modernity in Albanian literature of 1912-39. A comparison can be made about constructive work in poetry or prose authors of critical realism of 30s, pointing out the similarities of the problems but also of the style specifics of, let us suppose, P.Marko, K.Cepës, G.Palit etc. Applying the comparative method helps the synthesis and evaluation of level 5 and 6 under the Blum taxonomy. Through synthesis of the literature student of tradition formulates and builds new structures based on preliminary knowledge. He combines, merges, processes, connects, corrects, and expresses his opinion freely, thinking that in the case of literature he cannot be censored because, student work alongside the professional analysis of the literary work, introduces his subjective experience as a reader. "In order to make literature achieve its goal helping students understand better the nature and human life, active teaching methods should be used. Rarely can student reach conclusions only by listening to clever words of teachers; they must extract these conclusions through meditation and discussion. Synthesis is the level where the student is supposed to have full knowledge about the author and the work, including the acquisition of the lecture creatively, use of resources, selection of material, comparison, etc. This leads him to the level of assessment where he considers and evaluates the whole process regarding the teaching of an author, literary work or certain period where it ends, protects, tests, verifies everything that has to do with knowledge. By the end of the classes, he can judge an author or work done (as e.g. how the knowledge about an author is delivered, how helpful it had been, sometimes offering suggestions for a better performance). To improve teaching process, surveys are often conducted to test students' needs, demands and recommendations.

Finally I would highlight another aspect that encourages critical thinking and creative student and develops personal argument; essay, which is not only a reflection of what a student has learned, but primarily as an effort towards the formation of an independent literary thought. Certainly the essay not always shows exactly how much the student knows, but allows observation of several stages: recognition, evaluation, analysis, comparison, argumentation, etc.. Just like in the early classes of literary discussion, essay writing demonstrates various levels of students' intelligence. It also helps uninterested students to express their opinion to argue about the issue that arises in literature classes. As a rule three essays are applied in two different levels, which can be selected by the student eg:

Awareness about literature as a signal of modernism in the Albanian literature of the period 1912 - 39

2 Why did Salman Todorusha die? (Story "How Salman Todorusha died" The M.Frashërit)

3 Analyze the concept of affection in verse: "Runs the coming of comes and goes, / affection that rises where it sets" from L.Poradecit.

Obviously the student who enjoys the attribute of acquisition of knowledge and the necessary information and interest in the subject, will usually choose the first essay, while the rest of the students prefer second or third essay, as more than concrete knowledge, experience and knowledge subjective and imagination allows adjustment of these essays in a more subjective. Even in this case prompted the student's creative thinking which his interest incentive for the author or criminal case. The essay is a form of applied less frequently but necessary to promote creative thinker

These were in a summarized way some methods applied in the teaching of literature, but for a more detailed analysis, there might probably be some detailed research where the promotion of critical thinking and creative analysis of a student's work or a particular author are drawn to attention. Critical thinking, having no fixed definition but unfolded in the light of many interpretations, is a necessity especially in high schools where students are prepared to be free thinkers. The saying "Give a man a fish today and he will it today" symbolically disassembles the whole process of teaching, not only knowledge transmission, but the preparation of the new generation as free thinkers in a free world without ideological, psychological or other barriers.

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## TEACHING IDIOMS THROUGH CRITICAL THINKING IN THE ALBANIAN CONTEXT

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### **Abstract**

The aim of this article is to present the way how Albanian students acquire idioms through critical thinking. The process of idiom acquisition has been a long, difficult and a challenging one through cultures and nations. The importance of the paper stands in teaching students how to make them think critically in class. The purpose of this study is also to analyze English textbooks of the low secondary level in Albanian schools and the way how critical thinking is promoted in students while learning idioms through book activities.

The study incorporates a contrastive analysis of four English textbooks Access 2, Access 3, Access 4 and Click on 3 taught respectively in grade 6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup>, and 9<sup>th</sup> in Albanian schools. The methods used in critical thinking for the acquisition of idioms in class are also presented in this study. The paper outlines the most effective strategies used in teaching, to promote critical thinking based on some theories and criteria of linguists in different subjects. These theories are given to shape the notion of critical thinking and enrich the study with theoretical and practical assumptions.

**Keywords:** *critical thinking, methods, contrastive analysis, idiom acquisition, strategies*

### **Theoretical background**

Critical thinking is considered to be an important process in the acquisition of not only a foreign language but of the development of the process of thinking in general in all the subjects. Teachers and educators use different methods to ensure a better understanding of the subjects and topics they develop while teaching. It is considered by some researchers both as a process and an outcome. As an outcome it is understood as the acquisition of deep meaningful understanding as well as content-specific critical inquiry abilities, skills, and dispositions. It is the role and responsibility of the teacher to decide the quality of critical thinking as an outcome within a specific educational context. As a product critical thinking is said by linguists to be judged through individual educational assignments. Thus understanding of the process would be the key of acquiring of critical thinking skills.

Critical thinking is seen and defined from many perspectives. From the philosophical point of view, it is primarily approached as the norm of good thinking, the rational aspect of human thought, and as the intellectual virtues needed to approach the world in a reasonable, fair-minded way (Gibson, 1995). Based on this approach Bailin (2002) also defines critical thinking as thinking of a particular quality, essentially good thinking that meets specified criteria or standards of adequacy and accuracy. The definition of critical thinking originates from the definition given by Ennis (1985:45) as a ‘*reasonable reflective thinking that is focused on deciding what to believe or do*’. He distinguishes between *skills* and attitudes the so-called *dispositions*. By *skills* is meant analyzing arguments, judging credibility of sources, answering and asking clarifying and/or challenging questions while by *dispositions* to be prepared to

determine and maintain focus on the conclusion or question, prepare to seek and offer reasons, willing to look for alternatives, withholding judgment when evidence and reasons are insufficient (Kennedy, Fisher, & Ennis 1991). For many linguists who have defined critical thinking they assume that the basis of its definition is the individual's ability to identify central issues and assumption in an argument, make correct inferences from data, deduce conclusion from information, interpret whether conclusions are warranted on the basis of the data given and evaluate evidence or authority. (Pascarella and Terenzini 1991, p. 118). For McPeck (1981:8) critical thinking is defined as “*the propensity and skill to engage in an activity with reflective skepticism*”.

From the physiological aspect critical thinking is conceptualized as first and foremost higher-order thinking skills and focus attention on the appropriate learning and instruction processes (Halpern, 1998; Kuhn, 1999). Thus critical thinking is an important process in the concept of pedagogy. Lipman (1988:39) gives this definition: “*skillful, responsible thinking that facilitates good judgment because it 1) relies upon criteria 2) is self-correcting, and 3) is sensitive to context*”. Critical thinking does not mean comprehension or application of the knowledge but it is a rather complex system of data analysis, synthesis and evaluation. According to Paul (1992, p. 303-304) critical thinking is not *an* aim of education but *the* aim. He defines critical thinking as a “*disciplined, self-directed thinking that exemplifies the perfections of thinking appropriate to a particular mode or domain of thought*” (Paul, 1992:9). He argues that students learn best when their thinking involves exchange of points of view or frames of reference.

From the psychological point of view critical thinking is defined as “*the mental processes, strategies, and representations people use to solve problems, make decisions, and learn new concepts*” (Sternberg, 1986. p.3). Halpern (1998:450) has defined it as “*the use of those cognitive skills or strategies that increase the probability of a desirable outcome*”. According to this approach critical thinking is tended to be defined by psychologists by the types of action or behaviors critical thinkers can do. They have tended to focus on products of thought concerning behavior or overt skills which include analysis, interpretation and formulating good questions.

What is important in education is the quality of what is learned. This is what teachers have to direct their education and teaching toward in order to trigger students to learn in a creative way, develop situations of their own, and use according to *Paul* their thinking to exchange different points of view or frames of reference. The purpose of education is generally to foster critical thinking and the skills and dispositions of critical thinking can and should infuse teaching and learning at all levels of schooling. According to Siegel (1988) critical thinking is linked to the idea of rationality itself, and developing rationality is seen as a prime, if not the prime, aim of education.

### **Teaching strategies in critical thinking**

There are some teaching strategies while teaching through critical thinking. What is important is these strategies have to fit the concept of good reasoning or thinking in a disciplined way. Students should be taught to learn and study through critical thinking which the teacher have to trigger and make students think and reason in this way. As Brown (1997) and other linguists such as Halpern (1998) and Kennedy et al. (1991) points out it is the importance of using real-life problems because first it is motivating and stimulates students' active involvement and secondly he points out the ill-defined, messy, complex problems for which critical thinking is needed.



The most effective ways to raise critical thinking in education are described to be group discussion which promotes higher-reasoning strategies and competence. According to Tsui (1999) he thinks that assignments to give class presentations, critical analysis of papers, taking exams rather than multiple choice exams have proved to be highly effective in raising students' critical thinking. Other strategies are: peer-to-peer interaction, eliciting a high level of student participation, praise and use of students' ideas which increase critical thinking in students. Concerning small groups some of the methods are: focused discussion, student-led seminars, problem-based learning, and role play. What are also appropriate for such groups are the fish bowling procedure (students are organized in an inner and outer circle reflecting their own judgment and then changing positions with the inner circle), the creative-controversy-model and according to Johnson & Johnson (1993) the method of 'academic controversy' typical of largely similar cooperative groups. These methods enable students to exchange ideas, think and judge creatively, reach consensus, present and defend their position, ask for justification and further evidence, openly challenge 'opponents', etc.

According to some research three main teaching methods are used to promote critical thinking.

**Questioning.** They should be designed to trigger evaluation and synthesis of facts and concepts. Critical thinking in this method should focus on how students approach a question and reason about it. Teachers should use questions with words or phrases like: *why, what, when, show, how, conclude, demonstrate, identify, state, explain, give an example of* (question phrases used in knowledge category); *build, construct, solve, test, demonstrate, how would you* (application category); *support your, what assumptions, what reasons* (during analysis); *think of a way, propose a plan, develop, suggest, formulate a solution* (during synthesis); *choose, evaluate, decide, defend, what is the most appropriate, which would you consider* (used during evaluation) (Craig, Page. 1981). In this way they are made to think critically and be synthetic.

**Classroom discussions and debates concerning different topics**

**Written assignment.** This method possesses a variety of attributes that correspond to powerful learning strategies. Written assignment should be short in order to promote thought and focus on the aspect of thinking.

Assessment in critical thinking includes tests and self-reports. The objective tests focus on a student's competence to argue in a consistent and rational way while alternative tests focus on essays or informal interviews usually done at the end of the class to make students think creatively. What is important in critical thinking is that we should not try to use techniques in order to teach critical thinking but to develop into the individual the development of his identity through the relation of the learning process and the current and future situations in which the students can apply the acquired information. Thus learning to think creatively is a social process. The techniques mentioned above like working in groups, role-plays, and discussion trigger the exchanging and sharing of their experiences including them in the active process of learning.

Interaction is another process in which students participate and cooperate with one another in culture activities the book provides. Commeyras & Summer (1998) says that the teacher should not ask questions themselves but give the responsibility to students to 'express a different opinion, to be open, to relate a question to general principles as justice, equality, respect, in which the teacher can act as a participant.

### **Methodology**

Through a contrastive analysis of English textbooks taken into consideration from the 6<sup>th</sup> to the 9<sup>th</sup> grade in Albanian schools it is aimed at pointing out how critical thinking is realized and

through what methods and strategies students are made to think thoughtfully and creatively by the teachers during the process of the idiomatic language acquisition.

### **The aim and research questions**

The aim of this study is to present which activities and methods are used to promote critical thinking of students in foreign language in the process of the acquisition of idioms and idiomatic language in class. It also points out how cultural activities are used in function of idiom explanation and teaching in class by the teacher. The study aims at answering these research questions:

What methods and strategies do teachers use in teaching idioms in foreign language in order to promote critical thinking?

What activities and exercises do the texts provide and how are students made to think creatively?

What methods are used for students’ assignment in the process of critical thinking?

### **Instruments of the study**

Four English textbooks are taken for study in this paper from grade 6<sup>th</sup> up to grade 9<sup>th</sup>. The English textbook is Access 2 for the 6<sup>th</sup> grade, Access 3 for the 7<sup>th</sup> grade, Access 4 for the 8<sup>th</sup> grade and in continuation of these is Click on 3 for the 9<sup>th</sup> grade of Express Publishing house with author Virginia Evans and Neil O’Sullivan. The study presents even the methods and strategies used from the textbooks to promote critical thinking. These textbooks are associated together with workbooks but only the student book is taken into consideration as subject of the study.

### **Discussion of findings**

The analysis of this study is focused on four skills: listening, speaking, reading and writing. We have presented the activities carried out in class based on these four skills. As far as the textbook Click On 3 is considered we have pointed out several activities that promote critical thinking:

#### ► Speaking activities:

Pair work – Discussion (pg. 9). Talk with another student and tell him/her:

- What your job is
- What kind of person you are
- What your daily routine is
- What you do in your free time

Another activity in speaking is making true sentences about themselves including grammar topics (e.g. present perfect or the past simple, pg. 22). In this activity they do not only use grammar but also use the prompts which are some collocations such as: *study abroad, argue with my friend, study hard, go to the hairdresser/dentist, etc.*

In other book activities (usually as pre-reading activities) students are asked to elicit how the title of the unit is related to the pictures. So they have to think and use their imagination and the prompts given to justify their answers (pg. 32). Typical of speaking activities are questions like: What do you think about (pg. 34, etc)? How would you end the story? Persuade your friend to do something (pg.35, pg. 124), use the prompts to make sentences/similar dialogues (pg. 49), suggest (pg. 46), how is ... used in your country, describe the costumes above in detail (pg. 73), etc. Speaking activities in each unit provide exercises which greatly promote critical thinking. They are based on questions like: how, what, explain, justify, discuss, etc.

In Access 4 the textbook gives these activities: demonstrate gestures from your country (pg. 10), think of some tips which can help you socialize (pg. 12), Work in pairs. Imagine you are at a summer camp. Use questions in Ex. 1 to find out about your partner. Record yourself

(pg. 16), how do you deal with arguments? What’s the best way to handle such situations? Discuss in pairs (pg. 18); Read the joke. What do you expect the answer to be? (pg. 18); imagine you are Joseph Montgolfier. Tell the class how you invented the hot-air balloon; Describe your feelings (pg. 21); what do your parents do for a living? Use the questions in Ex. 2 to act out a similar dialogue (pg. 26); in groups discuss the quotation “...” Do you agree? Give reasons and examples (pg. 27); in three minutes write a few sentences in response to the questions. Read your answers to your partner (pg. 40); etc.

As it is seen typical exercises are presented above. There is also a considerable number of other similar ones with different topics presented in each unit but however these are mainly types of activities included here. As it seen students are made to think critically in different ways by giving their own opinion and experience. This skill offers idiomatic language in diverse exercises such that students might be unaware of their usage.

### **Reading activities.**

Some of the typical questions and activities in reading skills include the following: What do you think a police dog does? Discuss in pairs and decide (pg.12); answer the questions about the text; explain the words in bold (this is an activity used almost in every reading part); find synonyms for the highlighted words (pg. 64); read and find the words which match the definitions (pg. 81); guess the story through pictures; etc. In Access 4 some of the reading activities are: What is the author’s purpose? Put the events into the correct order. Which is the climax event? Use the plotline to tell the story to your partner (pg. 24); etc. Here students are made to think critically because they do not have to answer only straight forward questions but also to go beyond the information given in the text that is to read between the lines. What is common in both textbooks are the exercises in which the students have to choose the correct answer after a reading part in most of the cases.

### **Listening activities.**

Typical questions are: Listen and complete, then make similar dialogues using the prompts below. Listening activities are almost the same in these textbooks.

The activities presented above have in focus pair work activity. During this activity students are free to show what they know and do in their daily activities, reflect upon their daily routine, talk and discuss about their likes and dislikes, reflect upon their own character, listen again and answer the questions in your own words (Access 4 pg. 60), etc.

### **Writing activities.**

Some of the activities included in this skill are: Write an essay about the pros and cons of a job, write a letter of complaint (pg. 40), a report (pg. 66), a letter to the editor (pg. 78), write beginnings and endings for three of the above situations (pg. 41), use the ideas to write a letter (pg. 41), complete the sentences using the past perfect (or any other verb tense), expand the prompts to write appropriate supporting sentences for the topic sentences below (pg. 94). In this activity students are promoted to think critically about the pros and the cons, to write what they know from their experience, the environment where they live, from what society believes in and comments on certain problems, etc. In Access 4 some writing activities include: write a short paragraph about your dad or mum (pg. 5), which places can a tourist visit in your country? Write a short text like the ones in Ex.3 (pg. 8), write sentences about you and your friend using the prompts given (pg. 14), write a short message to congratulate your friend about the scholarship he has won at a summer school (pg. 14); what were you doing yesterday afternoon at 5 o’clock, this time three days ago, at 7 o’clock on Monday evening? (pg. 22); write a review about for favorite restaurant for the school magazine (pg. 34);

► Other activities related to grammar are: fill in and identify the future forms used in each sentence (pg. 62), making sentences using different grammar aspects, refer to the grammar box and make as many speculations about the pictures as possible (pg. 81), use the prompts to respond in the passive (pg. 89), etc. As far as Access 4 is taken into consideration some other activities this textbook offers are: study the examples and say what the spelling rules are (pg.5), etc.

Access 2, 3 and 4 in comparison with Click on 3 has ICT activity at the end of each class where students have to collect information and present it. The book offers also websites to make easier for the students the net surfing. In difference with Click on 3 this text is divided in *a*, *b*, *c*, *d*, and *e* classes where *d* section is Culture Corner. In this class students are presented with different reading parts where they learn on social etiquettes in other countries, learn about their culture and traditions, then students are made to think and reflect about each topic in each *d* section of each unit about their own country (in our case of Albania). These topics might include writings in a school magazine or other things which are included in Portfolio activities. Projects are part of Access textbooks. They require students to give their opinions and work in groups. Most of the exercises are the same including reading, writing, speaking, and listening in both textbooks. Idiomatic phrases and expressions are used to be completed either in exercises with blank spaces, or make sentences of their own using certain prompts or use them in stories or writings offered in the text.

As it was stated above the aim of the study is to give a general idea on how the given textbooks used in low secondary schools use the book activities to promote critical thinking in general and idioms specifically. In writing and speaking activities students use also the idiomatic language including idioms, collocations, phrasal verbs, to talk, write or do other group or pair activities in class. The percentage of idioms in both texts varies to 30- 40% or more. Idioms or collocations, set phrases are found throughout the book activities in reading section, dialogues, listening exercises, vocabulary, etc. Idiomatic language in low secondary school consists mainly of word –groups, collocations, phrases and less of idioms. Unit 8, 9 and 10 of Access 4 include a special activity with phrasal verbs included respectively such as: *get*, *break*, and *throw*. Everyday English activity part of Access textbooks offer colloquial phrases that students find in dialogues or reading parts to familiarize students with common English expressions. This section of *e* lessons (e.g. 7e, 8e, etc) offers learning collocations or phrases in a quite natural way through dialogues or speeches. Students are made to think critically while acquiring idiomatic language presented in these textbooks. As the nature of the expressions is getting the meaning not from its constituent parts but from the whole unit as one lexical and semantic component, they have to supply them in missing gaps, add other expressions under a certain category (e.g. everyday life, business, entertainment, etc). Teachers also give assignments to use them in compositions or essays. Many exercises require from students to match the phrases with definition, these increase steadily their critical thinking.

Teaching idioms through the critical process is the aim of most teachers’ lesson targets. Activities that textbooks provide and what teachers force toward this process is using them in sentences or creative activities of their own such as essays, writings, dialogues, etc. In this way the teacher controls not only the right usage of idioms in sentences but even their understanding. Other activities include matching exercises with their definitions, finding phrases in dialogues which mean the same, identifying them in reading parts, etc. Culture Corner and Curricular Cut sections of each unit offer a variety of activities that promote critical thinking of the students using expressions and colloquial phrases. English textbooks also offer many activities that

trigger student imagination and reflection on what they are reading. They are colorful, clear and attractive for the student interest. This makes them feel comfortable while learning a foreign language. The textbooks make the teaching environment friendlier, interesting and easy to participate in class. Materials brought by the teacher, posters, role-plays, project presentations, group and pair work activities enforce students toward the successful process of critical thinking. Textbook activities and exercises are the same considering Access 2, 3 and 4 while the structure of Click On 3 differs. So we have based the analysis mainly on Access 4 and some activities of Access 3 and 2 and Click On 3 since we have only a difference in the thematic of the reading parts and cultural topics of activities given in each of the Accesses.

As far as assignment is concerned the teacher uses mainly writing activities for example: writing a report, a formal or informal letter, a pros and cons essay, a transactional letter, an e-mail, a story, an article, a postcard, a news report, a six-page magazine (Access 3), a short biography, a quiz, a CD review, a letter of application, a popular folk tale, etc. Students are assigned even in speaking, story making exercises, grammar exercises, and vocabulary activities. Teachers evaluate students mainly in THINK! activities (*a* lessons) because there students reflect upon the topic presented and share their experience with the whole class. Tests are usually one of the traditional ways to evaluate students in Albanian classes. Exercises in the test are generally given from grammar exercises and writing is included, too. Sometimes at the end of the module the teacher might use multiple choice exercises but this do not promote critical thinking. They undergo written and sometimes listening tests. The later are usually done at the end of each unit or even as part of the test they are undertaking. Usually the teacher evaluates what promotes critical thinking in the process of teaching in the class because this is what students have really acquired in learning a foreign language.

### **Conclusions and future recommendations**

Students should be encouraged to think in a critical way. Many researchers believe that thought develops with practice and evaluation over time using multiple strategies. Students should be encouraged to ask questions and to be inquisitive. The process of participation in class is considered to be one of the crucial processes. Critics believe that the process of participation can be improved by reflection.

According to the results of the study speaking activities in Access 2, 3, 4 and Click On 3 represent a wide variety of questions and activities. They take most of the part of the textbook activities. Work in pairs activities are also part of each lesson. There might be more than two speaking activities so the textbooks promote greatly critical thinking of students. It is also followed by reading, writing and listening activities. English language learning in these books offers a wide variety of participating activities, exercises where students give, share, suggest and argue about different social, scientific, and family issues. Speaking activities include even grammar points. The text asks students to think critically about the topic given by using e.g. comparatives or superlatives (pg. 42), tenses or other grammatical points. Time is limited in some writing activities which trigger students to think critically and fast in a specific time (e.g. three minutes) and give as many ideas as possible and then they share them with their partner. Listening activities trigger students' thoughts. Some exercises require them to listen and answer the questions in their own words. From 5-6 exercises to 9-10 in *a* lessons of the text, 2-3 or 4 of them require students to develop critical thinking. As the study shows the textbooks offer questions and activities included in each module and aim to develop students' critical thinking. Writing sections are provided with guided practice of the relevant vocabulary given which is consolidated and followed by a model text which is thoroughly analyzed. Plans are also provided

to guide students. Writings are based on realistic types and styles of writing such as letters, descriptions, notes, postcards and articles. These progress from short sentences to paragraphs and finally to full texts allows students to gradually build up their writing skills. Culture corner section is interesting and informative. Students are provided with cultural information and read about aspects of English-speaking countries which are thematically linked to the module. It also contains related tasks and creative projects which give students the chance to process the information they have learnt and compare it to the culture of their own country. Speaking activities have been carefully designed to allow students guided practice before leading them to less structured speaking activities. Functional dialogues set in everyday contexts familiarize students with natural language. Dialogues also present useful expressions so that students can practice everyday English. Listening also develops their skills through a variety of tasks which employ the vocabulary and grammar practiced in the module in realistic contexts. This reinforces students' understanding of the language taught in the module. Reading also provides a variety of texts which allow skills such as reading for gist and reading for specific information to be systematically practiced. Grammar items are taught in each module. Specific exercises and activities methodically reinforce students' understanding and mastery of each item.

The process of critical thinking is important for the development of students' awareness of language and promotes them toward the independent thinker. The study aims at giving through a contrastive analysis the activities that the foreign textbooks of English for Albanian learners offer. The degree and scale of stimulating critical thinking is seen in four texts of low secondary schools from grade 6<sup>th</sup> to grade 9<sup>th</sup>.

The research offers others educators and researchers in the field to enrich the gamma of critical thinking activities and exercises used to increase critical thinking which exceeds the limit of textbooks taken for study and extends it in other fields and subjects. Students nowadays are forced toward the process of critical thinking in order to become successful, independent, and active social participants of the society as the process of critical thinking is a social one in general. Critical thinking is considered to be the prime aim of education and all teachers should aim at forcing and stimulating students toward it. Critical thinking does not mean comprehension or application of the knowledge but it is a rather complex system of data analysis, synthesis and evaluation.

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## **POSSIBILITY OF USING THE TECHNIQUES OF CRITICAL THINKING IN ALBANIAN LANGUAGE CLASSES IN THE LOWER GRADES OF PRIMARY SCHOOL IN THE FYROM**

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### **Abstract**

Educational systems nowadays are distinguished in that which forms, methods and ways used to achieve certain goals. Continuous changes in the educational process that are caused by contemporary trends and movements cause that consistently presented new models for the acquisition of knowledge which enable the development of capabilities and skills of those who teach. In this sense, in the world there are different theories and concepts that come from theories of learning, which lately looks for its modernization and upgrading, combining the benefits determined by them. For this purpose the teaching process more and more changes its original form, which includes modern learning techniques in order to improve the effects of the acquisition of content during the class.

The use of modern techniques for the acquisition of content basically means changing our role as teachers and role of students in the teaching process. Together we become active participants in the process and should be in constant interaction.

Methods and techniques that promote critical thinking in Macedonia first began to be used within the project "Development of critical thinking in reading and writing" implemented by the Foundation Open Society Institute Macedonia. These methods and techniques can be used successfully in the Albanian language classes in the lower grades in the different stages of a lesson by ESR framework of learning and teaching (evocation, understanding the meaning and reflection). This is especially important, because teaching Albanian language in lower grades of primary education in Republic of Macedonia incorporates dialectical related areas of language, literature and culture media, and these techniques, despite the development of cognitive skills in students, can contribute to the development of social skills.

**Keywords:** critical thinking, techniques, schools, Albanian language

Big changes that are happening today in modern world, globalization followed by rapid development of the technology in all areas, particularly in area of communication and possibility of fast exchange of ideas regardless which part of the world you are caused situation that factographic knowledge (memorization of data) that sometimes was everyday life of our education easily to lose her actuality, it is worth only if it can be implemented in practice, in creative and critic way. Among the youngsters at the present days increasingly there is a need that they get prepared to live in conditions of expansion and often changes of data, where first of all they will need skills for solution of problems, for critic review of circumstances, for finding alternative solutions and brining of conclusions that are thought well. In this meaning, in the world there are different theories and conceptions which are flowing from learning theories which seek modernization, combining benefits which are defined with that. For this purpose, education process increasingly is changing its primary form, also putting modern techniques of learning, in order to improve effect of an acquisition of knowledge in the class. Implementation of these techniques of acquisition of knowledge in essence means change of our role as a teacher



also the role of the students in the education process. Together both parties became active factors in the process and they should have continuous interaction between them. A such teaching to be realized, first of all quality preparation of the teachers which are involved in the education process and those that are preparing for this profession is needed, first of all they have to leave traditional way of retention of learning, (ex cathedra way) where students remembers the material because methods of teaching allows giving of the large amount of data, while students are placed in a passive rather than an active role since the teacher does the talking, the questioning and most of the thinking (Maiorana, 1991).

Modern techniques of learning are based on number of research that are done in education area and on acquired knowledge from longeval work of the teachers in education practice. Long critical thinking is one of an educational main issue, theory of a critical thinking started with a Benjamin Bloom, 1956, which identified six levels inside cognitive field; each of them is connected with different level of cognitive skills. Knowledge (remembrance) oriented to the remembering data, understanding (interpretation) oriented in organization and creating of connections between gained data, application oriented in implementation of data according the law and principles of concrete problems, analysis oriented on dividing of data in its components and their functioning in entirety, synthesis oriented in reconstruction of parts of data in one new original entirety, evaluation oriented in creating judgments, thoughts and attitude based on the arguments.

From that time issue of critical thinking in education process is an issue that always raises debate. Definition of that what is critical thinking has been changed last decade and it is a hard issue because this process inside contains complex activities which develops in human's mind.

Chanse (1986), says that critical thinking is “the ability to analyze facts, to generate and organize ideas, to defend opinions, make comparisons, draw inferences, evaluate arguments and solve problems”. Tama (1989), calls it “a way of reasoning that demands adequate support for one's beliefs and an unwillingness to be persuaded unless support is forthcoming”. Ennis (1992), defines critical thinking as “reasonable reflective thinking focused on deciding what to believe or do”. Definitions most likely will be changed in the future, but one thing will remain constant – the need to provide effective solutions for complex problems. In the process of critical thinking, basic understanding of data is the beginning of the learning and not the end of it.

The critical thinking is a complex process of creative integration of ideas and resources, creation of new concept again and reformulation of meanings and data. This mean active and interactive cognitive process, which in same time develops in more levels where is built how is data understood. Thinking in critical way means to get ideas and to see how they can be implemented, those ideas to be subject of continuous review, to be compared with opposite thoughts, to be created conviction support system which will be verified and attitude to be taken based on this structures.

Despite students that follow studies in tradition way which we mentioned before in passive way speculate data, while students that think in critical way connect that they learned with their experience, compare that with results from other authors, gain conclusions, create new examples, think solution for problems, ask questions and seek answers, research cause and consequences, arguably defend their positions and very carefully review other's arguments.

By using modern learning techniques students get skilled to think for new data, to connect them with previous knowledge, to express them with own words and to discuss between them about new knowledge, which exceed level of remembrance of the facts and with what they transforms to critical thinkers.

In pedagogical practice in Republic of Macedonia increasingly is implementing taxonomy of Blum, based on this taxonomy there are created new learning programs that are realizing in education process since 2005. With Blum’s reviewed taxonomy and with modern learning strategies and techniques, teachers of all educational levels are informed with trainings within the project “Development of the critical thinking during reading and writing”, and they successfully implements them in their learning practice.

Subject Albanian Language in which mother tongue is also tool and content in learning process contributes for development of thinking of students because language and thinking are very connected occurrences, but critical thinking is one of the main skills which should characterize modern human being. Therefore techniques that stimulate critical thinking may be implemented also in learning of Albanian Language subject, which will make this subject more interesting and students will commit more.

In the learning plan for primary schools in Republic of Macedonia, in lower primary group (from grade I until grade V), Albanian Language subject (but also other languages wherein teaching takes place) take first place from the group of the mandatory subjects and takes place with 6 hours per week, i.e. 216 hours per year, in this subject in dialectical way are connected more fields of language, literature and media culture. Basic tasks which need to be realized in this subject are: development of the thinking of students, oral and written expression in mother tongue, knowledge of its nature, develop skills to be expressive and communicative, inform students with artistic values of literary and based on that to develop their feelings, esthetic and moral values and to be skilled to feel artistic values. Those needs of the students may be realized through flexible teaching which is built in two directions: with using of modern principles for defining of learning content and using of different techniques, methods and forms during teaching and learning which are selected in accordance with goals and tasks which needs to be realized by the teacher.

Like we said before, techniques of the critical thinking successfully can be used also in Albanian Language subject in lower grades of primary school and that in different faze of class which according to EMR frame of learning and teaching divide in evocation, meaning of the relevance and reflection (in Republic of Albania it is known as PBR frame; prediction, building of knowledge and reinforcement). During this, EMR frame and learning techniques cannot be used just formally, but they should be in accordance with purposes of the class. In this project we will analyze some of the techniques which are successfully used by the teachers of lower grades during the Albanian language classes in primary schools in Republic of Macedonia such as brainstorming, skeletal appearance, fiveliner, double note diary, mixed sequences, prediction with Keywords, insert, etc...

**Brainstorming;** one of the techniques that from the beginning found its large usage among the teachers, it’s a simple learning technique which stimulate different ideas or thoughts among students or prior insights for particular issue. It’s a good possibility to make sure that all students are involved in the process and they change more ideas. Course of technique: teacher ask a question from different field of language, literature or media culture which is foreseen to be developed in that class that seek for ideas and thoughts, students individually writes their idea and thoughts, this ideas they can change in pairs, group or in front of all class, after request of teachers students tell their ideas and thought which teacher writes them on the blackboard. During this technique teacher writes all ideas and thoughts, highlights to the students that they don’t have to take critical attitude toward what is said, encourages students to tell new ideas and thoughts, plan how to use said ideas and thoughts which will help him to achieve the goal of the

class and at the end he get back to the written list during discussion about that after developing and synthesize them into more general ideas. This technique has larger implementation during phase of evocation.

**Skeletal appearance;** it's a technique for structuring and relief of discussion and enable students during the class of Language to describe, think, synthesize, argue student's information and experiences after reading of one part. This technique mainly is used for individual work and work with small groups. With this technique students are skilled to give main idea of a literary work, to express individual feelings cause by the literary work and skill them to express in creative way. Chart of this technique is: **Sentence** – describes what is topic of the literary work i.e. book Pinocchio describes that this literary work of Carlo Collodi is about wooden boy which follows advise from the bad ones and not from the good ones and at the end he transforms into a real boy. **Phrase** – says something important about work; at Pinocchio might be fulfilling wishes. **One word** – tells meaning or basic topic; at Pinocchio might be lie. **Symbol or drawing** – draw a symbol or drawing that is content key thing; at Pinocchio might be extended nose. **Color** – choosing color that express feelings or spiritual status which is cause by this literary work; at Pinocchio might be red cause tells pleasure of transforming of Pinocchio to a good boy. **Fulfill one of the best things...** – request from a student to fulfill sentence; at Pinocchio might be when he transforms into a real boy and old man Geppetto is very happy. Purpose of this technique is to stimulate discussion, might be used in evocation phase or as a reflection.

**Fiveliner** is technique with which synthesis of information is done in short and clear expression which describes topic or shows its reflection. Ability to collect information, to understand thoughts, feelings and complicated conviction in just few words is a skill that gas to be stimulated at students. Chart of this technique is: **First line is title (topic)** – description of the topic with one word which usually is noun; example Scanderbeg. **Second line is description** – description of the topic with two words usually pronouns; might be strong, brave. **Third line is activity (action)** – expressing the action with three words usually verbs; fought, destroyed, led. **Fourth line is feeling** – marking a phrase with four words which marks any feeling about topic; Scanderbeg fought against Turks. **Fifth line is reappearance of the essence** – contains a synonym with one word with which again describes essence of the topic; hero. Course of activity each student within five minutes has to do a fiveliner, with a partner is to be done common fiveliner about the given topic; fiveliners are written in the blackboard and shared with all class, which generate further discussion.

**Double note diary** is technique through which is done extraction of the parts of text and comments for those parts. Chart of the technique: students in the center of the paper draw one vertical line. At the beginning they read the text and later on the left side they write parts they liked most, which part confused them, with what they agree in text depending on the purpose of the class, on the right side students writes comment for highlighted part, what makes them to write that part, what makes them to think that, question they might have for that part. Teacher, after listening the comment for part of the text, asks question “Why exactly that part took attention? What thoughts it cause to you?” If two students marked same part, both of them comment and highlight similarities and differences in student's reactions. At the end teacher ask some question for all class like “What from this text will you remember? What were you thinking about during reading the text? What is main message of the text? Is there any question that is not answered?” Etc. This technique is used in the phase of meaning of content, but in the part that has to do with commenting for same conclusion take part in phase of reflection.

**Mixed sequences;** this technique is logical reorganization of key sentences in one certain content. Chart of the technique: mark few sentences from the text that can show logical entirety, every sentence is written in separate paper, presented in front of students with mixed ordering, seek from students to find logical order, changing can be many times, when students achieved relative compliance with sentence order they leave them alongside text is read or content is acquired. At the end of the class we come back to mixed sequences to compare is it ordering successful, if it is needed sentences again can be reordered while searching sentences in the text. This technique is used in phase of advocacy but part where student control order of the sentences enters in the phase of reflection.

**Prediction with Keywords;** this techniques is kind of prediction with words, it is used to stimulate curiosity and to stimulate active reading in order to better understanding of that what was read. This technique contains writing of a composition based on a few words from a text or content that has to be processed. Words have to be provocative to stimulate different fantasy to the students. Chart of activity: Keywords are presented, depending on the age number is determined, for example, house, new settlement, school, friends, after that from student is asked to think how they can connect given words and later their ideas to write in a composition form, after at the end they read them, firstly with partners or group, later share them with all class. After reading of compositions, they are given to read text or to follow content from where Keywords are taken, in our example ‘new settlement’, it is necessary that after acquisition of contents student has to be back to his ideas and to see how close they were with their prediction. This technique is used in phase of advocacy.

**Insert** is technique for reading led with usage of special system of signs in order to read the degree of understanding. Name of the technique come from original label of the authors Vaughan and Estes (1986), **Interactive Notating System for Effective Reading and Thinking (INSERT)**. This technique is important in process of learning, as the individual acquisition of the contents as well as learning the contents during the class. With this technique is enabled that students in active way to follow that they understood during reading of any text, therefore students are guided that within margins of the text to note a symbols, number of symbols that students can use may vary, depend on the age or on the goal we have set during the planning of the class. Signs are: (√) checkmark if from that you have read that you know or you had think you know is confirmed, (-) sign minus if some information you have read are contradictory or differs from that preliminarily you know or you had think you know, (+) sign plus if some of information are new to you, (?) question mark if you are in front of information that confuses you or if you want to know more about them. It is very important that to give time to the students which will discuss about what they have read because enables that students to clarify unclear parts of the text, discuss what they understood and verify that they have understood if it is correct. After ending of discussion from student is asked to fulfill INSERT – table that contents same symbols, students have to elaborate in their minds the marked data and to present them shortly with their words. INSERT technique is used in phase of meaning of content because with that knowledge are acquired and fulfilling of insert table enter in the phase of reflection.

### **Conclusions**

Up mentioned techniques are just some of the techniques which develops critical thinking used by teachers in class of Albanian Language in lower grade of primary school in Republic of Macedonia, there are a dozen of other techniques which can be used in such modern education process, but has to be highlighted that for realization of one such teaching it is very important qualitative preparation of the teachers that are involved and this can be done with different

trainings, but also those who are preparing for this profession by introducing these techniques in the program of different subjects where they can be included. If we are not well prepared for implementation of these modern techniques, education process might pass as a game through which it cannot be realized even a goal of the class. With changing of ourselves and role that traditionally our teachers had we will achieve that to train students to think in critical way, to solve problems, to be active participants, to respect other's opinion, to cooperate with others and they will be followers of concept of learning during all life and with that they will be given a healthy base for further education.

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## ASSESSMENT IN TEACHING AND LEARNING ALBANIAN LANGUAGE

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### **Abstract**

Assessment is not simply a means of control, but a genuine psycho-pedagogical aspect related to psychology laws, especially with learning ones. In any kind of learning process the subject should be familiar with the results that he achieves.

Assessment is the process that provides teachers complete information about level of objectives implementation and strategies that he should build on future lessons to make them interesting and effective. During the planning and selection of assessment methods, it is important that the teacher to take in consideration aspects, such as: information which he wants to get through the evaluation; assessment methods comply with the working style and easy to implement; students to be aware of what the teacher wants to know and he will use that information taken from the assessment; students to be free to express their achievements in the best manner of them learning style; when is possible usage of information and communication technology, students feel better, they can answer using the computer.

Teacher has a duty to assess: the curriculum, textbook, his daily preparation and concrete activities in class, the whole teaching lesson and in detail, the class as a whole and every student as an object of special subject.

However, we must recognize that the evaluation in the Albanian language and literature must pass through the following components:

- Assessment through achievement standards,
- Continuous assessment of students,
- Diagnostic assessment,
- Summative assessment,
- Assessment of written works,
- Final evaluation of the curriculum, made possible by the standards of achievement indicators.

Assessment is graded, with expressions or points, which are converted to grade according to some predefined criteria (known from students) and aspects related to the theme and treatment of the topic.

**Keywords:** appreciating; diagnostic and summary evaluation; student’s folder.

### **Ways and means of evaluation**

Assessment is not simply a means of control, but a genuine psycho-pedagogical aspect laws related to psychology, especially with learning ones. In any kind of learning process the subject should be familiar with results that he achieves. To make known to students the achieved results, it’s meaning more efficient spending of his energies, because in this way he gets information they need to improve learning. So, evaluation plays a measuring apparatus that makes clear the situation in which is the student. For example, a student at the beginning of the year has a certain speed in reading. Over the weeks, we can build the curve of his progress. If we enroll in the tape parts of reading by the student, we can appreciate the elements of his progress

in this direction. When we make clear to students results that he arrives at before testing and after testing, or a fulfill the criteria of writing the essay, we are make him aware of his progress.

Assessment is the process that provides teachers complete information about level of implementation of objectives and strategies that he should build on futures lessons to make them interesting and effective. In his daily activity teacher prepare, study, teaching, practice leads to students, implements working forms and methods, oversees the activities, aims to achieve targets etc. He is able to perform all these better, only if he knows and makes assessments. Master teacher, in the evaluation process, must change its role from the person who observes evaluation, listen, ask, expect to respond, speak and promote confidence. During the planning and selection of assessment methods, it is important that the teacher be aware aspects, such as: information which he wants to get through the evaluation; assessment methods to comply with the working style and to be easy to implement; students to be aware of what the teacher wants to know and how he will use that information taken from the assessment; students to be free to express their achievements in the best manner most suited to their style of learning; when is possible usage of information and communication technology, students feel better, they can answer using the computer. ICT facilitates teacher's work.

#### **Albanian language teacher as the evaluator (assessor)**

The role of the teacher as an evaluator does not begin and end with the student's evaluation, this is insufficient. The student is the latest (but the main one) in the pyramid which belong teacher estimates to make, because its level (students) is the best indicator of all activity on the synthetic joint teacher-student. Understandably, the teacher, before assess student should evaluate themselves and other objects related to his work. Important is that teacher had to do consistently evaluations for everything related to teaching and learning. In fact, the teacher has a duty to assess: the curriculum, his daily preparation and concrete activities in class, a teaching in details and as whole, the class as a whole and every student as a special object and subject. For all these forms of assessment is necessary to regularly kept notes from the teacher, not just like a formal document, but for helping himself, to increase professional competence.

However, we must recognize that the evaluation in the Albanian language and literature must pass through the following components:

- *Assessment through achievement standards,*
- *Continuous assessment of students,*
- *Diagnostic assessment,*
- *Summative assessment,*
- *Assessment of written works,*
- *Final evaluation of the curriculum, made possible by the standards of achievement indicators.*<sup>2</sup>

Below we will discuss a teacher's work for the evaluation in Albanian language.

#### **Class assessment**

Classroom provides dynamic work of teachers, but also and class. If the students go-ahead, if they accompanies the teacher, then any planning latter becomes fait accompli. That's way it is necessary the teacher not only to recognize and motivate the class, but also to evaluate it. And the highest score that can give the teacher to class is encouraging to know, to understand, to implement, to analyze, to synthesize and to assess knowledge, for acquiring skills necessary for the age group. Kindness, sweetness, gentle and loving of teachers motivates many classes.

According to cases, the class can be shown more or less active. Depends on its level

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<sup>2</sup> "Curriculum visions " in curriculum and schools: *Albanian language and literature readings*, no. 6, 2004, p. 43

of difficulty of learning material and the teacher's work before and during the class. A good teacher never blames class and never ignores its work.

### **Student's assessment**

We can appreciate students for the oral responses, workgroup commitment, for collecting and processing of materials, for research or writing works inside and outside the classroom. Assessment be graded, with expressions or points, which are converted to grade according to some predefined criteria (known from students) and aspects related to the theme and treatment of the topic. It's not important when and how we assessment the student. It is necessary, teacher to make evaluations regularly and consistently. Any assessment, especially one with marks must be motivate. Unaccompanied teacher's grade with comments, excuses and justifications, very soon is forgotten even form the student, it can also be prejudiced by his peers. Children and young people are very sensitive to what they get for what they give. When the teacher makes incorrect assessment, students experience this in different ways, with silence or indifference.

The Albanian language and literature classes have a wide space to evaluate the student. The secret lies in the fact that how efficient is the teacher to attract students, to encourage them to be ready for being activated in showing to him (teacher) absorption of subject matter, expected achievements of teachers and of students themselves. There are no recipes when, what and for what, teachers should assess students. If we set borders and if we give recipes, of course we will have to do with the assessment like a goal in itself. Assessment should be seen as a necessary and a natural process, without imagining. Whenever a student shows that reached a standard or a target, he deserves to be evaluated and take what belongs.

In the daily work of Albanian language and literature teachers distinguished two occurrences which must be removed from the evaluation process:

**First occurrence:** *Teachers don't make rhythmic estimates in the registry, under pretext that they use tests assessment.* Their "justification" is that, if they assessed the student in the period between two tests, deterring it with the pressure of the grade. The teacher, who rarely estimates, doesn't have full knowledge of literary language level of students. That, ultimately, may not constitute a major or a waste of time to reflect on the record 1, 2, ... 5 or more grades during the class, in end or after its. This formal act is nothing in relation with motivation of grade from each student. But, when it's not made this (motivation), indicated that it would miss the grades

**Second occurrence:** *Teachers more often just assess too good students or high progress and rarely other categories of students.* These students "forgotten" are those who do not progress, their progress is weak or moderate, but "reduce" the step and work performance of teachers. Teacher of the Albanian language and literature must be convinced that activation of all categories of students not overshadowed at all class work. Of course, the teacher should decide on activating certain ratio of students from all categories. Working in groups, differentiated tasks by levels of pupils, poor supervision of students for a longer time in different learning activities give teachers more freedom and the opportunity to check and evaluate the extent of all students. Supervision and respect the free thought of each student, among others, bring life to the classroom. Activity and evaluation of students that do not advance regularly, never treated as a goal in itself, but should be realized come naturally, without pomp, without feeling and understanding from others. The work of each student should be followed, should be check and evaluated step by step. The curriculum and the textbook give enough space. Remains that the teachers use them, keeping in mind the standards of learning and achievement. Subjectivity assessment removed students from the teacher and sat them interest for learning their native



language. How more objectivity is teacher assessment in student's evaluations, more pleasant climate and democratic atmosphere he creates enables in classroom against other roads, reaching minimum objectives, specific and general.

### **Assessment of the Albanian language curriculum**

The teacher is the first person like a teacher which picks up the student text. Teacher as didactic, as "intermediation" that conveys "subject" of the curriculum and the student book makers, is more critical evaluator, in a positive sense of the word, because he, while working in the classroom throughout the year, look and like any valuable notes that curriculum and textbook have, as well as any distinguishes deficiencies of text and creates him a resentment, when it fails where it is intended, where he will leads his students.

Albanian language teacher, just like all other teachers, now he has all the opportunity to be a part, author and party in process of drafting the Albanian language curriculum and literature. He is involved in the process, whether it is skillful to access in groups of interest, when he knows well curriculums and textbooks, and also knows educational developments at home and abroad.

### **Some of student's works and activities should be assessed**

#### *Duties and personal or group projects*

Through personal tasks which perform the student, the teacher observes the effectiveness of teaching and learning: level of student skills development; level of understanding from learning topic; student's ability to apply the knowledge and problem-solving; ability to reason, to make conclusions and to make connecting with real life.

It's good for students often to engage in activities as personal work, as in this way they are oriented towards selection and use of evidence to identify, to describe, to analyze and to make conclusions about a particular issue or problem. In this case, the teacher assesses the usage and processing of secondary sources, collection and selection of data from student and the final presentation of the assignment or project.

Projects in group enhance and develop skills and personal responsibility for cooperation through the role as team member to write product appearance.

#### *Oral presentation*

Students' abilities are different, they are not the same for all of them. There are many students who rather prefer speaking than writing. For this category of students, oral presentation is strong indicator of communication skills. Oral presentations in Albanian language and literature are numerous, varied and different nature. Even a written report may be presented orally to the class or to a wider audience. Reciting a passage of prose or a poem, playing a role in a drama, the representation of a task group has met, are forms that need to be considered by the teacher to assess pupils activated. Debates, discussions and student interaction within the group are activities that should be closely followed and evaluated by teachers.

#### *Listening*

Students to take over to make interviews, conversations etc., with different people in real situations. Teacher evaluation should begin from first step, from the care that shows the student to prepare questions (requests). Other phases, in which the teacher may not be present, will be evaluated by presenting short summaries of the student, where, through the form and accuracy of information, distinguished skills as: communication, attitudes, values, concentration of attention to listening, cooperation in group, etc.

#### *Tests and essays*

They are very motivating for some students, especially for those who like writing. Assessment of student achievement made so quickly and reliably. Tests and essays are easy to

organize, but difficult to correct. They create more opportunities to engage students in the reorganization of arguments, facts and ideas to improve the effectiveness of learning. The essays feature is the use of different references. Tests, with limited duration, also essays assess a number of student skills. It is important to understand how to use the methods and general basic ideas of assessment to improve student learning and teaching effectiveness of teachers. This will reach teachers teaching concepts, methods and theoretical and technical procedures for estimate the scale based on class.

### **Self-assessment and reciprocal assessment**

#### **Self-assessment as a process and method of assessment**

Self-assessment is a process and a method of assessment. Students evaluate their process of learning, as they are set learning goals and standards of learning and achieving success. Through self-assessment, students evaluate the extent how much they meet these standards.

#### *Products that can evaluate students*

Students can also evaluate their learning process, but this process cannot be measured, is indicative of learning, i.e. the results achieved. In this sense, measurable products for self-assessment are: different tasks and written work (including essays and tests), practical work (posters, templates, projects), homework, folders. All these are assessed by teacher at the same time.

#### *Self-assessment by students and their reaction (reflection)*

Students taking self-assess, make a personal analysis of what they have achieved and what needs to be improved in their product. Effective aspects of their reaction, after self-assess, are two: Students thinking how to overcome the weaknesses observed by them or by teachers. During the following work, they use their previous experience.

#### *Some benefits of self-assessment*

Self-assessment helps in improving the quality of learning and enables increases the scale of acquisition object by students. In one way, a part of responsibility in the learning process and learning moves from teacher to pupil. When students are wise to self-assess, they: become aware of how to learn; become more efficient, more independent and more confident in the work they perform; develop skills, habits and competences for lifelong learning; trained to better understand the goals and objectives of learning and assess their progress according to sated goals and objectives achievement; evaluate their work and learn through mistakes, before evaluated by the teacher; trained to think about their learning and be self-critical to this learning.

### **Reciprocal assessment of students**

Reciprocal assessment is a process and a method of assessment between each other students, in order to improve understanding of the goals and objectives to be achieved, to improve learning and encourage critical thinking and communication skills. Students give feedback on responses and the quality of works of other students from the class, also for the learning process from them.

#### *Some benefits of reciprocal assessment*

Reciprocal assessment helps students to understand the assessment and motivates them to learn. Feedback can help students in completing the task and deepens the learning before achievements be evaluated by the teacher. Reciprocal assessment significantly facilitates the teacher's work during the evaluation. When students are involved in the process of reciprocal assess, they: better and more clearly understand the characteristics of quality work and become more self-critical of their own work; develop initial skills for assessment and reflection; exhibit

responsibility and greater independence in learning process; help each other to learn and develop skills, habits and competences for lifelong learning.

### **Students folder**

Today is taking extension creation of the student's folder. More experience finds in preschool and primary grades. At these levels of pre-university education system, the folder contains works from all areas, but most important works are from the fields of art: drawings, work with paper or paperboard, material collected by the student etc.

The only good opportunity to self-assess the self reflection in Albanian language is the folder, because assessment with folder significantly changes the focus from traditional assessment methods, such as grades for performance during the month, grades in the end of the semester, or notes in end of the school year. Traditional ways of assessing cannot give arguments from where come the student's weaknesses.

Below we mention some of the benefits arising from the preparation, maintenance and enrichment of the student's folder in the Albanian language and literature subject:

1. *For the student:* A student prepares, completes and enriches the folder by itself. In this way, he learns to organize and systematize his materials (works). The folder shows how active and how intentional was student thinking, how active his learning is. Student aware of his progress, he recognizes the strengths, problems, weaknesses, and deficiencies of his difficulties. The folder shows how the learner reflect on what happened and how he learned, what had moved him and what not.
2. *For the teacher:* The folder shows level of understanding of student knowledge, depth and breadth of this knowledge. In folder are included and found different learning stories of student learn. The teacher has ability to recognize what are the interests, inclinations, strengths, weaknesses and deficiencies of the students needs.
3. *For school board and other interested:* Students folders provide concrete evidence, documenting student learning and show which learning objectives are achieved.
4. *For children's parents:* Parents specifically and exactly see what and how their children learn. The folder gives the parent a full range of child training and skills development. Parents reading child's self-assessment comments, they will learn how the child sees himself as a man who learns.

It is necessary that the teachers have enough time to experiment with the creation of folders, in a way to reveal how it is and how it performs best for his students and class.

Works which may include the student's folder in Albanian language and literature subjects:

**Table of contents.** Continuously supplemented and creates opportunities to interested parties without difficulty find the needed material.

**Critters of assessment.** Used analytical assessment list prepared by the student.

**Short CV.** The student wrote this autobiography itself and he can make amendments to its with events of his life during the school year or during the school period.

**Work and tasks models.** Folder included tasks that the student has performed in class or at home. You can get into examples of personal work, couple and group, essays, drawings, papers, reports, reviews, discussions, letters, certificates, records kept in notebooks, sketches, projects, video recordings, photographs, etc.

**Creation.** Are written work performed by the student in literature classes, but also prose, sketches, poems etc. who writes artistically inclined student. It's nice to include examples of the sentiments expressed by the student.

**Different assessment.** These include assessment made by the teacher of Albanian language and

literature, assessments by parents and self-esteem occasionally made by the student.

**List of readied books by the student.** Included student’s analysis and comments about books (fiction, science, encyclopedic etc.).

**Materials used for the meetings of the various competitions** at school level, at the local or national level, where the student participated and achieved concrete results. Includes majors and certificates earned by the student.

The teacher and students should together decide what to include in the folder and what will be the assessment criteria. During the dossier assessment, special emphasis is placed in assessment of the progress that the student arrives, process and practical training during a certain period (during a semester, school year or a level of education).

Started from the period, we can have two types of student folder:

**Progress folder**, which documents the level (degree) of learning and provides evidence of student progress. This folder is used for continuous assessment, but can also serve to evaluate at the end of the semester or at the end of the school year.

**Folder of achievements**, which demonstrates the best achievements in learning. This folder contains the best student’s works. By its nature, is used in the summary assessment. Folder of achievements allows final assessment by uniting with other indicators included in the assessment.

Started from importance that the student’s folder receives, its assessment is a process that shouldn’t be left to coincidence, rather, it requires teacher’s preparation and cooperation with students and their parents. This process can be divided into three phases:

### **1. Organizing and planning**

Teacher has a duty to explain the purpose of the student’s folder (monitoring and evaluating their progress in learning). Student should be oriented to think about questions, such as:

- ♣ How to plan time, collect materials and perform the work, to do analyze of what he teach in Albanian language and literature?
- ♣ How to organize picked materials and prepared works?
- ♣ How to complete and how to enrich folder in continued way?

### **2. Works collection**

The collecting process of materials and preparing works reflects the goals and educational experiences. Works selection is made based on these factors: a) subjects area; b) process of learning; c) type of product.

### **3. Reflection**

Materials and works contained in folder are evidence for reflection by students on their learning progress, are evidence of knowledge and skills acquired of possessed competencies. Reflection includes various forms of learning diaries, notes for each accepted paper in folder.

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## THE CONTRIBUTION OF DE RADA TO THE ALBANIAN LANGUAGE

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### Abstract

De Rada is a symbolic figure for the Arbereshs and for the whole romantic literature. Besides the great political contribution and the best works of the Albanian literature (which belong to him), he is an important contributor in the gathering of the folklore and the teaching of the Albanian language to the Arbereshs.

A great contribution De Rada also has about the throwing and protecting his thesis on the Pelasgic origin of the Albanians. De Rada according to his linguistic reports protects strongly this thesis. De Rada meanwhile is explaining the Albanian words is trying to interpret some names of the classic Greek mythology in order that to argue the antiquity of the Albanian people, its autochthony and the antiquity of the Albanian language in comparison with the other old languages for example: Diana (di ana). According to De Rada, the folk songs reflected the basic Pelasgic features of the Albanians. “The great ability of the language that dresses the words, presents in itself the grandiosity of the nation to whom they belong. The language is endowed with sounds that express wealthy and in a great manner the stages of the spirit, among the other terms of its divine origin, it keeps inside itself three words that show the happy situation in which was created the human being on the earth: *jam* (I am), *them* (I say), *kam* (I have). Beginning from the personal final ending of some inherited verbs of the athematic verbal conjugation of the Indo-European languages, they are also called the conjugation in *-mi* form, the Arberesh linguist De Rada tried hard to protect the antiquity of the Albanian nation and of the Albanian language using in meantime other linguistic arguments, such it was by the three verbs: *jam*, *kam*, *them*.”

**Keywords:** *De Rada, contribution, Albanian language, antiquity, features*

De Rada gave a special contribution by the compiling of the Albanian language grammars by which his aim was to standardise the Albanian language or the formation of a literary language for all Albanians. During whole his long life which was very productive, the main care of our great Arberesh all the time was the cultivation of the Albanian language, its study and deepening, the proclamation of its treasures, the spreading of the language towards the wide masses of the Arbereshs and the Albanians, inside Albania and in the foreign countries where the Albanians were established, the propagation in the world, beginning from the ideals and the requests of the Renaissance figures that the language is one of the distinguished distinction that notices one nation from another – so writes Professor Jup Kastrati in his preface of De Rada’s work *Authobiography*, translated from him. He compiled three grammar books of the literary Arberesh: the first one in 1870, it was published in the name of his son, Zef, the second one was published in the name of his brother, Kamil De Rada, and the third one he published in 1894, using his own name. The grammar compiled by De Rada is the very first of this kind published by an Albanian person. The main merit remains in the fact that this work is the first in the series of the text books of the grammatical structure of the Albanian language, that later on will follow with other Renaissance figures such as: Kristoforidhi, Sami Frashëri, Pashko Vasa. The Albanian grammar of De Rada is a very rare book and it is considered very important by the linguistic point of view. Many very well-known authors as Indo-Europeans, Slavics,

Albanologists, Balkanologists have confirmed this, among them they are: Max Myler, Shuhard, Gustav Mayer, Franc Miklosic and others. De Rada's work is compiled based to the speaking of the people of the Arberesh villages such as: Saint Sophia, Saint Demetre, Maqa, Strigari, Vakarico, Mbuzati,. According to Professor Jup Kastrati this grammar has special values because there are many notes that express the speaking of the Arbereshs and these notes are useful to dialectology. The dialectological comparisons are important but more important are also the comparisons of the Albanian language to Greek, Latin and Italian languages using the comparative method. Besides that this grammar at the same time has much values according to syntax. Especially Professor Kastrati emphasises the using of the cases. But the work presents itself with many deficiencies such as the adopted alphabet, the grammatical terminology that he uses, the phonetical system in the vocalism and in the consonantism, the morphological structure, the nominal system and the verbal system, the word-formation etc.

According to De Rada the antiquity of the Albanian language is conditioned on four characteristics: The monosyllabic terms, the clarity of the unruined suffixes, the antiquity of the basic vowels *a, i, u* that correspond to Assyrans-Babylonian suffixes and the inclusion the names and the verbs about the reflection of the essence of the word. According to De Rada the monosyllabic words of the Albanian language do not show the primitiveness of this language because every monosyllabic word has the meaning of a general word that corresponds to a feeling. The preoccupation of De Rada – writes Leonardo M. Savoia in his article “*Aspetti della linguistica di De Rada nel quadro delle ricerche linguistiche arbëreshe del 700 e del 800*” in reference with the fact De Rada was afraid of misunderstanding that the monosyllabic system of the Albanian language may arrange among the languages which are less noble and rich compared with other European languages in the meaning that the monosyllabic words of the Albanian language express a less meaning compared with the languages of that time.

In the preface of the first grammar that was published, we notice the purpose of De Rada for the creation of a common and unical for the whole Albanians. According to a study by As. Prof. Aljula Jubani, the grammar books written by De Rada were concentrated to the Arberesh language of Italy and they were written in Italian language. De Rada had a great interest to the Arberesh language, because these groups of emigrants, as he wrote, bring up different dialects, folk speaking from different groups, also reveal different kinds of the manners of dialects and although these differences it is clear they are appearances of the Albanian language. (*portoviddialetti diversi, dal discorso popolare de varii gruppi in cui ella si divide, s'illustra pure la varieta dei modi dialettali, i quail, per quanto la loro estensione e differenza sia pur poca cosa ostanto oggi alla chiara apparisenza del linguaggio Albanese*). In this way it is clear that De Rada searches for to justify the right of the Arberesh language to be the basic form of the unic Albanian language, because it represents the different dialectical kinds, but also it shows that these parts of people although have left their invaded country, this kind of the Albanian language is for the author the most conservative kind of its distinctions.

In the found manuscripts by De Rada results that he has used two different alphabets. He has used the Italian alphabet fulfilling in it some special signs as a face down *a* instead of the vowel *ë* and two greek letters to note respectively *th* and *bj*. De Rada in the beginning of his literary activity enters in the track of the alphabetic tradition of the Arberesh writing, which although its oscillations from one author to another in the essence it was based in a latin alphabet fulfilled with greek letters- admits Professor Altimari in the preface of his book “The Literary Work I”. Later on the poet will pass from the graphic system based on the latin alphabet to another mixed up Greek-Latin and he explains this choice in the preface of the first edition of

Milosao in the year 1836. “I am thinking to determine the alphabet that I will use in these songs and I will use the Italian alphabet because we are in the middle of Italy exactly in the place where these songs will be published. But I warn that Albanian language perhaps the oldest language among the European languages, was born almost at the same time with some different elements of the Italian alphabet or with some idioms of the Greek language, - so believes according to the sources Maltebrun and the wise my compatriot Skiro... The idea is to discover with the sounds of the word of Epirus the real harmony of the Hellenic idioms which were settled on the doubts about the existence of the real harmony, doubts favorised from my impatient spirit and from the unappeased situation. I composed in this way one third of the Italian signs and a supply of the Greek signs, and this I have used systematically without any defect (De Rada, 1836: f,XI).

According to Mikel Markianoi, Jeronim De Rada never studied basically and he did not cultivated well the Italian language. He, says Markianoi in his book “Albania and the Work of Jeronim De Rada” (1902) is so far from the linguistic items. He avoided to formal technics and does of his own accord. He had some despise for Puotit School, he was a pupil in that school only for a day. In his book *The Political Testament*, De Rada writes that there is nothing left, only the echo of what it was; a linguistic survival emptied from the content. Italy of nowadays is left like a relic of the old times and there is not the former content. (Using other words from the former glory of Rome, today, there is nothing left, only the inherited Italian language like a linguistic remain, but it is empty from the former content). He was tired searching for the phrases about The Deeds of Eneu. This is affirmed by De Rada when he says, “every evening for two hours and half, while my brother Kamil was studing Latin language and exercising himself reciting the Lamentation of Ciceron Pro Milone, I was trying to adapt to the Albanian language the Greek and Latin lines. But I could not do it. Always I was amazed by the simplicity of the idea and the form of the folk songs”. De Rada in his creative work he never imitated the Italian metrics but those of the Albanian oral literary folk. Sme of the songs of Milosao, De Rada compiled as he says by his own, imitating, “the simplicity of the rapsodies”. But later on, in his next works as says the scholar Jup Kastrati in De Rada’s poetical novel *Adine* it is marked a turn in his art for the reason to emphasise the vocation of the elaborating of the language creating by himself many compounds and neologisms and ellaborating the lines which lost the spontaneity of Milosao. Although in his *Autobiography* or *Autobiology* talking about this work, De Rada writes “when I returned to my country, I began the experience to raise up our language in order that to present the way of the high life in his writings and possibly , real life and the noble passions”. De Rada is expressed about his works *Frosina* and *Vantisana* that “for me the language is an instrument with many broken down wires and this dictated to my creations a unsurpassable bare situation”. While he is commenting the *Serafina* edition, De Rada notes that “to the simple and active style of *Milosao*, sprinkled with fresh figures, while revised *Serafina* is in front of much figures and thoughts, that face down the actions and the characters... The style of *Serafina* is burdened from much accessors, it was not welcomed bad by the public, who now was accostumed, says De Rada in his *Autobiography*.

In later phases of his creative work of De Rada, such as his work *Autograph* in the year 1855, according to Dr. Mikel Markianoi, his energetic style and liveliness are absent. The work is full of mistakes, the Latin words, the provincial idioms, the waver inversions, the poetical words, the games of words, the strange metathesis, the archaisms, the syntactical amnesia, the repetition of the words and the sentences. There are crossing and interrupting sentences which mix up with one another right and wrong and turn in a prose with the elements borrowed by the Latin style,

and from the albanian style. His language, - continues Dr. Markiano, is developed in a form more or less childish, using the wrong punctuation and there are many orthographic mistakes and the rhythm is weak. Sometimes the big letters are not used in a punctual manner.

His tireless work and his inexhaustible passion towards Albanian language seems that often has impeded the literary creation work. De Rada himself accepts this when he says in his *Autobiologjia* “my literary creation was impeded by my tireless and insisting effort to restore the Albanian language to which were interrupted more than one time, my ardent desire was to improve and be able in the presenting of a better life. The fruit of these seven years of work was the restoration of my native language and to bring to light the nobility of the people who speaks this language. This is a kind of work which is worth to my fatherland more than any other work of art”. As it seems, De Rada was not regretted for this barrier towards his art for his imposition in the field of linguistics, in contrary he is conscious that his contribution in the linguistics is much times worth as any other literary work written by him.

Another interesting concept to be underlined is the way how De Rada regards the report language-God. Although we know that during his life De Rada’s religious world outlook has experienced strong oscillations during different periods of his life, he considers the language as an attribute of God. Even the other nations tied by the bloody unity, even the languages through them they are known are not made by the human beings in the different times. They are created by God together with human beings from nothing, in the same way as they were born from the earth the trees with flowers and with many different fruits, one more pleasant than the other. We know- says De Rada – that this doctrine is opposed by the pedantic persons of the science. The language only clears and motivates the fact that the languages are united altogether with a syntax that is unbreakable with the form of the human race. All the nations, although are born with different languages and are antagonist with one another, they very soon speak among them and it seems that the diversities of the nations and the languages are blessed to revive during the whole life. The wars- says De Rada - begin when the people call God using the words they do not understand. “The human race in its miseries calls the God using the word Father, in foreign languages that does not know. To find him that he calls Mister and God it is the barrier of the misunderstanding of the words which he uses and what he asks for. Because of the evil leaders of the people, who seem they have replace Christ, today it is legal till the liquidation the personality of the nations, disappearing and denying the language which distinguishes and destroys the existence. As an example De Rada gives the crazy treachery of the Greece as he calls it “conspiring for the final destruction of the Albanian people”. The awakening of the national conscience De Rada thinks it is difficult when he compares with a “divine preparation”. The Albanians need to unite for the studying of their language – says De Rada.

De Rada as a very wellknown enlightened thinker believed that the school is a centre where the new generation will be educated with love for the motherland and will have an intellectual and moral development. And in order that to fulfill this mission the school must fulfill first of all taking care about the native language. The beginning and the basis of every knowledge – writes De Rada – is the language, which also protects to the peoples the loving nationality. According to him the language itself keeps the national unity and the distinctions of the national life and it makes possible that every human being of a nation to be distinguished from the others. De Rada believes and is convinced that for every Albanian there is nothing precious than the native language which expresses the soul of the nation and unites Albanians everywhere they are. We Albanians – emphasised De Rada- must keep with a great care our



language, which resembles to a beacon torch which could not blow out the different winds that scattered us in foreign countries(Uci, 2003).

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## THE CONCEPT OF VERB VALENCE - AN ANALOGICAL ARGUMENT BETWEEN GENERATIVISM AND THE TRADITIONAL, AS AN UNDERTAKING TOWARDS CRITICAL THINKING

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*(Since the start of this paper, we would like to explain that during translation from Albanian into English of the provided examples, the sentence in English appears to be different because the verb is presented as a two-valence verb and as a result, the subject heads the sentence, while in Albanian, the verb remains a one-valence verb).*

### Abstract

The issue of the valence of words is an issue still to be discussed further ahead in relation to some of its main aspects, which have already been treated not only as regards the theoretical framework of generative grammar, but also in regard to an undertaking considered by a comparative viewpoint based on as much rational criteria as possible. Based on the generativist tendencies, aiming at a comparative approach in relation to the concepts of traditional grammar, we will take verb valence into special consideration in order to better understand where these two theories mix and where they differ regarding this aspect. The generative conceptions of the verb valence are likened to the traditional conceptions and often they are in complete compliance, but at times, in partial compliance. Thus, based on this starting point, the analogical argument has served as the main pivot of this paper, through which we aim at presenting the verb valence as much reasonably as possible, in light of generativism and the traditional viewpoint. This comparing and analytical approach has served as an incentive in order to present a paper, which aims at drawing two parallels, facing each-other as regards the two different linguistic trends. Critical thinking, as a rational and systematical process has drawn us into a furrow and the two clashing theories are appreciated and exemplified by concrete facts taken from the traditional grammar of the Albanian language and generative syntax. This paper aims primarily at developing critical thinking not only in the framework of school pedagogy, but also as an approach out of which different linguistic issues come into being thanks to active thinking. The main goal of this explication of a linguistic nature is that acquisition of the results be based on well argued criteria and facts, legitimized by active thinking only.

**Keywords:** critical thinking, analogical argument, verb valence, generative syntax, traditional syntax

### Potency of critical thinking as a rational and systematical process

In language philosophy, the problem of thinking has been seen as linked to the linguistic and socialization process, or put differently, there is an intermediate cooperation between the logical intelligence, the linguistic intelligence, and the interpersonal intelligence. These three processes condition one another as chain links, whose interaction is a three-sided cooperation, the origin of which remains communication. Communication, since its primitive shape, has served as the basis and an impetus, as the means by which both, the man and the being have managed to project themselves since genesis through existential communication, to codify the inside and outside world through a non-linguistic communication, and furthermore, to the extent

that abstraction level reaches the highest level, that of a linguistic communication. Thinking linguistically and expressing through the linguistic intelligence implies that the stage of human development is a highly developed stage.

Based on this philosophical view, and why not, on a psychological tendency as well, the process of thinking is not only a rapport by which the general laws which can feed logics, reason, arguments are understood, but it is also required and it also means a model where the interaction of the genetic factor and the way how this intelligence 'is bombarded' by other external factors, is of paramount importance. In this aspect, not only mental skills which we are born with matter, but also the way we use and develop these skills. This rapport would be meant and expressed very well within an as much productive pedagogy as possible, where the stimulating factor brings a more effective and comprehensive effect, hence the thinking process can be a process, where not only the competence should be at maximum level, but performance should mean the same. Hence, "*the need to have in view that thinking is doing and not just saying, so it is an active process, not a passive process.*" (AEDP, 1998: 11).

Thinking critically is more productive than passively accepting, this way of thinking enables you to distinguish, to understand the basic concepts of reasons, induction, the argument, conclusions; it makes you be more rational in assessment and argumentation, since it is not enough just to understand, to recognize, but to appreciate, do the synthesis and analysis of various problems.

Aiming at critical thinking and in order to obtain such a treatise, we are not centered towards teaching for the development of critical thinking, but on the basis of the latter, we have aimed at obtaining an essay of comparative character on the potency of critical thinking in the linguistic aspect.

#### **A comparative venture on the valence of verbs**

In the field of Albanian language there are many untreated problems which can be viewed in a new light, even untreated before, especially as regards Albanian linguistic problems whose known trend and main direction have been the traditional trend and direction. The main purpose of this paper is to pose some theoretical aspects of Albanian syntax, which, the latter, has evolved into traditional grammar, based on the theoretical model of generative grammar. We are putting our efforts on the use of analogical induction as a method of critical thinking through which we aim at bringing different arguments by using the analogy of traditional and generativist trend. The main topic of this paper is the concept of valence considered in a linguistic perspective. The issue of the valence of words is an issue that can be discussed more broadly on as regards some of its main aspects, already discussed in the theoretical framework of generative grammar. Considered in a generativist perspective and with a view to achieving a comparative approach to the concepts of traditional grammar, we will focus in particular on the valence of verbs, to better understand where these two theories meet and split regarding this aspect.

First, we will clarify the concept of "*valence*" which was introduced in linguistics in 1959 by Tesnière, as a metaphor taken from chemistry (G. Graf, 2003: 62). Apparently, the concept of valence, taken by a natural science, would expand in linguistics as a need to meet specific meanings relating to aspects of language, thus, a terminological element taken from the technical vocabulary of chemistry becomes a complement to express "*linguistic meanings*". In different contexts, some verbs require complements which do nothing but just "*fill in*" the valence of these verbs, which clarify them both, structurally and semantically and at the same time, they become an inseparable part of them. These elements which appear to us as mandatory or as inseparable have different names, such as "*actants*", "*nuclear*" or even "*arguments*" (the latter is the term we

choose to use), (G. Graf, 2003: 62 -63). While making phrases, except for the arguments which appear as mandatory complements, in regard to verbs there are other optional elements, whose use, or lack of use does not structurally or semantically disable the phrase. These elements are called "*modifiers*" or "*adjuncts*". If we refer to this aspect, we could perhaps draw two parallel lines between the traditional and the generativist grammar concepts in order to make the comparison and reasoning of the main problems related to this issue more complete.

In traditional grammar, sentences except for the main parts, respectively, the subject and the predicate, mostly have other parts, known as second parts. These emerge as complements to the main parts; they define them even further, and are related to them semantically and structurally. So, the second parts in traditional grammar (referring always to the Albanian language grammar) are the cause that thought expressed in sentences is more defined, explicated into details, and often more complete. According to this traditional conception, the second parts are named as such, not because they express second-hand data, hence, unimportant data, but because they are dependant on the main parts and serve to further supplement or clarify their meaning. We realize that in this respect this traditional conception is in line with the generativist conception, but partially though, since "*Albanian Grammar II*" textually states that second parts may not be necessary; the sentence would still make sense without them. (Academy of Sciences of Albania, 2002: 203-204).

For example:

Birds played with each-other for awhile  $\rightarrow$  Birds played with each-other.

One aspect worth mentioning here is the fact that often the second parts express an important element of the statement, which may be as much necessary as the main parts, as in the following interrogative sentence:

**When** did you arrive, Petrit? Did you arrive **the day before**, Petrit?  $\rightarrow$  **When** did you arrive, Petrit? ... are you here, Petrit?

The object is likewise conceived in traditional grammar, respectively, a second part, but very often, of mandatory use.

For example:

While reading, he **nodded**. While reading, he shook... (If the second part "*head*" is removed, the sentence appears to be in a state of temporary disuse or suspension as regards semantics, and it is incomplete as regards structure.)

In this regard, if we compare the traditional view to the main and the second parts in relation to the generativist view of verb valence that brings up such clarified above concepts as "*arguments*" and "*adjuncts*", we immediately realize that perhaps roughly speaking, they may seem like the same thing, but in fact compliance in this regard appears to be partial. The above given sentence will be treated in a generativist aspect, such as the following:

While reading, he nodded.

Here, the argument of the verb "nod" is the word "head" and it can appear as follows:

He **nodded**  $\rightarrow$  He shook his **legs**. (a one-valence verb)

Agron **nodded**. He shook his **legs** (a two-valence verb)

As for the elements which are not necessary or the adjuncts that can be added or removed, it appears that the phrase would take this form:

Agron **nodded**  $\rightarrow$  **ceaselessly, fast** etc.

To further illustrate the generativist concept, we give the following example:

Agron **read** the booklet eagerly.

**Agron read** the brochure.

Who read it?—→ What did he read?

"Agron" and "booklet" are arguments; they are units which complement the relationship expressed by the verb, and "eagerly" is an adjunct because it specifies an aspect of this relationship, that is, the way, this process works. In a traditional concept, the second part appears to be mandatory, that is:

Agron **read** the brochure. Agron **read** ... (incomplete sentence)

We are elaborating the concept of valences of verbs even further. Based on valence the verbs can take, that is, based on the arguments accompanying them, according to the generativist conception they appear split up into four groups:

1. zero-valence verbs;
2. one-valence verbs;
3. two-valence verbs;
4. three-valence verbs (F. Koleci, G. Turano, 2011: 32-33).

Zero-valence verbs are not accompanied by any arguments, they are verbs which we have classified as impersonal verbs as regards the traditional grammar, verbs that mark atmospheric phenomena, for example: it lightens, it fulminates, and it drizzles.

Comparing impersonal verbs with the concept of zero-valence though, this, in accordance with traditional grammar, we notice that they are not in full accordance for several reasons: their classification criteria are different, and the verb classes according to traditional grammar do not coincide with those determined by valence.

Hence, impersonal verbs according to traditional grammar are as follows:

Some verbs or verbal expressions that mark atmospheric phenomena, such as it lightens, it fulminates, it drizzles, it's chilly, it's warm, etc., (Academy of Sciences in Albania, 2002: 265).

Hereby, we understand that the concept of impersonal verbs and zero-valence verbs are in accordance regarding this aspect.

Parts of the group of impersonal verbs are also the verbs of modal value, such as *should* and *would* which appear as one-valence verbs and not as zero-valence verbs, for example: It **should** take some work to do this. Now I **would** need some work tools.

These arguments suggest that the class of impersonal verbs and zero-valence are not fully consistent.

A comparison will also be made between **one-valence verbs** and **two-valence verbs** to the transitive and intransitive verbs which are classified as transitive and intransitive verbs in the traditional grammar.

Thereby, **transitive verbs** are those verbs which mark actions that do not abide with someone who performs the action, but pass on a person or thing being a direct object as far as the part of sentence is concerned.

He **flipped** the diary.

He **opened** the door carefully.

As far as valence is concerned, the one-valence verbs are associated only with an argument, which as known, can be a noun or a nominative group, such as the following verbs: **sleep, nap, walk, die, it meows, it neighs** etc.

The cat **meows**.

Miri **sleeps**.

If we take the above cases into consideration, hereupon “He **flipped** the diary”, (seen in this context), the verb **flipped** turns out to be a transitive and an one-valence verb, hence they are in accordance as regards this context, but the verb **flipped** can also be a two-valence verb, as in

the following example:

He **flipped** the diary. Mira **flipped** the diary.

We will also compare the two-valence verbs to the **intransitive** verbs to see whether or not they completely agree.

Intransitive verbs (intransitive) are those verbs that mark actions that abide with someone who performs the action.

He walked carefully, not turning his head back.

They sat silent at the seashore.

The two-valence verbs are accompanied by two arguments, for example: *work, read, sing, etc.* This is not to be confused with the case when the sentence appears in two forms:

Agron **tills** the land.

Agron tills.

It should be mentioned here that this phenomenon does not indicate that the object of the verb of this type is an optional element, but this type of verb agrees to two constructions, one with an argument and the other with an argument.

There is a discrepancy with the verb sleep which is considered as an intransitive verb, but it is also used followed by a direct object. For example, in Albanian grammar you could find such cases: In the large room of the inn the back to back bales seemed as if **sleeping** the heavy **sleep** at night.

So in this case we are dealing with an intransitive verb, but we see that it is accompanied by a direct object; therefore they are considered as transitive as regards traditional grammar, despite not being semantically as such.

It was mentioned above that the verb **sleep** turned out to be a zero-valence verb as regards the generativist concept, thus being a transitive verb. The case in question shows a discrepancy between these concepts, that is, the verb **sleep** is considered as an intransitive verb in traditional grammar because the action abides with the one performing that action. But we also see that there is not a drawn line between transitive and intransitive verbs. Being transitive or intransitive is defined by its lexical meaning depending on the context it is used. The conclusion to draw here is that even the intransitive verbs and two-valence verbs can not be equated, so in this regard, there is a partial compliance between traditional and generativist. In addition, it should be noted, that in traditional grammar there is not such a class as that which corresponds with three-valence verbs. We should mention that the latter are considered more as intransitive verbs according to the traditional conception.

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## CRITICAL THINKING ISSUES IN DESIGNING OF ALBANIAN LANGUAGE TEXTBOOKS

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### Abstract

The new curriculum in pre - university education is oriented towards a new approach, that is based on competences. One of the main elements of this approach remains the textbook designing as an important part of the implementation of the learning process at school.

According to UNESCO, textbooks should encourage every element of the learning process and their role is not limited only to the learning of factual knowledge, like quality that actively encourages students to the process of building knowledge, skills and attitudes necessary to be help them become responsible citizens in the community.

To accomplish this, it is important that the implementation of critical thinking techniques and strategies should have the primary role for texts designing.

Our paper aims to highlight some elements related to the implementation of critical thinking in curriculum and Albanian language textbooks in grades 6-9 designing in pre-university education, mainly in the construction of questions, tasks and exercises for pupils envisaged in check-up tasks.

Questions regarding this issue are:

-Are the texts conceptualized in such a way that enhance students' abilities to think critically?

- Are students involved in critical reflection of what is learned?

-Do the text create opportunities for teaching to implement practical techniques that promote critical thinking?

**Keywords:** curriculum, the text of the Albanian language, conception, critical thinking, pedagogical tasks.

The new curriculum in university education aims towards a new approach, which is based on competences. One of the key elements of this approach remains the drafting of textbooks, as an important part for the realization of the learning process in school.

According to UNESCO, textbooks should promote every element of the learning process and their role should not be restricted only to the learning of factual knowledge, as a quality that encourages the student actively toward the process of knowledge acquisition, skills and attitudes necessary in becoming a responsible citizen in the community where he lives.

To achieve this, it is important that in the drafting of texts, the application of techniques and strategies for critical thinking should have the primary role.

Our paper aims to focus on certain elements related to implementation issues of critical thinking in curriculum and the Albanian language textbooks in grades 6-9 in primary education, mainly in questions building, tasks and exercises for students provided in the textbooks.

Questions that arise regarding this issue are :

-Are Texts conceived in such a way that enhance students' abilities to think critically?

- Are students involved in the critical reflection of what they learn?
- Does the text allow that teaching to be built on practical techniques that encourage critical thinking?

In the definitions of the curriculum framework of our pre- university system , the curriculum , among other things , determines what the students need to know and what they should be able to make , which values and attitudes should be cultivated , how they should be enabled for coexistence and tolerance , how they can actively contribute to the social and personal well being etc .

For our school is very important to determine on what basis will be selected the content of what should be taught , how will be selected the thing that is important from the world of the information , and also how it will be realized the structuring of knowledge , skills , attitudes and values for a particular purpose . The ability to distinguish knowledge necessary for school, requires constantly critical attitude towards these knowledge (IZHA,2014).

It should be kept into consideration the fact that, when the word " critical" paired with the word " thinker " , what must be understood , is someone who is able to discern and judge , to reason and to reflect on the meaning of assertions about what should be believed or made (AEDP, 1998).

For achieving the curriculum competencies, each area of learning or subject has its peculiarities for the realization of the learning outcomes. For this, programs and textbooks , in their design should tend about this approach so that the basic competences to be acquired in the proper quality .

Albanian language program in compulsory education, grade 6-9, determines the areas of use and fields of changes associated with the studying of this subject

Thus, in the areas of use can be mentioned elements such as *active learners, learning to learn, cooperation , coherence , the value in learning and change between them* etc., whereas areas of changes related to the changes that texts have undergone and the language learning such as: *switching from non- contextual to contextual teaching, from passive to active learning, from disconnected to cooperative teaching , teaching through questions , etc.*, the reflection of all these elements applies to texts.

Teaching methodologies that require Albanian language textbooks, today apply the principles of effective teaching that attempt to provide competences to lifelong learning. To achieve this, the texts require teachers to use methods and techniques that relate to the development of critical thinking, achieving the required learning standards. Using these techniques is encouraged in planning that should be made to the learning stages of its implementation. So there may be mentioned methods such as hurricane opinion , the discussion network , secret hand , think / work in pairs / exchange with others , INSERT ; concepts table , leaded reading, graphic organizer , Venn diagram , , clusters , free writing , essay etc .

Our attention is mainly focused on teaching apparatus of the Albanian language textbooks from grades 6-9 , although it is not the only element which can be investigated for critical thinking . The main objective has been the implementation of all these above mentioned elements by keeping in mind the fact that what is the proposed method work of the text? If the recommended methods develop the ability for independent study ? Is it possible to detail knowledge given to methods for using the text ? etc.

Especially in times of literary knowledge , at their end , in the form of assignments are found sections such as: meaning , interpretation , language , or reflection semantic , linguistic and stylistic reflection , task , etc. Most of these sections are constructed on the basis of



questions . From class to class sections include level of questions that come by being filled from the level of knowing and understanding towards higher levels . The defect that is observed in some cases has to do with the level of questions , which does not include all levels of Blum taxonomy, especially those of high-level, but they focus on the question of the low level of cognitive character , reproductive or even executive.

For example; Section" Meaning" :

- What are the children looking for ?
- What did they discover in the cave ?
- How was the pillar and what was written in it?
- What did the children find children in the big great case ? ( Albanian language 6 )

All inquiries to come in the understanding of the material belonging to the low level of taxonomy , and as a result students' responses are expected to be merely reproductive, where the student mechanically will reproduce what he has read from the literature .

Such cases are found in the texts of higher classes , which in fact should be aimed not only basic and intermediate level , but also high level , for example

- Who narrates in this event ?
- What is the environment ?
- What is the time when the action happens ? etc. ( Albanian Language 8 )

or :

- Who are the characters
- What is the thing that disturbs more the guys in the passage ?
- What do they conceal from the parents ?
- Do you like to make visits with parents ? etc. ( Albanian language 9 ) .

So as we can easily ascertain the greatest amount of the questions belong to first levels by creating a problem at this point even in the comprehensive aspect, as the student of the high level does not find himself in these sections. On the other hand most of the questions are converging questions, with a response that the student finds in the relevant text , without thinking too much in finding it , when in fact they should instead find more questions that require a greater mental commitment by the students to come in well thought responses, responses that demand well organized and argumentative thought , an answer that should be logical and cause discussion and debate .

Concerning the basic topics directly related to the language system knowledge at the first sight it seems that the number of the exercises and assignments provided by the text is satisfactory enough. But if we submit the given material to a kind of classification based on the level of difficulty we will notice that they are appropriate to the same level and obviously they are not due to the same target reader.

E.g

Regarding to the subject positive and negative sentences there are four exercises included in Albanian language 6 text

*Exercise 1.* Discern the negative sentences in the following text. Underline in red the negative particles and blue the component part.

*Exercise 2.* Referring to the 1st exercise find out and contrast the sentences possessing a complete negative meaning to those the negation is composed by means of a single negative component.

*Exercise 3.* Distinguish and compare the sentences reflecting simple or reinforced negation.

*Exercise 4.* Give emphasis on the different structural types of the sentences. Rewrite the following sentences in negative.

On the other hand there is another very important fact not to be excluded, i.e. the presence of many effective elements that instigate the critical and creative thinking during the teaching process. These methods have been for a long period of time the scope and focus of our research. This is why one of our fundamental concerns is related to the inclusion and encouragement of different critical thinking methods and techniques through the questions and tasks which get oriented the whole teaching methodology. The way these methods are completely harmonically interlaced in the text give incentive to a teaching process in need of proper applications of interacting effective methods and procedures in search of continuous development of critical thinking abilities and skills. The fact that these methods are fully applied in teaching process is already accepted and the lack or exclusion of these procedures would bring to a state of passiveness and lack of interest from the part of the students.

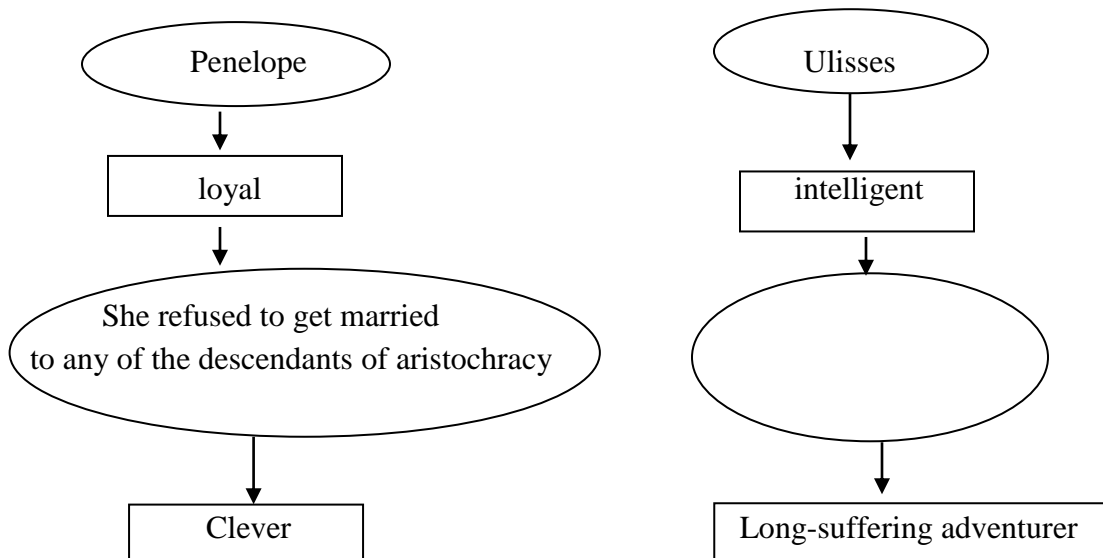
During our research we also observed that the way how the questions have been directed to the students as well as their variety and large assortment would obviously integrate the application of specific methods of which we can mention: the Ven diagram, the graphic organizer, the discussion net, essay, Keywords etc.

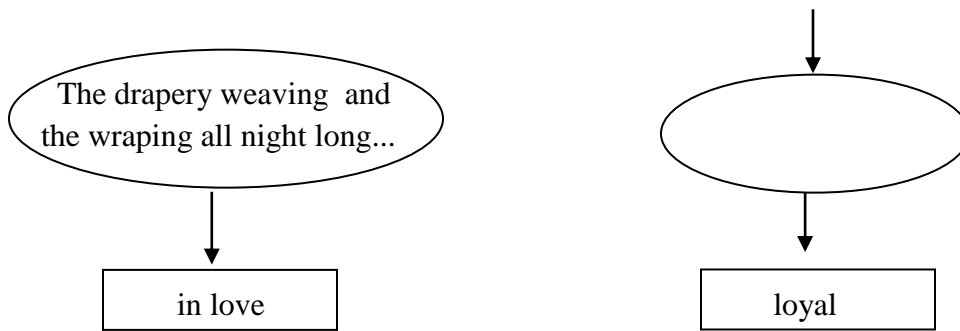
For example in the text “Arnaut Osmani”, Albanian Language 8 (Albas) the dy or three part diary can be applied for the given assignment *Identify and explain the figurative speech use and the phraseological units*

Literary figure	Type	My comment

Phraseological unit	My comment

**Graphic organizer.** Character’s qualities. Albanian Language 8, Albas, “The return of Ulisses”.





**The discussion net** Albanian language 7 , Albas, “ A letter to my father”

Yes  Do you think the adults have the right to control your own feelings, thoughts and decisions  No

It is fair because \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

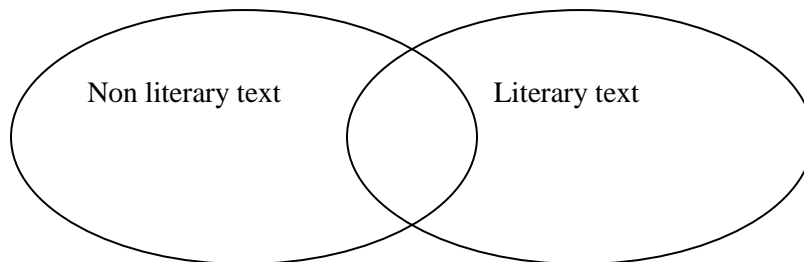
It is not fair because \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**The Ven diagram.** Albanian language 9 , Albas, The text classification based on their scope and objectives



Focusing on the different fields and competences determined in the Albanian language curricula it is clearly evident that in each of them the tasks and assignments provided, give to the students the proper opportunities for a fully application and testing of knowledge regarding the critical thinking procedures. Due to the exact use and application of critical and creative thinking techniques and strategies the students’ and teachers’ activities have continuously been interrelated and integrated for the sake of a better exploitation of linguistic competences.

Thus the critical reading of the texts might be fully applied by means of a series of strategies such as finding out the arguments to achieve the conclusion, give arguments and develop the ideas, exploring the strong and weak arguments provided, bringing into light new convincing facts and arguments etc. using techniques such as INSERT, DRTA/DLTA and so on.

In order to develop the students’ communicative skills the teacher’s basic aim is to attract their attention especially during the evocation stage by means of specific techniques such as brain storming, cluster etc. most of which presented as already half completed in the text.

From the critical thinking perspectives, writing serves as one of the most useful tools in fulfilling students’ needs and requirements giving them a second opportunity to enhance their skills and express their ideas clearly and correctly. Writing as a competence and skill can be acquired by means of specific methods such as: quintain, two or three part diary, free writing, and especially essay given in most of the cases as a homework assignment. All the above mention techniques can be fully applied in order to develop the listening and speaking skill as well because from the competence aquirement point of view the Albanian language text should be considered as a integral unity.

To conclude we would say that the creative and critical thinking procedures used in Albanian language teaching process give to the students an immense opportunity to test and exploit different comprehensive abilities. Pointing out the very important role and value this subject plays in function of developing the general linguistic competence in other subject’ teaching process as well we would consider it as fondamental in the genaral intellectual, social and emotional progress of the students. On the other hand this subject should be considered as a key componenet in educational curricula. This is why the texts and programs should be of a great help in the function of a better understanding regarding the teaching critical and creative methods

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## THE ESSAY, AN AUTHENTIC MATERIAL THAT ENHANCES THE LEVEL OF AN INTERACTIVE TEACHING AND LEARNING

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### **Abstract**

As much as societies struggle with temporary status to a market economy and democratic social order, a central question that educators have to do is: "How can we train students for a democratic life and economic productivity in the XXI century." The central task is to teach students how to learn in an effective manner and how to think critically. Learning and critical thinking expand when students have the opportunity to apply new learning in real tasks. Teaching for critical thinking is not a simple task, or a task that can be performed in a certain class and then forgotten. Spoken language is inseparable from the written one, so the development of one of them is also the development of the other one. So they enrich each other and forms of communication. Writing is one of the key skills that can be learned, but cannot be taught. Writing is very complex and requires a fair grasp of achieving more sophisticated human mind, language. Given the current practices of Albanian schools, it is very important to recognize that the student essay carries over from one task, through which he sought to reproduce facts and phenomena, in writing, through which students express personal opinions, reflect and estimate about the subject they write. The essay encourages students not only to think differently, but also to promote perspective thinking to the key problem, gathering many ideas and relate them to each other.

**Keywords:** critical thought, essay, information, multicultural education, faultfinding, logical training, intellectual, linguistic

As much as societies struggle with temporary status to a market economy and democratic social order, a central question that educators have to do is: "*How can we train students for a democratic life and economic productivity in the XXI century.*" The content of learning is important, but perhaps foremost in learning. Central task is to teach students how to learn in an effective manner and to think critically. Students should be able to reveal new information in order to review it in a meaningful and critical way. Mechanical and reproductive learning gets soften when students are helped to think themselves about things, facts and analyze them, draw conclusions out of the case, which should be illustrated through brainstorming, where not only the horizon is clear, but also their interpretative, generalizing, independence in judgment etc.

Researchers of cognitive psychology, philosophy and multicultural education support richer definitions for learning and thinking. Common sides in this research study are:

Fruitful and long learning, which can be applied to new situations, is an issue in which information and ideas that are owned are meaningful. This happens in the best way when students actively participate in learning, enter inside of it, synthesize and produce their own information. (Endersen Aderson, 1985).

Understanding gets expanded when a set of strategies for thinking are used. It is the use of these strategies, meaningful learning experiences that students use to acquire the process of learning (Palinscar and Braun, 1989).

Learning and critical thinking expand when students have the opportunity to apply new learning in real tasks (Resnik (Resnick), 1987).

Learning expands when it is built on previous knowledge and experiences of students, so, students are given opportunities to connect what they know with the new information (Roth (Roth), 1990).

Critical thinking and learning occur when teachers understand and appreciate differences of ideas and experiences. Critical thinking occurs when the mentality “just a question is right” does not exist (Benks (Banks), 1988). The question with multiple choice is the most flexible type of objective question, enabling the evaluation of high-level skills of thinking.

Teaching for critical thinking is not a simple task, nor a task that can be performed in a certain class and then be forgotten. There is not a final recap of the steps that should be followed to lead to critical thinking. However, there are some rules for conditions in the classroom and students’ reasoning, which promote the development of critical thinkers. *Conditions described below for the class are essential to promote critical thinking:*

- Promote time and opportunity to disclose experiences of critical thinking.
- Create the possibility of thinking.
- Considerate different ideas and opinions.
- Incite the active involvement of students in the learning process.
- Persuade the ability of students to make critical judgments.
- Evaluate critical thinking.

To be included in the effective critical thinking students should:

Gain self-confidence and reasoning for the usefulness of their opinions (judgments) and ideas.

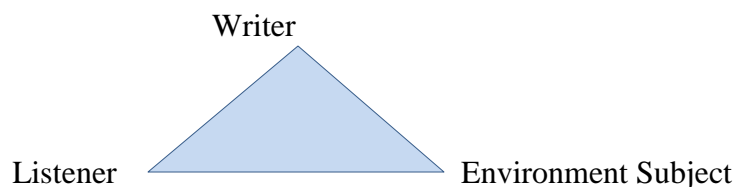
- Actively involve in the learning process.
- Listen to many opinions.
- Be prepared simultaneously, to formulate and avoid judgments about others.

It is easy to criticize everything and everyone, but it is more humanistic and more professional to guide out efforts and help to maintain and improve the skills that rely on creative thinking and creative skills as universal for any student. Writing also is one of the key skills that can be taught, but cannot be given a lesson. Writing is very complex and requires a fair grasp of achieving more sophisticated human mind and language. Writing is related with our being, who and what we are, what we believe, feel and know, how do the others understand and how they relate with us.

There are some basic concepts that are necessary in order to use writing as an effective tool of thinking.

Firstly, it is essential to understand what learning is. James Moffett talks about writing, such as:

“Someone, talking to someone about something.” In this sense of writing, man who writes has chosen something about a listener environment, which is interested in what the author has to say. Mofit (1968) gives us a scheme, where the main ingredients are drawn into his conception of writing.



So, writing is a process and its steps are so closely connected to each other, that each of them includes the other ones. In each of them the attention is drawn to the process as a whole.

Essay is also like this, difficult to be determined. Basically it is “try” or “attempt” in order to make something. In 16<sup>th</sup> and 17<sup>th</sup> centuries it was used in this sense, for articles that discuss general issues from a limited perspective and often personal. In these writings an exhaustive treatment was not pretended. But this label can be useful because it allows us to include in it a large number of things as a unified whole.

And so, the essay, as a technique that is involved in the large group of techniques and strategies is conceived as an individual work of students. The opportunities that it provides to involve the students in the process of learning, the authentic material in order to know the learning degree and reflection of students during one hour, but also beyond, makes it an activity that increases the level of interactive teaching and learning. It is an opportunity, which builds new strategies, seen as a reflection of learning.

The essay effects:

- In reflective learning of students.
- Gives important information about their education.
- Provides a real evaluation.

Given the current practices of Albanian school is very important to recognize that the student essay carries over from one task, through which students are sought to reproduce facts and phenomena in writing, through which students express personal opinions, reflect, and estimate the subject they are writing about. In this way, the differentiation between a topic or issue, reactions or new insights to their worldview is clearly distinguished. The essay encourages students not only to think differently, but also thinking toward the perspective of key problem, gathering many ideas and linking them with each other. In this way, students create in their minds many relations and schemes, arise in certain conclusions.

Simultaneously, this written work makes the student to think deeply about what is required by mobilizing all his mental and intellectual capacity, to be displayed well in relation to themselves and others.

Essay, is a summary paper of a particular topic, an authentic document, which should not be seen as an artistic creation, but as a philosophical value, linguistic, artistic work etc. Each individual sees himself and works to perfect with elements in both content and structure, becoming more attractive.

In this kind of activity the student ranks facts, knowledge, data, assessments and suggestions same as in the library’s files, which, sorted according to a logical time to inform about what the student knows and not, about the problem he is writing for. So, essay provides authentic material about what we have recorded in our minds, a material which has not been lost in time, it is read and reread, to proceed further, to read and beyond the words, finds causes, occurrence, operating and functioning in logical, intellectual, linguistic formation of the individual displayed through the essay.

In the essays written by students it is noted that they very often use interrogative sentences. In the moment they ask, they get encouraged to formulate the answer too. So, this becomes a research activity. This activity suggests that students are not just receivers of the information, but also researchers and processors. It keeps alive thinking about the problem, which the student, even then, still pays attention by inscribing more processed and richer essays. In this works are noted differences between one student and another. They break from the traditional similarity of their written works.

As a written work, through which student activates more communicative skills, essay gives a pretty significant view of linguistic formation. So, it informs about the reasoning. The reasoning of through his written work, is not the work of a day or of a school topic, it is a chain of an everyday work, of new information, which according to the capacity of each student returns to way of thinking and judging phenomena and events of daily life, behavior and values. Written papers show how rich and argumentative is written language of the students.

Essay, also informs about the use of structural language. What does orient us to the level of thinking and use of structural language is the sentence and the way students have written it. From year to year the structure of the sentences changes from the simple one to enhanced sentences. As students grow up we see efforts to make the language richer through the use of its copula. Observing some essays we would conclude:

- Short essays, but clear.
- Long essays and ideas.
- Long essays with many repetitions.
- Short essays and clueless.

It is the duty of the teacher to help the student to bring his work to a satisfactory level. So, essay must pass at key stages:

- Preparation for the essay.
- Draft preparation (first copy).
- Revision (based on estimates).
- Publication (writing and presenting the final version).

As such, it becomes an activity full of teaching values and affects: The enrichment and usage of a wide vocabulary of students, which is achieved in a quite new way by enriching and obtaining through the settled context and a well-defined thematic, through which you should activate anything you know about it. The vocabulary is activated through logical understandings and crystal-clear linguistic structures. Furthermore, the essay affects in learning topics, as a new aptitude of student teaching. By writing about a particular topic, the activation of several intelligences of student’s intellect takes place. Within this frame students become reflective, having a better idea on what a student can do, including the concept of working with the essay. Through a particular topic, students vivify, enrich and use the dictionary of a particular thematic field and of course, in higher level of education synonyms of language are present as well.

Another important component of written assignments of students is also **spelling**. Contrary to essays which have a time limitation, essays which provide the writer enough time, have more deliberation on spelling and punctuation. Even more it has been seen now that essay correction is made by the student itself, of course with the last consent of the teacher.

#### Essay Questions

Essay questions are mostly valid for measuring the expression of processes as well as the ability of high level thinking and brainstorming of analysis, synthesis and evaluation. Also, it has been called as a free answer question and asks the student to produce a written answer as a paragraph. There can be given specific instructions regarding the form and content of the answer. This is a better structure and makes the evaluation easier, but it does not give an account of measure for the ability of students in the synthesis and rating of information. That is the reason why, during the essay writing we should have in regard:

- To test students thinking ability at implementation level or higher.



- To use appropriate interrogative words for the thinking ability level that will be evaluated.
- To avoid the use of unclear leading words, such as “discuss”.

Traditionally, written assignments of students, such as essays, are usually seen as objects of literature and language. In the last decade, they have been used in other subjects as well. In the new curriculum of high school, there are higher possibilities for school and teachers in terms of having students practice essay writing, in support of relative curriculum according to grades; through specific thematic, through homework and within the class hours, in application of writing objectives.

In 10<sup>th</sup> grade such definition is given: “Argumentative text is that kind of text, in which several ideas and/or thesis regarding different issues are treated” All argumentative texts have a common aim: To persuade the receiver for the validity of the treated thesis.

In 11<sup>th</sup> grade students are presented the structure, scheme of the text, different types of arguments (objective/subjective arguments), data, citations as well as steps to be followed for writing an argumentative text.

In 12<sup>th</sup> grade the theory information taken by the student, is a continuity of the information previously taken. There is a presentation of rules for the selection of the argumentative topic, methods of essay organization and rules for writing a good argumentative essay. Students get known with different types of essays, with models of analysis and distinction of argumentative paragraphs, with paragraph itself, especially with the ones in which the cause-effect relationship takes priority, distinction of structure and it is also aimed writing an argumentative essay with grounds of given arguments. Essay, usually takes place on the last exercise of the State Matura Exam (Matura Shtetërore). It possesses a considerable potential in the result a university candidate could achieve. In the best case, when the written essay takes a rating of 8 points, it means that only by fulfilling one task from the whole exam, the student has assured 16% of the maximum points of the must graduation exam “Albanian Language and Literature”

#### Summary

Based on what’s so over, the first essay as a process, not as a product:

Gives the students the opportunity to express themselves as they want and think, gives the teacher the opportunity to **investigate** in written assignments of students.

Improves teaching quality, looks for use of new efficient and preceding techniques.

Reinforces and systemizes educative activities which have a need for retake and reflective standing from students.

Avoids the tendency of teacher-centered teaching.

Encourages independent activity of the student.

Enables the conduction of many ideas and opinions of students on the same topic.

Improves the writing quality of students.

Stimulates the students do more research on the problem they will write the essay about.

Gives the students more time to work on; gives the possibility of an authentic evaluation of the student.

Develops critical thinking.

Specialists of education and teachers should put an emphasis on the importance of being involved in writing an essay as a primary evaluation, not only for achieving a success in the State Matura Exam, but also for having a welfare of the educational process in general. It suggests

for the student to make self-practice and be confident in itself that, with small, but systematic steps by writing on a daily basis and with persistence, he/she will achieve the aspired results.

**Subsidiary:** A group of excerpts taken from essays written by students, which illustrate previously-written ideas of this text.

Topic: Originality of the Albanian Epos

Our history could not be imagined with the presence of epos. It has been present and it had been involved in the economic and spiritual prism of Albanian's lives. Epos's origin is Albanian because we know from our history that the Slavic tribes piled everywhere into Illyrian inhabited lands. Another testimony of the antiquity of our heroic epos, are also some **toponymys** (toponime) which correspond to it. Of a great importance to write, is Jutbina, which is the center of Kreshniks. According to today's geographical conditions, Jutbina is noted as a small city in Croatia, but compared to the ancient it shows that once upon a time that place was inhabited by Illyrians/Albanians, which came to shrink down to today's borders. In epos there are also a lot of information on Late Medieval Times, which testimony for his vivid living. (A.M.)

The songs of Epos are cycles talking about myths and legends, for Albanian national heroes, and they are counted through the most important artistic piles of spiritual culture of Albanians. They give us a wider specter of the way of popular linguistic expression with a diversity and strictness with show evidence of a fine artistic taste and at the same time, ancient tradition of art of refined expression. (E.M.)

Extraordinary people in extraordinary situations. When we say this sentence, we might think of Epos of Kreshniks, a chain of songs which reflect alpine nature in which you can find strange characters, real rises of Albanian mountains. .... Through the elements that take the Albanian Heroic Epos to a faraway historic period, we have:

- a. Mythic wear of characters.
- b. Cohabitation with mythic beings.
- c. Way and place of living.
- d. War tools.
- e. Way of making war.
- f. Extraordinary moral and physical attributes.
- g. Way of marriage.
- h. Elevation of mother's figure and lack of father's figure.
- i. Transformation, death and revival.

This time according to historical data could lie mostly up until the appearance of first military formations. Put on other words, it means that first time of Albanian Epos coincides with the first military formations, which historically more or less coincide with the antique period. (A.P.)

Albanians are an autochthonous nation in the Balkans, having lived there for thousands of years with lots of traditions. Just like the French people with “Shanson de Roland” or Germans with “Nibelungen” or Spanish with “Songs for Sidi”, our nation as well is proudly represented with “Epos of Kreshniks”.

..... There is no way other than feeling the epic and heroic songs with the deeds of Muji and Halili, of those fairies, sylphs weeding-goers, Gjergj Elez Alia and the Kostandin. There is no way other than being guzzled from the virgin beauty of our mountains and valleys, of rocks and waterfalls, of all those marvelous gorges. Because there, the Kreshnik's song was very smoothly making company to the throaty and raised sound of the lute, the echo bubbling of the water stream, and at the end, the mythic assemblage of pagan Gods. They were all there, in the

songs of the ancient lute-player, right there in “Bjeshket e Nalta”. Ceto Bashe Muja with the other brave-men of Jutbina, Hajkuna and her 30 girls of Mountains, Brother Halili and Zuk Bajraktari, The King and the Queen, as well as the 4-armed Sokols with their yataghan and swards. (Xh.B.)

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## THE USE OF "TABOO LANGUAGE" AND MARGIN DIALECT IN THE SLOGANS OF THE "INDIGNANTS" MOVEMENT IN GREECE: A CRITICAL READING

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### Abstract

This paper presents the uses and functions of language, which reflect and represent the reactions of the so-called "movement of indignant" citizens that appeared in Greece after mid-May 2011. Specifically, under study are slogans against political corruption, economic recession and the implementation of the "Memorandum of Understanding" and the "Medium- Term Program", emerging through this movement.

In order to capture the linguistic representations of both wrath and indignation of the citizens, we gathered 212 textual fragments, 2.136 words in total. The slogans were derived from both conventional media and alternative sources of information, as well as social media. The research approach was based on the principles of Critical Discourse Analysis.

As observed, the use of taboo language is characteristic, with elements that typically fall in the level of vulgar style. We can also identify elements of folk style, with phrases and words from the so-called "slang" or margin dialect. The use of these linguistic codes reveals a jeering and insulting taunting mood, on the part of the language generators/ carriers.

The effects of hard economic measures imposed, in conjunction with the recession, are worded via texts of slogans, in a way, not only imaginative, but also dramatic. Dramatization in realization becomes clear due to the use of intense and emotionally charged words and phrases.

Moreover, it appears that in the slogans of the "Square movement", the use of elements of the so-called private language is extensive. The element of emotion is captured intensively in the aforementioned language, given the interface between language and emotion.

As we finally assume, the use of degraded social varieties and that of "taboo language", as well as the various deviations from the standard and official language, act as a direct or indirect promise of participatory and collaborative relationships in a more cooperative society, which is one of the visions and the key demands of the "Indignants".

**Key words:** critical analysis, slogans, taboo language, private language

### Introduction. The linguistic, cultural and social-political interest of the "Indignants" movement

The linguistic structures and the functions of the language in the various slogans which prevailed during the protests of the "Indignants" movement in Greece after the adjustment of MOC<sup>3</sup>, are being during the last years in linguistic level.

The "Indignants" movement is being described as a popular movement which realizes demonstrations against the economic crisis and corruption in Greece since May 2011 in response to the Spanish "Indignants" movement-"Platforma Democracia Real Ya!" of May

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<sup>3</sup>MOC was signed between the Greek government, the International Monetary Fund and the European Union, in May 2010. It's an extensive text that describes the conditions under which Greece may receive at regular intervals loan doses from an approved total amount of 10 billion euros to repay previous loan installments. It also has to do with measure-taking related to cut wages and pensions and introduction of new taxes in order to collect money. Available at the website: <http://www.tanea.gr>. Accessed March 8 2010.

15<sup>th</sup> of the same year. The Spanish first wrote about the Greeks the following slogan: “Shhh! The Greeks will wake up!” on May 25<sup>th</sup>, 2011. A basic and common characteristic of the demonstrations is their peaceful character and the absence of party disunion. During the demonstrations Informal People’s Assembly is carried out whose minutes are published on web. Due to the fact that the demonstrations started mainly through facebook, the phenomenon is called “The May of facebook”.

The linguistic study in the field of analysis of the language used in multifarious slogans of the “movement of the square” displays special interest, not only linguistic, but widely cultural and sociopolitical. The present paper which is closely related to a series of related research in this field of science is based on a multitude of recent texts derived from field recording of slogans and banners posted in the space of protest and of material collected from diverse sources, starting from You Tube and rising to TV news.

Among the issues of concern to the research approach are both the selected items of speech (“discourses”) and representations used for the description of the protest and complaints of the public and primary functions of the language that emerge, as are for example the descriptive, the expressive and particularly the one of accusation.

At the level of form the preferences of the verbal depictions and name structures are examined and lexical level the use of words and phrases from the so-called popular language. Finally, at semantic level, the disclosure of the way in which the ideological functions are accomplished, is attempted with the emphasis on the anti-authoritarian and denunciatory function of the speech.

#### **The texts’ “corpus” and its homogeneity**

The analysis of the depiction and fulfillment in the new Greek language of citizens’ complaints and protests who are engaged in the multi-faceted and indefinable “Indignants” movement” focuses on various verbal forms such as verb forms and noun phrases that include noun and adjectives. These structures were detected and cataloged by boundary homogeneous “corpus” of texts.

It’s about “posted” and publicized texts in general, not just in traditional print but in electronic media also and social networks. Particularly, these texts come from the following data pool:

- the Internet and specifically the various blogs update websites.
- social network of facebook.
- audio material gathered from You Tube.
- footage aired on TV news.
- amateur shots as are, for example, the downloads to mobile phones.
- images and texts of the print and electronic media.

Section of the text findings was drawn after research in various areas and observations at the Athenian Syntagma Square and the central squares of other greek cities like Larissa and Ioannina.

Minutely, the gathering and indexing of the burnished documents began at the start of the protests of the “Indignants” movement in May 2011 and lasted until 27 June of the same year. Obviously the data included within the scope of our interest is assessed as naturally and spontaneously produced. Consequently, the “corpus” shall not in any case, constitute product of “elicited” or invented language” (See Sinclair 1991: 4, Deignan 1999a: 178, Deignan 1999 b: 20, Laskaratos 2013).

The access being followed is inductive and is motivated by authorized and genuine data and reaches their scientific analysis. The choice of the specific composition is based on a need to study the structure, the form and the function of language being emitted from different transmitters which usually are not related to a business political or editorial hierarchy. In fact, it is assumed that the designers of speech slogans exist and suffer from the elite's choices.

The research approach is based on fundamental principles of Critical Discourse Analysis according to which the linguistic status occurs almost always pre-prepared, that is, organized and prepared by the dominant ideologies and the wider socio-economic environment (Fairclough 2003). Therefore, the linguistic form does not mechanically reflect the external reality but constitutes, to great extent, the reality itself and our knowledge about it (Georgakopoulou-Goutson 1999: 40, 41).

Moreover, to uncover deeper meanings the analysis of representations is required as they are presented through structural and grammatical structures. The declaration of the signified and the various statements is made with the help of Halliday's Functional Grammar (1998).

### **The phrasing of anger and the consequences of the Memorandum**

The study begins with the assumption that people “victims” of noxious experience of the financial crisis phrase the negative effects of recession and the measures of Memorandum through verbal and noun types. Furthermore, by the view that there is each time the possibility of selection of different linguistic codes from a rich communication repertoire (Kostoula-Makraki 2001:54) a more specific assumption is being put forward about the kind of language used for the representations of the consequences of the crisis. This hypothesis argues that when drafting the slogans of the “Indignants” an over-using of data occurs consciously or unconsciously from the folk language so that the size of the effects of the economic downturn are attributed more clearly and effectively to the affected socio-compact layers. Through “private language argument” (Wittgenstein 1953/1989<sup>4</sup>) recoverable experiences, events and situations are ascribed in a manner familiar to the recipients of such messages but at the same time this manner is representative and eloquent for their instigators themselves.

#### **What is the “slogan” and whom it concerns**

From a variety of interpretations of the word “slogan” in the Dictionary of Common New Greek Language<sup>5</sup>, we distinguish that which defines the meaning as “speech formulated briefly, with emphasis and vividness so as to attract the citizen's attention in political, commercial and other messages and motivate him accordingly”. E.g. “The young wrote slogans on the walls against the invaders”. But there is also a with downward mood interpretation of the world when it comes to “political slogan repeated mechanical without the substance of equivalent concern in the issue”. E.g. “The political discourse in large gatherings is based on slogans rather than on the analysis of social problems”.

Accordingly, the use of slogans or messages which have lost any substances in the political mainly set p constitute the verbal form “chant of slogans”, such as e.g. “The parties instead of chanting slogans should present programs”. The action or the result of “chanting slogans” which is characterized by a reducing mood and declares the inanity and the lack of arguments, constitutes the “chanting slogans”.

If this interpretation is adopted, the slogans of “Indignants” risk outset with desbain as claptrap and messages without serious content. However, the ideological stigma of the word is avoided if, in order to understand the broad sense we consider another interpretation, whereby it

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<sup>4</sup>See the Wittgenstein, 1953/1989.

<sup>5</sup>Institute of Manolis Triantafillides, see p. 1244-1245

is about “a word or very brief expression that has been conventionally accepted as a means of understanding or recognition of persons who usually belong to secret or illegal organizations. “In this case, the indignants garment, arbitrarily of course, in the guise of the illegal or the group which operates underminingly against the established order. In other words we are dealing with slogans that serve as “pre-agreed points of consultation”<sup>6</sup>.”

A third more neutral interpretation maintains that it is merely “a visual or audible signal with which we command or mobilize and motivate someone to do something, e.g. The leader gave the signal of attack.

Focusing on our research work, it is observed that the crisis and its effects listed among others and as an emotional experience, a fact which indicates the need for thorough examination when investigating the various cognitive aspects of emotion in the development of social phenomenon (Enfield and Wierzbicka 2002:7).

The slogans are directed primarily at:

- a) the imposed Memorandum and additionally the imposed “Medium Term Program”<sup>7</sup> and
- b) the vehicles of civil, judicial, police and journalistic power.

### **The findings and the discussion about them**

#### **General information**

In particular, it is found that in the texts of slogans and multi-species posters or banners popular words and phrases are used which we divide into two subcategories. One of them is concerned with verb forms and the other with non forms. Common metaphors and similes are also found, “cliche” phrases, with special interest lying on vulgar words and “taboo” phrases. Furthermore, we find words and phrases from the social dialects and neologisms. The use of “private speech” is systematic. The use of complex and “aristocratic” words referring to the “systematic” or “cultured language”<sup>8</sup> is very rare, if not non-existent, on the contrary. Finally, the treatment of paralinguistic elements on the side of the “Indignants” is characteristic, with dismissive, insulting and derisory gestures (such as protests with open palms towards the House of Greeks) in combination with other token gestures that are distinguished for the element of entertainment (such as protests with empty pots and ladles).

#### **Words and phrases with negative charge**

The lexico-grammatical analysis of slogans yields a lot of information for the use of the so-called “taboo language” (Allan & Burridge 2006). Phrases such as “Let us live, otherwise we ’ll f...” and “cops”, “pigs”, “informers”, dominate many of the more extreme expressions of indignation and protest of the “movement of square”. It’s about words negatively charged in relation to sex, man’s physical needs, etc. On the one hand, it is possible to be argued that in these texts are ribaldry, the impertinence and shamelessness of the author of these texts are revealed. On the other hand, someone may argue that we are only dealing with phenomena of original outspokenness, daring, recklessness or impudence towards the authoritarian enterprising elite.

#### **The inclusion of the anti-authoritarian mood**

Apart from that, it is obvious that we are dealing with linguistic realizations in which what is aimed at is the record in written speech of explicit and implicit antiauthoritarian attitudes

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<sup>6</sup>According to the Antilexicon or Nominal of Modern Greek Language by Theol. Vostanzoglou.

<sup>7</sup>The Medium Term Financial Strategy includes strict measures of fiscal discipline such as the rationalization of wage expenditure, deletions and mergers of bodies and the reduction of subsidies, a wide privatization program, reduction of tax exemptions, tax compliance etc. Source: <http://government.gov.gr> Accessed on 21/06/11

<sup>8</sup>For all details see examples. Annex.

and intentions with latent or overt warnings for revenge or retaliation phenomena on the part of the governed.

Undoubtedly, it concerns a kind of speech that falls to the level of vulgar style, sometimes with folk style and sometimes with words and phrases from the so-called “slang”, the margin dialect or private language. The treatment of these linguistic codes discloses a jeering, insulting and abusing mood on the part of the producers of speech. The purpose is associated with the stigma and cauterization of unpleasant effects of the economic backwardness and the demonstration of persons supposed to be culpable and accountable for negatively changing situations and unpleasant realities. The used structures are interim by majority, while a significant portion of them are intransitive.

### **Claiming of remediation of the “injury”**

Transitional structures are preferred that yield the dynamic claim of commodity, such as work, decent living and rehabilitation of law. The broadcast messages require one power as acceptor which appears as challengingly unjust and cruel against the weak and the poor who claim the redress of the alleged injury that they have been subjected to after circumvention of their rights and the arbitrary removal of their privileges.

Moreover, the angry requirement of the wronged is reflected for restoration of the concept of law. The assignment of responsibilities and characteristics of wrong doing focuses on all forms of hierarchy, giving priority to political, followed by judicial, press and police. In the content of slogans, the recording of acts and omissions is detected that have preceded on the part of the elite, as the surprise attack against the vulnerable.

Moreover, the severe impact of the economic crisis is presented holistically as to run the whole greek society and not a single part of it.

### **The intensity of emotions**

Using the noun structures the impact of recession and implementation of the MOC is depicted as a separate but communicating with society threatening self-existence. Nouns like “cops”, “pigs”, “informants” realize through dramatization in a very vivid way intensity of feelings of rage against the powerful and the policies obtained.

Moreover, in other examples we observe that through nouns and adjectives, a strongly evaluative and denunciatory speech is ministered such as “Scurvy rats, greek and foreign politicians”.

### **The devaluation of the political institutions**

In addition, the dislike and depreciation of the “Indignants” are described in a purely negative way not only for a series of sociopolitical evens but for political institutions as well. We mention the following as illustrative examples: “No to the blue-green political leaders of Greece”, “Thieves, get out”. These structures serve in a particularly clear way for the transmission and understanding of messages associated with disgust and disdain of a possibly corrupt “top” of the financial and political pyramid. Finally, the treatment of vivid imaging nouns achieves the maximum vividness in the description of the effects of economic deprivation of the affected citizens.

### **Some characteristic conclusions**

In this text, we worked on the linguistic structures and functions through which the reactions of the so-called “Indignants’ movement” are presented which was manifested in Greece after the middle of May 2011. Specifically the slogans against political corruption, economic recession and the implementation of the “Memorandum of Cooperation” and the “Medium Term



Plan” were studied that emerged through this movement for more than a month and in particular till June 23<sup>rd</sup>, 2011.

For the recording of linguistic representations of the citizens’ anger and indignation we gathered 212 textual pieces, 2136 words in total. From all these, almost 169 were placed in the field of linguistic analysis because of uniformity. The slogans were raised by both conventional media and alternative sources of information but also through social networking. A collection of texts also mediated after at close observation of the protests in Syntagma Square in Athens and in squares of other greek cities. The investigative approach was based on the principles of Critical Discourse Analysis.

As it was found, for the expression of various conflict situations and feelings between the recipients and the victims of the Memorandum and the economic backwardness, multifarious structural configurations are employed, with clear superiority of noun and verb structures. The verbal structures incorporate the deeper citizen involvement in the painful and stressful experience of the crisis and the risks involved in it, while the noun structures are characterized by the descriptive function which in several cases specializes taking a purely denunciatory dimension of the situation. Some other times the noun structures are used in the shape of orders as what is sought is the mobilization of people towards a direction of more dynamic reaction in the political and financial scheming. In this case the nouns used function as structures with a regulatory character for the people’s behavior.

As estimated, both figures confirm the aspect that the effects of harsh economic measures imposed in conjunction with the recession of economy turn into speech via slogan texts and even more in a manner not only fanciful but also dramatic. The dramatization of the realization becomes clear because of the treatment of intense and emotionally charged words and phrases. The assignment of responsibilities and the character of wrong-doing focuses on all forms of power.

In the slogans of the “movement of the square” the use of elements of the so-called private language is extensive. There is indeed a strong imprint on it of an emotional element, given also the interface between the language and the emotion. Among the emotions captured with consummate and vivid way can be identified those of insecurity, of disgust and of general dislike for the implemented policies. The use of language’s characteristic-speech taboo items are normally included in the level of the vulgar style. Folk style elements are also identified with phrases and words of the so-called “slang” or margin dialect. The treatment of these linguistic codes reveals a jeering, insulting and abusive mood on the part of the producers of speech.

The recognised corruptions of a formal and official language function as a direct or indirect promise for participatory and cooperative relations in a more cooperative society (“caring society”), which is one of the rebel’s vision.

#### **ANNEX: Illustrative examples.**

- (1)“Scurvy rats, greek and foreign politicians”. Video from [www.dailymotion.com/.../xjb5r3](http://www.dailymotion.com/.../xjb5r3) στις 20/6/11.
- (2)Informants, bums, journalists! From [epanellinismos.com/index.php?...](http://epanellinismos.com/index.php?...) Regained on 20/6/11.
- (3)Go now, liar and crook. From [epanellinismos.com/index.php?...](http://epanellinismos.com/index.php?...) Regained on 20/6/11.
- (4)Go away! From [vimeo.com/24359107](http://vimeo.com/24359107). Regained on 20/6/11.
- (5)Cops, pigs, killers! Source: Indignants Slogan, Facebook. Accessed on 20/6/11.
- (6)The dick! source: Indignants Slogan, Facebook. Accessed on 20/6/11.

(7)Leave us live or we gonna fuc...! Entitled video «Beautiful slogans of idignants students» in [www.axortagos.gr](http://www.axortagos.gr). Accessed on 20/6/11.

(8)Go!!! From trupokaridos.com. Regained on 20/6/11.

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**‘FROM FUNCTIONAL LITERACY TO CRITICAL LITERACY’: A COMPARATIVE ACCOUNT  
OF THE GREEK LANGUAGE CURRICULA FOR PRIMARY EDUCATION**

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**Abstract**

Since the educational reforms being established are normally reflected on an effort to reform the National curricula, the recent educational reform in Greek Language Curriculum, has included the overall philosophy and principles of “critical literacy”. Critical literacy focuses on developing critically literate individuals to meet the challenges of the 21<sup>st</sup> century. In other words, it aims at developing readers and writers as active participants in the reading and writing process. As a result, the communicative-genre based approach is ineffective to fully meet that demand.

This paper examines the "transition" from the communicative approach and functional literacy to critical literacy in the curricula for primary education and its impact on language teaching in Primary Education. The starting point of this study is the so-called "reform Arseni" namely the three successive versions of the curricula of 1999, 2001 to 2003(the Cross-thematic Curriculum framework), which are compared with the reformed pilot curriculum of the New School (2011). Through a comparative analysis of basic aspects of these curricula, the study aims at investigating how the principles of functional and critical literacy are presented in the Cross-thematic Curriculum framework (2003) and the Curriculum of the New School (2011), in an attempt to identify the innovative characteristics of the latter curriculum. Furthermore, an attempt was made to map the aspects of convergence and divergence, and to pinpoint the rate of exploiting the theoretical principles in the language teaching practice. The comparative study indicated the innovative aspects of the Curriculum of New School, which focuses on developing relationships between language and social practices, and enhancing reflection, communication, and critical awareness, as well as promoting the use of multi-media and multi-modality literacy in the classroom.

**Keywords:** functional literacy, critical literacy, Language Curricula, communicative / genre based approach, primary education

**Introduction**

In new Greece Language Curricula (1999, 2001-2003 and especially the curriculum of the New School in 2011) it is suggested that education, nowadays, has to meet the new demands, such as globalization, interculturalism, multilingualism, technologies, as well as international commitments by renovating methods and goals, always in the light of the Greek educational strategies.

The Curricula of the last two decades have attempted, for the first time systematically in Greece, to incorporate strategies that promise the transition from “*sentence*” to “*discourse*” through social and textual circumstances by incorporating the methodological principles of *communicative-genre based approach* (Archakis 2005). The social nature of the communication function requires that the speaker is competent to choose from all good proposals those which

comply with the specific social rules that dictate appropriate language behaviours for specific communicative situations (Mitsis 2004).

Through a comparative analysis of the Curricula, a special effort was made to take into account the major changes that have taken place locally (in Greece) and globally for the last two decades. An attempt has been made to include all global sociopolitical changes, such as the explosion of information technology, advances in communication, multicultural and multilingual societies.

Thus, the latest educational reforms have been included in the overall philosophy and the goals setting the concept of “*critical literacy*”. This concept, which focuses on developing skills to meet the challenges of the 21<sup>st</sup> century, aims to create critically literate people. The need for the pedagogy of critical literacy emerges from the fact that communicative-genre based approach is unable to fully meet that demand. Critical literacy is based on the concept that language constitutes a socialsemiotic system (Halliday 1978), which refers directly to new textual practices in primary school, examining both the social and the structural aspects of language (Chatzilouka-Mavri & Iordanidou 2009).

### **The main purpose of the study**

The main purpose of this study was to identify those elements that reveal the “*transfer*” from the communicative approach and functional grammar to critical literacy, through a comparative overview of the Primary School Language Curricula of 1999, 2001, 2003 and the curriculum of the New School (2011). Emphasis was placed on some points of convergence and divergence between the Curricula in relation to the general aims, the specific objectives and the teaching methodology in order to indicate the variation that occurred diachronically in the philosophy and principles of the curricula. These were examined with respect to the functional use of language, the development of critical language awareness and linguistic / metalinguistic skills and the principles of pedagogy of multiliteracies.

### **From the curricula of 1999, 2001-2003 to the “New School” Curriculum (2011)**

#### **Theoretical framework and objectives of language teaching**

In February 1999 a new Modern Greek language Curriculum for Primary Education was published (Government Gazette 93/10-02-1999), with the provision to be implemented during 1999-2000 school year in order for “*the child to learn to use as much as possible the Greek language: to develop listening speaking, reading and writing skills quite easily*” (Government Gazette 93/10-02-1999: 1528). The concept of language development is in accordance with the holistic approach; this is a complicated skill that includes the development of the receptive and productive skills. According to the aims, objectives and activities of the curriculum, students should use the language by adapting and adjusting their speech to the appropriate situation and audience.

In the 2001 curriculum, however, (Government Gazette 1372/8-10-2001) the functional dimension of speech seems to be placed in the “*foreground*” since linguistic purpose is being approached in detail and the context in which it occurs is achieved. More specifically, language teaching aims at enabling students “*to use as much as possible the Greek language: to listen, to speak, to read and to write with ease, so as to gradually develop the multiple forms of literacy which the society of knowledge, information and multiculturalism requires*” (Government Gazette 1372/8-10-2001: 18736). For this purpose, the need for developing critical language awareness and enhancing students' ability to produce effective texts suitable for any special situation is stressed. The concepts of “*genre*”, “*communicative situation*”, “*critical language awareness*” are highlighted, referring to the modern concept known as ‘*critical literacy*’.

Nevertheless, the Cross Curriculum Framework was released in 2003, after being revised for once more (see Dinas et al. 2003). This new curriculum extends further the idea of language. In particular, in view of the general teaching of the language curriculum 2003 it is stated: *"language teaching in primary education aims to develop students' ability to operate efficiently and confidently, consciously, responsibly, efficiently and creatively in written and spoken language, and to actively participate in school and society"*. Language is considered "[...] as a vector for promoting intellect and highly creative and critical thinking" referring to newer perceptions of critical literacy (Curriculum 2003: 14).

The importance of developing productive skills and abilities, which is the purpose of language teaching in the primary education, is stressed in order for the children *"to handle with competence and confidence, consciously, responsibly, efficiently and creatively written and spoken language"* and *"to actively participate in school and the wider community"*.

Although the basic principle of 2003 Curriculum is interdisciplinary, the Language Curriculum of the New School (2011) obviously adopts the principles of critical literacy pedagogy, which define the overall objectives, content, basic skills / strategies and language teaching methodology as well as adoption of alternative evaluation methods. The main purpose of the curriculum is *"[...] students to acquire the properties of a critical and vigilant person that is able to recognize the historicity of various cultural traditions [...] a social subject which will primarily be able to understand how the language functions in economics, political, socio-cultural and ideological contexts"* (Curriculum 2011: 5-6). This is evident from the detailed record of such objectives and indicative aims proposing student's critical skills development to a) evaluate the various ways of writing based on the specific social context and to b) exploit the existing or emerging knowledge of dialects, language varieties or other languages in their local communities and contrast them critically with the standard variety, in terms of the stylistic, communicative and social dimension (Curriculum 2011: 8-9).

The curricula present a significant difference regarding the emergence of the role of ideology and linguistic diversity. Thus, the awareness of Greek language diversity in terms of geographical and social dialects and idioms (Government Gazette 93/10-02-1999: 1528, Government Gazette 1372/18-10-2001: 18736, Curriculum 2003: 3749) contributes to the understanding of the function of linguistic forms as indicators of social aspects and mechanisms of constructing identities, ideologies, attitudes and behaviors (Curriculum 2011: 8). Similarly, in the genres and types of speech, language course has changed dramatically, since it was restricted not only to the understanding and use (of the content instead of textual organization structure) of a very limited range of textual items (almost exclusively narrative), but to speech production (Government Gazette 93/10-02-1999: 1528, Government Gazette 1372/18-10-2001: 18736, Curriculum 2003: 3748). In the curriculum of the *"New School"* the types of texts and their linguistic form are treated as *"products of social factors and power relations"* taking into account the current economic, political and cultural changes (Curriculum 2011: 9).

The new curriculum aims at a deeper clarification of the framework related to a variety of texts, which belong to different genres and include various types of textual and linguistic functions (Curriculum 2011: 12), thereby activating students' previous experiences with respect to everyday reality. Along with the study of the ideological dimension of speech, students understand that in addition to oral and written texts there are also hybrid text genres, which are used in some cases in daily communication, mainly through IT (Curriculum 2011: 9). The Curriculum of the New School (2011) is enriched with new data related to the multimodal, visual and general IT literacy means and the use of tools, such as web 2.0. In addition, it is worth

mentioning that the development of family literacy practices is strongly suggested (Curriculum 2011: 10-11). Finally, special emphasis is put on the enhancement of students’ critical skills, to develop individuals who can easily comprehend and effectively use the language as well as to reflect on the “*meaning beyond the words*”, so as to become active citizens

### **Educational practices and Teaching methods**

In the previous curricula (2001, 2003), the section concerning teaching methodology begins with stressing teachers’ responsibility to implement the curriculum, by stating: “*The teaching approach dictates the resulting responsibilities and initiatives taken by the teacher in order to adjust his/her teaching to the circumstances and objectives of each course*” (Government Gazette 93/10-02-1999: 1550, Government Gazette 1372/18-10-2001: 18770, Curriculum 2003: 41). Nevertheless, in the curriculum of the New School (2011), teacher assumes a different role: he/she is the advisor, supervisor who coordinates the teaching/ learning process and the performance of the various activities students are involved into (Curriculum 2011: 16). Students themselves, with their own previous experiences, are at the core of the teaching process and participate actively in the learning process, get involved in communicative, problem solving tasks appropriate to their age.

Furthermore, this curriculum differs from the previous ones in terms of the proposed teaching approaches and texts types. It was first in the curriculum of 2001/2003, when texts are classified basically under narrative (narration, description, etc.) and directional ones (argumentative text, instructions, etc.) in relation to their use and their function in communication. The «*New School*» curriculum, gives emphasis not only on the ideological and sociocultural aspects of the texts but also focuses on providing students with the opportunities to develop metacognitive skills and critical thinking (Curriculum 2011: 15).

Moreover, in the latter case, other forms of texts emerge because, apart from oral and written texts, hybrid genres are used, since they are part of our daily communication mainly through IT (Curriculum 2011: 9). It should be noted that the common component of all curricula is the inclusion of texts performed/composed in real communicative conditions, since it is stated that “*certain communicative purposes, for example, are carried out through texts structured in paragraphs*” (Government Gazette 93/10-02-1999: 1550) and “*special circumstances for each course of the curriculum to contact those kinds of speech, types of texts [...] are offered*” (Government Gazette 1372/18-10-2001: 18771). Indeed, in the Curriculum issued in 2003 it is stated that “*the texts of the textbooks can be replaced by other articles, announcements, etc., relevant to students’ interests and background knowledge and in any case, when texts contribute to teaching a specific linguistic item*” (Curriculum 2003: 3773).

Furthermore, a turning point is the change in the types of text processing: in the curriculum of 1999 it is stated that the main focus is on students’ ability to comprehend and produce various text types covering a wide range of linguistic diversity and levels of speech (Government Gazette 93/10-02-1999: 1550). In 2001, a systematic reference is made to the types of text and key characteristics such as the structure, the axis of linguistic consistency and level of style (Government Gazette 1372/18-10-2001: 18771). In the revised curriculum issued in 2003, composing texts is introduced as three-step procedure. The first stage, *pre-writing phase*, is related to the production and organization of ideas. In the *writing stage*, the first draft of the text is composed and finally, in the *post-writing phase* improvement interventions are made to make the text efficient and effective for the situation of communication (Curriculum 2003: 3773). This process is highlighted even further in the New School Curriculum (2011), since this curriculum incorporates activities that focus on the processes of revising texts, based on the specific genre

and the appropriate style. This method is process oriented, since focuses on the process of writing rather than on the “*final product*” (Curriculum 2011: 18).

Despite the differences pointed out and highlighted in the Greek curricula of the last two decades, they all aimed at the enhancement of oral and written language both in terms of comprehending and composing. In relation to the teaching of the language system, the teaching of grammar to the level of word, sentence and text is provided. The level of the word corresponds to the area of morphophonology, while that of the sentence corresponds to the area of syntax. The third level concerns the effective teaching of morphosyntactic structures in relation to their function in the text (Government Gazette 93/10-02-1999: 1550, GG 1372/18-10-2001: 18771, Curriculum 2003: 3773). In the New School Curriculum (2011), the critical dimension is added, with emphasis on the identification of the mechanisms of style construction as the result of specific grammatical choices. In addition, emphasis is given on students’ linguistic and cognitive background knowledge, as well as on digital literacy. Even more emphasis is laid on the principles of critical literacy, since oral and written language comprehension and production involves an active, dynamic and reflective process.

### **Students’ evaluation and assessment**

The final part of the 1999 curriculum refers to students’ assessment, where a series of written and oral tests are proposed aiming at the efficient evaluation process. It is characteristic that the errors are treated as “*provisional level indicators of student communication skills*” and act as “*diagnostic tools that allow the teacher to devise remedial interventions*” (Government Gazette 93/10-02-1999: 1552-1553).

The Curricula of 2001/2003 introduce an expanded “*concept*” of student assessment. In particular, three different types of evaluation are identified to be applied by the teacher in the classroom, the *diagnostic*, the *formative* and the *summative* one. The regenerative nature of evaluation is emphasized, as well as the need for students’ effective engagement in the evaluation process through self-assessment (Curriculum 2003: 3777) or evaluation of their peers is stressed in order to promote “*self-confidence, self-esteem*” and “*metacognitive skills*” that will enable “*control and management of their learning*” (Curriculum 2003: 3743- 4).

In the *New School* curriculum (2011), emphasis is placed on alternative assessment methods, such as systematic observation, think aloud process, student diaries, and projects with the ultimate purpose to record the students’ progress and highlight both the strength aspects and those that inhibit the learning process (Curriculum 2011: 19-20). Moreover, the language portfolio is suggested, which is mainly a student self-evaluation instrument since it contributes to a systematic record from the part of the students and/or additionally by teachers (Curriculum 2011: 20).

### **Writing and reading skills in 3<sup>rd</sup> and 4<sup>th</sup> grade of Primary School: a comparative account**

The material extracts of the 3<sup>rd</sup> and 4<sup>th</sup> grade of Primary school which was selected to present, is representative of the whole Primary School. In these extracts, we have tried to identify and record some elements of convergence and divergence of the curriculum from 1999 until 2011. In the communicative-oriented research, the focus is on the context of communication and the social parameters that affect language use. The trend is for students to adapt the language depending on the variety of conversational contexts (Government Gazette 93/10-02-1999: 1537-8, Government Gazette 1372/18-10-2001: 18750-1, Curriculum 2003: 27-8, Curriculum 2011: 101-3, 111-2).

As a result, we see that the previous curricula (2001-2003) aimed at strengthening students’ abilities to refer to reality, to influence, to change it or to create reality, thus

introducing a concept of priority of culture communication ability, since the language is understood as a system of communication based on articulated discourse and treated with its natural complexity. On tables 1 and 2, where some indicative aims of reading and writing skills are recorded, it is obvious that the language and context of communication are in a dynamic influential interrelation constantly defined and redefined during the production of oral and written texts. Also, the culture of language aims to develop students' ability to negotiate, through texts, a variety of meanings, as well as to develop critical reading and writing skills.

On the contrary, the new curriculum, taking into account economic, social, and mainly technological developments, focuses on the emergence of Multiliteracies which refer to *"a variety of forms of text produced in a multilingual and multicultural society"* (Chatzisavidis 2006: 115). There are similar references in the previous curricula and the term is extensively analysed in the section *"Information Management"*. The innovation aspect of the new curriculum is the shift from *"passive reception"* to *"active production"* and *"interpretation"* of the meaning of the text produced in the specific context.

In the *New School* curriculum (2011), it is suggested that students should be able to understand the various types of texts, reflect on and critically interpret the meaning produced under the specific circumstances of communication (Oikonomakou & Griva 2014). At the same time, the students themselves become creative and critical *"producers"* of discourse, depending on the different social environments. In other words, students are exposed to a wide range of texts, so that through the juxtaposition of different types of discourse differences, conflicts, contradictions, etc. will cultivate *"genre"* awareness and critical reading skills.

Table 1: Comparative presentation of some objectives related to reading skills in the curricula (2003/2011)

Curricula 2001/2003	Curriculum 2011
<b>Reading</b>	<b>Reading</b>
Compares texts on the same topic, but belonging to a different <i>type of speech</i> . Identifies the level of a text style and decides on being <i>appropriate to the theme of the text</i> . Develops the ability to select and read <i>unfamiliar texts</i> . Shows a positive but <i>critical attitude</i> towards the book and gradually becomes an independent and adequate reader who enjoys reading. Familiarizes himself/herself with vernacular speech and highlights <i>the structural differences</i> in relation to standard language.	- Evaluates the <i>effectiveness</i> of the texts being processed.  - Identifies <i>"polyphonic"</i> texts and identifies author's perspective. - Shows a <i>critical attitude</i> towards the text and gradually becomes an independent and critical reader.



Table 2: Comparative presentation of some objectives related to writing skills in the curricula (2003/2011)

Curricula 2001/2003	Curriculum 2011
<b>Writing</b>	<b>Writing</b>
<p>Reflects on his/her needs to <i>rewrite readable texts</i>.</p> <p>Uses various <i>types of discourse</i>, and writes <i>different types of texts for different purposes and for different audiences</i>.</p> <p>Invokes <i>the language of feeling</i>.</p>	<p>Plans texts after negotiation, depending on <i>the communication / socio-cultural conditions and context</i>.</p> <p>Learns to reflect on and assess, or <i>challenge the stands and opinions</i>.</p> <p>Understands that writing is a dynamic process resulting <i>from the active students' involvement using procedures</i> of collecting, comparing, recording and evaluating the content and its linguistic expression.</p>

### Discussion-concluding remarks

Through the comparative presentation of the Modern Greek language Curricula for Primary Education in 1999, 2001/2003 and the New School curriculum (2011), their complementary character was revealed, along with the influence of social and cultural developments in the development of a new approach to language and educational reality in Greece. The curriculum of 1999 adopts a communicative approach to language teaching (Charalampopoulos 2000). In the same line, as the subsequent ones issued (2001/2003) followed the communicative approach and furthermore encompassed a new term of “*interdisciplinary approach*”.

Although the horizontal interface of courses has existed since the curriculum of 1999 (Dinas et al. 2003), the curriculum of 2011 goes beyond the terms of “*interdisciplinary*” and “*holistic*”, as it follows the new trend of language teaching “*the language teaching integrated with other subjects of the curriculum*” (Chatzisavidis 2007).

Since the principles of communicative approach are at the core of the 1999, 2011/2003 Curricula, focusing on the importance of the functional use of language, students are trained to understand and produce oral and written discourse adapted to the appropriate circumstances of communication. At the same time, they are asked to realize the mechanics of the language and learn to take advantage of the options to achieve effective communication (Charalampopoulos & Chatzisavidis 1997: 59). The New School Curriculum (2011) follows the principles of critical literacy according to which “*any cultural product is conceived as a multi-level learning outcome of ideological, social and technological processes*” (Curriculum 2011: 5). So, language teaching in Primary education in Greece follows a continuum of the communicative approach to post-communicative approaches to come under critical literacy (Chatzisavidis 2010).

Considering the Greek Language Curricula implemented from 1999 to 2011, we believe that the New School Curriculum (2011) incorporates a number of innovative elements while adopting and including the principles of critical literacy and multiliteracies (Chatzisavidis 2005, Oikonomakou & Griva 2014). Moreover, it provides students with opportunities to develop

creative abilities and critical skills with the ultimate purpose to become critical thinkers and active citizens (Curriculum 2011: 5-6).

Concluding, we assume that Critical literacy contributes to training students how to analyze social issues and helping them identify, reflect on and analyze underlying power relationships. In addition, critical literacy strategies learned across the curriculum, support students' higher order thinking skills and formulate inclusive behaviours both in school and society. However, the innovation of language policy and language curriculum towards the adoption of “*critical literacy*” is a multi dimensional, long-term and an ideologically charged process, while the question remains unanswered, whether teachers will be “*the agents of change*” or those who maintain the educational status quo.

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## TEACHING ENGLISH GRAMMAR VIA DEDUCTIVE AND INDUCTIVE APPROACHES; A CASE-STUDY WITH ALBANIAN TEACHERS

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### Abstract

The aim of this paper is to discover the attitude of the Albanian teachers towards the application of deductive and inductive approaches in teaching English grammar to Albanian students. The paper consists of two parts. The first part is a theoretical introduction on both approaches and the advantages and disadvantages of each. In this second part, the results of the survey that we conducted will be presented. Albanian teachers of English (14) were given an inventory about the approaches they use while teaching English grammar to their learners (either students or pupils). They were also asked about the advantages and disadvantages of each approach and which of them works better with their learners. At the same time, they were asked about how appropriate the textbooks they are actually using respond to these approaches. Most of the teachers are teaching young learners up to 13-14 years old. But there are others who also teach students (at university level) and sometimes more adult learners (especially in private schools).

**Keywords:** English grammar, deductive, inductive, approaches, Albanian learners

### Introduction

Teaching grammar has always been considered as crucial to the ability to use language (either native or foreign). In 1622, Joseph Webbe, schoolmaster and textbook writer, wrote: ‘No man can run speedily to the mark of language that is shackled...with grammar precepts.’ He maintained that grammar could be picked up through simply communicating: ‘By exercise of reading, writing and speaking...all things belonging to Grammar, will without labour, and whether we will or no, thrust themselves upon us.’ (cited in Thornbury, 1999, p. 14)

Grammar gains its prominence in language teaching, particularly in English as a foreign language (EFL), inasmuch as without a good knowledge of grammar, learners’ language development will be severely constrained (Widodo, 2006). According to Ur (1999) in the case of the learners, grammar rules enable them to know and apply how sentence patterns should be put together. The teaching of grammar should also ultimately centre attention on the way grammatical items or sentence patterns are correctly used. So teaching grammar should include language structure, meaning and use. Further Widodo (2006) develops his idea by revealing the importance of grammar which is thought to furnish the basis for a set of language skills: listening, speaking, reading and writing. In listening and speaking, grammar plays a crucial role in grasping and expressing spoken language (e.g. expressions) since learning the grammar of a language is considered necessary to acquire the capability of producing grammatically acceptable utterances in the language (Corder, 1988; Widodo, 2004). In reading, grammar enables learners to comprehend sentence interrelationship in a paragraph, a passage and a text. In the context of writing, grammar allows the learners to put their ideas into intelligible sentences

so that they can successfully communicate in a written form. Lastly, in the case of vocabulary, grammar provides a pathway for learners how some lexical items should be combined into a good sentence so that meaning and communicative statements or expressions can be formed. In other words, Doff (2000) says that by learning grammar students can express meaning in the form of phrases, clauses and sentences. Long and Richards (1987) add that it cannot be ignored that grammar plays a central role in the four language skills and vocabulary to establish communicative tasks.

However, when we decide to present new grammatical items to our learners explicitly, there are two underlying approaches for the differing techniques we can use – deductive and inductive. This article will compare the two, describe how they work, what they look like, and what benefits they can offer us (without forgetting the drawbacks of each) when we need to present something new to our learners. This article will also include the conclusions that were drawn from a survey that was conducted by me with different Albanian teachers in our hometown.

### **I. Deductive and inductive approaches**

First of all, here are two important definitions:

-A deductive approach starts with the presentation of a rule and is followed by examples in which the rule is applied.

-An inductive approach starts with some examples from which a rule is inferred.

In the case of pedagogical grammar these approaches are also called as rule-driven learning and rule-discovery learning respectively.

#### **I.1 Deductive approach**

The deductive (rule-driven) approach is traditionally associated with Grammar-translation. But this method has fallen from favour because typically the lesson started with an explanation usually in the learners’ mother tongue of the grammar point. Then practice activities involved translating sentences into the target language. The teachers, on the other hand, had to be proficient in both languages so that they could make it work. But it is important to stress that deductive approach is not dependent on translation (at least not how it is used nowadays). Kaye (2007) states that the deductive approach is often thought of as a more traditional way of teaching: it is teacher-led and teacher-centered at least at the presentation stage; it focuses initially on rules and then use; it often uses input language which is adjusted to the learners and not authentic. These do not in themselves have to be traditional ways of teaching; but they indicate a traditional approach. This approach has been the bread and butter of language teaching around the world and still enjoys a monopoly in course books and self-study grammar books (Fortune, 1992). In fact, many popular student grammar books adopt a deductive approach, with all their explanations and exercises in English. Eisenstein (1987) suggests that with the deductive approach, learners be in control during practice and have less fear of drawing an incorrect conclusion related to how the target language is functioning.

In the case of the application of the deductive approach, therefore Michael Swan (author of teachers’ and students’ grammars) offers the following criteria to what makes a rule, a good rule (cited in Thornbury, 1999, p. 32):

**Truth:** Rules should be true. While truthfulness may need to be compromised in the interest of clarity and simplicity, the rule must bear some resemblance to the reality it is describing.

**Limitation:** Rules should show clearly what the limits are on the use of a given form. For example, to say simply that we use *will* to talk about the future is of little use to the learners since it doesn’t show how *will* is different from other ways of talking about the future (e.g. *going to*).

**Clarity:** Rules should be clear. Lack of clarity is often caused by ambiguity or obscure terminology. For example: ‘Use *will* for spontaneous decisions; use *going to* for premeditated decisions.’ To which a student responded, ‘All my decisions are premeditated.’

**Simplicity:** Rules should be simple. Lack of simplicity is caused by overburdening the rule with sub-categories and sub-sub-categories in order to cover all possible instances and account for all possible exceptions. There is a limit to the account of exceptions a learner can remember.

**Familiarity:** An explanation should try to make use of concepts already familiar to the learner. Few learners have specialized knowledge of grammar, although they may well be familiar with some basic terminology used to describe the grammar of their own language (e.g. conditional, infinitive, gerund).

**Relevance:** A rule should answer only those questions that the student needs answered. These questions may vary according to the mother tongue of the learner.

But rules are only one component of an explanation. Here, for example, is a procedure a teacher might use to give a grammar explanation (T = teacher; ST = student). Different stages of explanation are also identified.

T: Right. The past perfect. (cueing)

T: The past perfect is formed from the past of the auxiliary ‘have’, plus the past participle. (rule of form)

T: For example, ‘everyone had left’, ‘the film had started’. (examples)

T: So, what the past perfect of ‘they go’? (check)

ST: ‘They had gone.’

T: Good.

T: It is used when you are talking about the past, and you want to refer to an earlier point in the past. (rule of use)

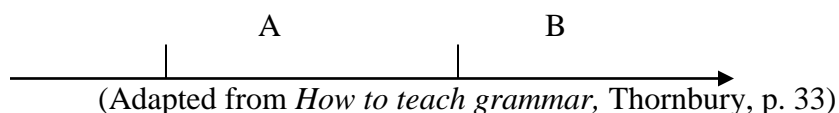
T: For example, ‘We were late. When we got to the cinema, the film had already started. (example)

T: Did the film start after we arrived, at the same time as we arrived, or before we arrived? (check)

ST: Before.

T: Right.

T: So, it’s like this. [draws] (illustration)



Here is an example of a lesson using the deductive approach (Kaye, 2007). The teacher’s aim is for learners to be able to use the present perfect continuous to describe a present result of a past action.

- The teacher shows the learners pictures of people who have been doing some kind of activity, for example, somebody covered in paint, somebody red and sweaty, somebody who is looking green and nauseous, and the learners match these pictures to others which show activities, e.g. a rollercoaster, a freshly painted room, a running track.
- The teacher then presents the new language by describing what these people have been doing.

- The learners listen and repeat the language. The teacher then explains the structure, how it works, and how it is made.

- Learners then practice the language in another matching activity, where they have to report their findings in sentences, e.g. ‘On card A there is a man who has been eating chocolate cake, and on card B there is a man who has been running for a bus.’ Freer practice is a game where learners act and others guess what they have been doing.

Nonetheless, the deductive approach offers advantages and disadvantages. Here are some *advantages* which are more or less mentioned by many authors or grammarians:

1. It can meet student expectations. In some way it fits with their previous learning experiences.

2. It may be easier. A class using the deductive approach, if well planned, goes from easier to more difficult – which may be more appropriate for some learners. It can also be easier for less experienced teachers as there is more control of outcomes.

3. The level of input language can be controlled more.

4. Our learners’ understanding of rules can be controlled more – making sure that the ideas they form are the right ones. In this way teachers can try to avoid learners forming incorrect hypotheses.

5. It may be a more efficient use of time; many rules – especially rules of form – can be more simply and quickly explained than elicited from examples. This will allow more time for practice and application.

6. It can be designed to meet the needs of more learning styles, particularly for those learners who have an analytical learning style.

7. It is used by many coursebooks and it fits in better with many syllabus structures.

Some possible *disadvantages* are:

1. Beginning the lesson with a grammar presentation may be off-putting for some learners, especially younger ones.

2. Younger learners may not be able to understand the concepts or encourage any grammar technology given (they may not have sufficient metalanguage).

3. Grammar explanation encourages a teacher-fronted, transmission-student classroom, so it will hinder learner involvement and interaction immediately.

Adair-Hauck & Donato (2002) state: ‘In the past, a traditional classroom, with its emphasis on grammatical competence and explicit knowledge of language rules, did not provide occasions for learners to communicate...’

4. The explanation is seldom as memorable as other forms of presentation (such as demonstration).

5. This approach encourages the belief that learning a language is simply a case of knowing the rule.

They (Adair-Hauck & Donato) also claim: ‘Unfortunately, many students who spent years learning only the formal properties of the language (sound system, verb conjugations, rules of syntax, vocabulary lists) could not, in the end, exchange information, express ideas or feelings, construct and control problem solving, or develop and nurture a social relationship in a second language.’

### **I.2 Inductive approach**

The inductive approach, on the other hand, is seen as the ‘natural’ route to learning and is associated with methods such as Direct Method and the Natural Approach that model themselves on first language acquisition. These methods share a basic assumption that language data (or

input) is best processed inductively and without recourse to translation. The most natural route to a second language bypasses the classroom altogether, and the best example of experiential learning is that of immersion in the foreign language speaking community. Even theorists who support a ‘zero-grammar’ position, such as the Natural Approach claim that there are nevertheless significant gaps in the language competence of the learners who emerge from these programmes, suggesting that unfocused exposure to unorganized language data may not be in itself sufficient. Induction, to work best, it seems, requires more than random exposure; it needs the intervention of either the syllabus designer, the materials either, or the teacher, or all three (Thornbury, 1999).

In Direct Method classes, therefore, the rules of the language are supposedly acquired out of the experience of understanding and repeating examples which have been systematically graded for difficulty and put into a clear context. Here is an example of a teacher’s notes for a beginner’s class teaching the present continuous:

1 Walk from one side of the classroom to the other, and, while you are walking say two or three times to the class: I am walking. I am walking. I am walking.

2 Select one student. Tell him to walk across the room. Indicate that he must say the sentence as you did. I am walking. (3 times)

3 Tell him to walk across the room again. Indicate that he must be silent and you say to the class: He is walking. (3 times)

4 the class can next say it in chorus.

(Adapted from Thornbury, *How to teach grammar*, 1999, p. 50)

What can be noticed in this approach to teaching grammar is that it was not thought necessary to draw learners’ attention to an explicit statement of the grammar rule. It was considered sufficient by the teacher to simply rely on the learners’ unconscious processes to do the job. Kaye (2007) states that the inductive approach is often thought of as a modern way of teaching; it involves discovery techniques; it seeks in some ways to duplicate the acquisition process; it often exploits authentic material; it has learners at the center of the lesson; and the focus is on usage rather than rules. While Eisenstein (cited in Long & Richards, 1987) maintains that the inductive approach tries to utilize the very strong reward value of bringing order, clarity and meaning to experiences.

Here is an example of a lesson using the inductive approach (Kaye, 2007). The teacher’s aim in this lesson is that learners understand meaning, form and use of linking devices in formal writing.

- The teacher gives the learners a text to read and respond to.
- He/she then asks them to identify all the conjunctions in the text and then put them into 5 or 6 groups according to how they are used, e.g. to add something, to make a contrast, to show a result.
- The learners themselves suggest headings for these categories.
- The teacher monitors and guides. Groups of learners then work with one category each to analyze structure, meaning and use, and finally present their findings to the class.

Similar to the deductive approach, the inductive approach offers advantages and disadvantages as well. Here are some *advantages* worth mentioning:

It moves away the focus from the teacher as the giver of knowledge to learners as discoverers of it.

1. It moves the focus away from rules to use – and use is, after all, our aim in teaching.



2. It encourages learner autonomy. If learners can find out the rules for themselves then they are making significant steps towards being independent. This can be taken further by letting learners decide what aspect of the language they want to analyze.
3. It teaches a very important skill – how to use real/almost-real language to find out the rules about English.
4. It can be particularly effective with low levels and with certain types of young learners. It enables these students to focus on use, not complex rules and terminology.
5. Its authentic materials are used as our context, then learners are in contact with real language, not coursebook English. It is through communication that we are able to improve our world, to prosper, and to enjoy it (Cooper, 1993).
6. Authentic material can be exploited from a wide range of sources to present our target language.
7. The rules and structures students discover are often more valid, relevant and authentic as they can be drawn from real use of English.
8. The action of discovery helps learners remember.
9. It reflects the acquisition process that children learn by, i.e. being in contact with the language and using it, then finding rules and applying them to new contexts.
10. This kind of task – and the independence it fosters – is stimulating and motivating for many learners. It also encourages communication naturally.
11. We are able to respond better to the needs of our learners by supporting and encouraging new learning styles and strategies. For example, this kind of approach is good to develop reflective learning and learning in groups, and encourages the strategy of using the English around us to find rules and examples.

Some possible *disadvantages* are:

1. The approach is time and energy-consuming as it leads learners to hold the appropriate concept of the rule.
2. The concepts given implicitly may lead the learners to have the wrong concepts of the rule taught.
3. The approach can place emphasis on teachers in planning a lesson.
4. It encourages the teacher to design data or materials taught carefully and systematically.
5. The approach may frustrate the learners with their personal learning style, or their past learning experience (or both) would simply prefer to be told the rule.

Whether grammar rules are taught deductively or inductively depends on certain structures, since some are keener to a deductive approach, while others can be learned better by an inductive approach. Both deductive and inductive presentations can successfully be applied depending on the cognitive study of the learner and the language structure presented (Eisenstein, 1987; Brown, 2000).

## **II. Method of study**

In this second part of the article the results of the survey that I conducted myself will be presented. Albanian teachers of English (14) were given an inventory about the approaches they use while teaching English grammar to their learners (either students or pupils). They were also asked about the advantages and disadvantages of each approach and which of them works better with their learners. At the same time, they were asked about how appropriate the textbooks they are actually using respond to these approaches. Most of the teachers are teaching young learners

up to 13-14 years old. But there are others who also teach students (at university level) and sometimes more adult learners (especially in private schools).

### II.1 Results from a Teaching Grammar Inventory

All the questions will be taken in consideration one by one and see what the results are:

The first question is *Which approach do you use in teaching different grammatical issues to your pupils?* And the teachers responded as follows:

Deductive (4) Inductive (2) Both (8)

What can be noticed from these results is that young teachers (in age and profession) prefer both approaches because according to their opinions, using both of them is more effective and helpful at the same time. Only four of them prefer the deductive approach mostly and only two prefer the inductive approach mostly (this does not mean that they are excluding the other one respectively). These results are also related with those of the other question:

*How often do you use each approach?*

Deductive 70%/30% (6) Inductive approach 70%/30% (3) Equally 50%/50% (5)

The answers are related with the age of the learners. For example, 2 of the teachers state that they use the deductive approach with adult learners and inductive approach with younger ones. Some others relate their usage of one approach or the other with the level of the learners as well or sometimes with the grammatical issue being taught.

The other questions are about the advantages and disadvantages of each approach. Sometimes the answers correspond and sometimes not. The teachers have not responded theoretically but practically i.e. they have given different answers because each relates them with his/her own experience. All the advantages and disadvantages are listed in the tables below:

Table 1: The description of the advantages and disadvantages of the deductive approach according to the teachers asked:

Advantages	Disadvantages
It helps the teacher keep to his working plan (no sudden turn-outs) Students feel safe, ‘the teacher is always right.’ Practice & repetition might be good learning strategies for some learners. Some grammatical issues can be explained easily. Students learn grammar gradually, step-by-step. It is a way of saving time. The teacher can predict the problems. It consolidates the learning of grammar rules. Comparison with native language also helps. The teacher can have control of the class. It is familiar to students.	It discourages learners from undertaking tasks (new to them) on their own. There is lack of self-confidence (become passive) There is need for teacher monitoring. Difficult to shift from theory to practice. It is hard for the student to remember the rules. It does not help them think and use imagination. Classes are likely to become boring. The teacher is the center; the learners remain in his shadow.

Table 2: The description of the advantages and disadvantages of the inductive approach according to the teachers asked:

Advantages	Disadvantages
<p>Students infer the grammar rules themselves.                      Rules are easier to be remembered and longer.                      It makes students think and being active.                      The students are the center of the class.                      They feel involved, important, more attentive.                      It encourages autonomy in learning.                      It makes the class more interesting.                      Learners apply the grammar rules intuitively.                      It encourages learners’ motivation.                      There are more opportunities to practice.                      Learners are not bewildered with complicated terms (found in rules).                      Learners build up their learning process.                      They learn by making mistakes (very helpful).                      It also builds self-confidence.</p>	<p>Not all students can discover the right rule.                      Time is limited, other skills are integrated.                      It may lead to misunderstanding and cause frustration.                      It is difficult to control the class or learners’ proper knowledge (sometimes too much noise)                      Some learners want the teacher to explain.                      Not consolidated knowledge (a fairly fragile product).                      Learners have different learning strategies.                      It needs a lot of pre-task work (by the teacher).</p>

To the other question *Which approach works better with your learners?* the teachers responded as follows:

Deductive (3)      Inductive (7)      Both (4)

The choices of the teachers for applying one approach or the other, or both of them is related with the following reasons: the first one is the level of the learners that is not always the same. ‘When working with ‘weaker’ students,’ claims on of the teachers, ‘I prefer setting the rules clear from the start in order to avoid mistakes and misunderstanding.’ Another is the lack of motivation on the part of the learners especially when it comes to learning grammar even because they do not have enough knowledge about grammar concepts and terminology at the same time. As one of the teachers mentions ‘... some students find it difficult to learn because of lack of knowledge about language and Albanian grammatical concept knowledge.’ Age is the other reason. It seems that the adults prefer the deductive approach because they want to make things clear first and ‘... it is essential for them to feel sure in each utterance they make.’ They also have the tendency to make comparisons with Albanian grammar and why not translating different structures. On the other hand, it seems that younger learners prefer the inductive way of teaching because they enjoy taking risks and experimenting. The teachers also relate their choices with the grammatical issue being treated. For example, one of the teachers states that for using correct tense forms the deductive approach works better, but for the plural form of the nouns it is the inductive approach that works better. But teachers also choose to change their way of teaching when they see that it is not working properly: ‘... when I see that my students/pupils are ‘getting nowhere’ from the examples, I switch to the deductive approach.’

The next question is *Do you use textbooks only as a source for teaching grammar or other means as well?*

Half of the teachers expressed that they prefer using the textbooks because they are accompanied by extra materials, which give the teachers the opportunity to alternate different

grammar sections. Some other books are a very rich source of not only grammar but other information as well (rich vocabulary, social activities and culture). They mention books like: Gold, Access, Click on, Headway (new edition), Lifelines, etc. The other half responded that they use other means and materials like; song lyrics, images, games, colour cards, group work, charts, diagrams, miming, visual prompts, songs, etc.

What I noticed from these responses was that teachers working in public schools (especially primary) use other means as well, while the others working in private schools (or courses) usually prefer the textbooks.

All these are also related to the other question: *How appropriate are the textbooks (or exercise books) to each approach?* to which the teachers responded in the following way:

Satisfied (8)      Not satisfied (4)      Neutral (2)

It seems that the teachers who are not satisfied with the textbooks provide other means and activities. Others who are satisfied relate this with the approach they use. For example, textbooks (as teachers state) usually lead to an inductive way of presenting grammar (especially the contemporary ones). Another teacher states that she is satisfied with the textbook because it is more appropriate to the deductive approach, which she prefers.

It should be mentioned that, recently, things have changed a lot in Albania. Nowadays textbooks are very different, leading to more inductive approach, as the older ones were more traditional. There are a lot of new things even for the teachers themselves. But this does not mean that there is a real difference in quality (quality of teaching and learning).

### **Conclusion**

However, it has to be mentioned that from what the teachers expressed, there cannot be a straightforward conclusion of deciding which approach is the best. In fact, this question has always been a source of debate and arguments among scholars in the past and nowadays. Applying one approach and not the other does not make you a good or a bad teacher either. No matter what the teaching approach is, getting to know our learners, their needs and expectations is the best way to benefit from each approach. Both approaches are useful and effective and they can and should be used according to the situation in the class, to various grammatical issues and to the learners' needs. Both the teacher and the learner should cooperate during the class. The best approach would be a combination of both.

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## CRITICAL THINKING IN TEACHING MACEDONIAN LANGUAGE IN HIGHER EDUCATION

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### Abstract

The system of higher education in FTROM is based upon interactive approaches and connected with the global integrative processes, and institutes solid bases for linking the educational services with the labor market and educating students into people who need knowledge as well as competences and skills to meet the challenges of the new age and to succeed in life. Therefore, in the teaching practice, the teacher teaches not only about information and content, but he also promotes the procedural knowledge, for ex., the competences and skills for critical and creative thinking, solving problems etc. The actualization of the curriculum dimension in which instead of facts the development of these competences and skills are favored, is also stressed out.

The paper describes and analyzes the conception of textbooks which are used in teaching the Macedonian language in the higher education and shows their (in)coherence for development and promotion of students’ critical thinking with the given conception. When teaching grammatical content, in the first instance, the content is directed towards adoption of facts, so, in that sense, the paper analyzes the grammatical content in the textbooks, especially taking into consideration the essence of the grammatical content and the activities that the teacher can undertake when teaching grammatical content regarding development and promotion of students’ critical thinking in teaching the Macedonian language in higher education.

**Keywords:** textbooks, grammatical content, critical thinking

**Introduction.** The directions for development of the education in RM, given in the National strategy for development of education from 2005 to 2015, contribute, to a large extent, to advancement of the effective and contemporary educational system, which adjusts itself to the new age and the global integrative processes and which establishes structures for associating the educational services with the labor market and for educating people who need knowledge and competencies to meet the challenges of the new age and succeed in life. The formulations and the aims of this strategic document, have been realized to a large extent: the teaching curricula have been revised through implementation of the conception of the learning outcome; the educational system has been intensified and upgraded, i.e. the teaching and the learning have been promoted and modernized; the educational process is based on interactive approaches in teaching which puts emphasis on the development of the procedural knowledge, such as, f. ex., the skills and competences for critical thinking, solving problems etc., as well as on the curricula dimension, i.e. the teaching content in textbooks prepared according to a specific conception and methodology for designing textbooks which favor the skills, competencies and abilities of the citizen of the future instead of the facts: personal and social responsibility, planning, critical thinking, reasoning, creativity, team work, communication, computer literacy etc.

Teachers are becoming more and more directed towards students, towards the way the teaching unit affects them, towards the activities that students undertake in order to acquire the unit, towards the way students acquire knowledge and develop the skills and competencies, i.e. teachers are not only concerned with the material, but with the functional and educational tasks

of the teaching as well, which implies putting special emphasis on the way students implement the knowledge and competencies in new situations. This way, the concept of long life learning is promoted, the educational system is modernized and this provides a solid base for building up students into people with democratic values and citizen responsibility who will be capable of thinking critically, of solving complex problems after finishing the formal education, i.e. a higher level of cognitive development will be achieved. This is the base of every reform in education.

In this sense, the relevance of critical thinking is regarded as an important tool in the educational process for enabling students to think clear and rational, i.e. for their qualification for reflexive and independent reasoning. Critical thinking is related to logical thinking and reasoning, and involves skills such as comparison, classification, deductive and inductive reasoning, revealing the cause and effect relations, forecasting, hypothesizing, criticizing etc. Critical thinking is a concept which is most often associated with the higher cognitive processes which are relevant to learning: analysis, synthesis and evaluation, i.e. with the competences that help the logical connections among ideas be understood, the arguments be identified and assessed, the relevance of the idea be identified, problems be resolved systematically etc.

The paper describes and analyzes the conception of the Macedonian language textbooks used in teaching in the higher education and shows the (in)coherence of development and promotion of students' critical thinking with the given conception. When teaching grammatical content, the content is, primarily, directed towards learning of facts, so, in that sense, the paper analyzes the grammatical content in the textbooks, especially taking into consideration the essence of the grammatical content and the activities that the teacher can undertake when teaching grammatical content regarding development and promotion of students' critical thinking in teaching the Macedonian language in higher education.

**Methodology of research.** In order for the aim of the paper to be realized, two textbooks for the language disciplines, morphology of the Macedonian language and syntax of the Macedonian language, are taken into consideration, which are used in the higher education by students of the Faculty of Education in the following departments: Macedonian and English language, Macedonian and German language and Macedonian language and literature. The conception of the textbooks and the teaching content are examined regarding the possibility of developing and upgrading the students' critical thinking, and there is greater emphasis on the role of the teacher and the activities he can undertake regarding the grammatical units for promotion of students' critical thinking in teaching the Macedonian language.

**Results, analysis and discussion.** Critical thinking is a concept which most often is associated with the higher levels of intellectual behavior relevant for the teaching, i.e. with higher cognitive processes, such as analysis, synthesis and evaluation. In that regard, the conception of the textbooks and teaching units should be organized in a way so that they promote the students' critical thinking. The description and analysis of the textbooks mentioned above show the following results: a) modern Macedonian syntax textbook consists of the following parts: preface which emphasizes that the textbook may be used not only by students of the Philological faculty of the Macedonian language department, but also by students who attend Macedonian language grammar classes, 7 chapters: (The language as a system for communication; From morphology towards syntax; Approach towards syntax; Noun phrase and its equivalents; Sentences; Complex sentence; Text), bibliography and a list of used terminology; b) modern Macedonian morphology textbook (second part – the forms and their uses) consists of the following elements: preface which emphasises that the textbook is designed for students learning Macedonian language, 12 chapters (The word group; Noun; Adjective; Numbers;

Pronouns; Adverbs; Verb; Preposition; Modal words and Exclamations). It should be pointed out that the other textbooks used for other disciplines of modern Macedonian language (phonetics and phonology, phraseology etc.) are designed in the same way. In the two mentioned textbooks, every chapter consists of a certain number of grammatical units. The teaching content parts are written one by one, taking into account the didactic principles of suitability with the students' age, sequence in presenting the teaching materials, systematicness in presenting the teaching materials, as well other relevant didactic principles when designing textbooks.

The conception of these textbooks is quite different from the conception of the textbooks of Macedonian language and literature used in high school and from the conception of the textbooks of Macedonian language used in elementary school. The teaching content is presented as a whole text, i.e. it is presented as one meaningful whole, without illustration, without explicit parts for discussion among fragments of the whole, without explicit activities among such as: read, remind, relate the knowledge, remember and implement, class activities, exercises, extend the knowledge, think and answer, analyze, conclude etc. This is done in the textbooks for high school and elementary education where the teaching units are presented in small meaningful wholes among which parts for discussion and various activities as the mentioned above are pointed out. It should be mentioned that this conception of high school and elementary school textbooks does not necessarily mean that these textbooks develop the critical thinking successfully. An insight of this issue is needed as well as further analysis of their conception, also analysis of the teaching units and the given activities, but this is not the topic of research in this paper. However, we may say that these high school and elementary education textbooks are designed in the way that they are suitable for development of critical thinking because the teaching materials are presented in smaller meaningful parts and because the activities consist of verbs specific for the six levels of Bloom's taxonomy. This, on the other hand, may lead to a false conclusion that the conception of the university education textbooks does not provide a base for critical thinking, that the grammatical units are least suitable for critical thinking and that they are presented as facts that need to be accepted by students. It is clear that the grammatical units contain facts which need to be accepted, but in the same time, these units can be analyzed, compared, interpreted, examined, supported by arguments, synthesized, developed, evaluated etc., so, accordingly, they are appropriate for development of critical thinking. Correspondingly, we may conclude that the development of students' critical thinking is conditioned neither by the conception of university education modern Macedonian textbooks, nor by the grammatical units. The development of students' critical thinking, to a large extent depends on the teacher's role, organization of the class, as well as on the activities the teacher realizes in order to develop the critical thinking. So, in this case, the teacher has the key-role in the development of critical thinking. He should not only master the language teaching content, but also be competent in teaching the students the content, taking into account, both, the way in which the content is acquired, and the development of critical thinking skills. In the vocational literature, posing questions is considered a powerful tool for developing critical thinking and it is stressed out, among other activities that teacher can realize when teaching grammar units.

**Posing question for development of critical thinking in teaching Macedonian language.** Posing questions is not specific only for the Macedonian language teaching process. The questions correlate to other science disciplines as tools for development of critical thinking. The students need critical thinking in order to assess and promote their own creative ideas. The student who thinks critically can use his knowledge to solve problems and find relevant sources of information to stay informed. The critical thinking helps us improve the way we express our



ideas and it is a powerful tool in the process of self-evaluation. Thinking is governed by posed questions which need to have the appropriate level of complexity and be appropriate for the development of higher cognitive processes, in order to direct the students' intellectual capacity, so as to be able to generate new questions, direct their own thought and face solving complex problems. If the teacher wants his students to think critically, he needs to stimulate them with question which will generate new questions during the teaching process, because when the answer and the question generate additional questions, the process of thinking proceeds.

Critical thinking, as well as other skills, is not taught independently regarding the grammatical unit. It develops through various activities, but as mentioned, it is most often developed through posing questions and giving different kinds of tasks during the teaching process. Certainly, the questions should be posed in a way that they develop the higher cognitive processes, including the critical thinking. The language formulation of the question needs to be taken into consideration, for it contributes to directing the students' intellectual capacity and promoting the critical thinking.

When a question is posed in grammar teaching, the answer is either correct or incorrect. But, by posing questions that lead to a correct or incorrect answer, the student is demanded either to memorize or to recall, i.e. the lower cognitive processes are activated. In the teaching practice, there is a need to stress out that whenever it is possible, questions which do not have a single correct answer should be posed, even when teaching grammatical content, despite being more complicated and requiring a more skillful teacher (when teaching grammar content it is not always easy to determine what critical thinking is and what acquiring of facts and their implementation). Even if the student gives the correct answer rather quickly, the teacher is encouraged to further stimulate the students to think critically with questions such as the following: Tell me something more about it, What else do you think, Why is this difficult/easy, Which is the most interesting part etc. In that sense, open questions which inspire students to think in depth, to go further into the essence of concepts and understand the connections that exist among them, are especially suitable. The teacher should support the students, because when they spend more time reasoning, they will be able to talk more about a certain concept. The language is, thus, used creatively and communicatively and the students express their ideas with the language they learn.

**Development of critical thinking in teaching the Macedonian language and teacher's activities.** The grammar units provide a solid base for development of the critical thinking. Because of the fact that the grammatical content in the mentioned textbooks is presented as one meaningful whole, the vocational literature recommends the following: giving students support through division of the whole into smaller parts, alongside stressing out the illustration by giving ideas and examples; encouraging the students, f. ex., to express logical and reasonable arguments or to make assumptions during a discussion, etc. As mentioned before, grammatical content is the type of content that can be analyzed, compared, interpreted, examined, supported by arguments, synthesized, developed, evaluated etc., so, accordingly, it is quite suitable for development of critical thinking and, in this process, the teacher and the activities he undertakes in class have the key role.

The teacher can establish interaction in class and provide conditions for development of critical thinking with the use of the grammatical content. For instance, if he teaches about the structure of a simple sentence, he can develop students' critical thinking by posing various questions to them in order to perceive the relevance of the word sequence in a sentence and associate this sequence with providing a single meaning information. He proposes the following

sentences: ‘Petar hit Marko’ and ‘Marko hit Petar’ and asks the students to determine the grammatical structure of these sentences, i.e. to determine the syntactic function of the sentence articles. This is one of the examples in which the demand from the teacher does not have a single correct answer. In the sentences, in this case, it is not clear who the subject is and who the patient of the action is, because the two participants can either be subjects or patients. It especially refers to cases when both participants are same sex. In order to be sure about the correct syntactic function of a certain sentence article, the students should address the relevance of the words’ sequence in the sentence (and take into consideration the information about the relatively free words’ sequence in the Macedonian language), as well as the relevance of other factors that contribute to receiving a single meaning information (for instance, the verb in the appropriate gender and number, the use of direct and indirect object, and certainly of one’s own experiences and insight, (s. Gjurkova 2000: 28), and the role of the broader context in which the two sentences are present. If the context continues with ‘Marko cried’, we are sure that Marko is the one who has been hit, i.e. the patient and Petar is the subject. Disobeying this rule could lead to a misunderstanding. It is about implementation of a rule, but, still, a student needs to critically approach the grammatical units, analyzing, comparing and connecting them, give explanations for his own attitude, which has to rely on clear and reasonable arguments in order to come to a conclusion that in many cases, the information of the concept may be perceived from the wider context.

Further on, when the teacher teaches about the structure of a simple sentence, he may divide the students into several groups and give every group a task to write one paragraph about the relevance of the language to a person. Then, every group reads the paragraph and gets another task to change the order of the words in the sentences. Every group gets a paragraph with previously changed order of words and attempts to give meaning to the word sequence within the paragraph. Students will think critically and generate certain rules when looking for the predicate and combining the words into regular sentences to send a message. For instance, they will conclude that every sentence must have a verb form and that the language has its own structure. They will be able to tell that there is a relatively free word order in the Macedonian language, because different words’ order leads to forming the same meaningful units, but yet different ones, regarding the order of words in sentences, the combination of words in sentences, as well as the sentence’s accent.

The grammar can be taught in narrative texts’ context. When the teacher teaches about the order of the part sentences within the complex sentences (dependent or independent), he may dictate a paragraph from the artistic-literature style to the students, i.e. an extraordinary text; narrative and well written (the students can talk about where they have put orthographic characters and punctuation marks later), so in that sense, they will be able to tell the role of punctuation marks as a stylistic tool through comparisson, (when a comma is used where it is not expected and is absent where it should be used, s. Gjurkova 2003: 194). They will also be able to think about the stylistic formation of the text regarding the uses of orthographic characters and punctuation marks (the texts have similar semantic information; and the nuances in the meaning, will be commented on, through putting emphasis on the accent of the sentence.

When teaching about morphological content within the noun verbs, the teacher can use the same text and ask the students to determine verbs, noun phrases (noun and adjectives) which give the text certain vividness, so the choice of morphological forms in the stylistic formation of the text is considered. In this way the students think critically, compare, analyze and comprehend the relevance and the power of the words’ choice for a given description.

When teaching about noun words, adjectives for instance, the teacher can ask the students to write a short text in which they are to describe (internal and external description) a person or a character, separate the adjectives and then sort them according to their type. This way they will be able to think critically about the adjectives used in the text.

When teaching about verb tenses, for instance about the usage of the present simple tense, the teacher develops the critical thinking in such a way that after the teaching he might ask them to write a short essay about the daily agenda of one parent; and so, the secondary usage of the present simple tense emerges i.e. the usage of the present simple tense to express a repetitive action. Exercises with texts for determining the primary or the secondary usage of the verb tenses are especially important for the development of critical thinking, because through the texts, students determine the usage, and make their own judgment for the instances in which a double interpretation may occur. For example: *Za inat edna vrekja sol izeduva* (He can eat a bag of salt because of his stubbornness), despite the secondary usage of the present simple tense – the meaning of readiness, it may be acknowledged that the example shows the secondary usage of the present simple as well – the usage of future tenses.

**Conclusion.** The analysis confirms the knowledge gathered from the relevant researches and shows that critical thinking is a relevant segment in a person’s development. In that sense, the analysis puts emphasis on the importance of the critical thinking as a relevant tool in students’ qualification to think clearly and rationally, i.e. in their qualification for reflexive and independent thinking. Critical thinking is often associated with higher cognitive processes which are relevant for learning, i.e. competencies to understand the logical connection among ideas, to identify and evaluate arguments, to identify the relevance of ideas, to systematically solve a problem etc.

The analysis shows that the development of critical thinking is not conditioned neither by the conception of the textbooks for learning the Macedonian language used in the higher education, nor by the essence of the grammar content, because despite the fact that teaching grammar content is all about facts that need to be adopted by students, the grammar units can be analyzed, compared, synthesized, explored, evaluated etc. According to that, they are seen as a powerful source for development of the critical thinking.

The analysis confirms the relevance of posing questions for development of critical thinking, so, in that sense, it is important to mention that questions with no single correct answer can be posed even in the grammar content and that will lead the student to think critically. This means that the grammar content can develop the students’ critical thinking and help the students express their ideas with the language they learn. It is also important to emphasise that the development of critical thinking in students learning the Macedonian language, to a large extent, is conditioned by the activities the teacher undertakes in class regarding the grammar content. This means that the teacher should have the necessary competencies for the material he teaches as well as for the way he develops his students’ critical thinking.

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# PEDAGOGY

## THE CREATIVE ACTIVITIES AT THE BEGINNING OF CLASS HOURS

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### Abstract

Teaching as a proces, entails many factors, among which factors, the emphasise can be given to the organizing of a lesson or teaching activity. Actually, there are misellanoies activities worldwide, different strategies that would be acceptable for teachers of the University of Prishtina as well, especially for teachers of Faculty of Education.

The creative activities, are part of the modern strategy, but unfortunately not acceptable to all and everybody dealig with the teaching process. Lately, the creative acitities are being used at the begining of the class, to ‘*warm the head*’.

There are some dilemmas treated on this astract or paper-work on whether to initiate the activities to ‘*warm the head*’ at the begginig of the class or simply go strait to the point or subject for discussion during the teacing process.

The results based on an undertaken research, upon collection of data, showed that the creative activities not only are possitive, attractive and well pointed for the early-lesson especially, but they also help students to develop theteaching skills in other aspects.

*Keywords :the teaching process, students, creative activities, Faculty of Education, understanding.*

### Introduction

Nowadays, there are many strategies, starting from those for easier start of the learning unit, further to strategies for controlling of one's knowledge. These strategies are acceptable in Kosovo but for a category of teachers and professors and not for al of them. It is very true that ‘*Many university faculty members consider the use of learning games during classes and lectures inappropriate, waste of time, and an undervaluing of class and lecture subject matter*’ (**Beka 2013**) Due to the fact that in Kosovo for a long period of time had dominated the traditional strategy of teaching process, in whcih process the student was the object but not the participant of the teaching process. There are facts that in our society for a long time had dominated the frontal form of work, according to which form the student was given right to talk only when questioned, but no interaction or interactivity, which differs from today`s day when in Kosovo as well the process of teaching activities has evolved and changed, fortunatelly for the better. This change happened especially after the arrival of international organizations in Kosovo, (**i.e after2000**) such as UNICEF, Save the Children, KEDP, and many other organizations that contributed to increase the quality of education process in Kosovo. However, these reforms were not acceptable by all and everyone. Hence, from 2002 - 2006, at the Faculty of Education, Department of Gjilan City, only two (2) professors have excercised the creative activities or games strategy, during their teaching process. The mentioned fact illustrates the best the level of acceptability of the games and creative activities during the teaching process in our society. Still we can say that the situation is slightly different and tendency of implementation of new strategies, during the teaching process by the younger generation is evident.

### **The study goal**

The main goal of this study is to investigate the main factors that influence increase of quality of class, establishment of motivation, rise student's interest and possibility to reach higher scores during the learning process.

### **The objective of research**

- *To identify the role of creative activities in the learning process*
- *To understand the importance of creative activities at the beginning of class*
- *To talk about the importance of communication among students for better progress of the class.*

### **The literature review**

Creative activities are part of almost every modern strategy. On this paper work, the possibility of using the creative activities at the beginning of class has been examined. Gardner and many other authors, talk about creativity and innovation as the essential and necessary issues of the teaching process. Professors of educational psychology, **Robert Sternberg and Wendy M. Williams** highlighted three stages of creativity: *Balancing Analytic, Synthetic, and Practical Abilities*. Both authors talk about twentyfour (24) types of creative teaching, but we have used only: *Creative Model and Build Self-Efficacy*. Majority of our teachers, do not give the opportunity to students to express their creativity at least verbally. Two authors illustrates this the best: *All students have the capacity to be creators and to experience the joy associated with making something new, but first we must give them a strong base for creativity (Robert Sternberg and Wendy M. Williams, n.d. para 16)*. **Robert Sternberg and Wendy M. Williams** emphasised further that *‘ Richer, funnier, wilder, and generally far more interesting assignments, book reports, and projects make our lives less boring. It, is in fact a good example of enlightened self-interest for teachers to give students creativity training, because creative students are more motivated and more involved with their schoolwork, and their work becomes more interesting’ (Robert Sternberg and Wendy M. Williams, n.d)*.

The other expert of creativity, Robert Epstein, has identified four competencies of creativity.

- ✓ *Capturing—preserving new ideas.*
- ✓ *Challenging—giving ourselves tough problems to solve.*
- ✓ *Broadening—boosting creativity by learning new and interesting things.*
- ✓ *Surrounding—associating with interesting and diverse things and people ( Jennifer Henderson, 2008).*

Except other things, this author talks about the creativity, and suggest to teachers to dedicate at least five minutes per day to this activity, an acceptable and applicable suggestion, with the aim to increase the quality of teaching in all aspects. Finally *‘there is no greater freedom than freedom of daydreaming (Jennifer Henderson 2008)*

### **Methodology of researching**

This research was conducted during this semester, in a period of twelve (12) weeks. The group comprised of eighty (80) students, forty (40) female students of preschool group, and another forty (40) students (from them thirtysix (36) girls and four (4) boys) from the primary school group. The lectures with these students were not held on the same day, students were divided into four groups, each group had twenty (20) students, one day work during the week, ninety (90) minutes without any break. During this time, in three lectures, the subject of discussion started without any creative activity.

***The questionnaire as technique for collection of data was applied on this research.***

At the beginning of the lesson, students had various creative activities in weekly bases. Some of these tasks were individual activities, some other tasks were discussed in pairs, but also group activities were applied. The duration time for these activities, including discussions too was from three (3) to five (5) minutes.

*Examples:* change the place of letters of your name, and choose a variant to present it. This was a individual task. There were to examine various problematic situations, i. e. the preschool group was tasked to discuss a problem of a four (4) years old child. The child asking for fulfillment of his requirements at the moment of speaking, which was simply impossible. Another example, when the students of the primary school group, had to discuss about things they would never practise in the future with their own students, considering their own student`s experience. Another idea, was: with the letters of their names, they must to form another name. Another group was tasked to make a decision about the name of the group taking into consideration initials of the name of each group member and such similar activities. These activities, not only made students think deeper, but also activated other senses such as eye and hand for writing.

During this time, students spent part of the energy talking to each other, which resulted on possibility to discuss on the topic during the entire time of lecturing, while whisper was present in few cases only. The form of work in groups with students was mainly implemented through the method of dialogue and interaction. There were only three days without implementation of creative activities, which resulted on more whispering and difficulties for students to concentrate during the class.

### **Researching results**

The number of students for this survey was eighty (80) from the Faculty of Education, Gjilan center. The forty (4) students from the primary school group and the remaining forty (40) from the preschool group. The observation results showed that the creative activities exercised at the beginning of the class, influenced positively to all students. Hence, 64.5% of the students declared that they had freedom to express their opinion during these activities, which freedom was missing during the classes without these activities. Referring to results from the data collected for this research, 25% of students understood easier and better the subject – matter prior to discussion. Hence, the prior activity, helps students to understand easier the topic of discussion. There is no doubt that these activities increases students` motivation, easier concentration and distraction. 27% of students gave positive response to the question on ‘ how much creative activities help students ‘ and 15% of them declared these activities to be even relaxing.

### **Conclusions**

Based on data from this survey, we can conclude that the creative activities or activities for ‘ *warming the head* ’ help the students, and are useful for the teaching process, especially if implemented at the beginning of class.

These creative activities promote the critical thinking, increase student`s interest, learning motivation, they are attractive, increase level of understanding, reduce monotony during learning process, they are relaxing, and can be concluded that the creative activities are helpful in many aspects. When class begins with a creative activity, students are active during the entire learning process, encouraged to become both the object and the subject of the learning process.

The creative activities can be called ‘ games ‘ as well, thus it was rightly said that ‘ *learning games can be significant not only in childhood, but at all ages* (Beka 2013)



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## LEARNING METHODS AND THEIR IMPORTANCE IN TEACHING

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### **Abstract**

Learning methods in class are used and classified according to the underpinnings and different criteria that are used during the lesson. Therefore, on this basis in didactic and methodology learning texts, there are occurred classifications of learning methods made on basis of: the thinking course, the relationship between the totality and its constituent parts, the relation between cause and result, time chronology of the occurrence of relevant methods' affirmation or also the resources of learning acquisition.

The purpose of learning methods is that, every person must be able to learn lifelong and to multiply knowledge, to gain ability and qualification, also to be able to suit to a complex world of reciprocal connections that changes continuously:

-Compilation of preparation for classes/activities, which involves defining the forms, methods, procedures, tools, articulation of oriented classes/activities and the expected results from its implementation;

-Determination of the purpose of classes;

-Advantages of interactive-creative classes;

-Forms of teaching works;

-Types and kinds of classes etc.

In order to have good results in teaching and learning one must work and respect all the methods of learning on the basis of the stages of learning units:

**( RIR).**

**R-Raising**

**I-Implementation**

**R-Reflection**

In conclusion, every teacher must behave in accordance to the Code of the educational institution during his comittment.

**Keywords:** *Learning methods, teacher, learner, creativity, innovations.*

### **Introduction**

Teaching methods make a powerful and direct impact in the final effect, whether the masterfully selected and applied ones provide sufficient qualitative concretization of the contents in teaching. This is required and with a particular importance for learning of the subject curricula because of the specific and synthesized nature that learning contents have in their broader meaning. It is generally known how big the profit of convinient and abundant concretization of the content of this nature is. In collectivity exists the joint vision for schools' development and the strategies, the importance and the use of methods on how and when should they be implemented.

Through the interactive teaching methods, teachers help students to build the content and new idea for the basis of knowledge that they have and advance sooner. Teaching methods in teaching should be selected taking into account the age and psycho-physical abilities of students. That is because students of all school ages are not able to understand samely abundant and good

the teaching contents with any teaching method whether it is one subject or there are more subjects. There are some methods which require a higher level of maturity and general psycho-physical preparedness of students. The density of implementing teaching methods need to respond to students' willingness to receive and to learn with them. Otherwise it will be that learning becomes extremely difficult and overburdens students in learning.

We can call teaching methods as effective only when their appropriate appliance ensures optimal engagement of students in teaching. The specific nature of the use of teaching methods is another criteria that dictates the choice and level of enforcement of methods in learning, with synthesizing nature that they have they require the selection and implementation of more teaching methods. (*Sallmani, A. Ethics and ethical codes of teachers, Tetovo, 2010, p. 72*).

Therefore we can say that each subject and each learning unit does not fit all alike to all teaching methods but they change during their use in learning and teaching.

### **Teaching methods**

#### **The classification of teaching methods**

Different Authors, different ways of teaching, classify while being supported on different criteria. Therefore, on this bases, in the basic texts of the didactics and teaching methods, we face classifications made on the basis of current thinking, of the relationship between general and component parts of it, the relation between cause and flows, time chronology of appearance of the corresponding method affirmation or resources of knowledge in teaching. (*Filipović S., Didactics I, Sarajevo, 1977, p.236.*)

The basic teaching methods are:

1. Verbal-textual methods
2. Demonstrative-illustrative
3. Laboratory methods of practical work

-Within each of these three basic groups, there are included and processed unique methods.

1 Verbal-textual methods, are groups of teaching methods, which has as a basic source gain of the knowledge.

In the group of teaching methods we have:

1. Pre-spoken method
2. The method of conversation
3. The method of working with text

Pre spoken method is the only and universal method of learning. Living word of teachers, or the written word, is the only source of learning and teaching.

Verbal-textual methods have an important and should always apply in teaching in our schools. (*Sallmani, A., 2008.p.40*)

Pre-spoken method

In today's lesson, pre-spoken method have to choose the method we apply, for these purposes and teaching situations:

-When we are dealing with content learning units which can not be processed through sources other methods of learning and teaching.

-When with pre speaking of the teacher, wishing to offer the model of the regulated speech and literary for students.

-When pre speakers want to encourage and motivate students to speak fluently and regulated.

-When with the pre speaking we want to make the teaching more attractive. (*Bakoljev, M., 1984, p.72*).

The effect of pre-spoken methods' implementation in teaching depends on the cognition degree of compliance of adherence of a whole series of didactic and methodological requirements in teaching. For their right marginalization, according to their objectives these requirements are divided into three basic groups:

- Requirements relating to the content of the prespeaker
- Requirements dealing with the language of the prespeaker
- Requirements dealing with time needed for the prespeaker in one class

Within the first group of claims, which refer to pre-speaking composition we should take care of some issues:

- Content of the pre-speaking in teaching should be scientifically proven and true
- Content of the pre-spoken teaching should be prescribed to the age and shaped in terms of didactic and methodical.
- Content of the paraforulit should also be systematized.

From the group of requirements dealing with the language of the pre-speaker, we should be careful that:

- the pre-speakers' language should be adequate to the degree of linguistic and literary development of school-aged students when learning.
- language of pre-speaker should be rich in words, terms and language and literary expressions that help the advancement of culture.

it should be regulated by concrete.

The effect of applying the pre-spoken method depends on the degree of compliance of requirements related to the time and age of students, how the pre-speaking should last within one hour.

### **Conversation method**

The method of conversation is a verbal method by which, through questions and answers the process of class and aims and tasks of learning are developed. This method is focused on the implementation of the purpose and tasks of class.

In current class theory, the conversation method occurs as:

- dialogue method,
- erohematic method- (gr. erotema) question.

The didactics of contemporary methodology is against the enforced implementation of obsolete variations, but, it is committed in the implementing of variations and newest and the most productive forms of conversation method and modern class. (interactive, creative).

There are a lot of reasons and situations for the requirement of the implementation of conversation method in learning and teaching.

Then, it is recommended to select and implement this method:

- when the teacher or other education experts consider that students have
- sufficient knowledge on the content of class, they have the ability to transform the conversation into **monologue**.
- when through conversation about class unit content we want to ascertain the degree and quality of information mastery and experiences of the pre-knowledge of students for the content of class unit prescribed for the particular class hours.

We will choose and implement the conversation method in class also in case we want to encourage students to actively take a part in learning. Through well formulated and submitted questions in the introductory part of the class can create a pleasant atmosphere. The same will be provided in other phases of the class.

It is recommended to choose and implement the conversation method also when we will through the good oriented conversation encourage the students to get right and general conclusions for class issues through their own forces.

#### **Versions of conversation method**

1. Cathectic version of the conversation,
2. Socratic version of conversation,
3. Heuristic version of conversation,
4. Free version of conversation,
5. Discussion version (controversial, review, debate).

#### **Cathectic version of the conversation**

Characteristics:- started to be practiced in medieval schools, catechism = ways of learning the content of the text by heart, verbally (literally). Now comes into expression when dealing reproduction of text content or cultivate exact data. Pedagogue GANDIGT calls it a question with despotism, ruler character. We use this when we make a reproduction of the learning content and when we check latitude facts of learning contents. e gjerwsive tw pwrmbajtjes mwsimore.

#### **Socratic version of conversation**

Is named after the old Greek philosopher Socrates. Socrates has built specific form of conversation with his pupils (Plato, Euclid).

Starting from the position that truth is found in humans, the questions are of alternative or descriptive kind that means they contain two alternatives. So the one who answers to the question should be determined on one alternative or the other. In school practice it comes into expression in all stages of learning process with a certain purpose.

#### **Heuristic version of conversation**

Characteristics; - students come up to new knowledge through it, when we apply productive repetition in the learning process; because encourages students, makes them to think and to be activated in discovering new knowledge (terms, definitions) in the lesson, because it orients students to participate in the elaboration of generalizations. (*Poljak, V., PCC, Zagreb, 1977, p.15*).

In this version of conversation the application of following kinds of questions come into expression: developmental, dialectical or linear. The structure of heuristic version of conversation consists:

- 1) question;
- 2) answer;
- 3) observation

Heuristic form of conversation is typical of the way of the inductive method in teaching (from the general one-sample to the specific- rules).

The designations of this version of the conversation are:

- it is like heurose that discovers the didactic (Burger),
- it is a productive moment in class (Copei),
- it is intellectual resonance (Dilthey),
- it is interiorization ((internationalization) (Piaget).

#### **Free version of conversation**

Developed in family, on street, at the plant, factory, in learning etc. It is being developed around a topic without definitions and previous orientations.

Free dialogue. Forms of free version of conversation:

- 1) discussion,
- 2) consulting,
- 3) controversy,
- 4) debate,
- 5) review,
- 6) analysis and conclusion.

Some of the didacticians call the middle variant of heuristic and free conversation as=developmental version of conversation.

According to some didacticians the version of free conversation in a form of discussion, consulting, controversy, debate, review, analysis and conclusion is a form of dialogue, respectively conversation which is characterized by the democratic social system which means: the democratic system of life and work in school is introduced in learning. This is one of the most intensive and qualitative forms of conversation in class. This type of conversation is used in ; *-courses, -seminars, -TV, school, -radio.*

The effect of implementation of the conversation method in class mostly depends on the degree of recognition and condensation of class of more didactic-methodological requirements.

Pregarding their nature these requirements are divided into three basic groups:

- a. Requirement related to the manner of paraphrasing the questions,
- b. Requirements related to the manner of adduction of questions and
- c. Requirements related to the manner of paraphrasing and proclamation of the answers.

(Krasniqi, I. & Veseli, A., 2000).

#### **Method of reading and working with text**

Also the method of reading and working with text is one of the verbal-textual methods.

Text is a written word, which generally is a source of receiving and learning in contemporary school and outside in life. Therefore, reading and working with text are made classal methods.

By the method of reading and working with text we understand the verbal-textual method which as a source of teaching and learning has a written word and text. Many methodicians give their estimations and ideas that there are a lot of disagreements around the idea that where should the method of reading and working with text should be applied in practice?! Despite this idea, there are more other theorists who rightly think that the method of reading and working with text should begin to be applied since the first class in primary school because students today are more intelligent and more skillful. Also the ability for understanding of read contents and for learning through reading should be exercised since the first class in primary school and to constantly progress by interactive forms in this sphere of education.

-The program contents are considered as very adequate for effective implementation of the method of reading and working with text. These interesting contents for students can be found in different books. For this reason, in the phase of preparation it is necessary for the teacher to plan and to use the method of reading and working with text in the most appropriate manner. (Ministry of Education, November 2011, pg 18.)

The implementation of the method of reading and working with text, also in learning gradually enables the students to understand and to rightly interpret the the information they have read.

-It advances also the culture of reading and writing. It Enriches the vocabulary and the speaking culture of students which means advances and mobilizes the attention and memory functions of students.

-It exercises the critical thinking, right expression and fluency.

The methods of reading and working with text makes it possible the systematic acquisition of the learning contents.

-Learning through the method of reading and working with text influences also in the education of many positive virtues of the will and character of students in learning. - Learning through the method of reading and working with text helps also the individualization and differentiation of the class.

The method of reading and working with text is likely to be implemented in different stages of general structure of learning process and for different purposes.

The implementation of following is recommended:

- a. Reading and working with text as a source of acquisition of new learning contents and
- b. Reading and working with text as an illustration and complement of the learning contents acquired by the methods and other teaching and learning sources.

### **Demonstrative-Illustrative method**

These are classal methods which as a source of knowledge acquisition have the demonstration, illustration and graphic presentation of the contents in learning. These methods are very important because if they are implemented rightly and with a professional maturity they provide the highest and polysemic(manifold) of concretization (conduction) of learning contents.

This group of learning methods includes:

- Method of demonstration,
- Method of illustration,
- Method of work with writing,
- Method of drawing,
- Method of graphic works.

### **Method of demonstration**

This method has to do with live observation of the situations, relations, movements, working operations, work organization, and also other activities, the functioning of machines, aparats, technical instruments, creators in the field of music, TV programmes, radio etc. It is one of the most required and used methods in presentation of the learning content better and more proper as far.

**Method of demonstration** is a method by showing, (of all that is possible in a manner that will be perpetuated). The demonstration in class is in different types. These types can be accomplished having in support different criteria of separation and classification. In methodology there must be implemented these demonstrations: static demonstration, dynamic demonstration, direct demonstration and indirect demonstration.

In didactic-methodological literature all requirements that are referred to the effects of implementation of methods of demonstration are divided into these basic groups:

-Requirements that are related to things, objects, actions and processes that we choose for demonstration;

-Requirements that are related to the place where the demonstration is done;

-Requirements that are related to the manner of the conduction of demonstration and

-Requirements that are related to the time of the duration of demonstration within the class. (Sallmani, A., 200,p. 51).

A special impact on the final effect of the demonstration has also the TIME-WHEN the demonstration is done within the class.

The demonstration can be conducted in all stages of the classes.

### **Method of illustration**

This classal method provides a direct contact with objects and other classal models. It's versions are:

Illustration of objects and models - when we have direct illustration of the object and the model may come into consideration even more:

*the viewing, comparison, pushing the boundaries of attention, evaluation of students.* Their illustration is required to rely also on these moments, : *illustration with a spontaneous tempo, ie neither too slowly nor too fast..*

**1.** Illustration of artistic photographs – here comes into expression the motive and aesthetic moment in the illustration of artistic objects.

In the learning process, its value is almost irreplaceable because awakens and develops students' interest, curiosity for work – lesson. This comes from that aesthetic side of the object that offers the student for its complete cognition. (Sallmani, A. 2006. P. 15).

### **Phases of class**

In order to have good results in teaching and learning one must work and respect all the methods of learning in all stages of learning process.

R- RAISING(discussion before the content)

I- IMPLEMENTATION OF THE CONTEXT (it is achieved by a student-learner, when seeking relative information about forecast).

R-REFLECTION (discussion after the content).

In conclusion, every teacher during his comittment must behave in accordance to the Codex, values and ethic principles of the educative-classal institutions.

### **Conclusion and recommandations**

School is the most important place where the organization of the teaching work has been a problem in the class theory and practice. Therefore this problem is current also in the modern time studies and will go on to implement the class methods in practice..

As a result of the development of science, particularly the theory of teaching and learning, the old way may not be accompanied by it's entirety in modern schools. Roles and responsibilities of teachers are to prepare the students for life, so his image is displayed in his behaviour, in his role in the society, in a role of teacher, in role of determining objects in accordance to the lessons, in assesment and knowledge, in the role of professional development, in the role of indicator, in the role of researcher etc.

Professional-pedagogical potential of each teacher is also associated with methodical-didactic culture and methodological preparation for class. For this reason it is important to give a clear answer to the question: what is and what does consist the specific culture of teachers preparation for a complex work and a lot of plans such as teaching and interactive-creative class methods? These problems are a direct object of the use and implementation of these methods which are considered as very necessary in methodology in the process of teaching.

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## **EDUCATING PRE-SCHOOL STUDENT TEACHERS TO INSTRUCTIONAL DESIGN: AIMS AND ACTIVITIES**

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### **Abstract**

Developing teachers' competencies in instructional design is an essential part of both teachers' initial education and professional development. The starting point of this research is that by educating teachers by practicing instructional design and particularly by developing Teaching Learning Sequences (TLS) – a current movement in Science Education - we can contribute substantially in the development of their pedagogical content knowledge (PCK). A second point is that by enhancing some of TLS's characteristics in order to include teaching of science as inquiry as well as the skills of scientific methods, it is very possible to develop critical thinking skills as well. This study is a part of a project aimed to educate student -preschool teachers in instructional design and developing TLSs. We applied a 14 teaching hours project, during which specific knowledge (about PCK, TLS, Inquiry, etc.) were discussed, while 21 students in pairs were designing and developing their TLS, in one of the given topics. Many sources of data emerged, like pre-post tests and interviews, the corpus of the developed TLS, diaries of 4 selected students and a metacognitive class discussion. In this study we'll present findings concerning the teaching aims as well as the consistency and coherence between aims and teaching activities in the “water cycle” topic both in pre-tests and the final TLS and “day and night alternation” in post-tests. In order to have a deep understanding of our data, a well elaborated grid, included predetermined scores, was constructed. The first data analysis shows that student teachers competency in setting teaching aims and objectives is low. A slight improvement has been recorded in post-tests, but mainly in the project's final products. A better performance in setting aims concerning content knowledge compared with issues of equal importance (i.e. aims related to investigate and transform children ideas or aims related to affective domain) was recorded. These results are helpful in reorienting teaching to confront students' real needs in instructional design.

**Keywords:** science instructional design, preschool teachers, PCK, TLS

### **Introduction**

Teaching any school subject is a complex procedure as it's effectiveness is related with many factors. Teachers use knowledge from a wide range of cognitive fields during designing and implementing teaching. Specifically, research in science education has shown the

importance of two factors for effective teaching: The first is teachers' sufficient knowledge of the scientific content he/she is asked to teach, the other is his/her knowledge of pedagogic methods. Therefore, teachers should be educated and trained so as to enrich and widen their Pedagogical Content Knowledge ( PCK) (Magnusson, Krajcik & Borko 1999).

The enrichment of teachers' PCK along with the reinforcement of their teaching skills is related with the achievement of inquiry-based instruction. Recent research (Science Education now, 2010) has shown that science education should be based on inquiry, since by adopting this teaching model science education should not be based on memorizing events and ideas, but on investigating the natural phenomena and everyday situations (Duschl & Grandy, 2008). In inquiry, students, just like scientists, pose questions, observe, design research, collect information, analyze and interpret data, construct explanations and communicate the results to their peers. Additionally, in inquiry, students should use teaching material that is based on Information and Communication Technology (ICT) and investigate problems both in formal and informal contexts.

The connection between PCK and pedagogical knowledge can be achieved through Teaching Learning Sequences (TLS). TLSs are small or medium scale innovative curricula whose duration can be from 5 to 15 teaching hours. TLS's emphasize on epistemological analysis and transformation of teaching content (Tiberghien, Vince & Gaidoz 2009) as well as on students' conceptual difficulties. Educating teachers in designing, implementing and evaluating TLSs, seems to be a presupposition for them to be able to achieve inquiry-based teaching (Meuhet & Psillos 2004).

It is known that in many countries including Greece, the most common method in teaching science is by transmitting knowledge from teacher to student. Another important element is that teachers are loyal to the school book without taking into account neither students' needs, ideas, special skills, nor bibliography suggestions (Science Education Now, 2007). So, one of the factors of students success or failure is teachers themselves and the way they design and implement teaching.

The present study constitutes part of a broader research based on the above mentioned current trends in science education and taking into account that the educational environment in Greece is traditional (Kariotoglou et al.2013). In this developmental research project we educate future pre-school teachers in designing and implementing inquiry based TLS's. Nowadays, it is widely accepted that science education should begin in early childhood (Gelman et al. 2010, Eschach 2006); very young children can investigate and take part in a process of inquiry (Mantzicopoulos, Samarapungavan, & Patrick, 2009) Patrick, Mantzicopoulos, & Samarapungavan, 2009; Samarapungavan, Mantzicopoulos, & Patrick, 2008); and scientific activities in pre-school can influence children's long-term attitudes toward science (Eschach 2006, Eshach & Fried 2005).

The focus of the study is mainly on the part of instructional design concerning teaching aims and objectives, as well as the activities related with them. The questions guiding the research were as follows:

- What is students - preschools teachers competency in setting aims in their teaching?
- What is the orientation of the aims (e.g. to cognitive, affective or social domain) they mainly set in their teaching?
- Is there a consistency between the aims and the activities and vice versa in their design?
- Could future pre-school teachers improve their skills in setting aims after teaching and practicing by themselves in developing TLS?

## Methodology

As mentioned before, the present study was a part of wider research in which 22 undergraduate student - preschool teachers participated (21 women and 1 man). These students were enrolled in a course of 14 hours of theoretical and practical training in Science Education, and specifically issues like teachers PCK, inquiry teaching, TLS developing etc. During the practical part of the course, students, as they were designing their instruction, had the opportunity to seek information and materials in printed sources or in the web, while they were supported by educators in issues they asked for.

The aim of the theoretical training was to help participants, working in pairs, to develop their TLS, on one of the topics: “Water cycle” and “The journey of food”. In this study teaching design of the students who worked on “Water cycle” topic should be in focus. More specifically we studied the teaching aims as well as the consistency and coherence between aims and teaching activities. Data were collected from multiple sources and a variety research tools, as open questionnaires before and after training, individual interviews, personal students’ diaries, a whole class metacognitive discussion and the TLSs designed and developed by the students. Pre-tests - the open questionnaires used to record students’ competencies in instructional design before training - and the TLSs, as well, were on the “water cycle” topic. Post-tests - the open questionnaire used after training- were on “night and day alternation” topic.

The first data analysis was based on predefined categories constructed in order to record the orientation of aims students set in their teaching. The main categories of teaching aims’ orientation were: cognitive (sub-grouped in general and specific), emotional, psychomotor and socio-environmental. Then, we constructed two grids of analysis, in order to quantify students’ competency in setting aims, one on the water cycle topic and the other on day and night alternation. In this grid there were eight categories of aims and specifically: a general cognitive aim, specific cognitive aims, related knowledge, procedural knowledge (experiments- skills etc.), psychomotor aims, children ideas, aims concerning social and environmental dimensions and finally emotional and social aims. Predetermined points were assigned in each category of aims. The protocol/grid of analysis, as well as the predetermined points (presented in the Appendix) were checked and validated by a panel of experts. The maximum expected score in aims’ setting in the grid concerning water cycle was 17, in day-night alternation grid the corresponding score was 16. Individual scores were recounted as a percentage of the maximum expected score, for a comparison between pre, post-tests and TLSs be possible.

In a third step of data analysis, aims were divided in information units (that means individual aims with an autonomous meaning) and afterwards aim units were matched with teaching activities and vice versa. In this way, we intent to determine the consistency and the coherence between teaching aims and activities. We quantified the respective students’ achievement by giving 1 point to each aim related at least to one activity and to each activity designed for the achievement of at least one aim. The total individual score was recounted again as a percentage of the maximum expected score. We named this score as Score of Implementation of Aims (SIA). We follow the same mode of analysis and quantification to record activity – aims matching, and we named the Score of Targeting Teaching Activities (STTA).

All the steps of the analysis were made by two researchers working independently. In order to establish inter-rater reliability, the two researchers debated their decisions, when they disagree, in order to reach an homophonous decision. In case the degree of agreement was lower than 70% the analysis started from the beginning.

## Results

In the table 1 the mean score for each kind of aims, in other words the percentage of *achievement* among different types of *aims* concerning pre and post test, as well as TLSs are seen. There are not statistically significant differences between of pre, post tests and TLSs. We can see a high percentage of general cognitive aims, a lower percentage of Specific Cognitive Aims and related knowledge, as well as of procedural knowledge. Moreover, there very low percentages in Psychomotor Aims, aims concerning Children Ideas and Emotional and social aims, while for Social & Environmental topics corresponding very high percentages in TLSs, but very low in pre-post tests. A better performance in setting aims concerning content knowledge compared with issues of equal importance (i.e. aims related to investigate and transform children ideas or aims related to affective domain) was recorded.

**Table 1**, about the aims distribution among different types of aims in pre and post-test, as well as TLSs.

In table 2, individual scores concerning setting aims in pre, post-tests and TLSs are presented. As the range of expected scores was in all three cases from min=0 to max=100, it is obvious that student performance is low. Although, we can see improvement between pre and post-tests and pre-test and TLS, the difference is statistically significant.

**Table 2** About the individual students' performance in setting aims in their instructional design

**Table 3.** Individual students' scores in *Implementation of Aims (SIG)* and in *Targeting Teaching Activities (STTA)*

In t table 3, the pre-tests, post-tests as well as TLS scores for the consistency and the coherence between teaching aims and activities are presented. As we can see the scores of implementation and the scores of targeting are higher, as opposed to scores of results in setting teaching aims (table 1).

## Conclusion

In this study, we designed, implemented and evaluated an innovative intervention for educating pre-school teachers in science instructional design. In our results it is evident that our students are competent in the implementing of teaching aims but not in setting teaching aims. We believe that our students' instructional design is a bit poor and one-dimensional, as it is orientated only in cognitive aims. Our students are consistent in designing activities guided by specific teaching aims. Given the higher competence of our students in designing activities for achieving teaching aims, the need to focus our teaching in the enrichment of teaching aims is apparent.

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## REWRITING SKILLS IN STUDENTS OF PRESCHOOL AND PRIMARY SCHOOL PROGRAM

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### **Abstract**

Rewriting skills of 236 students of the Faculty of Education in Pristina were researched. In this research, students of the third year of studies, respectively 71 students who attend preschool education program and 165 students of primary school program were included. As far as gender is concerned, 224 are girls and 12 boys. In order to assess the rewriting skills, the test of rewriting sentence was applied. Initially, frequencies and percentages of results of the tested students were analyzed, then basic statistical parameters: arithmetic mean ( $\bar{x}$ ), standard deviation ( $\sigma$ ), the standard deviation of arithmetic mean ( $\bar{x} \sigma$ ), as well as minimum scores (Min) and maximum scores (Max) were calculated for the applied variable in this research. Differences between students of both programs and genders were obtained through t-test. Results of the t-test prove that there are significant differences in the test of the variable of rewriting sentences in favor of students of preschool education program. As for the gender, results of the t-test also prove that the tested girls are more successful compared to the tested boys in this variable. Based on the results of this research, it is recommended to continue with further research in the area of rewriting skills in order to increase the quality of education in all programs of the Faculty of Education in Pristina.

**Keywords** - rewriting skills, reading disorders, writing disorders, success at higher education.

### **Introduction**

*Language* can be defined as a means of communication that shapes cultural and personal identity and socializes one into a cultural group. Language can be nonverbal (e.g., facial expressions, gestures) and verbal (e.g., actual speech used in conversations). Language also includes both oral (i.e., listening and speaking) and written (i.e., reading and writing) components (Terry et al. 2010: 110). Linked to this, Lado (1961: 25) pointed that the integration of speaking, listening, reading and writing make up an individual's proficiency in a language, but the mastery of these skills is seldom even.

*Writing* as a part of language is a communicative tool. Communication takes place in social surroundings. Historical and cultural situations define the social needs and equipment used for writing. The writer is conducted by her or his cognition and affect. The writer is cognitively, emotionally and physically involved in the act. According to Hayes (1996: 5), each of the components is absolutely essential for the full understanding of writing. Indeed, writing depends on an appropriate combination of cognitive, affective, social, and physical conditions if it is to happen at all. Writing is a communicative act that requires a social context and a medium. It is a generative activity requiring motivation, and it is an intellectual activity requiring cognitive processes and memory. Green (2007: 80) added that factors such as age, educational experience,

cognitive style and attitude are also significant predictors of one’s writing ability. Writing is an integral part of academia, and can be assessed in a number of ways.

One of the principal factors associated with a child’s ability to learn is *working memory*, the capacity to hold in mind and manipulate information for brief periods of time in order to complete an ongoing mental activity (Gathercole et al. 2008: 1019). Berninger et al. (2006: 108) put writing clearly in working memory context, explaining the cognitive dimension of writing activity.

According to Berninger (2000: 67), *rewriting* consists of handwriting and spelling. They are separate although correlating skills. *Fluency in writing* is usually defined as the writing speed: the number of words or letters written or typed in a given span of time. Connelly (2007: 481) stated that fluent transcription is an important component of the writing process that needs to be developed in children and is presently done so through handwriting instruction in the classroom.

*Skill* is a behavior that is learned from the environment. With regards to social interaction this can be accomplished through modeling of other persons and/or direct instruction. Often practice is involved. *Disorder* means harmful dysfunction, where dysfunctions are failures of internal mechanisms to perform naturally selected functions. The harmful dysfunction analysis rejects both the view that disorder is just a value concept referring to undesirable or harmful conditions and the view that disorder is purely a scientific concept (Wakefield 1999: 374).

As Schneider et al. (2003: 3) pointed *dyslexia* is understood as a language processing difficulty to varying degrees that affect mainly reading in letter, number and/or musical symbols. These difficulties occur because of differing abilities of the brain to process auditory and/or visually presented information. While dyslexia cannot be cured, specific accommodations through professional teaching can provide the dyslexic individual with successful coping strategies. As Catts (1991: 164) stressed that many cases of dyslexia are best characterized as instances of a developmental language disorder, a disorder that is present early in life and manifests itself in different ways during development.

Kay (2004: 2) defined *dysgraphia* as a specific learning disability that is neurobiological in origin, characterized by difficulties with accurate spelling as a result of phonological processing deficit (dyslexic dysgraphia) and by poor penmanship or handwriting due to inadequate motor skills (motor dysgraphia) and/or spatial perception (spatial dysgraphia). These difficulties typically result in problems in written expression that can be unexpected in relation to other cognitive abilities and with the adequate pedagogy.

According to Connelly et al. (2006: 176), there has been little research into the writing skills of students with *dysgraphia at university*, and so considerably less is known about the effects of this disability on writing. This is despite the belief of students with dysgraphia and their tutors that writing, not reading, is in fact their biggest problem at university.

A lack of proficiency in learning and an inability to deal with the language demands of higher education have a detrimental effect on *student success* (Van Schalkwyk 2008: 2). Cotton et al. (1998: 75) added that poor performance at a university level can be attributed to numerous factors, other than language, and that there are many moderating variables which affect student performance. Their research found that personality and affective factors such as attitude, motivation and friendships can play a role in students’ performance.

Brown (1987: 7) stated that *teaching* means showing and helping someone to learn how to do something. Giving instruction, guiding in the study of something with knowledge causing



to know or understanding so teaching is guiding and facilitating learning enabling the learning to improve skill and attitude.

Anders et al. (2000: 732) stressed that the distinction between *teacher training and teacher education* needs to be examined. We know how to train teachers (e.g., with specific behavioral outcomes targeted), but we need to know more about educating teachers (e.g., with the goal of conceptual change, enhanced decision-making capabilities, or strategic teaching).

Regular *assessment of students' learning* provides vital information to teachers, parents and others on the effectiveness of a teaching program or method over time and reveals the progress being made by individual students. Based on such assessment data, teachers are in a position to adapt and modify their daily teaching practices and materials to bring about improvements where necessary. Assessment also helps identify those students who are achieving extremely well and therefore need extension work that will motivate and challenge their abilities to the full. Equally important, assessment helps identify as early as possible those students who are struggling to master reading, writing or spelling and therefore require further investigation and additional support (Westwood 2009: 3).

To date the *approach of institutions* has been to view the diversity in the context of a transformational process, whether this is in the form of student access and support, lecturer recruitment, academic programme development, research or scholarships (Cross 2004: 387).

### **Purpose of research**

The purpose of this research is to assess rewriting skills of students of preschool education program and primary school program.

### **Tested STUDENTS and methods**

#### **Sample of the tested students**

This research consists of a sample of 236 students, respectively 71 students who attend preschool education program and 165 students of primary school program. All students were in the third year of studies at the Faculty of Education in Pristina. As far as gender is concerned, 224 were girls and 12 boys.

#### **Sample of variables**

The sample of variables consists of the variable of students based on programs (71 students of preschool education program and 165 students of primary school program), the variable of students based on gender (224 are girls and 12 boys), and the variable of writing ability (the test of rewriting sentences).

Before the testing started, the sentence in Albanian language: “sot është kohë e ftohtë” (“it is a cold day today”) was written with capital letters on the white board. Then, the sentence was read aloud to students, and they were asked to rewrite the sentence on their papers as many times as possible. The time to complete the test was 2 minutes. During the assessment, only sentences which were rewritten correctly were taken into account.

### **Statistical analysis of results**

For the purpose of reaching the aims of this research, initially were analyzed frequencies and percentages, then basic statistical parameters, respectively the arithmetical mean ( $\bar{x}$ ), standard deviation ( $\sigma$ ), standard error of arithmetical mean ( $\sigma\bar{x}$ ), as well as minimal results (Min) and maximal results (Max) for the variable of rewriting skills. Through the t-test differences between students of both programs and genders have been calculated.

### **Results and discussion**

#### **Frequency and percentage of results obtained for groups and genders of tested students**

To elaborate in more detail the data collected through this research, analysis of frequency and percentage of results in the variable of the test of rewriting sentences (TRS) of the tested students of both groups has also been done, and they are presented in respective tables and charts.

Table 1, respectively Chart 1, shows that from the total number of 71 students of preschool education program 10 (14.1%) of them have not rewritten any correct sentences, while 27 (38.1%), have rewritten from 10-12 correct sentences. As for the group of students of primary school program, the majority, respectively 110 (66.7%) of them have rewritten from 8 to 11 correct sentences.

Table 1 Frequency and percentage of the variable of the test of rewriting sentences (TRS) for groups of tested students

Students of preschool education program			Students of primary school program	
TRS	Frequency	Percent	Frequency	Percent
<b>Valid</b> 0	10	14.1	8	4.8
1			1	.6
2				
3	1	1.4	3	1.8
4			1	.6
5			8	4.8
6	1	1.4	7	4.2
7	3	4.2	13	7.9
8	3	4.2	24	14.5
9	7	9.9	42	25.5
10	10	14.1	28	17.0
11	8	11.3	16	9.7
12	9	12.7	11	6.7
13	5	7.0	3	1.8
14	8	11.3		
15	4	5.6		
16	1	1.4		
17	1	1.4		
<b>Total</b>	<b>71</b>	<b>100.0</b>	<b>165</b>	<b>100.0</b>

Charts 1 Charts of variable TRS for groups of tested students

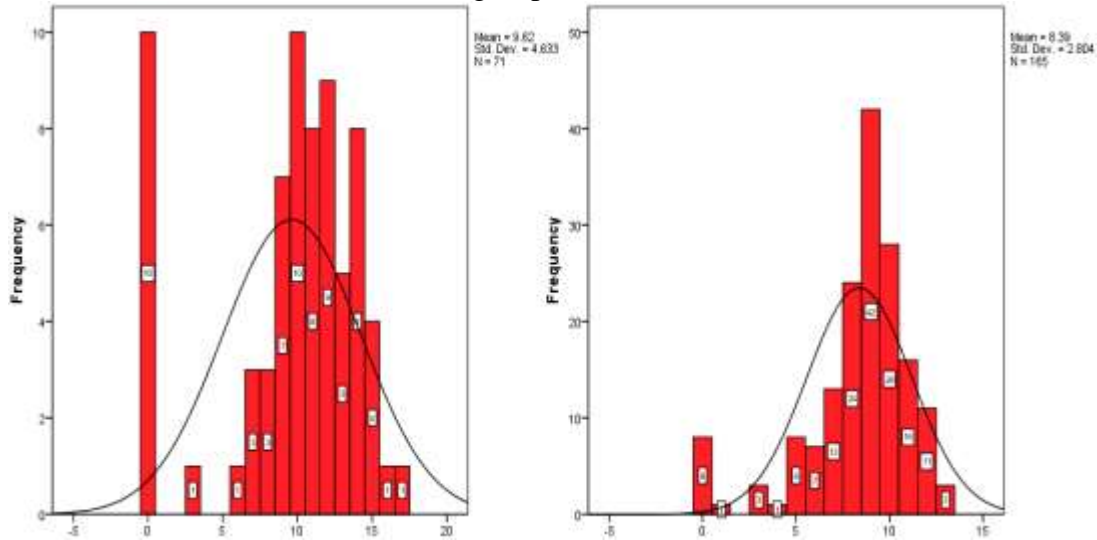
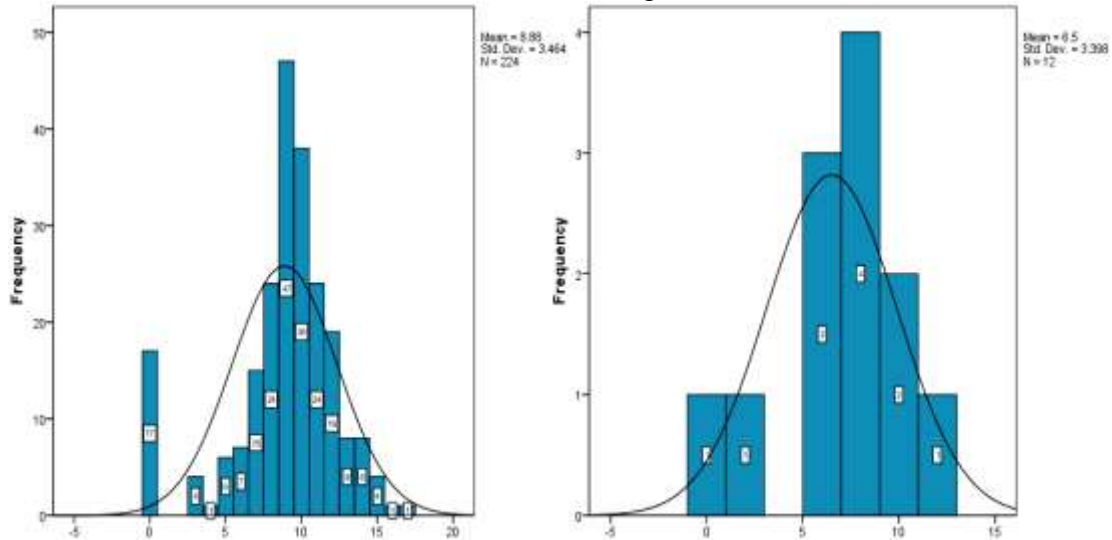


Table 2 Frequency and percentage of the variable of the test of rewriting sentences (TRS) for the tested students based on gender

Girls of preschool education and primary school program			Boys of preschool education and primary school program	
TRS	Frequency	Percent	Frequency	Percent
Valid 0	1	7.6	1	8.3
1			1	8.3
3	4	1.8		
4	1	.4		
5	6	2.7	2	16.7
6	7	3.1	1	8.3
7	15	6.7	1	8.3
8	24	10.7	3	25.0
9	47	21.0	2	16.7
10	38	17.0		
11	24	10.7		
12	19	8.5	1	8.3
<b>Total</b>	<b>224</b>	<b>100.0</b>	<b>12</b>	<b>100.0</b>

Data analysis of the variable of the test of rewriting sentences (TRS) presented in Table 2 and Chart 2, shows that out of the total number of 224 girls 109 (48.7%) of them have rewritten from 9-11 correct sentences, while out of 12 tested boys, even 9 (75.0%) of them have rewritten from 5 to 9 correct sentences.

Charts 2 Charts of the variable TRS based on the gender of tested students



**Differences in the rewriting skills between groups and genders of tested students**

In order to elaborate in more detail the obtained results, calculation of basic statistical parameters has been done: arithmetical mean ( $\bar{x}$ ), standard deviation ( $\sigma$ ), standard error of arithmetical mean ( $\sigma \bar{x}$ ), minimal results (Min) and maximal results (Max), as well as, the t-test of applied variable according to programs and gender of tested students.

Table 3 Basic statistical parameters for the applied variable for students of preschool education program

Variable	Students of preschool education program				
	$\bar{x}$	$\sigma$	$\sigma \bar{x}$	Min	Max
TRS	9.62	4.63	0.550	0	17

Table 4 Basic statistical parameters for the applied variable for students of primary school program

Variable	Students of primary school program				
	$\bar{x}$	$\sigma$	$\sigma \bar{x}$	Min	Max
TRS	8.39	2.804	0.218	0	13

Table 5 Results of the t-test for students of preschool education and primary school program

Variable	Students of preschool education and primary school program	
	t-test	2 Tail Sig
TRS	2.513	0.013

The obtained results from the Tables 3, 4 and 5 show that in the variable of the test of rewriting sentences (TRS), important differences were recorded due to the fact that the value of t-test is 2.513, respectively 0.013. Students of primary school program have in average rewritten fewer sentences (8.39) compared to students of preschool education program (9.62). There are also differences between maximal results: for students of preschool education program  $\Rightarrow$  17 correctly rewritten sentences and for students of primary school program  $\Rightarrow$  13 correctly rewritten sentences.

Table 6 Basic statistical parameters for the applied variable for girls of preschool education and primary school program

Variable	Girls of preschool education and primary school program				
	$\bar{x}$	$\sigma$	$\sigma \bar{x}$	Min	Max
TRS	8.88	3.464	0.231	0	17

Table 7 Basic statistical parameters for the applied variable for boys of preschool education and primary school program

Variable	Boys of preschool education and primary school program				
	$\bar{x}$	$\sigma$	$\sigma \bar{x}$	Min	Max
TRS	6.50	3.398	0.981	0	12

Table 8 Results of t-test for girls and boys of preschool education and primary school program

Variable	Girls and boys of preschool education and primary school program	
	t-test	2 Tail Sig
TRS	2.320	0.021

Results presented in the Tables 6, 7 and 8 for the variable test of rewriting sentences (TRS), show that there are statistical differences between gender, in favor of tested girls, since t-test is 2.320 and its 2 Tail sig is 0.021. Girls have written maximally 17 sentences, were boys only 12 of them.

Elaboration of obtained results through the t-test shows that there are significant statistical differences in favor of students of preschool education program and girls of tested programs.

### Conclusions

The purpose of this research was to assess rewriting skills of 236 students of preschool education program and students of primary school program. In order to accomplish this task, 71 students from preschool education program and 165 students from the primary school program were covered by the research. As far as gender is concerned, 224 were girls and 12 boys. All tested students were in the third year of studies, and for the purpose of this research they were tested by means of the test of rewriting sentences.

With the help of the t-test it can be concluded that there are statistical differences (Sig = 0.013) between the tested groups of students studying preschool education program and students of primary school program. Similar statistical differences are identified also between genders of tested students (Sig = 0.021). Obtained results prove that there are significant differences in the variable of the test of rewriting sentences in favor of students of preschool education program and girls of both programs compared to the students of primary school program and boys of both programs.

In view of the results, further research in the area of rewriting skills is recommended in order to enhance the quality of education in all programs of the Faculty of Education in Pristina.

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## THE EFFECT OF ATTITUDES AND SELF-EFFICACY IN MATHEMATICAL PROBLEM SOLVING

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### Abstract

Performance in mathematics is not a simple process, but a multi-faceted procedure, one that is shaped by many factors. In the present study, we investigate the problem-solving capacity of pupils attending the 5<sup>th</sup> grade of elementary school in relation to their attitudes and self-efficacy towards mathematics. 85 fifth-grade students from various schools of Florina participated in the survey. Attitudes and self-efficacy towards mathematics were measured with the Attitudes Towards Mathematics Inventory (ATMI) and the Motivated Strategies for Learning Questionnaire (MSLQ) respectively. In addition, in order to measure performance in maths, pupils were presented with a math test consisting of two standard problems. The first was with low difficulty and the second one of average difficulty level for fifth-grade pupils. We expected strong correlation between attitudes and self-efficacy towards mathematics as well as that problem solving performance depends on attitudes and self-efficacy towards mathematics. According to the results yielded by our survey, there is a strong correlation between attitudes and self-efficacy in maths. In addition, the pupils' performance in mathematical problem solving seems to depend on their attitudes and self-efficacy towards maths. The results demonstrate the importance of attitudes and self-efficacy in mathematical problem solving and the fact that attention should be drawn to the above factors during the teaching procedure.

**Keywords:** problem solving, performance, attitudes, self-efficacy

### Introduction

#### *Attitudes towards mathematics*

In this age of fast advancing technology the number of professions based on mathematics is on the rise. Having a positive attitude towards and doing well in mathematics can increase professional choices while a low performance in maths can restrict them significantly. Many attempts to define attitudes towards maths can be found in contemporary bibliography. As Hart (1989) argues attitudes are a multifaceted process that can be divided in three parts: emotional response, either positive or negative, someone's perception of mathematics and his/her behavioural tendencies. Attitudes permeate a large spectrum so they cannot be limited to either positive or negative, but they could lean towards being positive or negative.

According to studies there is a negative shift of attitudes towards maths as students advance in school years the origins of which can be traced to elementary school (Dowker, 2005). As far as the formation of attitudes are concerned, they are a multivariate phenomenon and are related to previous academic success of failure, as well as to motives; low motives are linked to more negative stances in maths (Singh et al., 2002). Additionally, attitudes are formed by the effects of the broader learning environment like the support provided and expectations expressed by the teacher as well as student interaction (Akey, 2006). Finally, attitudes are related to the level of trust one has for him/herself, with the value attached to maths and with the level of enjoyment one feels from doing maths (Aiken, 1974; Fenemma & Sherman, 1977). Frequent student failures have a negative effect in the shaping of attitudes (Mandler, 1989). In addition to this, pressure put on students in conjunction with traditional teaching practices and possible



negative attitudes of the teacher, affect student attitudes towards maths in a negative way (Philippou & Christou, 1998). Repeated emotional reactions end up constructing a broader personal scheme for mathematics, which is solidly build and is not prone to change (Nicolaidou & Philippou, 2003).

With regards to gender and attitudes towards maths it seems that although girls seem to be reaching boys' performance in maths, Gallager & Kaufman (2005) argue that the scale is still leaning towards an issue demanding the attention of parents and teaching staff. Finally, according to studies attitudes are positively related to maths performance and lead to successes in maths (Schoenfeld, 1989; Nicolaidou & Philippou, 2003). In a study carried out with US students (Lipnevich et al., 2011) it seemed that attitudes predicted academic performance and explained the fluctuation 25-32% in maths performance.

#### *Self Efficacy*

According to Bandura (1997) self efficacy is related to personal perception of a person's capacity to plan and execute actions in order to achieve specific goals. Self-efficacy is measured according to the level of the person's certainty for carrying out a specific task. It is task-specific, related to the perception about the difficulty level that a person has for a specific task (Zimmerman, 2000) and also context-specific referring to the context of the task (Bong & Skaalvik, 2003; Linnerbrick & Pintrich, 2003). As Bandura argues (1981) self-efficacy is the best means of measuring an action's level of success as it focuses on the specific action each time.

Self-efficacy affects behavioural and acting factors of a person engaging in a specific task, like motives level, perseverance when faced with difficulties, adaptability in adversities, emotional status and a person's analytic brain capacity (Bandura, 1986). Also, self efficacy affects the goals someone sets for oneself, the choices he/she makes and their level of commitment when trying to achieving these goals. (Zimmerman, 1990). There is a positive correlation between self-efficacy and performance (Hackett, 1985). According to studies students with high self-efficacy levels seem more ready to engage, are hard-workers, show perseverance and demonstrate lower levels of negative feelings towards adversities in relation to those that question their skills (Zimmerman, 2000). On the contrary, students with lower self-efficacy tend to give up more easily when faced with hard math problems and are less accurate in their calculations. When it comes to academic success, it is not only self-efficacy that plays a decisive role, but also the precision of this personal estimate (Bandura, 1997). Students that over-estimate their skills might engage in more difficult tasks and fail, something that will lead to lowering their motivation levels. On the other hand, students that under-estimate their skills may avoid difficult tasks restricting their chance of developing necessary skills (Schunk & Pajares, 2004). Studies show that students tend to over-estimate their maths skills / maths performance (Pajares & Miller, 1994; Pajares & Kranzler, 1995). Moreover, lower performance, students are less accurate and tend to over-estimate their skills in relation to high performance students that tend to under-estimate their skills (Bol & Hacker, 2001). The majority of studies show a positive correlation between attitudes and self-efficacy (Nicolaidou & Philippou, 2003).

#### *Solving Mathematical Problems*

Developing the skills for math problem-solving is of great importance for math education (Lemonidis & Kaiafa, 2013). Solving a math problem is a complex process that involves mathematical notions, strategies, attitudes, emotions and cultural factors (English & Srinaman, 2010). Developing the skills to solve math problems is a focal point in all maths teaching

curriculums. In Greece, according to the current mathematics curriculum, the process of problem solving is an important aspect of teaching that permeates all elementary school grades.

The process of math problem solving is a complex process in which the student goes through different stages to find the solution. According to the different stages of problem-solving of the first stage is that of the student understanding the problem and the relations between the problem's variables. The second stage includes problem analysis and organizing the data according to their in-between relations. In the third stage, the student tries out various strategies and selects the appropriate one that will lead him/her to the problem's solution. In the fourth stage, he/she applies the chosen strategy and executes mathematical operations in order to solve the problem. The fifth stage includes a cross checking of both the answer and the question posed by the problem as well as examining alternative ways of solving the problem, expanding it and making it broader. The stages mentioned above form a continuum in the process of problem solving and should not be isolated (Krulick & Rudnick, 1989 in Philippou & Christou, 2002).

Solving a math problem is a complex and multivariate process. According to Kilpatrick (1975 in Kulm, 1984) three interrelated factors affect the problem-solving process. The subjective factor that includes variables such as gender, age, convictions and a person's post-cognitive skills. The task factor that has to do with the problems content, the mathematical notions it contains and the problem's context that has to do with non-mathematical aspects upon which the problem is built. Also, it is also related to the problem's syntax and structure as well as to the mathematical relations concluded from the problem's data. The environment-related factors have to do with physical, psychological and social context within which the process takes place.

#### *The present study*

Solving a math problem is a complex process. The present study looks at problem solving from a psychological point of view, examining attitudes and self-efficacy that are involved in the problem solving process. More precisely, we examine whether solving problem capacity is related to attitudes and self-efficacy and whether there is a correlation between attitudes and self-efficacy in relation to maths.

#### *Method*

Fifth-grade students from schools of Florina participated in this study. Participants were between 10.7 and 11.3 years old. To measure attitudes and self-efficacy we used self-reporting questionnaires. In more detail, the Attitudes Towards Mathematics Inventory (ATMI) and MSLQ's self-efficacy scale. ATMI aims at detecting the general attitudes of students towards maths and includes the following factors: self-confidence, values, enjoyment and motivation. The self-confidence factor has to do with the level of self-trust in relation to mathematical skills, the value factor is related to the value attached to maths by the individual. The enjoyment factor is related to one's satisfaction of dealing with maths and finally the motivation factor has to do with the individual's motives of engaging in maths. A five-scale measure was used in the questionnaire. Cronbach's alpha is  $\alpha = .97$ . The self-efficacy sub-scale of the MSLQ was used in the study. Cronbach alpha of the scale is  $\alpha = 0.93$ .

Once the students filled out the questionnaire, the researcher handed out a maths test to measure problem solving capacity, that consisted of two math problems. The two problems were selected from the “Nature and Life Maths Contest”. Problem No.1 is considered a lower difficulty problem, requiring the execution of three mathematical calculations. Problem No.2 is also a standard, three calculation math problem. It is of average difficulty and it should be noted that students are familiar with this type of problem.

*Problem No.1 – At the Canteen*

Mary bought three croissants and paid 1,50 Euros. Helen bought 2 pieces of cheese pie and paid 2 euros and 40 pence. How much did Danae have to pay given that she bought one croissant and one piece of cheese pie?

*Problem No.2 – Easter Trip*

A group of 96 people, consisting of men, women and children participated in the Easter Trip organized by a local club. Men and women are 64 when added together, whereas women and children are 65 when added together. How many are the men, the women and the children of this group

*Results*

85 fifth-grade students from Florina participated in this study. 44 of them were girls (51.8%) and 41 were boys (48.2%). The age of the participants was between 10 years and 7 months and 11 years and 3 months. The students’ test performance refers to the total performance in the maths test. Since each problem was graded with 0 for complete failure, 0.5 for half-response and 1 for success, the total score was between 0 and 2. Students’ mathematical performance was average (mean: 1.37, std: 0.58). The first problem did not seem to pose great difficulties for the students as 84.7% answered correctly, 11.8% only solved half the problem and only 3.5% did not manage solve it. Problem No.2 seemed to pose greater difficulties for the students as 42.4% of them managed to solve it, 8.2% only solved it half-way through and 49.4% which is the largest of groups did not manage to find a solution.

*Table1: The scores of students in both problems of the test*

Performance	Canteen		Easter Trip	
	Success (score 1)	72	<b>84.7%</b>	36
Half-success (score 0.5)	10	11.8%	7	8.2%
Fail (score 0)	3	3.5%	42	<b>49.4%</b>
Total	85	100%	85	100%

According to our results students tend to have positive attitudes towards maths (mean: 4.08, std: 0,62). The majority of the students (75%) scored higher than 3 in a five-step scale. As far as the self-confidence factor is concerned students’ mean was set at 3.94 with std 0.77. The mean score for the value factor was 4.44 with std 0.48. Students scored a mean of 3.90 with std 0.82 in the enjoyment factor. In terms of motivation, the average score was 4.03 with std 0.69. In addition, it seems that, in general, students have high self-efficacy in relation to their maths skills (mean: 5.63, std: 1.12). As far as gender differences in attitudes towards maths are concerned, we found no statistical difference between boys and girls ( $t=1.650$ ,  $df=83$ ,  $p=0.103 > 0.05$ ). In addition, there was no significant difference in any factor of the attitudes scale, except for the levels of enjoyment regarding maths ( $t=2.560$ ,  $df=83$ ,  $p=0.012 < 0.05$ ). Boys seem to enjoy more their engagement in maths than girls. In addition, boys and girls seem not to differ with regards to self-efficacy ( $t=0.367$ ,  $df=83$ ,  $p = 0.715 > 0.05$ ).

As far as problem No.2 is concerned students that succeeded had not statistical significant difference in attitudes, self-confidence, value, enjoyment and self-efficacy levels from students that only half-solved the problem or failed altogether. However, in problem No.1 there were statistically significant differences between the students with regards to self-confidence ( $F(2,82) = 3.210$ ,  $p < 0.05$ ) and their sense of self-efficacy ( $F(2,82) = 3.260$ ,  $p < 0.05$ ). Students that failed

in the first problem demonstrate a statistically significant lower self-confidence in their mathematical skills compared to students that solved it or solved it half-way through.

Independence analysis was carried out between the two problems presented to the students in order to find out the cohesion and validity of the maths test. There seems to be an inter-dependence between the two problems ( $\chi^2 = 10.236$ ,  $df = 4$ ,  $p > 0.05$ ). Finally Pearson's correlations were carried out to investigate possible correlations between the variables. According to the results, there is a strong correlation between attitudes and self-efficacy in relation to maths ( $r = 0.815$ ,  $p < 0.01$ ). Moreover, it was found that all attitudes factors were positively correlated to self-efficacy and in more detail, self-confidence had the strongest correlation ( $r = 0.769$ ,  $p < 0.01$ ). With regards to attitudes and performance in maths problems there did not seem to be a correlation between them ( $r = 0.017$ ,  $p > 0.05$ ). In addition to this, no attitude scale factor seemed to be significantly correlated to solving traditional problems. Moreover, self-efficacy did not seem to be statistically correlated with performance in traditional problems ( $r = -0.017$ ,  $p > 0.05$ ).

### ***ConclusionS***

With regards to student attitudes towards mathematics, students seemed to have positive attitudes. In more detail, in relation to attitudes' factors, it seems that students have sufficient confidence in their maths skills and that they treat maths as an important subject. They also seem to enjoy maths and that positive motives drive their engagement. We did not find any differences in relation to general attitudes or the attitudes factors between boys and girls. However, it appears that boys enjoy maths more than girls. Perhaps this difference in satisfaction levels may lead to different motivation and engagement levels with maths in the future. With regards to self-efficacy it seems that students feel efficient when it comes to their maths skills, without significant differences between the two genders. According to the results there is a significant correlation between attitudes (and factors) and self-efficacy, something that seems to be in accordance with international bibliography (Nicolaidou & Philippou, 2003). Generally, students seem to have positive attitudes and high levels of self-efficacy in maths without, however, performing really well in solving problems. This seems to support the possibility of a false sense of self-efficacy as predicted by the socio-behavioural theory as well as studies that show that students tend to over-estimate their skills (Pajares & Kranzler, 1995) especially students with lower performance (Bol & Hacker, 2001). However, with regards to the first problem, it was noted that the lowest performing students had significantly lower levels of self confidence and significantly lower self-efficacy compared to the rest of the students. It should be reminded that in the case of the first problem results were not evenly distributed as was the case with problem No.2.

Student performance in maths seems to be depended upon their attitudes towards mathematics. A significant correlation seems to exist between performance and attitudes sub factors (self-confidence, value, confidence, motive). Additionally, performance depends on self-efficacy in maths. On the one hand, positive attitudes and positive self-efficacy is of great importance for positive engagement. On the other hand, given that students demonstrated an average performance in the test, one should note that successive failures might negatively affect attitudes in the long term, as well as their sense of self-efficacy and consequently their engagement in the maths process.

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## CRITICAL THINKING AS A PHILOSOPHICAL VIEW IN HIGHER EDUCATION EUROPEAN AREA

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### Abstract

Critical thinking strategies have been so far considered of specific importance in most of the fundamental European Area Higher Education documents. These methods and strategies have constituted basic concepts and standards in all levels of education and have been reflected in Higher Education Law, National Strategies of Higher Education(2007-2013), National Qualitative Standards, embracing both theoretical and practical applications.

More specifically, the goal of this paper is the treatment of the critical thinking strategies as a philosophy in concrete developing aspects in higher education. Generally speaking this paper treats the value and importance of critical thinking methods in nowadays education studies especially in knowledge testing level of the students and more importantly in valuable and concrete current applications of these methods namely in students' texts implementations and in teaching and learning processes.

As the critical thinking thesis is universally taken for granted as a worldwide philosophical and practical strategy we aim to make some concrete proposals regarding the recognition and evaluation of this thesis.

**Keywords:** critical thinking, higher education, law, strategy, quality standards.

Critical thinking is an essential element in Higher Education and all other educational levels as well. In this paper we would treat the importance of critical thinking in Higher Education as a significant factor in qualitative teaching, academic writing, reading, listening and speaking (discussion), as well as the analysis of the critical thinking importance as a philosophy that leads to the development of specific strategies for the improvement of Higher Education in Albania.

In years, critical thinking has taken special importance (place) in the strategic documents of the European Area of Higher Education. It is due to these methods and strategies that the basic concepts and standards have been built in all levels of education.

Education in Europe has undergone changes and has faced deep changes in the last decade. European Commission, in a series of recent recommendations, has highlighted challenges such as: the increasing number of students, quality increase and progressive approaching of learning and teaching to the society needs and labour market; adaptation to globalization and the great increase of students number and higher education institutions in the world, strengthening of Europe as a leader in the world education etc.

Facing these challenges, the latest and frequent recommendations of the European Commission emphasize that it is crucial to maintain and increase the quality in higher education, to develop modern higher education institutions which would enable students to be highly qualified and prepared to face the economic and social development, helping so in the accomplishment of the main objective of European Strategy 2020: better employment and stronger economic growth. (European, 2014)

The orientation towards the information society has increased the need for the development of critical thinking, thus becoming part of the strategies and curricula. In years, critical thinking has become part of university curriculum. The concept of critical thinking as part of higher education philosophy and curriculum began for the first time in Albania in the year 1997 through the Project for the Development of Critical and Creative Thinking during Reading and Writing from Soros Foundation in New York and supported by the Open Society Institutions in Central and Western Europe and Central Asia. With the passing of years and the work done by experts, critical thinking is included as a separate discipline in the university curriculum of the education faculties in the universities of Tirana, Shkodra, Gjirokastra, Korça etc.

The practice of critical thinking is very important and a good “guide” for the professional future of everyone during university studies.

Considering the legal documents for higher education functioning, the importance of critical thinking is well expressed since the mission determining of higher education institutions themselves, (LIGJ Nr.9741, datë 21.5.2007 I NDRYSHUAR ME LIGJIN Nr. 10 307, datë 22.7.2010) stating that: *The mission of higher education is: to create, transmit, develop and protect knowledge by means of teaching, scientific research and services; ç) contribute to raising standards of society democracy and civilization and preparing young people for such society.* (Ligji nr. 9741, 2010)

One of the main reflections on critical thinking in Higher Education Institutions in Albania is the Strategy of Higher Education for the years 2007-2013, where in chapter 3.3 of this strategy, the importance of quality in teaching and curricula is stressed: *The teaching methods, as well as the curricula content of most of university programs do not meet the needs of the future society and economy. Regarding teaching methods and style, there is a tendency to deliver students ready-to-read information and asking them to reproduce it, instead of encouraging their critical thinking. In terms of the content of the courses, they are often limited and traditional, following a discipline without modules and credits, as it is required from the Bologna process. They need to provide students with alternative choices and flexibility in studies. These lacks in students formation are one of the reasons that a considerable number of students choose to study abroad, and only a few of them come back home.* (Strategjia, 2007)

In the year 2014, the Ministry of Education and Sport issued the final report on the reforming of Higher Education and Scientific Research, in which the problems of the system and future objectives were reflected. As for the quality of study programs and teaching, it was stated that: *The quality of teaching ought to be placed at the center of the reform . Up to now, the teaching quality is measured only through some formal indicators which are related to discipline, respecting timetables, but almost nothing is done to the quality of knowledge transmitted to students, i.e. to the teaching process.*

With further increase of the higher education role in the social and economic development, the old indicators used to measure the education quality, where students’ good grades were their success or failure, or the higher education institution success itself, now are no longer helpful.

Through years, in Albania, responsible institutions for quality assurance in education have been created. The relevant legislative framework is designed, which, due to rapid changes in our country’s higher education system, has undergone successive changes too. Thus, in Albania, in the year 1999, the Public Agency for Higher Education Accreditation was created. It was a state and public institution and part of Quality Assurance System in Higher Education



under the administrative dependency of the Ministry of Education. Its main mission is quality assurance in higher education. (APAAL, 1999)

The importance of critical thinking as part of quality in teaching, is also defined in the Standards and Instructions (terms) for Quality Assurance in European Area of Higher Education, offered by the European Foundation for Quality Assurance in Higher Education, Helsinki, Finland 2005. (ENQA, 2005)

The importance of critical thinking as a way of thinking and acting, cannot be distinguished from different programs of study, but it is this discipline that makes the difference within programs themselves. Critical thinking appears in specific forms, in different study programs and in most study programs. It means learning how to think as part of that program. In other words, if a student is studying Geology, he needs to start thinking like a geologist. Critical thinking in all study programs means: learn to ask, learn to link theory to practice, create the appropriate basis of the data, analyze the available data and bind the conclusions logically.

However, critical thinking is not an aim in itself, separated from the goals and objectives of the higher education strategies. It is a philosophy that requires regular and long-term implementation. The more the students learn to think critically, the more they develop their abilities, values and opportunities for a successful life. Of course, not excluding the fact that teaching staff have an irreplaceable role in the spreading and right use of critical thinking.

The tendency to approach the legislation of the Higher Education in Albania to the European one, in accordance with the objectives of the European Strategy 2020 is one of the most important goals in the aspiration of Albania to become part of the European Union, but finding the right instruments for designing the right policies according to the needs of the Albanian society and economy (at regional and national level) and quality increase in higher education remain a challenge, which, within critical thinking framework, requires further development of human capital, critical thinking for qualitative teaching, orientation of curricula towards practice, active participation of students for becoming a well trained and capable generation in order to be prepared for the trade market, as well as the development of the procedures for internal quality assurance in the higher education institutions. These are the higher education challenges which, on their basis, have critical thinking as a philosophy and practice because “critical thinkers” are the most talented professionals.

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## CRITICAL RESEARCH PARADIGM IN FUNCTION OF CRITICAL THINKING IN LEARNING AND TEACHING

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### **Abstract**

The paper belongs to the theoretical group of papers and it is divided in three structural parts: Research paradigm as a base for learning and teaching, Critical paradigm for pupil`s critical thinking and Critical paradigm for teacher`s critical thinking.

In the first part, Research paradigm as a base for learning and teaching, the focus of the authors is on elaboration of the paradigms in the light of methodology of learning and teaching process.

The second part, Critical paradigm for pupil`s critical thinking, stresses the active position of the pupils in the process of their maturation and personal development.

Critical paradigm for teacher`s critical thinking, as a third part of the paper covers the aspects of learning of the teachers about critical paradigm, thinking about critical paradigm and practicing critical research paradigm in the methodological aspect of teaching.

**Keywords** Research paradigm, Critical paradigm, pupils critical thinking, teachers critical thinking

### **Introduction**

The participant reaction on the environment is a crucial aspect in the contemporary relations. The position in which one and everyone is trying to live without any objections, any wishes for changing and any action is “cool”, but not defined, passive and without productivity. The first step for changing the environment is the perception in which the action by the person can be seen as “thinking about the ...”.

The critical thinking is an active participation in the social processes, taking into consideration positive and negative aspect of the situation, having your own attitudes towards that situation and making the reality by using different opinions, different views, different actions and different results of doing and thinking.

### **Research paradigm as a base for learning and teaching**

Different perception of the reality, practice and educational activities is in the focus of every modern teacher. Doing parallel activities, teaching and researching, the teachers create a balance of successful teaching and successful researching. Teacher`s role in contemporary world is oriented to producing knowledge about and for the pupils and pupils achievement,

transforming that knowledge into designing methodological actions and decisions and application of that action as teaching activities. One of the ways for achieving the goals of the curricula is using research paradigms as a tool for successful learning and teaching.

In this occasion we will take into consideration positivism and interpretative paradigm, with the focus on critical paradigm.

The interpretation of meanings of Anderson, Lincoln and Guba about the positivism that: “reality is singular and objective; ...essential reality constrains the range of possibility knowledge claim; researchers should aggregate subjects based on their possession of specific trait, attribute or performance; theory is best developed deductively and incrementally.” (Lindlof & Taylor 2002: 8)

Critical paradigm produces views, interpretations and different actions for achieving goals and priorities in teaching and learning.

Using some of these paradigms in creating learner perception on the teaching materials, learning tools or learning goals, the individualization of teaching and learning can be achieved.

That means that using the postulates of critical research paradigm in teaching and learning processes, the didactics and methodology of teaching can achieve the high expected results.

#### **Critical paradigm for pupil`s critical thinking**

The role of pupils in a modern educational process can be described as researcher (Iliev 2010: 4208–4211) and learner. When we talk about the role of pupils as researchers, we think on the possibilities of acting to overcome the “...limits to reflection in action” ( Schön 2003: 228, 229). With their research activities the teacher can “...benefit with the intrinsic critics of the change, partnership in the process of improvement and shared unique educational values” (Iliev 2010: 4208–4211). When, we discussed in our previous paper, the pupils` action research, we have mentioned that the pupil researchers “... usually want to propose some decision, activity and some direction which are opposite to the current practice.” we concluded that “This strength for critics may be seen as a critical view on practice” (Iliev et al. 2014: 3902 – 3904).

As a learner, the critical paradigm can influence: establishing proposals for differentiation of the methodological acting of teachers, finding different resources and teaching materials, creating personal learning directions and producing specific knowledge and attitudes over the curricula. Critical view of pupils on these questions can be developed by the appropriate teaching based on: individualization, interactivity, cooperation, research based learning and positive reflexivity.

#### **Critical paradigm for teacher`s critical thinking**

The positive way of behavior of the teachers is to follow the positivist paradigm in which the things are defined as: “a belief in an objective reality, knowledge of which is only gained from sense data that can be directly experienced and verified between independent observers” (O`Brien 1998). The ability for interpretation of the educational reality strengthens the position of the teacher as a person with their beliefs, attitudes and the person who can give sense to every experienced educational situation.

The critical paradigm makes the person more active, more rebellious and more aware of the position and roles in the educational system. As it is stated in the speech of Hitchcock G. and Hughes D. “ there is also an important sense in which teacher research, viewed as a critical, reflexive and professionally oriented activity, might be regarded as a crucial ingredient in the teacher`s professional role” ( Hitchcock & Hughes 1995: 7).

The processes of researching the classroom by the teacher includes activities for:”... analyze and contemplate the power of each other`s ideas; constitute a `new critical culture of school` in the manner of `a think tank that teaches students` (Lankshear & Knobel 2006: 6).

When the teachers wants to design their research proposal for classroom research, they must face with “A number of different `types` of criticism were distinguished, ranging from `very cautions` to `direct`”. (Silverman 2005: 22)

Critical thinking of teachers can be produced in a process of interpretation of some specific aspects of teaching. During the processes of interpretation of findings about the teaching and learning in the classroom, as Lankashear C. and Knobel M. stress, “...we appeal to concepts, ideas, theories, arguments, models of explanation and the like to move from our analysis of the data to judgements which we can defend as being reasonable accounts of how and why the things revealed in our analysis have occurred”.(Lankshear & Knobel 2006: 26)

Another way of development of teacher critical thinking is the use of critical view in the process of collecting and evaluation of source materials. According to Wiersma W., “...source materials must be subjected to external criticism...” for establishing of their validity. The internal criticism of the source is compulsory for “establishes meaning” of the sources. (More in: Wiersma 2000: 225-228)

These processes improve research activities of the teachers, but have positive influence on teaching process in designing the lesson activities.

Having in mind everything which was mentioned above, it can be concluded that the critical paradigm, on the part of the teachers, creates different approaches to perception of the teaching and learning process, develops concrete actions based on comparing analytic and holistic approach in the teaching situation and produces original, authentic and situated decisions about the pupils development.

### **Conclusion**

Research paradigms strengthen the possibilities of the participant in the teaching and learning process for dealing with the curricula needs, facing with the context of learning and teaching and having adequate relation with pupils, bearing in mind their differences and similarities. For the teachers, having knowledge about the critical research paradigm, means being capable of improvement of their own work, actively participated in the educational changes in school and classroom, being creative in designing of the teaching process and being always reflective in relation with colleagues, parents and pupils. Pupils as consumers and designers of the learning and teaching process, through using the critical paradigm, can provoke better solutions, research their behavior in the classroom, find the most proper ways for personal development, but also help the teacher to redesign and manage their educational processes according to the needs of pupils.

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## THE INCLUSION OF THE PUPILS WITH EDUCATION SPECIAL NEEDS IN NORMAL CLASSES

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### Abstract

The focus of the study is in the values of the comprehensive education, the inclusion of the pupils with special needs in education in normal classes, the role and support of school policies, practices and culture in the achievement of this decision making.

These results of this study are part of a deeper analysis realized with 780 subjects (263 teachers, 261 pupils, 256 parents), in the Region of Korça. The study has evidenced the achievements, priorities but also the problems and difficulties of knowing, understanding and effectuating comprehensive education.

This part of the study treats the attitudes of the people questioned about the role of the school’s organization and management in support of the pupils with special needs in education. From the statistical analysis of the data it is evidenced a series of problems that have to do with: the cognitive, emotional and social performance of pupils with SNE; the inadequate psycho-pedagogical competences of the teachers; the lack of teacher-parent partnership; a dissatisfactory level of interaction in class among peers.

However, the results of the assertions analyzed, testify the benefit of the inclusion of these pupils in normal classes, in the social and emotional aspect. They feel better with the others, interact more, are happier and go to school on time. Furthermore, from the academic point of view, the results are positive when compared with the previous state.

**Keywords:** education, comprehension, pupils with special needs in education (SNE), school policies, practices, culture, individual plan

### Introduction

The schools involved in the comprehensive education need to apply different working strategies to create its policy, practice and culture more concretely to coordinate the support of all developing forms and forces. In the Normative Provision of the Pre University Education it is emphasized the request for the creation of the multidisciplinary committees in the DAR to achieve the coordination of all the factors that are needed to realize CE. A natural request that arises is the improvement of the buildings, the development of the professional staff, the organization of individual teaching, the creation of a strong partnership between teachers and parents, the professional support of the pupils by modifying the curriculum in adaptation with the needs of the pupils by building a social, psychological and emotional environment rich in empathic attitudes that exclude discrimination, teasing etc.

Such managing strategies guarantee the success of the schools in all the fields of development such as cognitive, social, psychological, moral and social fairness development.

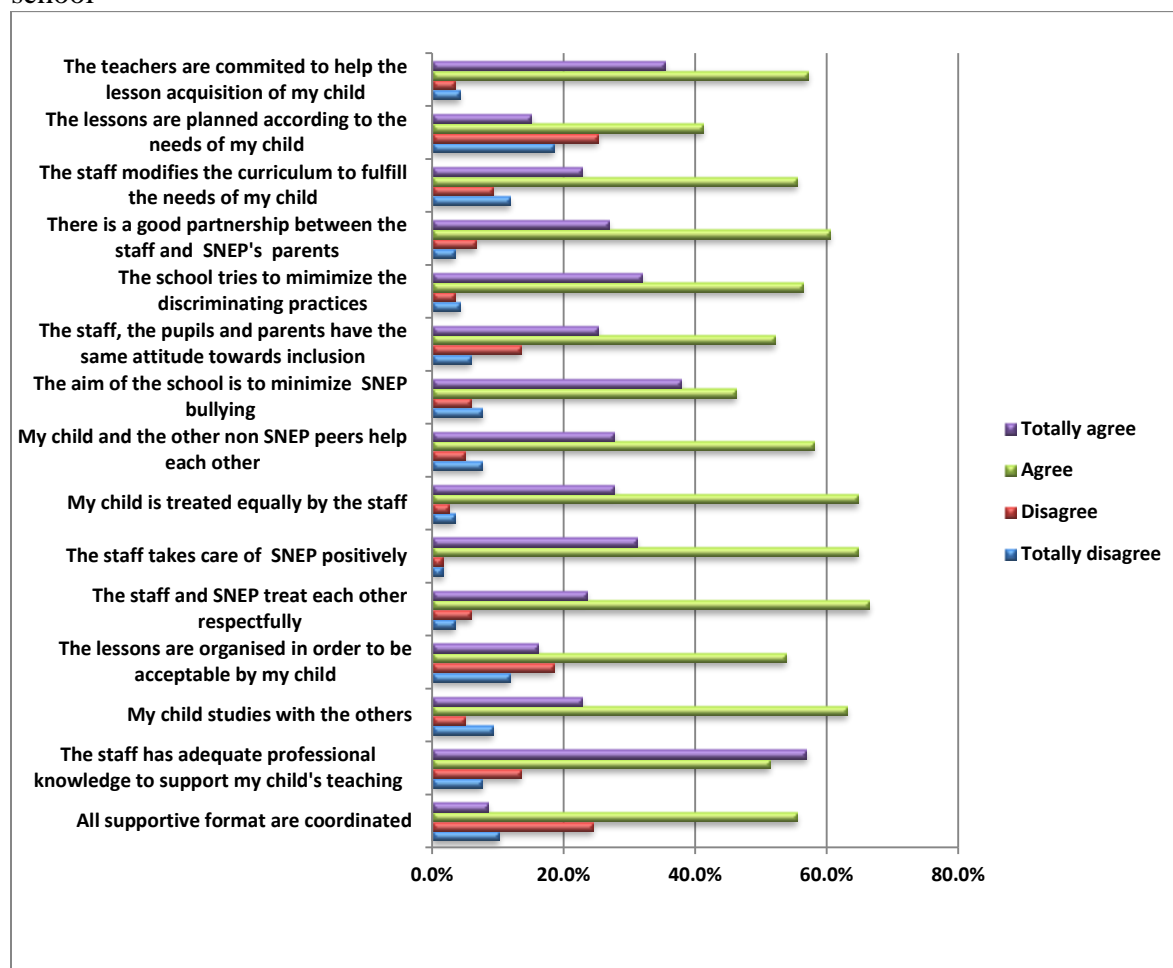
However, the school practice in our country testify results that measure the percentage of passing students and unsatisfactory quality, a non functional partnership, incomplete teaching directives, routine planning of the lesson, stiff, non supportive relationship between teachers and pupils and between pupils with each other, a ‘cold’ non optimal environment etc. These problematic issues were evidenced by the answers of the interviewers during our study, which measured their attitudes towards the statements in the rubrics.

**School policy, practice and culture**

In the rubrics that measure the attitude towards the organization and management of the school, the people questioned express their selves in relation to the school policy, practice and culture.

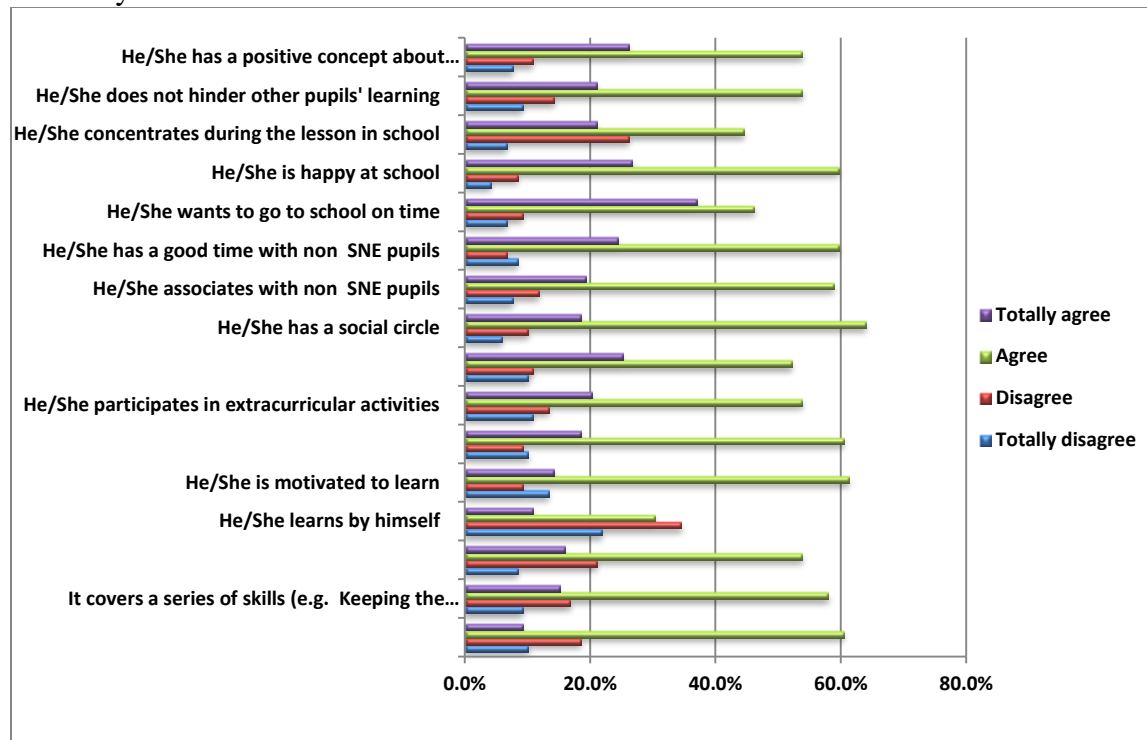
The parents of normal pupils voice their concern about the presence of SNEP in class thus restating an inadequate level of acceptance of these pupils, in Part B of the questionnaire (% of acceptance is 50%, the average 2.5-2.9, about light scale difficulties). Teaching and learning feel threatened not only in the attainment of the lesson’s objectives, but also in the creation of a healthy mental, emotional, motivational and appraisal environment.

Chart 1. The percentage of the non acceptance allegation about the forms achieved in school



From the data in the chart 1, 34.5% of the SNEP’s parents and 19.8% of the teachers disagree to the fact that all the supporting forms are coordinated. 21% of the SNEP’s parents are dissatisfied with the professional preparation of the teachers to modify the curriculum in accordance with the SNE pupils’ needs. 28.5% of the teachers are dissatisfied with the activities in school in relation to the adaption with the pupils’ diversity. Also, 30.3% of the SNEP’s parents are dissatisfied with the way lessons are organized according to the SNEP pupils’ needs; 43.7% of them are against the way they are planned. Also, 14.2% of the SNEP’s parents accept the fact that their children cannot be taught with the rest of the pupils

Chart 2. The percentage of the non acceptance of the allegations about the expectations about my child



These measured results (see chart 2) about the school’s policy despite the accomplishments achieved in some of its aspect, also demonstrate concerning problems related to the supportive, managing strategies of the multicultural values, multidimensional skills which in most cases damage the comprehensive multicultural education. For this reason I think that the comprehensive education is a practical reality but also a dream yet to come true.

The results measured in percentage, of the non acceptance of the allegations about the expectations, are disappointing about the parents of SNE children. 28.6% of the parents are not satisfied with the academic results of their children; 26% note the lack of a series of essential skills to realize the school work.

30% of the parents of SNE children think that their children do not understand the lesson in class; 22.6% of them say that they are not motivated to learn. Furthermore, 56.3% of the parents believe that their children cannot learn by themselves. In the analysis of the students’ questionnaire 40% of the children say that they cannot learn by themselves thus confirming their parents’ request for help.

As far as the social and emotional performance is concerned, there is generally a positive attitude by the parents of SNE children expressed in the participation of their children in the



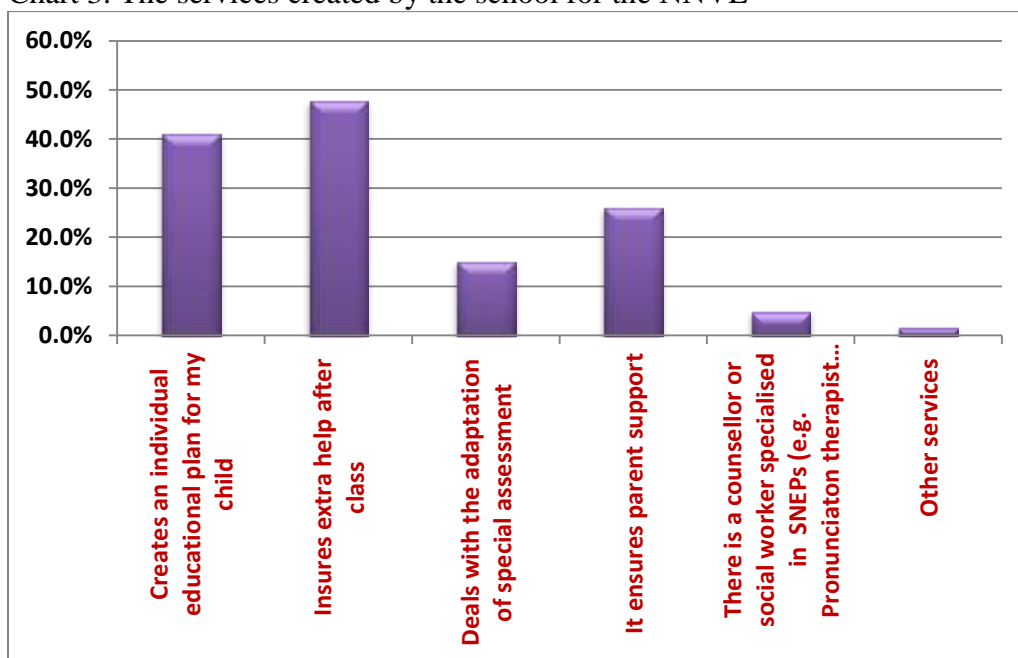
extracurricular activities, in the association with other non SNE children. In general they refuse the statement “They do not disturb the learning process of the other pupils”. 49.6% of the parents of normal children; 23.5% of the parents of SNE children, think that the children with SNEP disturb the others in class, hindering not only the academic achievement but also the quietness, attention, freedom and independence of other pupils. In the allegations of the SNEP s’ parents there is a part that is dissatisfied with the behavior of normal children towards their children, accompanied with teasing, bullying, physical and psychological violence.

In this analysis 18.5% of the SNEPs’ parents assert that their children do not have a positive concept about their selves to assist in the difficult path of learning.

**School support to SNEP**

SNEP s’ parents are dissatisfied by the support of the school towards the pupils and the kinds of services it organizes. Only 41.2% of SNEPs’ parents agree with the statement “It creates an individual educational plan”; 47.9% accept the statement “Insures extra help after class”.

Chart 3. The services created by the school for the NNVE



Only 15.1% of the parents admit that the school takes care of the adaptation of the assessment which means that PEI has not made any serious attempt to assess and motivate the SNE pupils with special techniques in relation to their individual characteristics.

The partnership school-family is an important factor in the education of the children. A weak cooperation is a potential risk to the problems in schools nowadays in general and EGJ in particular. This idea is confirmed by the acceptance by 26.1% of SNEPs’ parents of the statement “it ensures parent support”

The diversity of pupils’ difficulties, the cultural diversity that produces and develops them needs the help of other professionals, social workers, school psychologists and other services. Only 5% of SNEP parents declare that they cooperate with the school psychologist.

In table 1 there are the percentages of the non acceptance of the statements related to the achievements in school, which aim to measure the influence of the school practice in the attitude towards different kinds of difficulties.

The school practice also influences the comprehension, but this is especially noticeable towards different kinds of difficulties and their scale.

Table 1. The percentage of the non acceptance of the statements related to the achievement of the aims of the school. Teachers N=263

Teachers N=263)									
Types of difficulties									
	PD	PP	PF	PI	VES	AD/ HD	CA	VK	VSM
The staff has modified CV to fulfill the needs of NNVEs	5,1%	0,0%	5,1%	4,7%	3,3%	8,5%	3,9%	7,4%	8,2%
The lessons have been planned to face the pupils' diversity.	6,3%	0,4%	3,2%	2,1%	9,0%	8,5%	7,9%	6,3%	8,6%
The school has organized groups of teachers to assess the pupils	0,0%	3,1%	8,9%	0,4%	9,7%	3,1%	1,5%	1,2%	0,7%
The teachers are committed to help the students to learn.	5,5%	6,0%	5,6%	5,6%	,8%	,8%	4,1%	0,7%	,9%
As/Teachers are committed to help the students to learn.	3,9%	0,2%	7,5%	8,3%	9,0%	5,2%	1,3%	7,0%	4,7%
The lessons are accessible by the pupils	4,0%	0,5%	0,9%	9,0%	3,2%	0,5%	5,0%	9,3%	4,7%
The pupils learn together	7,8%	1,0%	7,9%	,0%	7,2%	1,8%	6,7%	,7%	2,2%
The school has adapted the valuation according to the pupils' needs	0,5%	3,6%	8,6%	4,8%	9,4%	0,9%	0,5%	8,3%	3,9%
The staff has adequate professional knowledge in order to help the pupils to learn.	0,1%	9,0%	6,8%	6,0%	7,1%	1,8%	0,1%	6,3%	7,5%
The lessons encourage the pupils to understand the diversity among pupils.	8,6%	9,8%	8,2%	9,0%	7,0%	0,5%	7,8%	7,4%	0,9%

About the assertion “The staff has modified the CV to help the needs of SNEP” the non acceptance percentage varies from 23% to 30% for all types of learning difficulties. Thus almost a third of the teachers are dissatisfied with their preparation to fulfill the needs of the pupils and the plan created in accordance with the types of learning difficulties.

A high percentage of non acceptance, 29%-41%, has been measured for the assertion “The school has organized groups of teachers to evaluate the pupils”, thus evidencing a big problem of the school in relation with the identification of the difficulties in learning, to determine the strategies for early intervention and solution to the problem. The absence of this cooperation permits an unprofessional labeling of the pupils by the teachers and as a result the intervention will be damaging. Moreover, the need for a teacher assistant has been a constant demand as evidenced in their interviews. Although the percentages of non acceptance do not truly show it, they vary from 15.2% up to 27%. The role of a teacher assistant is to support in a more special manner the SNE pupils in and out of class. The purview 97, clause 1 of the Normative Provision of the Pre University Education stresses the specialization of the teacher assistant in the education of the pupils with disabilities. In his absence, the task belongs to the teacher of the subject, who, in reality, lacks this particular qualification. The Albanian experience has problems in both the absence of a teacher assistant and also the lack of specialization of the teachers of the subjects.

The lowest percentages of non acceptance (3% - 16%) are in relation with the assertion “The teachers are committed to help the students”. Despite the difficulties that the teachers face to solve the problems of EGJ, their attitudes towards this assertion express the desire, passion and goals of the teachers to help the pupils in spite of the lack of the proper professionalism and training in this field.

The assertion “The pupils learn together” is positively valued by the teachers, with attitudes that vary from 8% to 18%, with the exception of the emotional and behavioral difficulties that are objected in 47% of the cases which have to do with group cooperation.

The acceptance of SNE pupils in normal classes, the support and training according to their needs, the hope and optimization are evidenced in table 2. (D4.1-D4.16). The values measured in this rubric have the same reasoning with the answers given by the parents and pupils in the rubrics related with the parents’ expectations and the beliefs the pupils have about their academic, emotional and social performance.

Table 2 The percentage of non acceptance of the assertions related to the expectations of SNEP, (D4.1-D4.16)

<b>Teachers (N=263)</b>									
<b>Types of difficulties</b>									
	<b>PD</b>	<b>PI</b>	<b>PF</b>	<b>PI</b>	<b>VES</b>	<b>AD/HD</b>	<b>CA</b>	<b>VK</b>	<b>VSM</b>
<b>The performance in the exam matches my expectation</b>	9,7%	1,9%	9,8%	1,5%	9,7%	1,9%	3,1%	1,2%	5,0%
<b>They have a wide range of skills</b>	1,6%	3,6%	3,6%	8,0%	6,2%	2,2%	4,6%	3,9%	7,2%
<b>They understand the teacher’s explanation in class.</b>	0,0%	3,5%	0,5%	9,2%	0,1%	1,8%	5,3%	6,2%	3,5%
<b>They learn by themselves</b>	4,3%	9,1%	7,7%	3,7%	5,8%	4,1%	1,1%	7,3%	3,0%
<b>They are motivated to learn</b>	2,4%	3,1%	8,5%	0,8%	8,5%	8,5%	1,5%	8,5%	5,4%
<b>They can develop their</b>	0,1%	4,8%	3,6%	2,4%	6,2%	5,4%	8,9%	5,4%	8,1%

<b>multiple intelligence</b>									
<b>They participate in extracurricular activities</b>	5,5%	1,7%	1,3%	1,6%	7,5%	3,9%	5,5%	9,7%	1,7%
<b>They participate in public and school activities</b>	4,7%	2,4%	2,0%	4,3%	4,4%	7,7%	7,8%	2,4%	0,0%
<b>They have a social circle with friends</b>	5,9%	7,5%	4,0%	7,9%	9,0%	9,8%	3,9%	9,0%	3,9%
<b>They befriend normal pupils</b>	1,8%	,8%	,4%	3,3%	0,6%	4,1%	5,5%	4,1%	2,5%
<b>They have a good time with normal pupils</b>	4,8%	1,4%	0,6%	5,2%	2,9%	2,4%	8,5%	5,9%	2,4%
<b>They aim to go to school on time</b>	4,2%	,6%	,1%	5,9%	6,7%	0,9%	5,5%	5,5%	0,9%
<b>They feel happy in school</b>	5,6%	2,9%	6,7%	8,2%	7,8%	0,9%	4,7%	5,6%	8,2%
<b>They are concentrated in the lesson</b>	5,1%	8,7%	2,9%	4,2%	6,5%	1,5%	8,8%	8,2%	3,7%
<b>They do not disturb the learning process of the others</b>	0,2%	3,7%	0,1%	5,8%	9,3%	9,2%	4,3%	3,6%	3,4%
<b>They have a good concept for themselves</b>	7,1%	3,3%	0,9%	1,3%	5,5%	1,3%	7,8%	0,1%	4,0%

In the answers of these assertions, in all the questionnaires, we have evidences a threatening problem in relation to the EGJ, because every side has treated it one-sidedly in the school practice. Building the pupils knowledge cannot be achieved in isolation. They do not understand well in class because the teachers do not plan, do not use strategies related to the SPE pupils' needs. Furthermore there is no proper partnership between teachers and parents to alleviate the learning process. During class there is no help from peers, because the teachers do not have adequate knowledge to train the other pupils to help the ones with SNE.

The results of the assertions we analyzed testify the need for the involvement of these pupils in normal classes both socially and emotionally. They feel better among others, interact more, are happier and go to school on time. Also academically the results are positive if we compare them with the previous state.

The percentage of non acceptance even in these assertions is lower with the exception of the less accepted difficulties, which are mentioned during the data analysis, like AD/HD, VSM, CA, where we can find more problems in communicating with others and in the emotional experience with friends, pupils, and teachers.

An important indicator to support the comprehensive education, for the inclusion of SNEP, is the quality of the training of the professionals that work in schools. The teachers answer the assertions that express the level of staff training with dissentient attitude varying from 20% from teachers, 26% from headmasters, 29% from other professionals like psychologists, social workers.

At the end of our analysis, I would like to point out some general findings that support but hinder the EGJ project aiming the composition of the educational strategies.

### **Conclusions**

#### Challenges for the application of Comprehensive Education

The application of comprehensive education in schools faces a number of serious challenges in relation to the quality of the comprehension, school results, climate in class, interactive activities.

- SSNE (students with special needs in education) increase the teaching hours of the teachers thus affecting the teaching process
- Little professional support and few trainings for the teachers applying SSNE
- Insufficient support by the government and the families
- There is a great number of children non diagnosed by experts, which hampers their help
- Many teachers do not accept comprehensive education let alone apply it.
- There is a lack of professional human resources, assistant teachers, psychologists in school.
- Parents of SSNE do not cooperate enough with the school.
- Parents of normal pupils do not welcome comprehension and are worried about the performance of their children.
- Normal pupils are bothered by SSNE
- SSNE are not easily accepted by other pupils in school.
- Some negative behavior of SSNE can be copied by other pupils.

Because of these reasons many parents and teachers think that school can only admit pupils with light disabilities; pupils with severe disability in learning should go in special schools because they may represent a threat for the security and success of others.

### **Recommendations**

What can we humbly suggest?

The partners of the schools we interviewed and gave the questionnaires, estimate some key factors, which affect the application of the CE:

- Early identification of the special needs in education in pupils;
- Stimulation of the communication with parents to encourage their support;
- Acknowledgment and acceptance of pupils with SNE by the school staff;
- Promoting a more tolerant and harmonious culture in schools;
- Education of parents to acknowledge and accept SNE;
- Encouragement of the professional knowledge of the teachers together with the skills to apply this education;
- School policy and culture needs to teach empathy and care amid all its members;
- Strengthening the cooperative attitudes and acceptance by normal pupils;
- Training of teachers and the organizing of teacher assistants;
- The increase of the number of social workers, psychologists in schools;
- The government needs to increase additional resources for the application o CE;
- Improvement of school transparency so that parents have the adequate information;
- The creation of Multidisciplinary Committees to truly identify the difficulties in the learning process and making individual professional educational plans;

- The schools must built cooperative relationship with NGOs, special schools, universities and educational institutes to create well thought practices for the preparation of the students that are going to become teachers as well as for the training of actual teachers.

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## TEACHING CRITICAL THINKING TO YOUNG ENGLISH LEARNERS IN GRADES 3 – 6. FOUR LESSON PLANS

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### Abstract

Critical thinking is often defined using several adjectives and adverbs as being able to think or reason analytically, deductively, rationally, logically, independently, strategically, reflectively and creatively.

But how shall we teach young English learners to think critically? This may be a challenge for many teachers and they need more information how to insert critical thinking in their English teaching, especially with young learners. They are in their first steps of learning a foreign language such as English and they need to know how to address to different issues, answer complex questions, solve problems and make decisions. So it is teachers' job to guide students toward critical thinking appropriately and they need to come into the classroom with a well-thought and structured plan with activities adapted to their age and linguistic competence.

By trying to answer the following questions, we would like to come out with concrete idea, useful to teachers and students at the same time:

Why is the lesson planning important for the teacher and for the learners?

What components are there in a lesson planning?

Which are the techniques that develop critical thinking in young English learners in a lesson plan?

There are also presented four lesson plans for the teachers in Korça, Albania, who use the English textbooks: English Zone 1 and 2 in the third and fourth grades; Access 1 and 2 in the fifth and sixth grades. The aim of this practical part is to see which techniques are incorporated in these lesson plans to develop critical thinking.

**Keywords:** critical thinking, young learners, lesson plan, critical thinking techniques

### Introduction

Thinking is a process that we use all the time to make sense of our lives and the world we live in. It enables us to solve problems, to make intelligent decisions and to achieve the goals that give our lives purpose and fulfillment. So, thinking is an activity that is very important for acquiring quality education that would promote living in a meaningful way.

Becoming a teacher needs skillful qualities in order to teach young learners how to think critically and also they should know the techniques which promote critical thinking in the EFL classrooms.

By trying to answer the following questions, we would like to come out with concrete ideas for both teachers and students:

-Why is the lesson planning important for the teacher and for the learners?

-What components are there in a lesson planning?



-Which are the techniques that develop critical thinking in young English learners in a lesson plan?

Four lesson plans are also presented for the teachers in Korça, Albania, who use the following English textbooks: English Zone 1 (Prieto M. Lauren R. 2006; 48-49) and 2 (Prieto M. Lauren R. 2006; 86-87) in the third and fourth grades; Access 1 (Evans V. Dooly J.2009; 18-19) and 2 (Evans V. Dooly J.2009; 74-75) in the fifth and sixth grades. The aim of this practical part is to see which techniques are incorporated in these lesson plans to develop critical thinking.

### **Why is the lesson planning important for the teacher and for the learners?**

Lesson planning is essential for the teachers as it gives the structure of the lesson and its overall shape. It allows the teacher to communicate more effectively with the students as he knows what he is going to teach and which the objectives of the lesson are.

In addition, it suggests professionalism of the teacher and genuine commitment. Planning the lesson is an important part of teaching and makes the difference between a lesson that covers the materials but which is uninteresting to the students and between a lesson that not only covers the materials but is very interesting to them and engages them in a learning process. (Halimi. S. et .al. 2006; Pg 13).

A lesson plan allows the teacher to focus on a topic or concept, from either the textbook or another source and create the kind of classroom from which the students will benefit most.

Lesson planning builds confidence to the learners and respect for the teacher and also gives a structural plan. In addition the plans give a model for the students to imitate the teachers in their future.

### **What components are there in a lesson planning?**

The components of the lesson are (Udhëzues 6; 1998):

1. *The topic* of the lesson
2. *The audience* (the class, the age and the level of the students)
3. *Objectives*: they should be clear, real and the teachers should think how they are going to reach them.

The objectives of the lesson are divided into *Overall objectives* and *Specific Objectives*.

*Overall objectives* focus on the broad skills that the students shall develop during the lesson, whereas the *Specific objectives* demonstrate the narrow skills that the students will develop during a lesson.

4. *Materials* include everything that teachers use in their classroom: the textbook, tape recorder, class cassette or CD, PowerPoint presentation, etc.

5. *Procedure* includes three steps:

*Presentation*: The teacher:

- *Calls up the knowledge students already have*
- *Informally assesses what they already know*
- *Sets purposes for learning*
- *Focuses attention on the topic*
- *Provides a context for understanding new ideas*

*Practice*: In this step:

- *Students compare expectations with what is being learned*
- *Revise expectations or raise new ones*
- *Identify the main points*
- *Monitor personal thinking*
- *Make inferences about the material*

- *Make personal connections to the lesson*
- *Question the lesson*

*Produce:*

- *Students summarize and interpret the main ideas*
- *Share opinions and make personal responses*
- *Test out the ideas (apply to assignment, project, etc.)*
- *Assess learning and ask additional question*

6. *Evaluation* ([http://linguistics.byu.edu/faculty/henrichsenl/lessonplanning/lp\\_14.html](http://linguistics.byu.edu/faculty/henrichsenl/lessonplanning/lp_14.html) ). It can and should be carried out both during and after instruction. It may be both formal and informal.

- a. Formal evaluation involves creating or selecting an appropriate language test and then administering, scoring, and interpreting it.
- b. Informal evaluation is done during instruction or at the end of the lesson according to the students performance.

7. *Homework assignments:* The last stage of the lesson plan includes the homework assignments that the teacher gives to the students for the next time. It can be of any kind, exercises in the Workbook, writing, complete different worksheets, etc.

### **What is critical thinking, and which are the techniques that are used to develop critical thinking to Young English learners in 3<sup>rd</sup> -6<sup>th</sup> grades?**

The Critical Thinking Community defined critical thinking as “the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action” (Scriven & Paul, 2007, p. 1). Critical thinking has also been referred to as metacognition (Tempelaar, 2006) or the process of “thinking about thinking” as defined and originally purposed by Flavell (1979). Critical thinking skills are important because they enable students “to deal effectively with social, scientific, and practical problems” (Shakirova, 2007, p. 42).

A classroom that offers an array of learning experiences increases the likelihood of success for more students (Gardner, 1983; Dunn and Dunn, 1978). Studies involving multi-sensory teaching experiences show students achieve more gains in learning than when taught with a single approach, whether it is a visual or an auditory approach (Farkas, 2003; Maal, 2004).

*The techniques that develop critical thinking skills in Young English learners.*

Teachers use a number of techniques to help students learn critical thinking, starting as early as kindergarten and continue in elementary school and beyond. The following techniques are divided according to the three steps procedure of the lesson plan: *Presentation, Practice, and Produce.*

Presentation:

**1- Focused questions.** The questions are focused on what students think it is going to happen in the lesson and write the reasons of their predictions. For example they are asked to look at some pictures and talk about them, what is the relation between the lesson and the picture.

**2- Individual or pair brainstorming.** In pairs or groups students list what they know about a topic.

**3- Guided reading.** Students read parts of a text and predict what it is going to happen.

**4- Pre-list of some terms.** The teacher gives some terms to students and they predict how these terms are connected with a reading text.

**5- Free writing.** The teacher gives the topic of the lesson and students write what they feel

about it in a free writing.

**6- Know, want to learn, I learned...** This technique is used to recall what students know as the new topic is learned based on what students already know. Then they write what they want to learn. At the end students write what they learned (Udhëzues 6. 1998)

#### Produce

**1. Open-ended questions.** In their research, Haynes and Bailey (2003) emphasized the importance of asking the right questions to stimulate students' critical thinking skills. Other researchers (Brown & Kelley, 1986; Hemming, 2000) also focused on integrating questioning techniques into class discussions to support an educational environment where students can demonstrate and practice critical thinking skills.

Sample questions from all these studies include the following:

- What do you think about this?
- Why do you think that?
- How are you viewing it?
- Should it be viewed differently?

**2. Categorize and classify.** Students need to find the similarities and differences between the groups of some words or events and classify them.

**3. Work in groups.** When students collaborate together they learn how to communicate with others effectively, work as a team, practice self-discipline, and improve social and interpersonal skills and critical thinking skills.

**4. Problem solving:** Problem solving extends our inquiry work. It is important that our students think for themselves. In problem solving they apply the critical thinking strategies they have learned.

**5. Making comparisons:** Students compare two or three or more pictures, objects to find the differences and similarities and justify their answers.

**6. Cause and effect:** Students find an effect for each cause for different situations.

**7. Active listening:** Students listen to the recording and they react toward it, if they agree or don't agree with what they just listened.

**8. Mind maps:** Students think of words that are linked with the main words in center.

**9. Illustrate concepts:** the teacher illustrate the concept of the word using students' experiences and ask them more examples with that word.

**10. Venn diagram** – Students compare two situation, events, grammar issues etc, and they write what is similar between them and what is different.

**11. Think – pair work – share ideas.** Students are asked to think individually about the questions of some answers and then they work in pairs to share ideas. Then the teacher asks the pairs to share their ideas with the rest of the class (Udhëzues 6. 1998).

#### Practice

**1. Save the last word for me.** The teacher asks one student (S1) to write a sentence from a text in one part of a table and each student writes a comment about the sentence but the first student writes the last comment.

**2. Discussion.** Students discuss about the topic of the lesson in pairs. Then they work in groups to discuss.

**3. 10-minute essays.** Students are asked to write their thoughts about the topic of the lesson in 10 minutes.

**4. The exit card.** When there is not enough time, the students are asked to write (1) the most

important idea that they learnt, (2) a question about the lesson, (3) a general comment about the lesson.

**5. Know, want to learn, I learned...** At the end of the lesson students complete the last column of the technique: “*Know, want to learn, I learned*” (Udhëzues 6. 1998).

There are many other ways that critical thinking can be fostered among young English learners. It is a key skill that our students need to have in order to become life-long learners and self-advocates.

## **2. Four lesson plans**

Four English lesson plans are displayed from the 3<sup>rd</sup> grade up to the 6<sup>th</sup> grade. Then the researchers identified the critical thinking techniques that are incorporated in the English lesson plans.

**Class:** III

**Level:** Beginners

**Unit:** 4

**Lesson:** E

**Topic:** Listen and read the story: Funny Friends. Pg 48-49

**Materials:** textbook, tape recorder, class CD, flashcards

**Objectives:** By the end of the lesson students will be able to:

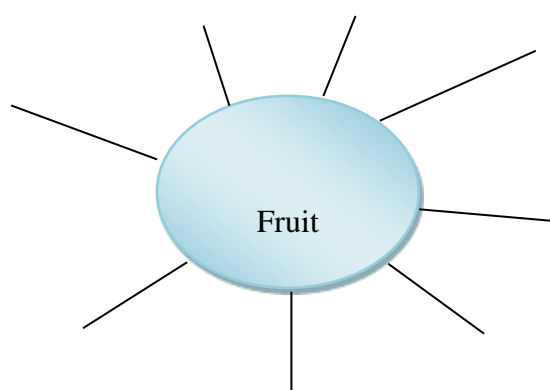
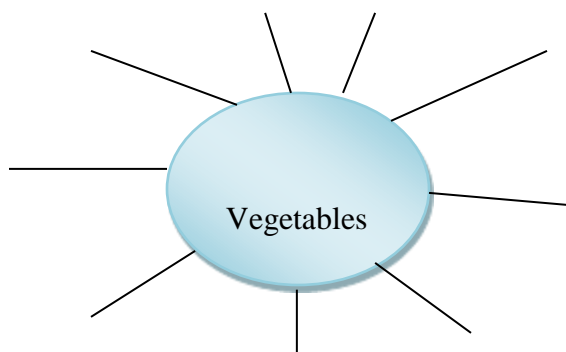
**Overall objective:** listen and read the story “Funny friends”

**Specific objectives:**

- 1) talk about the pictures of the story
- 2) identify what Chipmunk has
- 3) match the words with the pictures
- 4) colour the objects that Chipmunk has
- 5) complete the words in the list *with a or an*

**Presentation**

- 1) Revise the fruits and vegetables using Flashcards: carrot, apple, orange, potato, pear,
- 2) Elicit from students what they are. (Vegetables, and fruits). Brainstorm other fruits or vegetables from them.



- 3) Ask Ss to look at the story and ask the questions:  
What do you see in the pictures?  
Where are they?  
Why is the bear angry?  
What does the bear want?

*Practice*

- 1) Students listen and read the story: “Funny friends”.
- 2) Illustrate concepts: They underline the new words. Explain them:  
I'm hungry. (Gesture)  
Acorn. (flashcard)  
Monkey (Flashcard)
- 3) Students drill the new words with the teacher.
- 4) Listen and read again the story
- 5) Pair work: Students read the story in pairs. Check their reading.
- 6) Students read the words and match them with the pictures.
- 7) a. Students colour what Chipmunk has.  
b. Pairwork: Students talk to their classmates what Chipmunk has.

*Produce*

- 1) Students complete Bear's list with **a** or **an**
- 2) *Problem solving!* Students think, draw and write what Bear likes to eat.

**Evaluation:** Informal Evaluation of Students' answers.

**Homework:** Workbook exercises. Lesson E

**Class:** IV

**Level:** Beginners

**Unit:** 7

**Lesson:** E

**Topic:** Listen and read the story: Goldilocks and the Three Bears. The Angry Bears. Pg 86-87

**Materials:** textbook, tape recorder, class CD

**Objectives:** By the end of the lesson students will be able to:

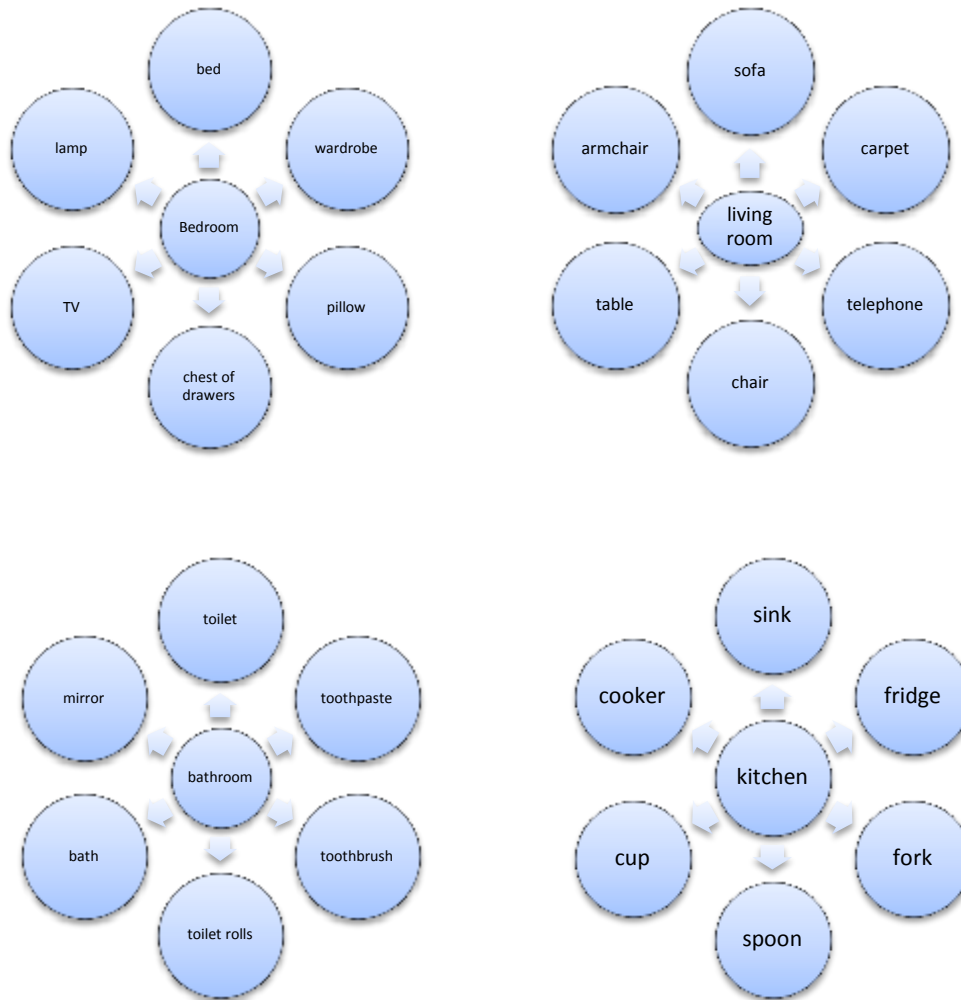
**Overall objective:** listen and read the story “Goldilocks and the Three Bears. The Angry Bears”

**Specific objectives:**

- 1) Describe the pictures of the story
- 2) Act out what the bear say
- 3) Complete the sentences of the story
- 4) Write what bear likes for breakfast
- 5) Write what they like

*Presentation*

- 1) Revise the rooms of the house and the furniture vocabulary through brainstorming:



2) Tell Students to look at the pictures of the story on pg 86

Ask them the questions:

1. What do you see in the pictures?
2. Where is Papa bear and Mama Bear?
3. What is Baby Bear doing?
4. Why is Baby Bear angry?
5. Who is sleeping in Baby's bed?

### Practice

- 1) **Active listening:** Students listen and read the story. They check their answers given in the presentation.
- 2) Then they underline the new words:  
**Illustrate concepts:** *messy*: a sentence: Your room is very *messy* when everything is not in their place.  
It's broken. Illustrate: break a chalk.  
**Verbs in Past simple:**  
Sit – sat  
See – saw  
Move – moved
- 3) Repeat the new words with the pupils.
- 4) Listen the story and the Students repeat it after each sentence.
- 5) Group work: Then Students read the story in groups of four.

*Produce*

- 1) Students complete the sentences about the story.
- 2) Students draw what Baby Bear likes for breakfast.
- 3) Students draw and write what they like for breakfast.

**Evaluation:** Informal Evaluation of Students’ answers

**Homework:** Workbook exercises. Lesson E

**Class:** V

**Level:** Elementary

**Unit:** 2

**Lesson:** Listening and reading: “Favourite characters”. Pg 18-19

**Topic:**

**Materials:** textbook, tape recorder, class CD

**Objectives:** By the end of the lesson pupils will be able to:

**Overall objective:** Read the story and practise vocabulary about appearance.

**Specific objectives:**

1. Talk and write what they know about Spiderman
2. Answer questions about the text
3. Translate the sentences in Albanian
4. Describe the cartoon characters
5. Match the characters with the sentences

*Presentation*

- 1) Write the chart on the board:

<i>What you know about Spiderman</i>	<i>What do you want to know</i>	<i>I learned...</i>

- 2) Students read the title of the text and the names. Ask:
  1. Who are these people?
  2. What type of text is it: a review or an email?
  3. How do you know it?
  4. What are you going to read?

*Practice*

- 1) Students listen and read the text to check their answer of questions.
- 2) Illustrate concepts: Check the meaning of the new words:
  - Bite – The dog *bites*.
  - Evil – very bad
  - Find out – discover
- 3) Ex 2. Ss read the text and answer the questions.
- 4) Check their answers in pairs.
- 5) Ex 3. Students translate the sentences in Albanian. Check their understanding.
- 6) Students complete the last column of the table, they write what they learned about Spiderman
- 7) Ex 4. Vocabulary: Appearance
  - Illustrate concepts: Read the sentences aloud, explain the words in bold by illustrating to students in the class: short, big, plump, tall and fat, fair, slim, small, long, beautiful, ugly.
- 8) Discussion: Would you like to like Spiderman? Why / Why not?

*Produce*

- 1) Group work: Students look at the cartoon characters and describe them and the other groups have to find the characters.
- 2) Students describe a friend in the classroom, the others have to find who she's / he's.

**Evaluation:** Informal Evaluation of Students' answers

**Homework:** Workbook exercises.

**Class:** VI

**Level:** Elementary

**Unit:** 7

**Lesson:** Injuries

**Topic:** Vocabulary: Parts of the body. Reading and Speaking. Pg 74 – 75

**Materials:** textbook, tape recorder, class CD

**Objectives:** By the end of the lesson pupils will be able to:

**Overall objective:** practise vocabulary about parts of the body

read for specific information

practise speaking skills

**Specific objectives:**

1. Group words under the headings
2. Translate the words about the parts of the body in Albanian
3. Identify what is wrong about the people
4. Talk about Steven Bradbury
5. Match heading with the paragraphs

**Presentation**

- 1) Ex 1. Pg 74. Group work. Ss group words under the headings: HEAD ---- BODY  
Check the answers with the group w\who finish the first.  
Listen and check.  
Students identify the parts of the body and translate them.

**Produce**

- 1) Ex. 2. Pg 74. Illustrate the problems and write them on the board:  
Break leg, sprain wrist, hit head, cut leg, pull a muscle, bruise an eye, twist ankle  
Then Students write sentences about the pictures.  
Students listen and check.
- 2) Ex. 3. Pg 74. Ask Ss: What do the pictures tell you about Steven Bradbury?  
Why do you think he is an accidental hero?  
Students listen and read the text individually.  
Check their answers.  
Check the meaning of the new words. Ss explain them from the context.  
Wonder – ask yourself  
Coma – A prolonged state of deep unconsciousness, caused especially  
by severe injury or illness  
Skull – (Draw picture on the board)  
Recover – return to a normal state of health  
Ss read the text aloud.
- 3) Ex. 4. Pg 75. Ss read the text and they match the headings to the paragraph.

**Produce**

- 1) Ex. 5. Pg 75. Pair work. Ss use the words/ phrases in the list to make sentences about Steven.
- 2) THINK! Explain the words in the last paragraph: “What goes around, comes around.”

**Evaluation:** Informal Evaluation of Ss' answers

**Homework:** Workbook exercises.

**Discussion**



If we analyze the English lesson plans, we can see that several techniques are used in different steps of the lesson to make the lesson more productive.

So in the 3<sup>rd</sup> grade the techniques that are used are:

1. Presentation:

- a. Brainstorming vegetables and fruits
- b. Focused questions about the pictures:  
What do you see in the pictures?  
Where are they?  
Why is the bear angry?  
What does the bear want?

2. Practice:

- a. Illustrate concepts:  
I'm hungry. (Gesture)  
Acorn. (flashcard)  
Monkey (Flashcard)
- b. Pair work: Ss read the story in pairs.  
Students talk to their classmates what Chipmunk has.

3. Produce: a. Problem solving: Think about the food that bear likes to eat.

In the 4<sup>th</sup> grade the techniques that are used are:

1. Presentation: a. Brainstorm the furniture vocabulary in the rooms of the house

2. Practice:

- a. Active listening: Students listen and read the story. They check their answers given in the presentation
- b. Pair work: Students read the story in pairs.  
Students talk to their classmates what Chipmunk has.

3. Produce:

- a. Problem solving: Think about the food that bear likes to eat.

In the 5<sup>th</sup> grade we used these techniques:

1. Presentation:

- a. The chart WKL: students have to write what they know about Spiderman in one column.
- b. Focused questions:  
Who are these people?  
What type of text is it: a review or an email?  
How do you know it?  
What are you going to read?

2. Practice:

- a. The chart WKL: students complete the second column and they write what they want to know about Spiderman.
- b. Discussion: Would you like to be like Spiderman? Why / Why not?
- c. Illustrate concepts of the new words:  
Bite – The dog *bites*.  
Evil – very bad  
Find out – discover

3. Produce:

- a. Group work: Students look at the cartoon characters and describe them and the other groups have to find the correct character.

In the 6<sup>th</sup> grade the techniques that are used are:

1. Presentation:

- a. Classifying. Students classify words under the headings: HEAD ---- BODY

2. Practice:

a. Focused writing. Students write about the problem people have with their health.

b. Open- ended questions:

What do the pictures tell you about Steven Bradbury?

Why do you think he is an accidental hero?

c. Illustrate concepts:

Wonder – ask yourself

Coma – A prolonged state of deep unconsciousness, caused especially by severe injury or illness

Skull – (Draw picture on the board)

3. Produce:

a. Pair work: Students write sentences about Steven.

Explain the words in the last paragraph: “What goes around, comes around.”

### **Conclusions**

In conclusion, critical thinking is one of the most important methods of teaching which help students to conceptualize, apply, analyze, synthesizing, evaluate information gathered from, observe, experience, reflect, reason, or communicate as a guide to belief and action.

From the above discussion, it can be discerned that this methodology can be applied in teaching English as a foreign language, disregarding to whether the students are in the 3<sup>rd</sup> grade, 4<sup>th</sup> grade, 5<sup>th</sup> grade or 6<sup>th</sup> grade.

The implementation of critical thinking can help learners bring about positive changes in the ways they think and expand the horizons of their knowledge. Therefore, if it is implanted in EFL classrooms, the students will not only build up communicative competence in English, but also intellectual traits.

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## STIMULATING CRITICAL THINKING THROUGH READING STRATEGIES EMPLOYED BY ELT LEARNERS AT THE ADVANCED LEVEL

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### Abstract

Of all the recent research and speculation about the comprehension process, that associated with schema theory seems to have had the most unique impact. Therefore it seems imperative that ESL teacher must provide the student with appropriate schemata s/he is lacking, and must also teach the student how to build bridges between existing knowledge and new knowledge. For that reason, the building of bridges between a student’s existing knowledge and new knowledge needs for text comprehension. Since prior knowledge is essential for the comprehension of new information, teachers, in performing their obligation of helping learners build schemata and make connections between ideas, may rely on discussions, songs, role – plays, illustrations and visual aids.

The aim of this study is to determine what critical thinking strategies good ELT readers employ in the three reading stages in language learning classrooms, which might later provide useful for both students and teachers to apply them physically in their language teaching classrooms.

Hence, 80 students at “Fan S. Noli” University were given an inventory on reading strategies. The subjects under focus were given a placement test in order to define their reading level. The reading section in the given test was graded 30 over 100. It was established that the students who scored 70 and over in total and 25 – 30 in the reading section were considered as good readers. The ones who scored 0 – 60 in total and less than 25 in the reading section were considered as poor readers. Once it was established their reading level, the students were introduced to the inventory on the reading strategies.

**Keywords:** Critical thinking, strategies, reading schema theory

### Introduction

Reading is not just pronouncing words—it requires understanding. Most experienced readers use a variety of strategies to understand text. Research has shown that teachers can, and should, teach these strategies to their readers.

In general terms, learner strategies are the cognitive steps learners use to process second language input. These cognitive procedures include retrieving and storing new input. According to Brown (1994), strategies are the specific “attacks” that learners employ when faced with a problem. More specifically, reading strategies are the comprehension processes that readers use in order to make sense of what they read.

#### *Schema theory*

Of all the recent research and speculation about the comprehension process, that associated with schema theory seems to have had the most unique impact. Because of its influence, it is important to define and review it.

Schema theory is a theory about knowledge, about how knowledge is represented, and about how that representation facilitates the use of knowledge in various ways. According to schema theorists, all knowledge is packaged into units called schemata, and embedded into these units of knowledge is information on how knowledge is to be used. Individuals acquire

schemata through their experiences – both real and explicit. As individuals have more experiences, they refine, reshape, correct, and restructure their schemata.

Therefore it seems imperative that ESL teacher must provide the student with appropriate schemata s/he is lacking, and must also teach the student how to build bridges between existing knowledge and new knowledge. For that reason, the building of bridges between a student’s existing knowledge and new knowledge needs for text comprehension. Since prior knowledge is essential for the comprehension of new information, teachers, in performing their obligation of helping learners build schemata and make connections between ideas, may rely on discussions, songs, role – plays, illustrations and visual aids.

According to this theory, comprehending a text is an interactive process, which can be divided into three parts:

✚ *Bottom – up Process:* Bottom - up processes are those that take in stimuli from the outside world letters and words, for reading - and deal with that information with little recourse to higher-level knowledge. The readers are expected to understand the meaning by simply recognizing letters and words. On the other hand, learners sometimes could not comprehend the text they read (Nuttall, 1996, p.5). Therefore, this processing is not adequate for explaining the reading process.

✚ *Top – down Process:* This process highlights the reconstruction of meaning rather than the decoding of linguistic form. The uptake of information is guided by an individual’s prior knowledge and expectations. The relation between the reader and the text is the main aim of the process. As the top – down process bases on schema theory, the reader brings to this contact his knowledge of the subject at hand, knowledge of and expectations about how language works, motivation, interest and attitudes towards the text and the content it contains (Nunan, 1985, p. 44). Instead of decoding each symbol or word, the reader should form hypothesis and predict the possible identification of text elements.

✚ *Interactive Process:* An interactive reading model attempts to combine the valid insights of bottom-up and top-down models. It attempts to take into account the strong points of the bottom-up and top-down models, and tries to avoid the criticisms leveled against each, making it one of the most promising approaches to the theory of reading today. (McCormick, T. 1988) According to this process, clues are taken from the page by the eye and transmitted to the brain. Then, the brain tries to match existing knowledge to the data to facilitate the further processing of new information. On the basis of this previous experience, predictions are made about the content of the text (Celce – Murcia, 1991, p. 197).

#### *Reading through a Three Phase Approach*

The goals and aims of the pre-, while-, and post-reading phases vary and this part of the paper will focus on an examination of these objectives.

#### *Pre-reading stage*

1. to provide a lead-in to the topic of the reading text,
2. to warm students up and pre-teach some vocabulary that might be needed for coping with the passage,
3. to prepare students for the context of the reading passage,
4. to activate schemata and build a bridge between the reading passage and the learners’background knowledge and interest,
5. to create interest in the topic and to help the students feel confident that they have prior knowledge about the text
6. to stimulate their participation in the reading activities.
7. to comment on the visuals,
8. to set the scene,
9. to talk about the title (Mato, 2000, p.20)

#### *During-reading stage*

1. set ways for students to interact with text by providing directions and questions (Kang, 1994, p. 649)
2. to help understand the writer’s purpose and intention,
3. to help understand the text structure and the logical organization in a reading passage,
4. to clarify and comprehend the text content,
5. to help students use inferencing and judging,
6. to help students discover cross-cultural differences in reading,
7. to survey the general information,
8. to look for specific information,
9. to find the answers of questions given at the beginning of the text (pre-reading questions) (Mato, 2000, p.44)

*Post-reading stage*

1. to make connections,
2. to extend the reading experience,
3. to review the first two stages,
4. to lead students to a deeper analysis of the text,
5. to outline,
6. to use classroom games,
7. to use the focus words or structures in a controlled writing situation (summarizing),
8. to answer some of the comprehension and the critical questions,
9. to be able to use what has already been learnt,
10. to speculate

*Aim of the Research*

The aim of this study is to determine what strategies good ELT readers employ in the three reading stages in language learning classrooms, which might later provide useful for both students and teachers to apply them physically in their language teaching classrooms.

*Research Methodology*

Keeping in mind the aim of the study, i.e., to distinguish the kind of strategies used by both good and poor readers at advanced level 80 students at “Fan S. Noli” University were given an inventory on reading strategies. The subjects under focus were given a placement test in order to define their reading level. The reading section in the given test was graded 30 over 100. It was established that the students who scored 70 and over in total and 25 – 30 in the reading section were considered as good readers. The ones who scored 0 – 60 in total and less than 25 in the reading section were considered as poor readers. Once it was established their reading level, the students were introduced to the inventory on the reading strategies

*Research Questions*

The research is conducted with the purpose to find out specific information regarding reading strategies employed by ELT students at advanced level. It aims to find answers to the following questions:

- 1-What strategies do good ELT readers mostly employ through:
  - a) pre-reading stage
  - b) during-reading stage
  - c) post-reading stage
- 2-What strategies do good readers differ from poor readers through:
  - a) pre-reading stage
  - b) during-reading stage
  - c) post-reading stage

*Instrument*

To determine the sort of strategies of both good and poor readers at proficiency level,

a reading strategy inventory adopted from Varaprasad (1997, p. 24) was administered to those subjects. The inventory included strategy types for the three reading stages.

1. Pre-reading stage
  - a. predicting / guessing
  - b. commenting on the illustrations
  - c. teaching new vocabulary
  - d. setting the scene
2. During-reading stage

This stage consists of such issues as:

a. Annotating: This part focuses on content and language of the text. To do this, students are asked if they use the strategy of underlying, questioning and organizing information to understand the text.

b. Analyzing: It includes analyzing arguments in the text, analyzing characters, the setting, the focusing on the use of words and other aspects of language use such as connectors, symbols etc.

3. Post-reading stage

In this stage students are asked if they use such strategies as:

- a. summarizing
- b. evaluating
- c. synthesizing
- d. commenting
- e. reflecting
- f. speculating

#### *Result and Discussion*

The data were analyzed through a percentage study to determine the differences in the strategies employed by these two different groups of readers. The conclusions were gathered and are presented in the following figures.

The students were given an inventory in which they were asked on the strategies employed on the three stages of the reading process.

*1-Pre-reading stage:* The poor and the good readers differ in the following strategies:

a-Find answers to the given questions based on the text (S1: good readers 79%, poor readers 21%),

b-Predict the continuing text (S3: good readers 63%, poor readers 37%),

c-The reason the author is writing about the topic (S4: good readers 73%, poor readers 27%)

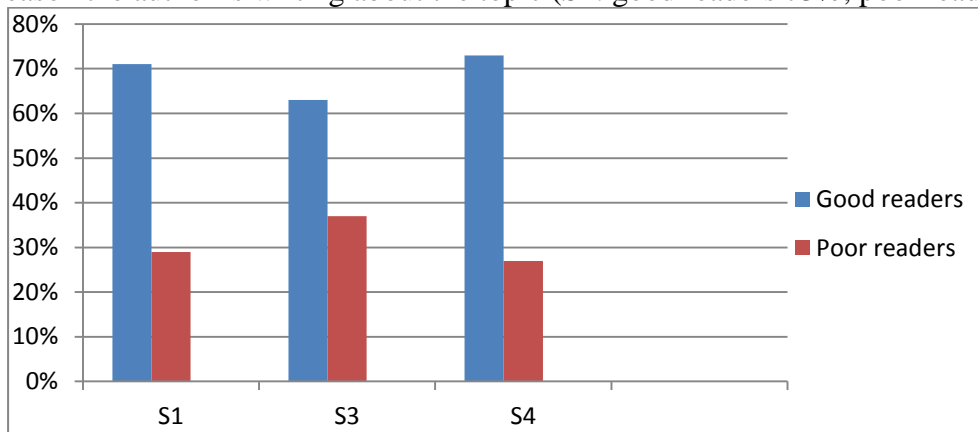


Figure 1. Strategy difference between good and poor readers in Pre – reading stage

As it is shown in the chart, finding answers to given questions based on the text, predicting and figuring out the author’s aim in the reading text found to be significant in

marking the distinction between the two target groups. These strategies contribute to the general idea and comprehension of the material and are usually preferred by good readers. As a result of the research we can conclude that the students' prior knowledge proves to be productive in the process of what the students will learn later. Therefore, it is really imperative to help students recall previously learned subject matter or general information from personal experience that relates to a new reading text and that leads to comprehending.

Poor readers, on the other hand, fail to relate topic to experience, therefore, since they do not use the pre-reading strategies effectively, they are not able to figure out the relations within the text by themselves, and obviously this may result into a failure to guess the rest of the text, to answer the questions and understand the author's aim in writing the text. There is no doubt that poor readers should be spent time on encouraging using their background knowledge and foreign language teachers should highlight the cultural or unknown concepts inherent in the reading text.

It is the teachers' duty to help students develop and use initiating questions, which will later on make them overcome the three most common problems encountered by the poor readers: boredom, inability to concentrate, and failure to remember what was just read. If the students use the right kind of question they create their own interest in what is being read. Therefore the strategy of questioning might be really successful during the first stage because it helps students develop a purpose in reading and, at the same time, if the students try to select a question they force themselves to concentrate. Finally, if students classify information in the attempt to answer their question, they will be using the principle of association to acquire new information and will be able to remember the information for a much longer period of time (Simpson, 1999, p. 166).

The readers should also be encouraged to find answers to given questions based on the text, and as Varaprasad suggests, to give their personal opinion about the topic and predict the continuing text by their teachers.

*2-During –reading stage:* The difference in some of the strategies during this stage are:

a-Read through the passage and underline difficult words and phrases, while getting a general idea of the whole passage. Next, I try to figure out the meanings of these words and phrases from context, and if necessary, look them up (S7: good readers 95%, poor readers 5%),

b-What point the writer is attempting to establish (S10: good readers 92%, poor readers 8%),

c-Repeated descriptions (S21: good readers 76%, poor readers 24%),

d-Consistent ways of characterizing people or events (S22: good readers 82%, poor readers 18%)

e-Repeated words and phrases, examples or illustrations (S23: good readers 80%, poor readers 20%)

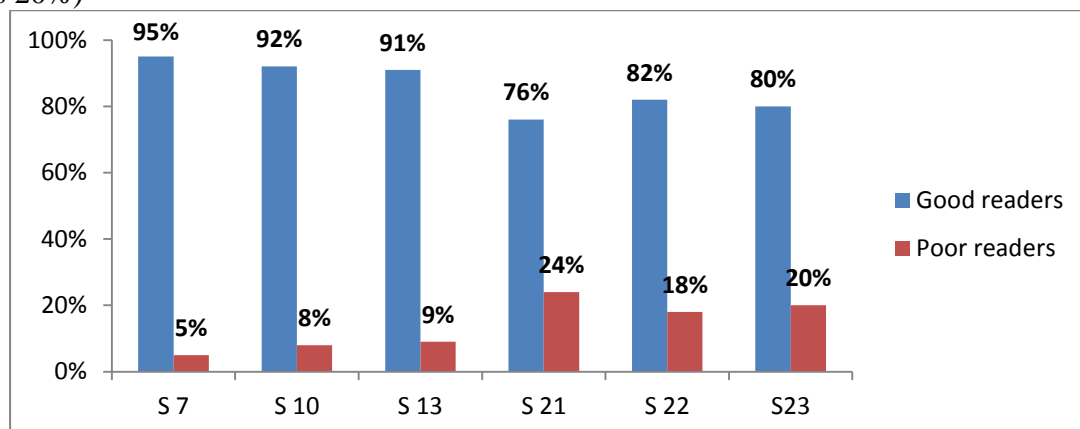


Figure 2. Strategy difference between good and poor readers in During-reading stage



As observed from the charter good readers tend to read and react to both the meaning and the language of the reading material by annotating and analyzing. By employing these strategies the efficient readers do not only understand the purpose and the message conveyed, but they also find ways to interpret that message and to characterize people and events in the written text. Once they get the meaning of the text, good readers do not have any problem guessing the meaning of the unknown words and phrases.

On the other hand less efficient readers do not make use of the structural cues, often placed in the text purposefully. They also have difficulty in finding out the meaning of new words as they do not employ underlining, questioning and outlining to analyze the written text. They usually misinterpret the cues provided in the text in order to grasp the meaning. Readers should also employ the strategy of argumenting and others to decode the encoded message.

In order to be successful in the reading process, the teachers should encourage three effective ways of annotating: underlining, questioning, and outlining. During reading stage should begin with a general understanding of the text, and then move to smaller units such as words, sentences and paragraphs.

*3-Post-reading stage:* During post-reading stage the two groups seem to differ in three strategy uses:

a-Summarizing (S35: good readers 77 %, poor readers 23%),

b-Commenting (S38: good readers 67%, poor readers 37 %),

c-Reflecting (S39: good readers 68%, poor readers 32%).

d-Speculating (S40: good readers 89%, poor readers 11%).

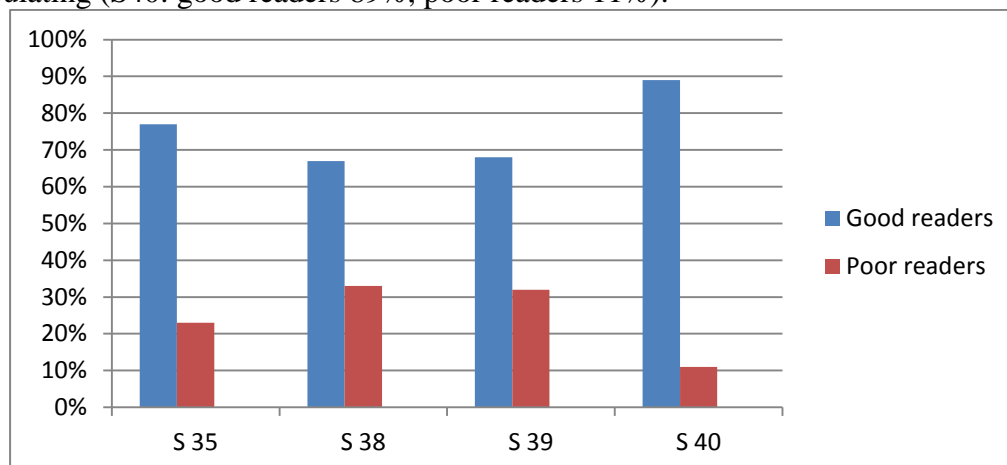


Figure 3: Strategy difference between good and poor readers in Post-reading stage

As it can be observed, good readers usually summarize, employ reflecting, try to comment on the encoded message by the author and speculate on other possible endings in order to extend their understanding of the text as a whole. Therefore, we can sum it up that the strategies such as summarizing, reflecting, commenting and speculating play a key role in developing one's interpretation and understanding of the text. They usually serve as a stimulus for critical and creative thinking encouraging students to play themselves a significant role, sometimes by being an author themselves. They integrate all the skills in a coherent manner so that the reading session is not simply isolated.

In conclusion, the primary responsibilities of teachers are to train students to determine their own goals and strategies and how to utilize all these reading strategies according to their levels, interests and needs. If the students know what they are doing and the benefits, they are going to enhance their efficiency of reading comprehension to become independent which is the aim of the foreign language teachers in a reading environment.

Teaching reading strategies should be given emphasis not only by the teachers but also by curriculum planners and text-book writers, since it is very useful in helping the students become independent learners. It is important to equip them with necessary strategies and skills so that they can be effective learners.

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## THE ROLE OF CRITICAL THINKING IN COMMUNICATION AND INTERACTIVE TEACHING IN PRIMARY EDUCATION

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*"Spirit of the child is absorbent, it has the option active, totally creative, draw to himself the elements that are necessary and useful, to adopt, to make them his own flesh and blood, his case life ".*

Maria Montessori, (Big Lecturers, 339).

### **Abstract**

The thinking process happens all the time and unconsciously. For this reason different researchers say that there are multiple definitions. But at certain moments in this activity consciousness and realize consciously. School is where thinking is oriented. But however powerful it may be, alone is not enough to promote the development of thinking in this case is defined as critical thinking. Critical thinking should include all disciplines and all professions, but its implementation in the classroom environment is of paramount importance.

Today in many literature provides guidance for quality teaching and successful. The latter forms the basis for the development of creative thinking among students. Increasingly, strengthens the belief that students should not simply reproduce the totality of the information transmitted by the teacher. They should be creative as well as reproductive any information offered in the classroom environment but not only. The conditions required for the purpose of this process is effectively connected with the active learning, a process that requires quality teacher-student collaboration, where pioneering, inspiring and encouraging, the teacher remains.

**Keywords:** critical thinking, teaching, creativity, interaction.

Today's knowledge about the mind of a child is comparable with a 15<sup>th</sup> century map, a blend of truths and errors ... entire immeasurable areas are yet to be discovered ...

Arnold L. Gesel (Adapted by Manual 2 'The cognitive and social development of the child' prepared for the project "Interactive learning" Tirana, 2001, pg 9)

### **1. Communication, critical thinking and interactive teaching, important factors in the educational process.**

A successful teaching depends largely on the stimulation of the critical thinking of the students. "To learn actively means to be curious, to ask questions, to discover new things, to think widely and to use one's knowledge to solve problems and to discover more things" (Musai, Bardhyl, "Strategies of teaching and learning", Tirane, 2006). Active and long term learning is achieved through critical thinking, a thinking model in opposition with the passive and short term learning. The main aims are: arousing the curiosity, motivation, and stimulation to express one self, the ability to discover, the encouragement to participate etc.

The teacher plays an important part. He needs to possess a series of skills related with the effective adaption of communication with the techniques used in class. He needs to:

- Understand the relation between technique, communication, stimulation and critical thinking
- Understand the importance of the techniques used to encourage critical thinking.
- Understand the interrelation between critical thinking, decision making, problem solving and thinking processes.
- Understand the value of the students' questions in different levels.

-Understand the thinking processes, related with different levels of questions. (Manual 2 ‘The cognitive and social development of the child’ prepared for the project “Interactive learning” Tirana, 2001, pg 7)

It is important to adapt the methods and techniques with the psycho-social development of the pupils. It is also important to adapt the teacher’s communication methods depending on the techniques used. They all affect the quality of the learning process of the knowledge and information by the pupil. For this reason the teaching process and the methods of its realization have become the main topic of discussion in the education setting in our days.

In our country the teaching and learning processes have undergone significant changes mainly in the last two decades which are related with the changes and global dispositions of life and education in our days. Under these conditions, the preparation of the citizens to think critically, capable of solving different problems, becomes a necessity and exigency.

Thus the Albanian educational system in the last years has faced a series of systematic reforms and changes aiming the improvement of this system, the approach with contemporary methods of teaching in the world etc. it is often discussed, in the debates about education but not only, about using student-centered methods and about the deviation from teacher-centered methods. In other words, the traditional teaching is being substituted with contemporary teaching, in which the teacher has acquired some other roles. He is viewed as a co operator, guide and facilitator for the transmission and acquisition of knowledge by the students. Starting from the 1990s even the role of the pupils has changed in relation to the position they have inside the class. Thus from a mere listener (active or not) he has assumed the role of an active cooperator with the teacher. The change of this role has encouraged an easiness and flexibility in the pupils’ processes of thinking and expressing their selves.

Let’s take the teaching process first. In the psychology of education, teaching is defined as the act of teaching in an education institute; the acting and directing of the teaching process by the teacher (Grillo, K. (2002), education dictionary (Psychology-Sociology-Pedagogy), “Dita 2000”, Tirane, pg 182). This activity, which has a purpose and a plan, also has a series of aims which are expected to be achieved at the end of this process.

When we say that this process is planned we refer to the activity of the teacher which seems to influence a great deal the quality of the teaching through the methods used in class, through the adaption of the characteristics and psycho-social development of the pupils with these methods and techniques etc. in other words the teacher facilitates the process of knowledge transmission in and out of class. What is being transmitted to the pupils is easily programmed because the basic reference is still the textbook. The challenges of the teacher start with finding the proper ways to transmit the knowledge to the pupils.

Based on the methods and strategies used during the teaching process, its strategies are multiple thus in the educational settings it is talked about direct teaching, where it prevails detailed explanation; intensive teaching, structured view, exercises, practice (THE ROADMAP, Dimensions of Teaching and Learning Teaching and Learning Branch, Education Queensland, May 2011, pgs. 9, 10)

In fact, teaching always has as an element the interaction with the pupils, which can have an emotional and psychological effect upon them (IZHA, Pedagogical Journal 2010). The different teaching models require the necessity for new communication methods in class. Teachers today, apart from the pedagogical skills, also need social skills, where the communication methods between teachers-pupils acquire essential importance. The application of contemporary teaching techniques in elementary education needs new ways of communication and new ways of demonstrating it.

Teachers who have chosen to develop in their classes the skills related to an effective communication, need to possess a series of specific skills like: ability in verbal communication, ability in non verbal communication, be a good listener, ability to ask the right questions at the right moment, and especially the ability to think critically.

Thus the main aim is to encourage critical thinking to the students and the only way to achieve this apparently relies in the teaching model, intertwined with the abovementioned abilities of the teacher. Critical thinking is a term which has different meaning for different groups.

“For most of the educators critical thinking means a higher level thinking, - higher cognitive skills, referring to the ascension in the taxonomy of Benjamin Bloom, of the field of knowledge. If we refer to the literature studies critical thinking is merely seen as a method which enables text or material division for studying purpose. Meanwhile in other academic fields, critical thinking is mostly related with the logic used by students and their ability to express their selves, to bring arguments, to discuss in an analytical way etc. In other words critical thinking equips the student with abilities to judge, reflect etc.

In order to realize this process, as a primary condition, it is important to bring knowledge and reasoning in the conscious level of the pupil. Thinking is a process that is realized in a social context; it is affected and formed by our environment and culture. To learn how to think is not achieved separately. Let’s see one of the teaching forms, the interactive teaching, to understand the role it plays in encouraging critical thinking.

Interactive teaching seems to be at the center of today’s educational development. Its aim is to transform the class from a ‘rigid’ surrounding to a ‘live’ one. This kind of teaching is not satisfied with just giving the information to the pupils. It aims to enable pupils to find information, to do independent research, to discuss, to analyze, to bring arguments, to make a synthesis, and especially it requires the teacher’s cooperation for all these activities.

Every opinion of the student should be evaluated as a contribution in class because these opinions or points of view are real evidence that knowledge it is no more taken for granted but that they are individually built, and this makes it possible for the students to cooperate and integrate themselves. The model achieved as a result of interactive teaching consists of less learning directed by the teacher and more learning oriented by him.

Interactive teaching it is not something new or unknown. The questions asked by the teacher towards the pupils, assigning tasks in class or home, their correction, the creation of group work and group discussion in class, all belong to the interactive teaching. Basically teaching is related with the participation of the students in class but not only. Thus

According to Banks (2000, Teaching Learning Process. Center for Aide Regulation and Education. North Carolina, pg. 1), teaching is an active process, in which a person divides the information with the others to give them knowledge, which leads to changes in behavior. According to Rather, A. R. (2004). Essentials of Instructional Technology. Publisher, Discovery Publishing House, pg. 5) teaching is a triple process which includes 1) The teacher 2) The pupil and 3) The learning situation which leads to the change in the behavior of the student.

If we refer to the definitions of Rather and Banks (2000), we can say that the key to the success of the class and the achievement of its aim is the cooperation between the teacher and the pupil. This cooperation can be in different ways and forms. This cooperation can be between the teacher and the groups (created in class by the teacher), also between the teacher and each student, on condition that they are all included with no exception. As a result of this cooperation both parties seem to affect each other: the teacher to the pupil and the pupil to the teacher.

Abrahamson points out that: “Basically, interactive teaching is to give pupil something to do, taking what they have done and then assimilate it in order to decide what is

best to be done afterwards”, (Abrahamson, L, A. Teaching with Classroom Communication System - What it Involves and Why it Works).

Interaction includes also the art of making questions. However, different researchers have admitted that to ask questions is not the only way to generate interaction. Mujis and Reynolds admit that discussion can be effective to attract pupils, helps to develop understanding and also helps to develop communication skills. They suggest that asking question should be clearly focused and carefully prepared by the teacher and also by the pupils where the results need to be succinct.

In general term interactive teaching implies the interaction between teachers and pupils in class, including here also their mutual influence.

This is said based on the fact that the teacher and the pupils work together, are both active as an effective way to learn actively. In this kind of teaching, the teacher, being the guide, facilitator and cooperator with the students, has the responsibility to give “the pupils’ assignment” in the form of duties that need to be performed by them.

- The necessity of using methods which focus on interactive teaching.

What is required today in our education is that teaching need to focus not only in possessing knowledge, but also in learning which is based on processing thinking skills. Instead of acquiring knowledge, today it is required that pupils build and create their own knowledge (Musai 205, pg 7.122)

Furthermore, another aim of interactive teaching and of the techniques that focus on this kind of teaching is the use of this knowledge by the pupils.

The experience of pupils in class will never be the same again, if the above mentioned methods are used effectively. They will feel involved in every discussion, will feel a greater sense of freedom, of dialogue and information exchange.

The process of the creation of expression by pupils will also have a considerable influence. Their manner of expression is expected to be more fruitful in relation to problem solving. Interactive teaching enables “an exchange of different ideas in class” and this increases the level of tolerance towards those that think differently. In other words, interactive teaching makes it possible that the different opinions of the pupils are respected.

The increase of the level of self assessment and the increase of participation in the process of learning seem to go side by side with the increase of the level of internal motivation to learn. The experience of everyone is considered important, but care should be taken here because the teacher’s interaction is not necessary for every feeling created by them. Choosing the experiences needed turns into an influential and determining factor for the continuation of the lesson. Valuable and appropriate ideas for discussion aim to strengthen thoughts, beliefs and expressions.

Experience has demonstrated that if the pupil is predisposed to be attentive and motivated to acquire the information, guided by the increase of self assessment, the opportunities to learn will be greater compared with the case when the above mentioned conditions are absent.

This is because the pupils do not acquire knowledge detached by the surrounding world, but they understand the personal responsibility and their relation with the world around. The effective cooperation of the pupils with each other will increase the capacity to communicate in a constructive way with each other. If we compare it with other types of teaching (e.g. direct teaching where the teacher is the one to guide the class and who encourages the pupils to repeat what the teacher says), the interactive teaching has the advantage of the cooperation between the teacher and the pupil. During the interactive teaching, the teacher is the cooperator, leader, advisor and facilitator of the learning process: the pupils are encouraged to develop and express their opinion about an issue, elaborate and assimilate effectively the knowledge acquired in class. An essential part in this process plays

the formation of the teacher, his knowledge and commitment in the exercising of his profession.

### **Conclusions**

The teachers of the primary education use the interactive activities in class as a great way to address the various styles of learning and by reinforcing the concepts with authentic activities.

We need to stress out that these skills of the pupils must be encouraged and nourished since the primary education but the integration of these activities is difficult for various reasons. Therefore the preparation of the teachers and their willingness to organize the class and the lesson are essential conditions.

So that these activities achieve the desired results it is necessary to create a series of basic guidelines.

Initially the teachers can develop specific subjects in an amusing way

Interactive teaching needs more time, commitment and zeal compared with other types of teaching, but the teachers and specialists of the pedagogical field think that the use of the strategies that have in center the abovementioned teaching method are essential for the formation and encouragement of the creative skills of the pupils.

Their efficient use will bring qualitative changes in the learning process and in the pupils to create citizens of an educated society.

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## ASPECTS OF PLANNING THE TEACHING BASED ON CRITICAL THINKING

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### Abstract

The introduction of modern methods, techniques for teaching in primary and secondary and later (partially) in higher education in the country, based on the development of critical thinking among students since the late 90's of the last century, brought significant movements in education in terms the understanding and realization of the teaching itself.

Having worked (continuously for many years) as a trainer (for primary and secondary education) and co-author of a series of manuals (especially for secondary vocational education) for critical and creative approach to teaching, I gained valuable experience. In fact, reviewing and analyzing a feedback information and answer (in written form-survey questions, evaluation sheets and in verbal form-semi-structured interviews) received from the teachers which participating in the training as well as observation of many specific teaching hours, then in their exchange of experiences (focus groups) is increasingly emerging issues related to planning teaching based on the development of critical thinking among students. Considering the fact that the planning as a basic, conscious, goal-oriented, meaningful and significant activity of the teacher's thought, presents the basis for the introduction, implementation and achievement of critical thinking in education. Planning also is associated with concepts of critical thinking (as theory and practice) and is inevitable part of daily operations, work and being a teacher.

Today the planning the teaching based on critical thinking requires an internal change in the teachers themselves, the revival of new educational philosophies of the profession of teacher, also observing the necessary stages, using of specific tools for planning, planning outside the lesson and courses, subjects, introduction some innovative approaches, strategies, techniques, etc. This approach gives to the planning a new meaning which contributes to the successful introduction and sustainable implementation of teaching based on critical thinking.

**Keywords:** aspects, stages, tools, approaches to the planning a teaching, critical thinking.

### Introduction

Starting from theories of learning according to teaching a critical thinking which are based on: 1) constructivism; 2) meta-cognitive learning; 3) critical thinking; 4) education for social justice; 5) multi processed – asking questions; and 6) Blum's taxonomy, can be seen the philosophical starting point of teaching based on critical thinking. Often, can happen to set up the question what actually these learning theories provide in terms of different educational practices, in order to developing a critical thinking in students. One of possible answers is related to the possibility that these theories of learning offer in terms of capturing the basic ideas, ideas on which are developed and building the modern techniques for realization the teaching based on critical thinking.

A range of previous researchers with their researches, contribute to further develop the concept for teaching based on critical thinking.

In terms of planning the teaching based on critical thinking, it's necessary to mention that it is one of the most important elements and activities for the development and fulfillment the teaching based on critical thinking. Specifically, starting from the premise that every human activity is characterized by *devising* → *action* → *realization*, it is clear that planning plays an important role. Planning is considered as rational human activity which



more efficiently and effectively are realize the set. Planning as an organized, systematic, comprehensive human activity is an essential item for every work and for each teacher as a professional in their work. However the success of planning depends from *approach, manner* and *consistency* in planning. The above points are important for the successful planning the teaching based on critical thinking. The degree of conversion in planning is a two-way relationship with the process of *thinking* (theoretical, cognitive, etc.), from which arising: *the flows – elements (goals, tasks) – ways*.

#### **Planning – activity and condition for successful working of teachers**

Planning is seen as an important condition for the realization of work of teachers and for the entire educational system. When defining the planning, existing a various pedagogical and philosophical approaches and views, that produce notion diversities in terms of what, who, how, where and why relates (philosophical grounds of educational system, type of school, curriculum, teachers, students, social and cultural environment, etc.).

In the school system, during the upbringing – educational work, planning generally includes and concerns the followings: educational programs; teaching subjects and areas; teaching; extracurricular and other activities; goals, methods, forms, techniques, resources, time schedules and operating conditions; screening, evaluation, assessment; management, governance; teachers; students; parents; local environment and authorities; mission and vision of the school.

In pedagogical practice existing a different types of planning (long-term, medium-term, short-term, micro, macro, annual, thematic, daily, developmentally, evolutionary, diagnostic, etc.), but important are also the principles that need to be adhered to in any kind of planning (reality; viability; comprehensiveness; adequacy; defining the quantity, complexity and volume, productivity, in accordance with the nature of the plan; timeline and distribution; process, flow and sequence of activities and achievements; vulnerability of assessment, valuation, evaluation and self – evaluation).

In terms of teaching, planning an implied processing of teaching according to didactic, pedagogical and psychological requirements of a particular teaching subjects, in order to achieve a quality in educational process.

#### **Certain aspects of planning the teaching based on critical thinking**

When considering the issue of planning the teaching based critical thinking, appearing some interesting aspects for further theoretical and empirical research, such as:

1. The need for quality planning of applied types (models) of planning, including: global, annual, thematic, and operational, in case of planning the teaching based on critical thinking. This request contributes for quality devising and consistency in planning the teaching based on critical thinking. Planning of teaching lessons or in certain time periods (which the teacher deems like a best suited for the application of techniques to develop critical thinking) is not a good strategy for the development of critical thinking in students;

2. The use of certain types of planning, such a planning by applying an integrative approach and the planning with team of teachers, contributes in several directions, ranging from: increasing the performance of the application the teaching based on critical thinking; developing a truly collaborative and relationships among teachers; strengthening and development of school facilities for teaching based on critical thinking, etc.

3. Permanent developing a professional competencies of teachers who implemented teaching based on critical thinking (enriching the knowledge of theoretical, practical and other nature), is a necessity, not a thing in itself, which experience the teachers will receive during the application of teaching that contributes to the development of critical thinking in students;

4. If the planning of teaching based on critical thinking review in terms of the EMA framework (Evocation, understanding the Meaning, Reflection) on the teaching lesson,

then teaching are treated only in the time frame while it lasted (40 minutes). When planning the teaching based on critical thinking, undoubtedly, teachers should adhere to the philosophical and theoretical basis of EMA framework for implementation of lesson. Any insufficient or inadequate planning of EMA framework leads to poor performance in realization of lessons, but also and the requirements and principles for planning of whole learning, which develops a critical thinking in students. Special attention should be paid to the phases of teaching based on critical thinking, such as: pre-lesson, which elements of plan are necessary for successful implementation (including: motivation; goals; previously acquired knowledge; assessment; allocation of resources and time; grouping). Also the phase during the lesson in which teacher doing a selection of teaching techniques to deliver the content of teaching unit (respecting the mentioned phases: evocation, understanding the meaning, reflection, concluding activities), as well as the phase after the lesson in which contains additional commitments in the form of homework, project development, (extension), etc.;

5. Burrowing into the core of techniques of teaching based on critical thinking themselves. Often teachers (even in textbooks for certain subjects) pay more attention to the appointment of applied techniques and its implementation in accordance to the application steps, without going into the substance of the application of the particular techniques. Often the teachers (even in the textbooks for certain subjects) pay more attention to the appointment of applied techniques, and its implementation in accordance to the needed steps, without their getting into the substance of the application of the particular techniques. Each techniques for developing a critical thinking in students, by itself does not causing it, nor the naming of same, but the correct, proper application (not to mention that the each of techniques carries development, changes), is important for understanding and retaining the essence of application of the specific techniques for teaching;

6. When planning the teaching based on critical thinking, it is necessary planning of means, resources, time, etc., because the lethargic approach in this domain affect the quality of the teaching. In terms of assets and resources is desirable to think in a creative direction, even through the involvement of students, what partly affects in their motivation. The issue of time is related to the competence of the teacher, i.e. from his readiness for a different role;

7. The special importance of setting of the goals. One part of the teachers are faced with so-called “old-new” (i.e. does not change the process but only the form) way of planning the goals. Teaching based on critical thinking requires not only good planning of the goals, but even their opportunity for integration with the types of goals (general, concrete, etc.), their vertical and horizontal connections, checking the goals (SMART techniques, etc.), and re-planned;

8. The application of a number of techniques that develop critical thinking in students within a lesson, as well as their inadequate planning (not correspond with goals; content, etc.), leads to opposite effects and results, regarding the development of critical thinking in students;

9. Collaboration between teachers in realization the teaching based on critical thinking, is important in terms of success. In this context, needed rising of strength of partnership and cooperation between teachers in order of quality planning of teaching based on critical thinking.

#### **Certain general reviews related to research**

Previous years (1997-2010) were devoted to intensive introduction of teaching techniques that will develop critical thinking in students of primary and secondary education (also partly in higher education). In fact 1200 teachers from primary and secondary schools were included in trainings for implementation of techniques and methodology for

development of critical thinking in students. Also 634 teachers is trained for application of new modules of training; 55 advisors trained for supporting and advising teachers in RWCT (Reading and Writing to Critical Thinking) methodology; 530 teachers trained to communicated and advised during the implementation of RWCT methodology in their teaching practice; and 127 teacher and assistant teachers from TTI (Teacher Training Institutes) trained for implementation of RWCT teaching methodology in classroom.

From realized trainings of teachers of primary and secondary education was appeared need for deepen specific knowledge and skills in the area of planning and assessment of students in applying of teaching based on critical thinking. So from 2006 to 2011 are realized the series of trainings that in focus had planning and assessment of teaching based on critical thinking (new planning and assessment module was developed within the RWCT training component).

From the received evaluation sheets, observed teaching hours and application of semi-structured interviews for teachers covered by trainings, we got some knowledge for certain issues, related with planning of teaching based on critical thinking. In research (accordingly with applied research techniques) is used the method of description (through the models of analytical – descriptive, analytical – explicative and analytical – interpretive approaches). The research is of a qualitative nature, and conclusions are drawn in an explicit way, through the analysis of the answer and analysis of dichotomies and frequency of the most common aspects of planning the teaching based on critical thinking, in general.

#### **Knowledge obtained from conducted research**

In accordance with title as well as the purpose of paper, will list the findings related to the planning the teaching based on critical thinking. Thus, according to the results, most of the teachers are on opinion that:

a) for successful implementation the teaching based on critical thinking, they need guidance, tools and techniques that will assist planning. Especially emphasized the connection of planning types (annual, thematic) with general and concrete goals and content of teaching subjects;

b) in the planning of teaching content (for a specific lesson) the teachers lack certain skills and abilities for planning a phase after (teaching) hours. According to phase after hours, teachers find that it is difficult or rarely for them to be able to suit the requirements of this phase, and related to: - further learning or activities offered by the realized teaching and curriculum content; and – activities that student should render them after the specified teaching and curriculum content;

c) in related to planning types, the majority of teachers surveyed, pronounced that, were like them, but due to the current placement and structure of educational system, are not able to apply integrative planning approach, nor a full team – teaching and planning. According to team planning most of the teachers share the opinions about this type of planning which usually identified with the planning in level of professional bodies (organized at the same or related teaching subjects) as professional organs in the school;

d) according to planning a framework for EMR lesson (Evocation, understanding of Meaning, Reflection), majority of teachers state that they don't have so many problems, unless realization of lesson in time frame from 40 minutes; also problematic is the large number of students in classes, lack of time needed for the realization of teaching that usual, and the lack of teaching tools;

e) in terms of techniques for developing a critical thinking in students, teachers are generally satisfied, and for them the teaching techniques are excellent, but in same time they show a certain incredulity about application the techniques in various teaching subjects (natural sciences, etc.).

### **Drawn conclusions**

From the obtained results we can underline that, for successful planning based on critical thinking is required:

- change in understanding of the teachers themselves about what is the teaching based on critical thinking,
- their active role in the acquisition of certain responsibilities associated with planning and outcomes – the teaching based on critical thinking;
- competence for planning of set goals of the curriculum and their implementation in practice;
- change the view that only by applying techniques to develop critical thinking, teaching itself becomes a teaching based on critical thinking;
- understanding of the nature and capabilities of techniques to develop critical thinking, not just their mechanical setting or especially just naming them, during the planning of teaching;
- approach to planning the teaching based on critical thinking as a whole, especially taking care of the planning phase before lessons, during lessons and after lessons;
- permanent monitoring and evaluation the planned and realized teaching (based on critical thinking);
- introducing dynamism and diversity in planning. It is desirable and involvement of students, parents, and others relevant and interested sides;
- greater cooperation between teachers, especially in the application of planning with integrative approach and team-work approach.

### **Conclusion**

Planning the teaching based on critical thinking if is well done then it really represents responsible, aware, targeted, designed, organized and evaluative activity of the teacher. For successful realization the teaching based on critical thinking is requires advocacy of understanding the one of major points in terms of planning, that the planning as a necessary activity of the teachers shall not overcome anticipated time envisaged for teaching. During the planning it is necessary the teacher to be comply with the requirements the teaching based on critical thinking, which means overall planning i.e. year, thematic, operational, the phases of the teaching hour, and expected outcomes, etc. In this context the cooperation between of teachers, like a common understanding of the needs for developing critical thinking in students, as a openness, consistency and professionalism are essential.

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## GREEK STUDENT-TEACHERS' WILLINGNESS AND CONFIDENCE TO TEACH SUSTAINABILITY ISSUES IN PRIMARY SCHOOL

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### Abstract

This research explores the development of primary student-teachers (STs) ability, willingness and self-confidence to teach sustainability issues. It was carried out during a sustainability-related six-month long academic course, aiming to the understanding of the sustainability concept combined with the familiarization of STs with the project method in order they to become capable of applying similar teaching methods as active teachers. 59 STs from a Department of Primary Education located in northern Greece, participated in the study. All STs were at the 3<sup>rd</sup> and 4<sup>th</sup> year of their study and apart from the activities held during the 13, 3-hours long weekly-based meetings, they had to organise and implement group activities regarding several sustainability issues of the town of Florina. Furthermore, a common activity of all students was carried out, where a meeting with the Mayor and the Deputy Mayors of Florina took place in order all students to present their queries and suggestions on topics regarding the sustainability of the town (e.g., urban planning, domestic water supply, etc.). The effect of the project was assessed at the end of the semester through a self-reported questionnaire. Both quantitative and qualitative ways of analysis was performed, whilst the emphasis was on participants' justification aiming to reveal the factors affecting them. Results are very encouraging, as STs reported increased improvement in all variables under study. In particular, their expressed ability to teach sustainability was increased by 2.29 points (maximum 4) and especially their ability to organize projects (35%), to collect and elaborate data (13%) and develop their creativity and critical thinking (12%). Self-confidence increased by an average of 2.29 points, mainly due to the activities of the weekly meetings and the group activities. Moreover, willingness improved by 2.59 points as a result, once more, of the weekly meetings, and as a result of the realization of the importance of sustainability in every-day life.

**Keywords:** Willingness, self-confidence, sustainability, student-teachers.

### Introduction

When talking about sustainability, it is difficult all to agree upon a common meaning and this is because the term approached differently depending on culture, ideology and science. However, there is a generally accepted definition that comes from the Brundtland Report (WCED, 1987) where sustainable development 'is the type of development which meets the needs of the present without compromising the ability of future generations to meet their needs'.

According to Unesco (2014) education for sustainable development (ESD - or education for sustainability), uses a variety of pedagogical techniques that promote participatory learning and it is based on the principles and values that inspire sustainable development. Moreover, deals with the well-being of all four dimensions of sustainability (i.e., environment, society, culture and economy) and it is locally relevant meaning that although it is based on local needs, perceptions and conditions, however these local needs often has international effects and consequences. In addition, it is interdisciplinary in nature,

promotes lifelong learning and engages all types of education (formal, non-formal and informal). As a result, education for sustainable development is not a particular programme or project, but is rather an umbrella for many forms of education that already exist, and new ones that remain to be created (Unesco 2014).

On the other hand, several traditional concepts and variables already existed in the field of education, are now viewed through the lenses of ESD. Self-confidence is one of them and there is a rich international literature on the role of the confidence in teachers' training and professional life. In a study carried out by Howitt (2007) with pre-service elementary teachers, she mentions that although after the course they were more willing to teach, having higher levels of trust in themselves, however, each one of them was affected in a different way and by a variety of factors. Not a single characteristic of the training course was identified as a major contributor to the pre-service teachers' confidence. On the contrary, a mix of factors was realized as necessary for the observed differences.

Tal (2007) in her study with senior pre-service science and technology teachers claims that from the multiple assessment modes employed in her course, the team investigation project was found to be most suitable for developing environmental awareness and inquiry skills. In another study with pre-service elementary science teachers, Kılınc (2008) concludes that 'the project-based learning environment caused positive changes in student teachers' behaviors regarding environmental protection', (p.495). In a more recent study (Effeney & Davis 2013) with pre-service primary teachers in Australia, it was established that although they were confident to be engaged with education for sustainability and their self-efficacy was increasing with increased levels of perceived knowledge, however, no relationship was observed between perceived knowledge and actual knowledge. The latter suggests that the participants were either unaware of their lack of actual knowledge on sustainability issues, or they did not feel any constrain from their level of understanding of sustainability issues.

Kenelly et al. (2008) also report that their pre-service primary teachers felt more confident about teaching environmental education after they participated to a course where improved pedagogical content knowledge and an appreciation of how to integrate environmental education into everyday learning of their students were the main characteristics.

Finally, Evans et al. (2012) in a phenomenographic approach about pre-service teachers conceptions about ESD, identified four related but distinctive categories of descriptions, with education that is active, hands-on, local and relevant and oriented to the future to be among them.

#### The course

The study was carried out during the winter semester of 2012-13 academic year in a Department of Primary Education located in Northern Greece. It was carried out in the framework of a sustainability-related, six-month long module, where the aim of the weekly-performed meetings was to understand the concept of sustainability along with the project method, in order student-teachers (STs) to become capable of applying similar methods and projects as active future teachers. Throughout the course, a constructivist teaching approach was adopted, including group working activities, site visits and STs' originated activities. It was an attempt to develop STs' ability, willingness and self-confidence to teach sustainability-related topics in primary schools, by enhancing their pedagogical content knowledge (Kenelly et al. 2008) through their active engaging in a real, project-based, module regarding Florina's aspects of sustainability.

Apart from the weekly-based meetings, STs were dealt with the organisation and preparation of group activities regarding several sustainability issues in the town of Florina. Furthermore, a common activity of all STs was carried out at the local authorities. In particular, a meeting with the Mayor and the Deputy Mayors of Florina was organised in

order all students to present their reflections on topics regarding the sustainability of the town (e.g., urban planning, domestic water supply, transport etc.)

#### Research questions

Based on the above, the research questions that guided this study are the following:

1. How does student-teachers self-confidence, willingness, abilities to teach sustainability issues and implement project-based teaching is affected after their participation to a relevant course?
2. What factors and characteristics of the university course affect more the above variables and in which way?

Literature indicates a lack of relationship between knowledge for sustainability and the capacity for teaching, and that the perceived knowledge of sustainability is very different from the actual knowledge, having as a result a move toward a symbolic approach to education for sustainability. The contribution of this study is that it explores the willingness, ability and self-confidence of Greek student-teachers, to teach sustainability issues in primary education and put them into praxis through project implementation. Moreover, it is the first time that all these three variables are examined together aiming to reveal aspects of their interdependence.

#### Methods

##### Participants

A convenient sample of 58 STs in the 3<sup>rd</sup> and 4<sup>th</sup> year of their study was participated in this research. Thirteen of them were males (22.4%) and 45 were female (77.6 %). Their age was ranging from 20 to 22 years old and the majority of them had no experience, either as school or university students, about the realization of sustainability issues in school and the implementation of project-based teaching.

##### Research tools

Data collected through the use of a questionnaire with open and closed-form questions that was administered to STs about two weeks after the end of the course. The questionnaire was consisted of two parts. In the first one, data regarding STs demographics were collected (gender, year of study, place of nurture, previous experience with environmental education and project-based teaching), while in the second part three main variables were explored, namely a) self-confidence, b) willingness, and c) abilities to teach sustainability issues in primary school. Each of these three variables was assessed through the use of both closed and open-ended items.

All closed-form items had a Likert-type response scale ranging from -4 (decreased very much) to 4 (increased very much) and zero was the balance point. Beyond these closed-form questions, for each variable, an open-ended question was used to gain in-depth views on factors affected STs' change in beliefs regarding the particular variable.

Among the limitations of the method is that all variables were assessed through a self-reported questionnaire and that it was used only at the end of project. However, the nature of the variables under study, which require a high degree of self-reflection, and the goal of the study, are compatible with such treatment, as are our main goal was to increase STs self-perception to all three variables under question.

##### Analysis

Both qualitative and quantitative analysis was performed to the collected data. For the Likert-type items, descriptive statistics was used for all variables (i.e., average and standard deviation) and effect sizes (Probability of Superiority-PS and Cohen's d, Grissom 2005) were also calculated aiming to increase the reliability of the observed differences. In the open-ended items, categories of ideas were developed. For that purpose, all STs' answers were inserted verbatim to Excel spread sheets and cross-tabulated according to variables under



study. Within each variable, categories of ideas were developed by grouping together conceptually similar ideas.

### **Results**

#### Participants' background

Forty-three of the participants had a secondary education background originating from humanities (75,4 %), while 14 had a science/technological background (25.6%). The majority of STs (37) nurtured in an urban environment (66.1%) and only 19 of them in rural areas (33.9%).

#### Effect of course on variables under study

STs' self-expressed increase in willingness to teach sustainability issues in primary schools is fairly high ( $M=2.59$ ,  $SD=0.90$ ) and the effect sizes indicated that this increase was extended among STs ( $PS=.98$ ) and sound in magnitude ( $d=2.88$ ). Moreover, inspection of confidence intervals suggests that the observed increase in STs' scores is significant (intervals does not include zero). Similarly, and STs' self-confidence to teach sustainability issues presented a sound increase ( $M=2.29$ ,  $SD=1.06$ ), which is further supported by effect sizes ( $PS=0.93$ ,  $d=2.16$ ) and confidence intervals (zero is not included). Moreover, STs' self-confidence to run project-based teaching in education for sustainable development was also substantially increased ( $M=2.14$ ,  $SD=1.49$ ). Probability of Superiority index indicates a large effect among STs (0.89) and Cohen's  $d$  (1.43) that the size of this effect although is not large, however, it is considered as adequate, while confidence intervals suggest that the observed differences are significant (zero is not included).

#### **Table 1. Statistics of the variables under study**

As far as STs' perceived ability to implement project-based teaching in ESD is concerned, results are very encouraging, as an improvement to these scores was recorded ( $M=2.29$ ,  $SD=1.03$ ) which is further supported by effect sizes ( $PS=0.95$ ,  $d=2.23$ ) and confidence intervals (does not include zero).

Alike to the previous cases, and in the last variable under study, that of self-confidence to implement project-based teaching to other school subjects, considerable improvement in STs' scores was also recorded ( $M=2.09$ ,  $SD=1.14$ ). Probability of superiority scores suggests that the observed improvement is extensive among STs ( $PS=0.93$ ) and medium in magnitude ( $d=1.83$ ). Confidence intervals does not include zero, indicating that the recorded improved scores are significant.

#### Factors affecting STs to teach sustainability issues

According to table 2, seven of the identified factors seem to have a prominent role on STs' learning, as they affect at least two of the variables under study. More specifically, four of the recorded factors appear to influence three of the variables under study, and three other factors two of these variables.

In particular, the learning benefits of their future students and the new ways of teaching that they were familiarized during the course, appear to have affected STs' self-confidence to teach sustainability issues (2/12) and to implement project-based teaching to other school subjects (30/3). Moreover, the understanding of sustainability concept helped STs to increase their self-confidence (16) and willingness (18) to teach sustainability issues, as well as to implement project-based teaching (19). The experience that STs' gained throughout the course seem not only to improved their confidence for project-based teaching to sustainability issues (25) and in other school subjects (11), but also perceived as an advantage that their future students could benefit (20). The process of project that was implemented throughout the course appears to has strengthened STs' self-confidence for project based teaching (19) and their willingness to teach sustainability issues (22). STs also mention that the linking of school with society that was made during the course enhanced their self-confidence (1) and willingness (9) to teach sustainability issues. However, a

regression in a few STs' willingness to teach sustainability issues (4) and to the learning benefits of their future young students (3) was also observed, as they perceive project as a difficult, time-consuming way of teaching in which they are lacking of experience.

Beyond the above-mentioned factors with multiple effects on STs' learning, several other aspects of the course were mentioned as influencing the variables under study. For instance, STs' willingness to teach sustainability issues was also much influenced by the cross-disciplinary teaching approach (15) and the sensitization about the environment (14) occurred during the course, along with the student-centred and experiential learning (12) and the development of values and skills (7). The linking of theory with praxis (10) was another feature of the course that STs perceived as potential contribution to their future students.

On the other hand, STs' abilities to teach sustainability issues was heavily influenced by the realization of how the project is organized and the new role of teacher in this new setting (35), as well as by some of the standard procedures inherent in the project-based teaching, like the data collection and elaboration process (13), the development of students' creativity and critical thinking (12), the experience gained in students' guidance and coordination (10), and the initiatives, responsibilities and time management tasks they undertaken (9).

Finally, STs' self-confident to implement project-based teaching to other school subjects seems to be increased by the motives developed during the course (13) and the real objectives that they had to undertake (10). However, the lack of STs experience related to project (4) was a restrictive factor for its implementation.

**Table 2.** Comparative table of factors affecting STs' beliefs in the variables under study

### **Discussion and conclusions**

Based on the above results, we can conclude that the actual implementation of project-based teaching and the pedagogical content knowledge that STs experienced during the course, was substantially enhanced their self-confidence, willingness and abilities to teach sustainability issues in primary school (Kennelly 2008). The observed differences are both extended among STs ( $PS > .89$ ) and sound in nature ( $d > 1.43$ ). As the majority of STs had no relevant experience neither with similar ways of teaching nor with sustainability issues, their self-expressed improvement is considered as far more essential. Another finding that further supports the realization of the course, is that the majority of STs clearly state that they are willing to expand project-based teaching beyond the sustainability issues, by implementing it and to other school subjects. The latter is further supported by Kilinc (2010) findings where the project-based learning environment caused positive changes in STs behaviors regarding environmental protection. Moreover, the notion of an education that it is active and hands-on (Evans et al. 2012) was also apparent to the findings of the present study.

However, although many STs undoubtedly state that the course helped them to better understand sustainability, and consequently increased their confidence to teach sustainability issues, it is unclear in which extend their perceived understanding matches with their actual knowledge of sustainability (Effeney & Davis 2013).

A variety of factors appear to have influenced the recorded STs' improvement in the variables under study. Although several of these factors (7 out of 26) seem to have multiple effects, the majority of the identified factors (19 out of 26) are associated with specific variables indicating that each of these variables is highly individualistic and no single factor can have significant effect upon them. This finding is in accordance with those reported by Howitt (2007), where rather a balanced mix of factors was necessary for increasing STs' confidence.

In summary, due to the lack of STs' previous familiarization with the methods and content of sustainability education, such project-based instructional approaches are necessary

to prospective elementary teachers, providing them a variety of real world teaching experiences, in order to enhance their confidence and perceived ability to adopt similar practices in their future professional life.

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Table 1. Statistics of the variables under study						
Variables	Mean	SD	Effect sizes		CI <sub>95</sub>	
			PS	Cohen's d	Upper bound	Lower bound
Willingness to teach sustainability issues	2.59	0.90	0.98	2.88	2.82	2.35
Self-confidence to teach sustainability issues	2.29	1.06	0.93	2.16	2.57	2.02
Self-confidence to run project in ESD	2.14	1.49	0.89	1.43	2.53	1.75
Abilities to implement project in ESD	2.29	1.03	0.95	2.23	2.56	2.03
Self-confidence to implement project-based teaching to other subjects	2.09	1.14	0.93	1.83	2.38	1.79
Range: (-4)=reduced very much to (4)=increased very much						

Factor	Self-confidence to teach sustainability issues	Self-confidence for project-based teaching	Willingness to teach sustainability issues	Contribution of project to future students’ learning	Abilities to teach sustainability issues	Project-based teaching to other school subjects
1. Learning benefits to their future students	2*			39		30
2. The new ways of teaching that they learned	12			2		3
3. The understanding of sustainability	16	19	18			
4. The experience we gained		25		20		11
5. The process of the course		19	22			
6. The linking of school with society	1		9			
7. It is difficult/time consuming/lack of experience			4	3		
8. The working in groups	4					
9. It needs experience/research	2					
10. The workload/Fear/inexperience		7				
11. The variety of course activities		6				
12. The cross-disciplinary approach/link with everyday life			15			
13. The sensitization about the environment			14			
14. The student-centred/experiential learning			12			
15. The development of values and skills			7			
16. The link of theory with praxis				10		
17. How the project is organized – the new role of teacher					35	
18. The collection & elaboration of data, and reach to conclusions					13	
19. The development of creativity & critical thinking					12	
20. The gain of experience in students’ guidance, coordination and evaluation					10	
21. The initiatives, responsibilities and time management tasks they undertaken					9	
22. The dialogue/patience during the course					6	
23. STs’ special abilities					1	
24. The increase of STs’ motives						13
25. Real and feasible Objectives						10
26. STs’ lack of experience						4
* Number of STs’ expressing the particular factor						

## CONTEMPORARY STRATEGIES FOR THE DEVELOPMENT OF CRITICAL THINKING IN THE FIRST CYCLE OF PRIMARY EDUCATION

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### Abstract

The contemporary strategies in education cannot be fulfilled unless a part of them is based on critical thinking, which is placed at the very top of the pyramidal setting of aims. In this direction, strategies that will awaken the pupils' feelings of critical behavior towards available information should be increasingly implemented. The first cycle of primary education is the most suitable period for intensively stimulating the pupils to think critically since, firstly, the pupils move from the concrete operational stage to the formal operational stage. Secondly, their developmental characteristics provide for the application of different strategies for that purpose. Thirdly and finally, the teaching programs and their content settings, as well as the didactic-methodical organization, offer opportunities for realization based on the critical thinking strategies.

The aim of this research is directed towards three aspects that are fundamental to the implementation of the contemporary critical thinking strategies, and they are: analysis of the teaching plans and programs for the first educational cycle, the didactic-methodical setting, and the activity of play as a contemporary and compatible strategy. The methodology, methods and techniques that were applied during the course of the research were: the method of analysis, comparison and the descriptive method.

On the basis of the received results, it can be concluded that:

The teaching plans and programs offer possibilities and content for implementation of the critical thinking strategies;

The didactic-methodical settings of the first educational cycle, through Bloom's taxonomy, enable critical thinking;

There are numerous critical thinking strategies, but the activity of play inherently incorporates the main characteristics of a contemporary strategy.

**Keywords:** Contemporary strategies, Development, Critical thinking, First cycle, Primary education

### Introduction

Contemporary theory and practice is in constant search of uncovering new educational solutions, which will bring innovations to it and develop it even further. The existing scientific achievements and practical realizations represent a firm foundation for new ideas and approaches in pedagogy. The need for changes is primarily initiated by the principles of respect and fulfillment of the needs, interests, opportunities, and critical thinking abilities of every child and thus, every pupil. The whole educational strategy in contemporary conditions is directed towards that specific goal. In addition, the social processes of democratization and the ever more emphasized individual approach in everyday life has been reflected in the educational sphere as well.

In that direction, scientists and practitioners are in the midst of a continuous exchange of various approaches and concepts that are in step with and correspond to the social status and treatment of the individual. The first such attempts in pedagogy most likely brought about the total opposite effect, where from an extremely traditional approach with a strictly

defined autocratic leadership, they changed into pedagogical approaches that offered an open, even (up to a point) anarchic, way of establishing the educational process. After a given time period, in which all the possible pedagogical solutions were analyzed, practice showed (and is still showing) increased interest towards a more balanced approach. On the one hand, the defined structure of the educational process and the teaching itself for many years has shown to be significant and provide strong educational results. Yet on the other hand, the respect towards the individual characteristics of the child and the pupil, the development of critical thinking skills, following their inherent strength and natural development, all compensate for the lack of socio-emotional development in the traditional approach, as opposed to constant attention on the cognitive development. It is possible that this attempt is complex because of the merger between two opposites, but precisely those have been specified as disadvantages in both directions. Such a tendency does not have the status of a pedagogical concept that will cover all the possible solutions and will offer a complete system of educational action. On the contrary, the tendency is directed towards forming an approach, i.e. a strategic resolution that will have to exempt the disadvantages and fill in the blanks in both extreme cases.

### **The Activity of Play as a Methodic Approach in the Development of Critical Thinking for Pupils in the First Educational Cycle**

The methodic concept of the activity of play has the goal of providing the required structure for the didactic-methodic realization of the activity of play in the function of the development of critical thinking for pupils in the first educational cycle. Structure in the teaching process has shown to be quite efficient in the traditional system, since it was the basis of the strong foundation of traditional teaching, which for many years was endured in various educational systems, and has left a trail of pupils with high-quality knowledge. The pressure on democratization and freedom is still felt in education, which reflects the negation of any kind of structure. Therefore, it proved to be exceptionally inefficient, useless, and with a very low level of acquisition of the needed knowledge, abilities, and skills. The didactic-methodic structure, among other characteristics for the activity of play, presents a tangible observation of the teacher towards their work, especially towards the work connected to pupil activities that lead towards a critical viewpoint. In such a manner, both parties (the teacher and the pupils) feel safe and secure in their own rhythm of realization of the teaching process. What is more important, though, is the way in which the structure of the methodic concept of the activity of play will be understood and interpreted, since it does not represent a finished product that is conclusive, but an ever-changing form that will be applied to future generations of pupils and will be common for every program area and developmental aspect.

In this study, the activity of play as a methodic concept is based on all the areas, disciplines, and sciences that cover issues regarding the development of children. Additionally, it provides an opportunity for the teacher to freely choose from the comprehensive didactic-methodic apparatus that is available to them. Literature, indeed, grants a wide spectrum of didactic-methodic offers and solutions, but the skillfulness of a good teacher lies in choosing the most suitable ones, and combining them for new creations, so as to portray their professional maximum in practice. With such a model, the lengthy criticism regarding the final products, the manner of activity completion, and the classroom itself, will finally be overcome. The methodic concept of the activity of play proposes, on the one hand, a greatly different dimension of the teacher and their competences, possibilities, creativity, and inventiveness, while on the other hand, it puts forward the teaching process with its flow and organization in a specific classroom, with a mixed group of pupils and their individual abilities, interests, and needs, all led by critical thinking.

### **Methodology of the Research**

The aim of this research is directed towards three aspects that are fundamental to the implementation of the contemporary critical thinking strategies, and they are: analysis of

the teaching plans and programs for the first educational cycle, the didactic-methodic setting, and the activity of play as a contemporary and compatible strategy.

On the basis of the received results, it can be concluded that:

- The teaching plans and programs offer possibilities and content for implementation of the critical thinking strategies;
- The didactic-methodic settings of the first educational cycle, through Bloom’s taxonomy, enable critical thinking;
- There are numerous critical thinking strategies, but the activity of play inherently incorporates the main characteristics of a contemporary strategy.

The methodology, methods and techniques that were applied in the course of the research were: the method of analysis, comparison and the descriptive method. The research implemented the quantitative approach, using the research technique of surveying to reach relevant information.

### **Analysis and Interpretation of the Received Data**

#### **❖ Analysis of the Teaching Plans and Programs for the First Educational Cycle**

On the basis of the analysis of the teaching plans and programs for the first educational cycle, it can be concluded that the content and form of the activity of play are different for all three grades. Accordingly, in Grade 1, play is recommended; in Grade 2, directions and opportunities are given for application of the activity of play in teaching; while in Grade 3, there is a combination of several sorts of activities, which are not prefixed with “play”, but content-wise, they can still be organized as such. What is characteristic for all three is that they provide an opportunity for stimulating and developing critical thinking with pupils.

Furthermore, there is a platter of activities of play for all the school subjects and all the developmental aspects. Examples of activities of play are not provided only for the subjects and learning content that stimulate simply one’s intellectual development, but they are provided as well for the specific subjects and content that instigate the pupils’ social, emotional, and psychophysical aspect of the development of their personality.

In the examples and recommendations of the activities of play, what has been noticeable is the propensity for content and goal integration, as well as the adjoining of the holistic approach in the pupils’ development. Another important statement that can be pointed out is that in the teaching programs there prevails a positive approach and trend regarding the goals, pupils’ achievements, and expected results for the given time frame that is connected to their full developmental cycle. In that direction, the activity of play does not always give momentary results and effects, but it should serve as a stimulator and generator for new knowledge, critical thinking, abilities, and skills of the pupils. Moreover, there is flexible ordering of the expected results since they are directed more towards training the pupils. According to the numerous ideological and theoretical bases of the activity of play, the meaning and role of the activity of play is determined in the early school period. Theories analyze the possibility of the developmental influence of the activity of play. Nevertheless, the teaching plans and programs, and the goals given in them should be expanded with a taxonomy of the goals, in the service of the activity of play in its instigation of critical thinking and movement towards a certain aspect of the development of the pupil’s personality. Aside from the didactic prefix and the intellectual function of the teaching, the activity of play is aimed towards stimulating the socio-emotional and psychophysical development as well, as especially significant aspects in the first educational cycle. However, an observation that can be directed towards such a conceptualization of the teaching programs, and is key for our research issue, regards the component of activities and methods for each and every teaching program. It is precisely this component that is the most important link connecting the program with the teacher, the teaching practice, and the critical viewpoint

towards it. This is the reason as to why it should be clear, concise, and headed towards concrete recommendations for the realization of the goals and content that will correspond to the expected results. Our observation, though, concerns the content unsuitability of this component. Titled under the terms of activities and methods, it is then expected that they include an appropriately systematized, didactic-methodic recommendation for the realization of a concrete goal and content from a concrete topic or program area of the subject in question. But it is precisely in this component that no concrete methods are given, and the activities are divided into three types, i.e. games (that are often included in the subjects for Grade 1), activities of play (often included in the subjects for Grade 2), and exercises (regarding the content of the subjects in Grade 3). In the description of the covered activities there is no appropriate methodical organization, but sole coverage through explanations of the goal and the directions as to what the pupil should do and strive towards. Rarely is there a description of the activity, the game, the activity of play, or the exercise, and when there is one, it refers mainly to the goal or type of the activity of play, content, final effects, process of working, etc. We believe that all those components should be systematized, ordered, and organized in a didactic-methodic manner. Of course there should be respect for the specificities of the different contents and the subject, since emphasis should be placed on the specificities in the realization of the different types of activities of play, as well as the possibilities for critical thinking. In individual conversations with the teachers during the research, we came to the conclusions that they frequently apply activities of play in the function of critical thinking in the course of the realization of the teaching process, but in their view, they are uniform and familiar enough. Furthermore, they greatly require professional support for this issue, which could fully initiate more creativity on their part in the organization and designing of the appropriate methodic parameters of the activities of play.

#### ❖ **Application of the Activity of Play in the Function of the Development of Pupils' Critical Thinkng**

##### ✓ **Initial Education of the Teaching Staff and their Ability to Organize and Realize the Activity of Play**

It is necessary to fulfill certain prerequisites in regard to the organization and realization of the activities of play. The initial education of the teaching staff in the first educational cycle of primary education, as a significant factor, refers to the coverage of the contents of this issue, their acquired practical experience, as well as the applicability of the acquired knowledge in their professional working space. In order to summarize the meaning of the initial education, the respondents had the chance to state their opinions on the following question, which is illustrated in Table 1.

**Table 1:** Opinions of elementary school teachers as to the importance of the initial education for the organization and realization of the activities of play as a methodic concept in the first educational cycle.

The methodic concept of the activity of play in the initial education was:		Not at all	Partially	Yes, in its wholeness	Total
<i>Sufficiently covered content wise</i>	f	28	114	10	152
	%	18.4	75.0	6.6	100.0
<i>With satisfactory</i>	f	34	100	18	152



<i>practical experience</i>	%	22.4	65.8	11.8	100.0
<i>Useful for present professional work</i>	f	18	86	48	152
	%	11.8	56.6	31.6	100.0

**Graph 1:** Graphic representation of the coverage (%) of the opinions of elementary school teachers as to the importance of the initial education for the organization and realization of the activities of play as a methodic concept in the first educational cycle.



From the results illustrated in Table 1 (Graph 1), in all three categories, the majority of the respondents (75.0%) think that in the initial education there is partial content coverage of the activities of play as a methodical concept. According to 18.4% of the respondents, there is no content coverage whatsoever during the initial education, while an insignificantly low percentage of the respondents (6.6%) stated that there is full content coverage of this topic during the initial education. Considering practical experience, the majority of the respondents (65.8%) share the opinion that they have partially acquired practical experience for this content, while 22.4% stated that they have not acquired any practical experience in the course of the initial education, and only 11.8% of the respondents have satisfactory practical experience from the initial education.

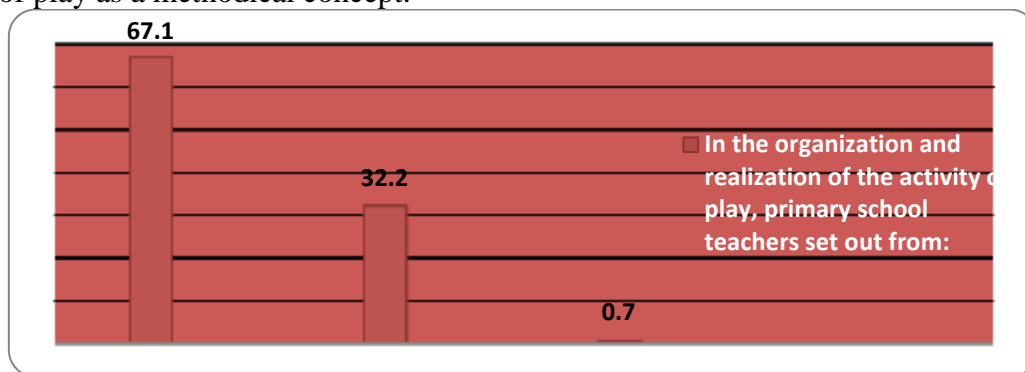
#### ✓ **The Didactic-Methodic Preparation of Primary School Teachers in the Process of Creating and Realizing the Activity of Play as a Methodic Concept**

In the process of creating and realizing the activities of play, a didactic-methodic preparation of the elementary school teachers is necessary, since it is beneficial in the search for suitable solutions to lay this issue on broad didactic-methodic foundations. Such preparation represents a guide according to which the teaching staff will be able to realize their ideas.

**Table 2:** Opinions of elementary school teachers as to where they set out from in the process of creating and realizing the activities of play as a methodical concept.

<b>In the organization and realization of the activity of play, primary school teachers set out from:</b>	f	%	Rank
<i>Teaching content</i>	102	67.1	1
<i>Pupils' interests</i>	49	32.2	2
<i>Recent school events</i>	1	0.7	3
<b>Total:</b>	152	100.0	3

**Graph 2:** Graphic representation of the coverage (%) of the opinions of elementary school teachers as to where they set out from in the process of creating and realizing the activities of play as a methodical concept.



The ranking that was obtained on the basis of the opinions of the respondents regarding the starting point in the organization and realization of the activity of play demonstrates that a high percentage of those surveyed set out from the teaching content, while the pupils' interests come second, followed by recent school events, which comes third, because of the low percentage. These data prove that the teaching content still takes up the primary position in the creation and realization of the activity of play in the practice of teaching.

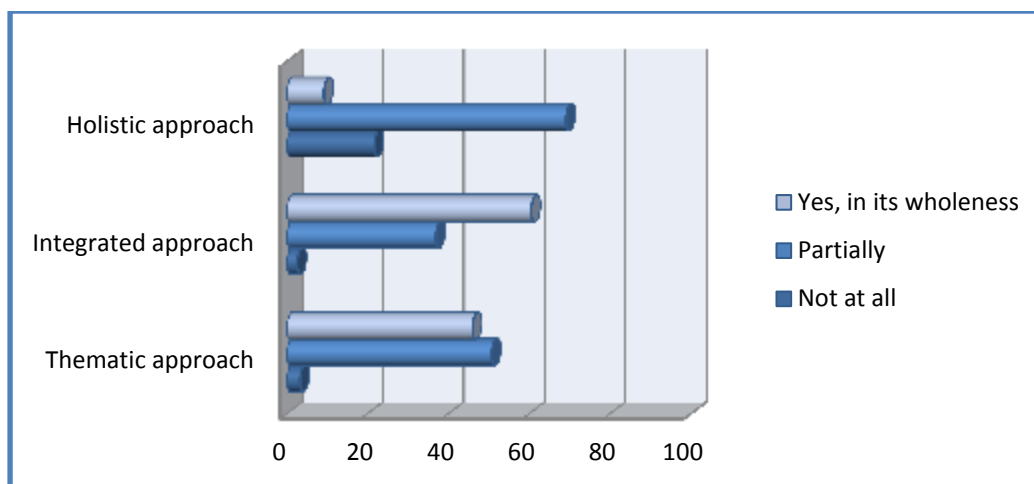
✓ **The Approach that Primary School Teachers Set Out From in the Process of the Creation and Realization of the Activity of Play as a Methodic Concept**

The didactic-methodic preparation of the activity of play largely depends on the approach that those surveyed apply in their everyday practice. In the pedagogical theory and practice there are several approaches in the planning of the teaching process: the thematic, integrated, and holistic approach. Each one has its own specific characteristics, which undoubtedly influence the realization of the activity of play. Through the following question, we analyzed which approach those surveyed most frequently applied:

**Table 3:** Opinions of elementary school teachers as to which approach they apply in the process of organizing and realizing the activities of play as a methodic concept.

In the organization and realization of the activity of play, primary school teachers apply:		Not at all	Partially	Yes, in its wholeness	Total
<i>Thematic approach</i>	f	5	77	70	152
	%	3.3	50.7	46.0	100.0
<i>Integrated approach</i>	f	4	56	92	152
	%	2.6	36.9	60.5	100.0
<i>Holistic approach</i>	f	33	105	14	152
	%	21.7	69.1	9.2	100.0

**Graph 3:** Graphic representation of the coverage (%) of the opinions of elementary school teachers as to which approach they apply in the process of organizing and realizing the activities of play as a methodic concept.



From the data received, Table 3 demonstrates that the majority of respondents (50.7%) partially apply the thematic approach, while slightly less (46.0%) fully apply the same approach. Only 5 respondents believe that they are not at all applied, but that percentage is taken to be insignificant.

Concerning the application of the integrated approach, 60.5% stated that they fully apply it, whereas 36.9% of the respondents partially apply it, and only 2.6% do not apply it at all.

Out of the total number of respondents, 21.7% declared that they do not apply the holistic approach, as only 9.2% fully apply it. The majority (69.1%) only partially apply the holistic approach, and since this percentage is the highest of all the provided approaches, we can take the liberty of stating that the teaching staff is open to implementation of contemporary approaches in the planning of the didactic-methodic aspects of the teaching.

✓ **Forms of Application from which Primary School Teachers Create and Realize the Activities of Play as a Methodic Approach**

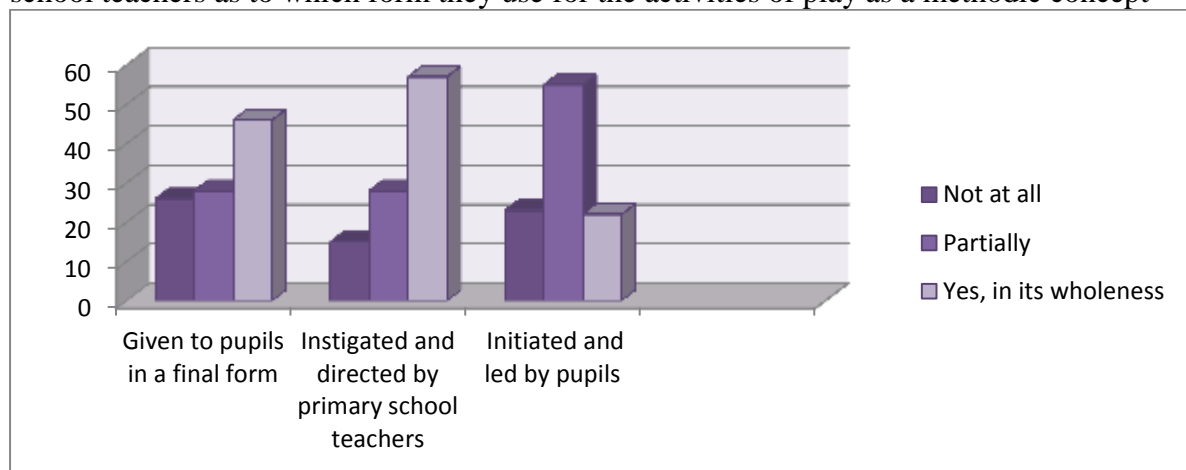
The activities of play as a methodic concept in the teaching practice can be applied in a variety of forms. They can be given in a final form, or directed by the teachers themselves, or the best case would be when they are initiated and directed by the pupils. Which form will specifically be applied depends on many factors. In order to figure out which forms the teachers most frequently apply in the course of the realization of the activity of play in the first educational cycle, the respondents aired their views in the survey, and these are the results:

**Table 4:** Opinions of elementary school teachers as to which form they use for the activities of play as a methodic concept.

The application of the activities of play is:		Not at all	Partially	Yes, in its wholeness	Total
<i>Aspect 1:</i> <i>Given to pupils in a final form</i>	f	40	43	69	152
	%	26	28	46	100.0
<i>Aspect 2:</i> <i>Instigated and directed by primary school teachers</i>	f	23	43	86	152
	%	15	28	57	100.0

<i>Aspect 3: Initiated and led by pupils</i>	f	35	83	34	152
	%	23	55	22	100.

**Graph 4:** Graphic representation of the coverage (%) of the opinions of elementary school teachers as to which form they use for the activities of play as a methodic concept



The data in the table clearly demonstrate the differences regarding the three aspects. For the majority of aspect 1 (46% of the respondents) the activity of play is given in a final form to the pupils, while for 57% of the second aspect, the application of the activity of play is fully instigated and directed by the teachers themselves. In the third aspect, however, the frequency is high (83%), i.e. 55% of the respondents consider that the activity of play is partially initiated and led by the pupils themselves.

**Final Remarks**

In the research section of this study we received data that reveal the state and influence of different aspects on the manner of organization and realization of the activity of play as an approach in the formation of the pupils’ critical thinking. The respondents largely shared the views that they are partially professionally equipped in terms of organization and realization of the activity of play. The content provision, practical experience, as well as the applicability in their present professional work context are not fully (but partially) covered in the course of their initial education, which presents the need for increased involvement of these aspects in the process of the initial education of the future elementary school teachers. As a whole, that would contribute to their more successful organization and realization of the activities of play in the function of critical thinking, in the first educational cycle of the mandatory nine-year elementary education.

The didactic-methodic preparation, as a significant question of this issue, emphasized the teachers’ views in several segments. Firstly, we can summarize that the teaching staff cannot be autonomous regarding the teaching programs. The research showed that in the preparation for the activity of play they usually set out from the teaching content first, and then from the pupils’ interests, or recent school events, thus pointing to the focus being placed primarily on the content order of the teaching process, with decreased likelihood of respecting the interests, possibilities, and critical views of the pupils. Secondly, the respondents clearly described their opinions regarding the application of the thematic and integrated approach, but it is surprising that they largely apply the holistic approach as a significant novelty in pedagogical theory and practice.

All these conclusions point to the rigidity of the arranged teaching process. However, the implementation of the segmented strategies and approaches lead towards overcoming the typical realization of the teaching, and at the same time provide stimulation

for pupils’ critical thinking, which even further leads towards the formation of knowledge based on one’s own views and stances as a higher goal of contemporary education.

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## A VIEW OF CLASSROOM ACTIVITIES IN SECONDARY EFL COURSE BOOKS RELATED TO THINKING SKILLS

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### Abstract

To communicate ideas clearly and successfully, it is needed good thinking skills in addition to communicative competence. Since the aim of EFL education program is to learn English for communicative purposes, it is important that course books provide teachers and learners with available practice materials including those that develop the critical thinking skills of students so as to help them in the communicative language teaching and learning process. This research aims to observe some English language textbooks actually used in Albanian secondary schools in order to probe into the activities related to promoting good thinking skills and make practical advice for English language teachers for promoting critical thinking skills and therefore effective language teaching and learning. It is concluded that the selected course books include a variety of activities. The suggested activities constitute other alternatives for use in the classroom for promoting critical thinking skills.

**Key words:** activities, course book, thinking skills

### Introduction

The course books are undoubtedly the most pervasive tool for classroom-based foreign language learning. They have become an unavoidable element of the curriculum because, as Ur (1999: 79) noted, they include a carefully planned and balanced selection of language content and provide texts and tasks with possible appropriate level for most of the class, which save time for the teacher.

A good course book, despite its subject, needs to help students to become educated thinkers by providing them not only with new knowledge but good thinking skills as well. Such skills, nowadays, in the reality of globalization, are essential for everyone to make sense of one's life and of the world one lives in, to solve the problems one is constantly confronted with, to make intelligent decisions and achieve one's career goals.

Good thinking skills can be promoted even in learning a foreign language. To communicate ideas clearly and successfully, it is needed good thinking skills in addition to communicative competence (linguistic competence, sociolinguistic, discourse and strategic competence). Since the aim of EFL education program is to learn English for communicative purposes, it is important that course books provide teachers and learners with available practice materials including those that develop the critical thinking skills of students so as to help them in the communicative language teaching and learning process.

How do course books address thinking skills? Are there any varieties of activities to promote critical thinking skills? This research aims to observe some English language textbooks used in Albanian secondary schools in order to probe into the utilized activities related to promoting good thinking skills and suggest further activities for English language teachers for promoting critical thinking skills and an effective language teaching and learning, referring to recent research of foreign language acquisition.

### What is critical thinking?

Referring to Lau (2011), good thinking involves critical thinking and creativity.

Critical thinking is thinking clearly and rationally following, among others, the rules of logic and scientific reasoning; whereas creativity is a matter of coming up with new and useful ideas generating alternative possibilities. Both of them are needed for us to survive and prosper in the reality of globalization.

For Lau, a critical thinker is someone who is able to do the following:

- Understand the logical connections between ideas
- Formulate ideas succinctly and precisely.
- Identify, construct and evaluate arguments.
- Evaluate pros and cons of a decision
- Evaluate the evidence for and against an hypothesis.
- Detect inconsistencies and common mistakes in reasoning
- Analyze problems systematically
- Identify the relevance and importance of the ideas
- Justify one’s beliefs and values
- Reflect and evaluate one’s thinking skills

The term critical thinking (CT) has been defined differently over the years. As Halvorsen (2005) stated, critical thinking is not an easy concept to define as it can mean quite different things to different people, in different contexts and cultures. He defined critical thinking as: “to think critically about an issue is to consider that issue from various perspectives, to look at and challenge any possible assumptions that may underlie the issue and to explore its possible alternative”.

According to Reed (1998), the controversy on a satisfactory definition has derived from various theories and models in two distinct disciplines, psychology and philosophy. Philosophers have tended to focus on the nature and products of critical thinking, while psychologists have concentrated on the process of cognition, and seeking the conclusion in empirical research. Some educators of the 1990-s (cited in Reed, 1998) have drawn on both psychology and philosophy to develop a rigorous theory of critical thinking for teaching.

Judge, Jones and McCree (2009) reiterated that critical thinking is “the ability to think about your own thinking in such a way that you recognize its strengths and weaknesses and, as a result, reconsider your viewpoint and reconstruct your thinking in an improved form”.

For Rudinow and Barry (2008), critical thinking is concerned with decision making; they think of critical thinking as a set of conceptual tools associated with intellectual skills and strategies useful for making reasonable decisions about what to do or believe.

Paul and Elder (2007, cited in Xia-jun 2012: 1146) thought critical thinking a mode of thinking in which the thinker improves the quality of his/her thinking by skillfully analyzing, assessing and reconstructing it.

Despite the various definitions, researchers support the necessity of teaching critical thinking skills in classroom, including EFL contexts. Kabilan (2000) emphasized that to become proficient in a language, learners need to use creative and critical thinking through the target language.

### **What kind of activities do English course books provide teachers with to promote good thinking skills?**

The research materials are five English language course books of foreign publishers, commonly used in teaching English as a FL in public Albanian secondary schools: *New Headway*, *Wishes*, *Blockbuster*, *Click on* and *New Framework*. Further information about them is given at the end of the paper.

Generally speaking, the selected course books provide various opportunities for developing thinking skills of learners at different phases of the lesson via various activities. Simultaneously, the activities give learners opportunities to integrate and develop language

and communication skills. Woolfolk (1998, cited in Aslan & Polat 2008: 148) stated “critical thinking is at the heart of effective reading, writing, speaking, and listening. ...It enables all instructors and administrators to raise the level of their own teaching and thinking”. These activities are described in the following lines.

The activities at the pre-reading and pre-listening stage provide opportunities for the students to prepare themselves mentally and linguistically to the text and the topics that will be studied aiming at facilitating the comprehension of the reading or listening material. For example:

-Discussion questions: ‘*How many different ways can people communicate?*’ (Headway, p. 10); ‘*What do you think are the pros and cons of working as a flight attendant?*’ (Click on, p.14);

-Asking learners to read the headline and the introduction of a newspaper article; then asking them to reflect on the new information: whether it surprises them and what further information they would like to find out reading the article by writing some questions (Headway, p.34);

-Looking at a character in a picture; discussing whether the character is related to the picture just by reading the title of the text (Wishes: p.6);

-Describing the pictures and deciding on an issue (Who seems to be a good driver?) by giving reasons (Wishes, p. 15);

-Explaining the relation between the given pictures and phrases (Wishes, p. 37);

-Thinking about the topic of a text just by reading its title or some sentences extracted from it (Blockbuster, p. 6, 10);

-Thinking of some questions that the learner would like to ask the person in a picture (Blockbuster, p.12);

-Reading some extracted sentences about a city and reasoning whether the given information (via the sentences) can be applied to another city (New Framework, p. 12);

-Discussing a saying: “Good walls make good neighbors’. What does this mean? Do you agree?” (Headway, p. 12);

-Completing a questionnaire about a topic (for example, your ideal neighbor) and discussing the answers in pairs ((Headway, p. 12).

The reading and listening materials are followed by questions and other activities aiming at checking learners’ comprehension, promoting thinking skills and language practice. The questions and activities related to the texts include:

- questions of low level seeking the surface information within the text; they are primarily important for checking learners’ comprehension of the text. After this stage learners can easily and safely participate in the further post-reading/listening activities to promote their thinking skills and language proficiency. Such activities consists in:

- questions of the type that aim to develop the higher order thinking skills of learners requiring: inferring, finding deep meanings within the text, developing the reasoning and comparing skills, providing opportunities for students to synthesize their knowledge and experiences, encouraging students to develop their own personal ideas and comments in any subject and from different perspectives. Some examples from the selected course books are given below:

‘*What is good and bad about information technology today?*’; (Headway, p. 10),

‘*What can animals do that people can't?*’, ‘*How do you like to communicate?*’, ‘*What is happening in information technology now?*’ (Headway, in section “*What do you think?*” p. 10),

‘*What do you understand by the words 'generation gap?*’, ‘*What do you think men are generally better at? What are women better at?*’ (Headway, in section “*What do you think?*”, respectively p. 12, 20),



*‘Do you think it was the perfect crime? Do you think she got away with the murder? Why / Why not?’*, *‘At the beginning and the end of the play, Alice was smiling. Why?’*, *‘Why do you think she did it?’*, *‘Do you think it was the perfect crime? Do you think she got away with the murder? Why / Why not?’* (Headway, in section “What do you think?”, p. 27),

Lansford (2014) and Byram (2000: 502) have emphasized the importance of developing learners’ questioning skills as a way to improve linguistic, cognitive, critical thinking and social skills. Lansford (2014) advises teachers not to hesitate to manipulate texts in the course books so as to get the learners think critically.

Despite questioning, other types of activities are present in the course books for the same purposes described above.

-Integrating listening with reading skills by asking learners to synthesize the knowledge and compare it: *‘Read the story. What do you learn from the story that you didn't from the radio drama?’* (Headway, p. 26);

-Working in groups or pairs; encouraging students to develop their own personal ideas and comments in a certain subject, reflecting on the reality: *‘Talk about the good things and bad things about living in your town. Make a list.’* (Headway, p. 32); *‘When do you exchange presents in your country? What is the best present you have ever received? How easy do you find it to choose a present for somebody? Do you think people spend too much money on presents? How else can we thank someone for their help apart from giving them a present?’* (Wishes, p. 21);

-Reading beyond the sentences and discussing in order to help learners identify the relevance and importance of the ideas: *‘Read the sentences. What do they mean: Many hands make light work / All work and no play makes Jack a dull boy /...’* (Click On, p.15); *“Read the quotation. In pairs, discuss its meaning and then say whether you agree or disagree with it - "Music is the shorthand of emotion" - Leo Tolstoy* (Wishes, in section “Think”, p.10);

-Integrating the four skills via discussion questions: *‘Listen and read the text. How does the writer feel towards his job? Give reasons based on the text. Would you ever choose to do this kind of job? Why / Why not?’* (Wishes, in section “Think”, p. 7);

-Making a project: *‘What gestures do people in your country use to show anger; joy, worry, regret, annoyance and other emotions? Collect as much information as you can and prepare a presentation for the class. Use photographs to illustrate your work’* (Wishes, p. 7). Such an activity gives learners opportunities to have some fun and enjoy thinking and learning the foreign language;

-Writing a paragraph on a topic via synthesizing one’s knowledge: *‘What qualities make a good driver? Spend three minutes writing a short paragraph on the topic. Use ideas from the text as well as your own...’* (Wishes, in section “Think”, p. 15); *‘Imagine you are Friday. Write a short description of R. Crusoe and explain what you think about him.’* (Blockbuster, p. 17);

-Asking learners to explain certain expressions and find the equivalent ones in their own language: *‘Explain the idioms in bold... Are there similar idioms in your language? (She seems to be on cloud nine after getting her degree)’* (Wishes, p.16);

-Asking learners to identify certain parts of a text, the tone of the writer or the main idea in a paragraph: *‘Read the following extracts and say which of them are the beginnings (B) and which are endings (E). What tone has the writer used in each?’* (Wishes, p.32); *‘... What are the main ideas in each paragraph?’* (Blockbuster, p.15); *‘Which paragraph(s) in the story: set(s) the scene / develop(s) the story / describe(s) what happens in the end?’* (Blockbuster, p.28). Such activities help the teacher to check the learners’ understanding of the logical connections between ideas of the text. To make the activity meaningful and effective in promoting the critical thinking skills, the teacher should also ask the learners to justify their answers;

-Writing and discussion: “When you have finished your work, exchange it with a partner. Evaluate his/her piece of writing. Think about the following: Has all the information asked for in the rubric been included? Is the letter/email easy to understand? Does it flow? Are the paragraphs clear and in the correct order? Are the beginnings and endings in the correct tone/style for the intended reader? Does the letter/email contain any information that isn't necessary? Is the style the same throughout the letter/email? Has a variety of vocabulary been used instead of repeating the same vocabulary?” (Wishes, p. 37). This activity makes learners consider each-other's piece of writing critically by making their own comments and evaluations of a piece of writing and inference from their readings.

As texts, the activities can be manipulated in order to make them appropriate to the learners' preference, teaching and learning goals and circumstances.

Foreign language acquisition research continues discussing other appropriate alternatives to develop good thinking skills. Referring to Halvorsen (2005) *debating*, *problem solving* and *media analysis* are very efficient and successful educational tools that encourage the development of various skills, including critical thinking. *Debating* gives learners an opportunity to address a controversial issue; the speakers on either side of the question support their position by using certain skills of persuasion and argumentation, respond to their opponents, and finally have an objective to arrive at a consensus and, to make a decision. In a *problem-solving*, learners can address a problem (relevant to their lives and interests) and analyze it critically. Similarly, *media analysis* encourages learners to think about the issues that affect their lives. According to Halvorsen, these techniques can be used in large and small classes, in levels ranging from lower intermediate to advanced, and generally in all manner of teaching situations. What it is emphasized is that teachers must know their students and their interests in order to choose a topic appropriate to the interests of the students and source appropriate material.

Another researcher, Thapaliya (2012), suggested some techniques in teaching English literature in general and short stories in particular. Some of them, appropriate to be used at different levels are listed below.

-*Pair –Reading and Pair-Summarizing (PR-PS)*: one student reads the text, the other summarizes it. If the listener cannot understand the text, the reader explains and tries to make it clear.

-*Semantic Map* creates an opportunity to show relation between different characters, ideas, topics and other things.

-*Prediction from terms*: the teacher selects five or six words or phrases from a text and asks learners to write a story, a poem, a song, a drama or an essay by using them.

This is a short view of a range of the activities for use in developing good thinking skills, essential to educated learner's autonomy. We as teachers need to:

-become familiar with different techniques and materials that can help facilitate the enhancement of learners' critical thinking abilities;

-create the conditions that encourage our learners to think in the classroom and

-use a variety of strategies and methods to develop students' attitudes as problem solvers in any situation, including the real life.

### **Conclusions**

Despite the controversy on a satisfactory definition, researchers support the necessity of teaching critical thinking skills in classroom, including EFL contexts. To become proficient in a foreign language, learners need to use creative and critical thinking through the target language. To communicate ideas clearly and successfully, in addition to communicative competence (linguistic competence, sociolinguistic, discourse and strategic competence), it is needed good thinking skills. For this reason, it is important that course books provide teachers and learners with available practice materials including those that

develop the critical thinking skills of students. Observing five course books of foreign publishers, commonly used in teaching English as a FL in public Albanian secondary schools, it is concluded that the course books offer a variety of activities that help learners in developing their thinking skills and therefore in succeeding in the communicative language learning process. We as teachers, especially those that are in lack of such course books, need to become familiar with different techniques and materials that can help facilitate the enhancement of learners' critical thinking abilities; create the conditions that encourage learners to think in the classroom and use a variety of strategies to develop students' attitudes as problem solvers in any situation, including the real life.

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## **HOMEWORK IN THE CLASSROOM: PERCEPTIONS AND PRACTICES OF TEACHERS**

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### **Abstract**

Assigning homework is an everyday teacher practice as well as an important and controversial pedagogical issue. Nowadays the unconditional value of homework is increasingly questioned both by the educational community and by a significant portion of parents; still the majority of parents are firmly in favor of homework assignment. The bibliographic review showed that there are limited references on teachers' practices of checking, correction and assessment of homework and that feedback on homework is very important for the students' progress. Therefore, we focused in these practices in Greek Primary Schools.

We chose as research tools the observation and interview of primary school teachers in order to select more comprehensive data. The sample of the study comprised of ten primary school teachers. The observations were conducted for almost six teaching hours per teacher in the subjects of Language and Mathematics. The observations were supplemented by interviews with each teacher.

According to the research results the majority of teachers checked if the homework was completed at the time of collection or passing by the desks, but the answers to several tasks were given to the whole class, without any individualized checking taking place. In case of non-completion, most teachers gave a deadline of a couple of days. The correction of the work was carried out by the teacher in the class or at a later time. The assessment of homework was communicated with one-word comments. We noted that several teachers' practices agree with the proposals of the literature, but there are areas where there is not adequate guidance by research on best practices, for example regarding the correction and the evaluation criteria. Therefore, more research in this area is needed.

**Keywords:** homework, homework assessment, teacher's practices.

### **Introduction**

Homework is an integral part of everyday life of both students and teachers. Nowadays, however, the unconditional value of homework is questioned by the scientific community and by a small but increasing proportion of parents (Thoidis & Chaniotakis 2012). The questioning concerns the effectiveness of homework, i.e. its effect on learning. The effect of homework on primary students is directly related to the quality and quantity of homework that teachers assign (Cooper 2007). Nowadays teachers tend to assign a lot of homework tasks aiming at the improvement of students' school performance. The excessive homework has negative effects on students, such as the reduction of the leisure time and the time of interaction with parents and peers, the negative attitude towards school and learning as well as their general physical and psycho-emotional fatigue (Chatzidimou et al. 2007, Cooper 2007, Czerniawski & Kidd 2013).

A heavy load of homework leads also to problems regarding the checking and evaluation of homework by the teacher. Checking, evaluation and feedback are important aspects of homework because they give students a picture of their progress and simultaneously are a form of recognition of the time and effort spent to complete a task. These practices, although very important, have not been adequately studied.

Feedback is a means by which teachers can identify students' weaknesses and difficulties and intervene immediately and appropriately (Hattie 2012). If the student does not receive feedback on his mistakes, he continues to make the same mistakes and practice incorrect skills, which may lead to poor performance and feelings of failure (Bennett & Kalish 2006). Feedback is more beneficial for students in the form of individualized oral or written comments and a dialogue between the teacher and the student (Vatterott 2009).

In the present study, our interest is focused on the issues of checking, correction and evaluation of homework, practices that contribute to a great extent to the effectiveness of homework and the improvement of school learning.

### **Research findings**

Many teachers are used to conduct only a sampling check on homework or not to check at all if homework tasks were completed (Thoidis & Chaniotakis 2010, Thoidis & Chaniotakis 2012). It is important, however, that teachers report that they check daily whether homework is completed and they correct it either during the lesson or at their home (Fykaris 2008, Thoidis & Chaniotakis 2010, Vafiadou 2009). Teachers sometimes check and correct homework tasks in class orally or written on the board. Sometimes they perform this check passing by the desks, checking and correcting at the same time homework tasks (Thoidis & Chaniotakis 2010). Most of the teachers report that they return the corrected homework as soon as possible (Thoidis & Chaniotakis 2010) and that they sometimes take into account homework in the final assessment of the students (Vafiadou 2009).

The way feedback on homework is given by the teacher can encourage or discourage completion (Vatterott 2009). Surveys show that the feedback given by the teacher is often addressed to the whole class and therefore a student may think it does not refer to him and therefore the feedback is not received and utilized. This form of feedback -according to research data- is not effective (Hattie 2012). If feedback is individualized and includes a dialogue between the teacher and the student, then the effects on learning are more positive (Strandberg 2013). Cooper (2007), according to a review of the relevant research, notes that the constructive dialogue between student and teacher and the creative feedback clearly outweigh the traditional grading. Research has shown that teachers also believe that correction of homework accompanied by written or oral comments is preferable than one grade (Vafiadou 2009). It would be a beneficial practice if teachers asked students what was difficult for them and tried to identify the reasons for uncompleted homework (Vafiadou 2009).

Summarizing the research data, we note that the checking and feedback on homework are educational practices that influence significantly the effectiveness of homework, the student's attitude toward it and finally learning. However, these areas have not been adequately studied.

### **The research**

The present research examines the practices and perceptions of teachers of the Greek Primary Schools regarding the checking, correction and assessment of homework assigned to the students.

For the research of our topic we posed the following research questions:

- 1-Which are teachers' practices concerning the checking and correction of homework?
- 2-Which criteria are teachers taking into account in order to assess homework and how do they express this assessment?
- 3-What kind of feedback is provided regarding students' homework?

In order to study these questions we chose to combine two research tools, observation and interview. The observation and interview guides were created according to the research questions. The observation was conducted for almost sixty teaching hours in the school subjects of Greek Language and Mathematics. The observation was followed by individual

semi-structured interview with each teacher. We chose to combine these two tools in order to select more comprehensive data and to examine if the results of the observation are in compliance with the results of the interviews. Furthermore, this combination would give us the opportunity to ask teachers about specific behaviors and practices observed and may reveal the causes and motivations behind these practices as well as identify data that may not have been apparent during the observation. Regarding the sampling method, "convenience sampling" was chosen (Sarafidou 2011). In the present research, ten teachers (N = 10) from three Primary Schools participated. The observation in class and the interviews regarded one First grade teacher, three Second grade teachers, one Third grade teacher, two Fourth grade teachers, one Fifth grade teacher and two Sixth grade teachers of the Primary School.

The main axes of the observation were a) the checking of the completion of homework, b) the teacher's reaction in case of non-completion, c) the practices of correction adopted and d) the form of feedback provided by the teacher. The interview guide included questions on similar topics as well as other questions regarding the frequency of homework assignment, the informing of the parents and the teacher of the full-day program as well as the contribution of homework to the students' overall grade.

### **Results - Discussion**

#### **a) Homework assignment**

Homework assignment, as noted both from the interviews with the teachers and by the observation of the teaching process, is an everyday routine which is not questioned, a fact that is also confirmed by other studies (Bennett & Kalish 2006, Strandberg 2012, Thoidis & Chaniotakis 2010, Thoidis & Chaniotakis 2012). Most of the teachers tend to assign more homework on weekends and holidays, although the Ministry of Education recommends avoiding this practice.

*"I assign homework every day" (1)*

*"On weekends and holidays I assign more homework" (4)*

The majority of teachers reported that they do not assign less or/ and different homework to students with low performance and do not differentiate the assigned homework in general.

#### **b) Checking of homework completion**

All teachers responded that they check daily most of the homework tasks.

*"I always check if homework is done" (5)*

According to the observation of teaching in class, all teachers performed at least a rudimentary check whether students have brought or completed homework tasks (copy exercises, exercises in the student workbook or worksheets). The observation revealed that the checking took place at the time of collection of the homework.

In many cases, however, we noted that a lot of tasks were discussed in class (apparently to save time) either orally or written using the board. The consequence of this practice was that teachers could not know if the students, who did not raise their hands to reply, have completed their homework. The fact is that if teachers assign a lot of homework, the checking and assessment are difficult and vice versa. If homework tasks are less and more qualitative, checking and assessment are more effective.

Almost half of teachers used to pass by the students' desks while they were discussing the homework tasks and in that way they checked simultaneously whether students had completed them and whether they were correct.

In case of non-completion of homework, most teachers would give the student a couple days to complete his homework. In case that happened often, several teachers would make a reprimand.

*"He is obliged to bring the homework tasks completed the next day and if the tasks were so many they could do them on the weekend and bring them next week" (4)*

Providing the student a deadline of a few days to complete homework does not increase the possibility of completion. According to the observation results, if homework was not completed, teachers were not used to require previous exercises from students who have not completed them and if the given deadline passed, they did not perform any other action. Therefore, we noted a contradiction between the observed practice the one reported. Moreover, only three teachers reported that they try to find out the reasons of non-completion. As a result, teachers could not perceive the deeper causes of uncompleted homework tasks and take proper actions in order to deal with them (Kazmierzak 1994).

Furthermore, all teachers reported that they never punish students for uncompleted homework and they never assign more as punishment, practice which was also observed.

*“In none of the cases (do I punish a student with more homework)” (2)*

In addition, all teachers responded that they never differentiate their reaction in case of uncompleted homework depending on the student’s performance.

Six out of ten teachers answered that they address to the parents if homework is not completed systematically.

*“If homework is not completed systematically, I will contact the parents and inform them” (9)*

*“I called his parents and told them that he must do his homework at least in the subject of Language and told them to supervise completion” (2)*

All teachers responded that they do not address to the full-day program teacher if homework is not completed, do not change their stance and do not have more demands if a student attends the full-day program. It is apparent that there is a lack of cooperation between the teachers of the morning and the full-day program.

### **c) Correction/Assessment of homework**

The assessment of homework was performed by the teacher outside the classroom (in the office or at home) or in class orally or written using the board, practice which in compliance with data from the observation in class and data from other studies (Thoidis & Chaniotakis 2010).

*“I collect homework and correct it during my free time” (6)*

Almost half of teachers answered that they correct some homework tasks in class during the lesson, while students are occupied with something else, practice that was also observed.

*“I collect and correct some homework when students are dealing with a task” (3)*

This practice is not considered beneficial, because if the teacher corrects, for example, spelling exercises while students are reading a text aloud, the students may think that he is not watching their effort. Furthermore, if the teacher is correcting other exercises while students are dealing with a task, perhaps they will be reluctant to address any questions as the teacher is busy. Moreover, it is likely that restlessness and noise is caused by students who have finished or couldn’t deal with the assigned task.

We noted that teachers utilize all known assessment criteria: the student’s effort (six references), the capabilities of the student (five references), the student’s progress (four references), the previous performance of the student and the performance of the class (two references each).

The observation showed that in case of incorrect completion of homework, almost all the teachers corrected it by replacing the incorrect answer with the right one and returned the homework to the students.

### **d) Feedback/expression of assessment**

All teachers reported that they return the homework as soon as possible (the next day), thus emphasizing that only in that way homework is beneficial for the students.

*“I return homework the next day. It does not have any meaning if I return it after a month”*  
(2)

This practice is highlighted as proper by the bibliography (Czerniawski & Kidd 2013, Kazmierzak 1994, Thoidis & Chaniotakis 2010). The direct feedback is very important as it is not certain that students will receive feedback from their mistakes if they are given a corrected homework at a later time (Fykaris 2008).

Taking into account the interviews’ data, feedback is usually expressed as a one-word comment, for example "Very good, Good, Excellent", depending on the achievement degree of the target set by the teacher. This practice was obvious during the observation in class. Only one teacher reported that he makes an attempt for more individualized feedback with written comments but only in essay tasks. However, as we have already noted, feedback benefits more students when it takes the form of descriptive oral or written comments and is accompanied with a dialogue between the teacher and the student, practice which, of course, requires time and effort by the teacher (Cooper 2007, Hattie 2012, Strandberg 2013, Vatterott 2009).

The purpose of feedback is to lessen the gap between where the student is and where he should be (Hattie 2012). Proper feedback is a complex process that requires an ongoing "dialogue" between teacher and student (Vatterott 2009). According to the relevant bibliography it is suggested that homework is used as a tool of formative assessment, which is designed to monitor the progress of the students regarding the educational goals. Thereby this type of assessment provides students opportunities to receive feedback on their progress. It also gives the teacher the opportunity to discover any misunderstandings and to intervene appropriately modifying the teaching process. The main objective is that students have the opportunity to practice, receive feedback from the teacher and improve (Bennett & Kalish 2006, Strandberg 2012, Vatterott 2009).

Furthermore, regarding the connection between homework and grading, it was obvious from teachers’ answers that homework completion was not taken into account for students’ grading.

*“No, I don’t take into account the homework for grading”* (7)

Nowadays, a tendency for not counting homework in the students’ final grades and not grading homework is evident (Bennett & Kalish 2006, Chatzidimou 2010, Cooper 2007, Fykaris 2008, Kazmierzak 1994, Kohn 2006, Vatterott 2009). It is advisable to think of homework as "a rehearsal before a performance" (Christopher 2007), which aims at the practice and improvement and not at the judgment of the students.

### **Final Findings**

The majority of the teachers surveyed appeared to support and use traditional forms of assignment, checking and evaluation of homework. The teachers do not differentiate the homework depending on the performance of their students and assign more homework on weekends and holidays.

The checking of the homework completion was in many cases inadequate, as a result teachers did not always have a clear picture neither of the correctness of the homework or of the students who have not completed it. The lack of checking may be associated with the large quantity of assigned homework. It is obvious that the more homework assigned, the greater are the demands of time and effort in order to be checked, but also to be assessed and corrected. Teachers perhaps in order to save teaching time avoid individualized forms of checking and correction of homework.

On the other hand, the practice of teachers correcting homework sitting at their seat while students are engaged in something else results in the opposite direction: valuable teaching time is lost, since teachers could correct homework outside the classroom. It is possible that such problems would be much less, a) if homework did not exceed the time



which is proposed by the Ministry of Education and derives from the majority of the previous studies (Bennett & Kalish 2006, Cooper 2007, Czerniawski & Kidd 2013, Vatterott 2011), b) if homework was effective, qualitative, creative and challenging for the student. In short, the problems of checking and evaluation would be significantly less, if the homework tasks were "few and good."

Teachers' reactions in case of uncompleted homework are relatively mild and do not give students the impression that homework must necessarily be done. This finding results both from the practice of giving a deadline of a couple of days, but without subsequently require the homework and from the lack of addressing to the parents as well as from the complete lack of communication with the teachers of the full-day program (who are responsible for the completion of the homework by the students who attend it).

The expression of the assessment using comments such as "Bravo!" "Excellent!" "Very good" clearly constitutes a form of grading homework, although teachers themselves emphasized that they do not grade homework: obviously this meant that do not use a numerical grade. However, this form of feedback is the least effective compared to the individualized, descriptive, written or oral forms of feedback. Of course, short feedback comments have the great advantage of speed and convenience, especially when the assigned homework is too much. This practice also, as those mentioned above, is connected to the force of habit and routine and the lack of training and information of teachers on the findings of resent research in this field. Research data doubt the effectiveness of homework and suggest different approaches than those used in the past.

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## THE CHALLENGES OF MODERN EDUCATION

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### **Abstract**

It is well known that the traditional education does not produce the required results by modern society. The result of this is modern education. Schools need to change, because the world is changing much faster in all domains of life. Furthermore, education needs to change in order to meet the demands of modern life. Modern education is orientated towards the students, and it demands more from both students and teachers. The students need to become more active researchers, and the role of the teachers is to direct the students instead of presenting them with ready-made information.

Teaching methods which help the students to learn faster and, which teach them how to learn during the entire life are used in modern education. The students learn much more when the brain is fully engaged, and when studying is not reduced to remembering facts. The students acquire knowledge, which is dynamic – a type of knowledge, which is natural and spontaneously used in authentic interactions in the real world.

Modern education enables students to be more creative. Creativity is an important characteristic of the well-organized pedagogic work with the students, especially in classes.

Modern education demands modern creative models, strategies, curricula, which enable the students to learn independently, and in this way to acquire the needed knowledge.

**Key words:** modern education, teaching process, teaching strategies, creativity, information and communication technology (ICT).

### **Approaching the problem**

We are about to face another reform in education. Many experts explain the way in which the education needs to transform, how the teachers need to conduct instruction, when the students should get more engaged and introduced to decision making and problem solving activities, as well as creative activities. Gilford emphasizes that a preoccupation of all modern instructional theories is to teach the children to think creatively.

Instruction is the most important part of the school work. It needs to be in the spirit of the modern changes in order to meet the creative, emotional, working and other needs of the students. An objective of the education work is the teachers to provide and create conditions for all students to discover themselves, to make progress in their further course of education, and to develop and improve the cognitive and learning processes, which best suit them. This is how an individual maximum is achieved, which develops the individual potentials for the things that suit the students, in some particular areas of the education, which the students find interesting. The instructional process should provide the students with a solid starting ground for education, which at the same time would be a solid ground for lifelong learning. All students should be provided with knowledge to develop, improve and expand their skills. At the same time, attention should be paid to the development of critical thinking, and the development of higher forms of creative expression, as well as divergent production, originality, fluency etc. (Stevanovic, M. 2004: 228).

The previously mentioned confirms that in the instructional process the students should be introduced to learning new models, thinking and contemplating. We need to help them develop their individuality and creativity and train them to form their own critical thinking and knowledge, from diverse sources, as well as to provide them with other possibilities to demonstrate various inventive and creative actions.

Modern education requires modern creative models, which are directed towards the needs of the students and their new role. In the education work, a particular procedure - a way of work is a model that enables the students to change in terms of their rationality, objectives and emotionality, i.e. to change the cognitive-affective and motor content of their awareness, which will form a new pattern of reaction and behavior in them. (Stevanovic, M. 2000. 94).

Modern education requires models, which are focused on the students, the essence of which is to include the students in all stages of the education process. The objective is to make the students active subjects in education, who will acquire knowledge, habits and abilities with their own efforts.

The schools need to take modern education to a higher level. They need to facilitate the acquirement of knowledge, and the development of the creative abilities of the students, meaning that the education process should be a process dedicated to the intellectual activities of the students. This is a kind of education, in which the tasks develop the students' creative thinking through independent researches and problem solving activities.

We should not always teach the students or present them with readymade knowledge. Instead, we need to provide them with data, facts and approaches that suit them and enable them to find themselves in the instruction, thus creating and developing potentials for a particular area. For these reasons, the teachers should only provide a solid starting ground for all students, so they can progress individually. This means that all students need to acquire essential knowledge from all school subjects, which will serve as a basis for independent learning, acquiring necessary working habits and life skills. The efficiency of education greatly depends on the organization, motivation and emotional climate established by the teacher, by adjusting the didactic-methodological demands of the work to the developmental-cognitive potentials of the students.

Modern education also requires modern strategies. The strategies have an objective to train the students to learn independently and acquire necessary knowledge in this way. This is a kind of permanent education and creating with active interactive communication between the teachers and students. (Stevanovic, M., 2000: 63).

The objectives of the instructional strategies should be focused on the inner motivation, which is encouraged through various research activities. The strategies, with creativity as their objective, develop the notion for oneself and the students' attitude for their own efficiency.

The instructional strategies should provide the students with diverse knowledge to a certain degree. Methodological knowledge is also important. This kind of knowledge is concerned with doing research, learning and creating. Dynamic strategies which give perspective about the researches, creating, etc. should be used in education. The new strategies cannot harm the students. Bearing their needs in mind, they motivate the students to learn.

The new curricula should provide modern instructional strategies. The curriculum and syllabus should no longer be perceived as they once were, but in a completely different way. The instructional strategy as a style of work, a way of interaction and communication should be looked into. The students need to have a clear understanding of the objective of the lesson and what they will acquire. Afterwards, they need to be presented with the content that they will learn (research) and the possible actions. This is a preparation for creating and relating

theory to practice, teaching and learning. Good planning can help the schools face / deal with the changes.

The world is changing very fast in all areas of life. Since the world is changing, and the education is supposed to meet the needs, it has to change as well. Accordingly, the curriculum and syllabus also need to change. It is crucial to find the best ways to reach the objective. In the school environment, the change is not an accurate formula to improve education, but rather, it is understood as a philosophy, which makes continuous analyses for new creations. This means to accept that change is constant.

It is well-known that traditional education is not adapted to follow the development of the world. Education is forced to follow this development, and this is why it changes. The changes can be seen in the orientation towards the students. The education focused on the students demands more both from the students and teachers. The students must become more active researchers, whereas the role of the teachers is to instruct the students instead of presenting them with readymade information. The complete engagement of the students in instruction is a process, in which the students are engaged as partners of the adults, with the objective to strengthen their dedication to education, community and democracy.

Project based learning is also one of the challenges of modern education. Project based learning is a method through which the students research a complex matter or real life problems, related to content from the syllabi, with the use of problem solving activities and different sources and materials, with the objective to create a final product.

The students find the project based learning more interesting. It motivates them more and enables them to reach a higher level of cognitive development. A key aspect in the project based learning is the independent research, in which the students use sources to obtain information on their own or in groups.

Modern education cannot respond to the needs and requirements, especially the ones that the future might bring without a planned and efficient use of the modern educational technologies. The educational technology has become an integral part of the education system and modern schools. The improvement of the quality and quantity of the instructional media results in more and better educational technologies. The learning environment will be enriched and the instructional work improved. We live in an age of computerization and rapid development of technology. People first need to accept all scientific achievements in order to apply them, and it is necessary for these achievements to be used in education. The education in the near future cannot be imagined without the use of computers. It is a fact that even now the computers have a place in the classroom. Each day, they become more useful in combination with the innovations of the world telecommunication and the Internet. The computers become an inexhaustible source of information, thus giving new dimension to the time and space distance among people.

The information and communication technology (ICT) is more generally accepted in many areas of society. This holds true for education as well. Education and knowledge are the basis for all human development and they are a fundamental right of each human being.

The intensive use of computer technology in many different areas of the professional life is why it is also present in education, i.e. instruction.

This also results in changes in the education system, the instructional content, the instructional technologies and the relations between the teachers and students. The potentials of using the computers in education are practically unlimited. There is not an area in education, in which computers cannot be used. This is a universal system for realization of the instructional process, assessment of knowledge, improvement of the quality of work of the teachers and professional staff, a source of knowledge and a means for quicker and better quality learning. As a basic technique of modern education, computers play an important role in its development, time management, as well as meeting the users' demands.

There are many computer methods in education, which result in more creative work. One of them is the problem solving learning. The problem solving learning allows a higher level of creativity by the students. This is the most advanced form of learning. This kind of learning is very amusing, and the knowledge gained in this way is permanent and applicable in practice, especially to new problem situations.

The development of science and technology and their use in education highlight the question regarding the place of the teachers in the education of the students with this technique. This was the case with other means as well. Teachers have always been irreplaceable in all education processes. Now, their role is even more responsible. No computer can replace a creative teacher. The computer education demands a new role from the teachers. They become organizers, coordinators and guides of the instruction.

The Internet is a big electronic revolution of the time we live in. The use of the Internet opens opportunities for the students to conduct researches, attain high quality data from the libraries, websites, museums, galleries and other information sources from all over the world. The Internet supplements the sources and materials available to the teachers and students, and decreases the relevance of time and space, as limiting factors. The Internet provides the students and teachers with powerful and diverse opportunities in the instructional process. It also gives them access to wide range of data and research possibilities and additional sources of information.

Modern didactics requires the process of instruction to have an increasingly researching character. Modern education has an objective to develop the creative thinking of the students through problem solving learning. Gagne stresses that “the problems are the highest form of learning in the hierarchy, which ranges from the simplest conditioning, the learning of notions and principles and all the way to problem solving”. It is a form of learning through communication, in which the students do independent researches and solve problems, and therefore develop their creative thinking. Problem solving learning is an instructional form that helps develop the creative thinking. It has been formed with the purpose to increase the efficiency and introduce rational problems in the organizational system of education. An objective of this kind of education is the problem solving learning. Today, it is generally accepted as the highest form of learning, a very complex mental process, in which all intellectual processes are engaged in different combinations. The students gain knowledge in a creative way by continuous, permanent assessment of the given subjects.

Modern education provides many possibilities, such as creativity and the new roles of the teachers and students. The teachers receive a new role. They motivate, encourage and suggest alternative procedures, enable fluency of ideas and create conditions for research and project tasks, as well as for problem solving learning.

Creativity is a kind of knowledge. It is a way in which the individual thinks, feels and acts. The students do not receive readymade knowledge, instead they choose the solutions in this kind of education. The creative students never ask for the solution of a problem, they try to solve it on their own. Real creativity is about abandoning the usual procedures and striving towards discovery of different procedures that lead to creativity.

All this is an indicator that the modern didactic and creative theories introduce new ways of work in the education process. In modern education, the students are motivated to learn. Their needs regarding the freedom of choice in terms of the ways of learning, autonomy, problem solving, research and diverse creative activities are met.

Creativity provides didactics with new points of view regarding the organization of the education process. In the creative instructional process the students ask questions, do research work, set and test hypotheses, analyze facts, discover causal relationships and ask

for argumentative proofs. The students independently study literature by studying the answers to the hypotheses.

Modern information technology changed the way of work in almost all areas. It mostly influenced receiving, processing and analysis of information. The school, teachers and students are part of a different information environment. Modern information technology is largely used in schools. The electronic classroom represents a challenge for modern education. It is a special type of classroom, electronically equipped for a programmed education process. It is flexible, and it offers many possibilities. The electronic classrooms:

- Provide the students with the necessary information through pictures and sounds;
- Make it possible to adjust the content and its presentation to the capacities and prior knowledge of the students;
- Strongly motivate the students and provide constant flow of information from the teachers to the students and vice versa;
- Provide the teachers with possibilities for better planning, monitoring and control of the instructional process. They can assist the students promptly, and they can always objectively assess their work and results.
- “Rationalize and modernize the instructional process” (Vilotijevic, M. 2000).

The electronic classrooms enable the teacher to approach the students individually. The prepared material can be used several times. The students are completely focused and work independently.

The electronic classrooms provide conditions for constant communication between the students and teachers. The students know their results, and progress according to their capacities and pace. The classroom is best used if programmed education is realized in it, with actions corresponding to modern didactics. It also enables easy adoption of knowledge. Whether this advantage will be used, depends on the teachers and the quality of the syllabus. The new telecommunication technologies allow any teaching content, syllabus and class to be realized at any time, in any place, by the best experts.

The Canadian expert for distance education A. Bates gives four main reasons for the use of the most modern distance educational technologies:

- They improve the access to education and training.
- They improve the quality of education.
- They decrease the costs of education.
- Education becomes more economical.

However, it should be kept in mind that distance education can only be realized if adequate investment is made and if the necessary equipment is provided. The students should previously be trained to use these means and they need to have adequate prior knowledge. Modern education provides better conditions for multimedia approach. The teachers, who approach the instructional process creatively, will be able to adjust the material from the Internet in order to meet the specific needs through graphical presentations, all in the function of a specific instructional unit.

All types of education are planned, which implies that distance education should be planned as well. It is necessary, because distance education is very complex in terms of technology, organization, program and way of realization. All stages of introduction and use of distance technology should be planned. Some of the advantages of this technology should be listed in the planning.

The planning should include activities that will make the school work better than before, that will change the way and organization of the work in the school, and that will establish new structures of education.

The role of the teacher in a school that is a part of an informational society is completely new. The schools, teachers and students are part of a completely different

informational surrounding. The traditional way of work cannot persist in these conditions. The number of subjects that influence the intellectual and moral profile of the students is significantly increased.

The energy that teachers wasted for collecting information and source materials can now be used for analysis of the information gathered by modern technology. The energy of the students can be used rationally, as well. The new technology enables the teachers and students to elevate learning to a new, higher intellectual level. Now they can spend more time on analysis, synthesis, and making conclusions. The instructional process can be focused on finding and solving problems. More attention can be given to the interaction in the class, the relations in the instructional process, and for an individual approach to the students. Today, the students ask for new forms of learning.

Instruction is the main component in the school work. Its objective is for the teachers to create and provide conditions for all students to develop individually, in accordance to their capacities. In modern education, the teacher and student have completely new roles. The organization of the instructional process makes it possible for the student to be a researcher, to be creative and a partner of the teacher, whereas the teacher is the coordinator of this process. The educational technology is completely new in education. The most modern informational means are used, which introduce creative and researching potentials in the instructional process.

The information and communication technology (ICT) is more generally accepted in many areas of society. This holds true for education as well. Education and knowledge are the basis for all human development and they are a fundamental right of each human being.

The idea for the use of technology in the instructional process appeared along with the third generation of computers. The instructional technique can be defined as a sum of all means that are used in the instruction, whereas instructional technology has a wider meaning, because apart from for the instructional means it also covers the content, instructional methods and the way the instructional process is carried out. The modern educational technology integrates modernly designed learning program (software) and technology (hardware), which renders the program accessible to the students. The program integrates materials, sources of knowledge – models, which provide two-way communication, interactivity, and tasks, which engage the students in the learning process, and instruments that are used for assessment of the syllabus. The highest form of educational technology is learning with the help of a computer. The computers demand a particular level of computer literacy both from the teachers and students. The instructional content may be presented by using a CD or by using the Internet. We can use players, modems, scanners and LCD projectors to visualize the mentioned models. The advantages of this kind of education are: better conditions for individualization of the education process, quick access to information, two-way communication, fast flow of the information, using modern instructional forms, and learning the instructional content with a pace that best suits the students. Like any other form of work, it has shortcomings too. The computer is a non-personal medium, and the development of the program is a complex and expensive process. It is optimally used in combination with the instruction of the teacher. The teacher has a role of a trainer and an educator, and no computer can replace the teacher.

In the conditions of modern education, it is no longer a question whether modern information technology should be used. The main concern is to devise adequate solutions and to find the best way to use the new technology in the context of the school subjects. Most importantly, it strives to improve the quality of the education process, and make it more efficient.

We live in a time when the information technology develops more and more each day, and it is increasingly used both in schools and our homes. Society demands the schools to



train the students to use the information communication technology.

These are some of the conclusions made regarding the use of ICT in education:

- ICT has a positive influence on the achievements in primary education.
- The use of ICT improves the performance of the students.
- The use of ICT has strong motivating effects, and positive influence on the behavior, communication and intellectual skills.
- The students are more responsible in terms of the individual learning when ICT is used.
- ICT provides the students with different styles and abilities.

This allows us to conclude that a positive context is formed regarding the use of ICT in education. Nonetheless, we must mention that this depends a lot on the content and didactic strategies packed in the ICT, since technology is not capable to learn on its own.

The use of the information and communication technology in education is necessary, since many aspects of the modern education concept could not be realized without it, or their realization would be very difficult.

The use of ICT in education is becoming increasingly important and it leads to modernization of the instructional process and the ever more popular type of education known as e-learning. The basic objective of the introduction of the information and communication technology in the education process is fast, accurate and reliable knowledge. The education system inevitably needs to adjust to the changes, which are the result of the use of the information and communication technology in primary education.

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## STUDENTS AND TEACHERS' PERCEPTIONS OF EFL LEARNING AND TEACHING STYLE

A case study of EFL Albanian students and teachers at “Fan S. Noli” University of Korça

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### Abstract

This study aimed to identify students and teachers' needs and their perceptions for better EFL learning and teaching at university level. English language university students and teachers were involved in this analysis to discover the best style used by both groups in EFL learning and teaching. By the help of two questionnaires delivered to 70 students and 20 teachers, we tried to reveal their preferred style of English learning and teaching the results of which would help students fulfill their expectations and improve their studying habits on one hand, and help teachers conduct English language teaching in accordance with students' expectations on the other hand. A set of questionnaire items were similar for both students and teachers so that, by the cross analysis, we could detect their insights and needs for better English language learning and teaching.

**Keywords:** perception of learning, teaching style, expectations, cross analysis, studying habits

### Introduction

The way students learn is different for every individual. They choose to use a “preferred learning style” which according to Alan Pritchard (2008) in his “Ways of Learning - Learning theories and learning styles in the classrooms” is defined as “*a particular way in which an individual learns; a mode of learning – an individual’s preferred or best manner(s) in which to think, process information and demonstrate learning; an individual’s preferred means of acquiring knowledge and skills; habits, strategies, or regular mental behaviors concerning learning, particularly deliberate educational learning, that an individual displays*”(Pritchard, 2008).

So, learning preferences refer to an individual’s preferred intellectual approach to learning, which has an important bearing on how learning proceeds for each individual, especially when considered in conjunction with what teachers expect from learners in the classroom. They are closely connected to environmental, emotional, sociological and physical conditions that an individual learner would choose, if they were in a position to make a choice (Dunn *et al.* 1989). The right choice affects learning progresses. Learners who are actively engaged in the learning process will be more likely to achieve success (Dewar 1996; Hartman 1995; Leadership Project 1995). Once learners become actively engaged in it, they develop a sense of being in control.

For this reason, an awareness of learning styles is important for teachers. Learning style awareness should help teachers to a better understanding of the needs of learners. “*All students need to feel seen and known. Before they will fully engage their minds in the classroom, they need to believe that their teacher has an understanding of who they are*”

states Ridnour (2011). A learner’s awareness of learning preference and an understanding of the learning process can lead to improved learning outcomes.

Teaching, like learning, is a very personal activity and “*while certain teaching styles and strategies may suit one teacher they might be totally inappropriate for another. There is no one way to teach....*” (Nicholls, 2002) Teaching is a continuous activity that requires creative thinking and problem solving. Teachers try to find the best styles to accomplish the objectives set for each teaching activity and according to the needs of the learner. That is why teaching styles vary from one teacher to another.

But what does teaching style mean? According to Nicholls (2002) “*Teaching style is the term used to describe the way a learning experience is conducted. It is derived from the behaviour of the teacher and the strategy chosen for learning to take place*”. So, by teaching style we understand the way teacher relates to the students and the teaching methods he / she uses during the teaching classes such as: group work, problem solving, discussion or practical work in order to keep students concentrated, engaged and stimulated to enhance their creative thinking and individual working for successful learning process.

### **Significance of the Study**

To find out the best style of EFL learning and teaching, two questionnaires addressed to Korça university students and teachers were compiled to obtain the information required. The recognition and the right choice of learning and teaching style would help both parties become successful in fulfilling their objectives; i.e. to become good learners and effective teachers. Although there has been an attempt to perceive the best style in EFL learning and teaching, we believe that effective learning and teaching requires continuing research because of “the known complexities both of classroom processes and of desired outcomes” (Cooper & McIntyre 1996). We do not think that the results of this paper are not known by teachers and students but we do consider them as useful strategies which need to be shared and used appropriately in different contexts; in or out of classroom. The answering of the following questions help us accomplish the aim of this paper.

### **Research questions**

- What are our students’ preferences of EFL learning style?
- What are teachers’ beliefs and preferred teaching styles?
- What are the students and teachers’ common points that lead to better learning and teaching styles?

### **Method**

This study made use of two questionnaires respectively completed by 70 English language students and 20 EFL teachers of Korça University. The students’ questionnaire consisting of 27 statements aimed to reveal their English language learning style on a level varying from strong disagreement to strong agreement. It was followed by some background information on students’ gender, age and type of high school education. The teachers’ questionnaire consisted of 15 statements aiming to obtain teachers’ beliefs and preferred teaching styles. Some background information on teachers’ gender, age and their university teaching experience was gathered. 15 out of 27 statements appeared to be the same for both teachers and students in order to find out what styles are effective for both parties. The questionnaires model was adapted from Busch, et al. (1992) and was modified to fulfill the aim of this study. They are attached by the end of the paper in Appendix 1 and 2.

### **Procedures**

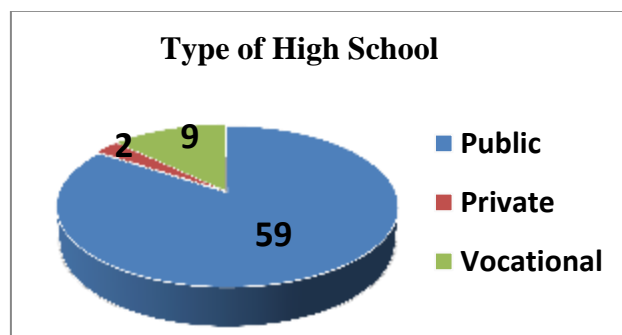
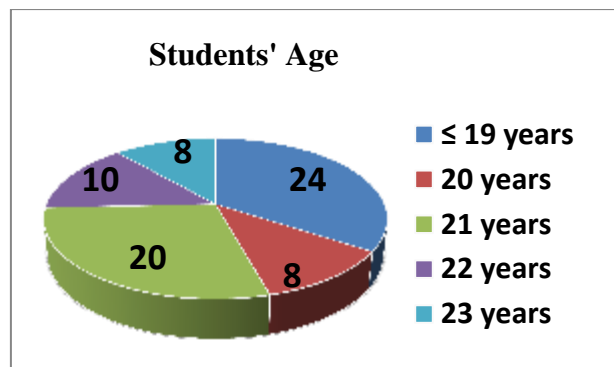
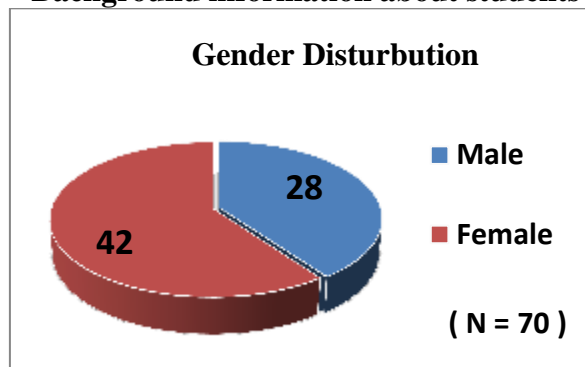
The questionnaires were distributed to 70 English language students and 20 EFL University teachers on May 2014. They were completed within a period of thirty minutes during an English language class.

### **Table 1 Students’ background information**

70 English language students of the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> year were asked to fill in the

questionnaire providing the right information on gender, age and type of high school attended.

**Background information about students**



The respondents were all students of the English language at the Faculty of Education and Philology whose age varied from 19 to 23. Most of them (84.2 %) came from public high school education, placing them on the same basis for accurate results.

**Table 2 Questionnaire on students’ perception of EFL learning style**

Nr.	Statement	Strongly disagree	Disagree	Unsure	Agree	Strongly agree
		Nr./%	Nr./%	Nr./%	Nr./%	Nr./%
1.	I like to work with other students in pairs and small groups.	-	10/14.3	10/14.3	41/58.6	9/12.8
2.	I learn best when I work alone in class.	1/1.4	17/24.3	20/28.5	20/28.5	12/17.1
3.	I learn best when the teacher is strict and controls the lesson.	1/1.4	4/5.7	14/20	24/34.3	27/38.6

4.	I learn best when the class follows a textbook closely.	-	6/8.6	18/25.7	30/42.9	16/22.9
5.	I learn best when the teacher gives tests and homework.	-	2/2.9	5/7.1	38/54.3	25/35.7
6.	I learn best when the teacher makes explanations in Albanian.	3/4.3	12/17.1	13/18.6	28/40	14/20
7.	I like the teacher to correct all my mistakes immediately	3/4.3	11/15.7	6/8.6	29/41.4	21/30
8.	I like learning using tapes/CDs/PCs in the language laboratory.	-	1/1.4	10/14.3	36/51.4	23/32.9
9.	I like studying English grammar and learning the rules of correct English.	-	-	5/7.1	29/41.4	36/51.4
10.	I learn best when the teacher moves around the class and helps individual students.	1/1.4	6/8.6	15/21.4	31/44.3	17/24.3
11.	I learn best when we have translation exercises.	-	6/8.6	10/14.3	38/54.3	16/22.8
12.	I learn best when I can choose other students to work with.	1/1.4	17/24.3	20/28.6	21/30	11/15.7
13.	I learn best when I see the words rather than just hearing them.	2/2.9	9/12.8	14/20	31/44.3	14/20
14.	If I don't know the answer to a question, I like to try to guess the answer.	-	6/8.6	11/15.7	41/58.6	12/17.1
15.	I learn best when the teacher let me discover answers by myself rather than just giving me the answers.	2/2.9	6/8.6	11/15.7	34/48.6	17/24.3
16.	I learn best when there is a friendly atmosphere in class.	1/1.4	5/7.1	5/7.1	24/34.3	35/50
17.	I like the teacher asking me to correct my own work.	1/1.4	9/12.9	7/10	37/52.9	16/22.8
18.	I like learning from videos and television.	1/1.4	3/4.3	11/15.7	32/45.7	23/32.9
19.	I like to practice English outside of class.	-	1/1.4	6/8.6	22/31.4	41/58.6
20.	I like it when we (students) help each other in correcting our written work.	1/1.4	8/11.4	11/15.7	34/48.6	16/22.8
21.	I learn best when the teacher makes learning fun.	-	9/12.9	13/18.9	24/34.3	24/34.3
22.	I like having homework, which makes me read English newspapers or listen to English radio programs.	1/1.4	6/8.6	9/12.9	33/47.1	21/30
23.	I like talking with other students in English.	1/1.4	1/1.4	4/5.7	25/35.7	39/55.7
24.	I learn best when I chose what work I would like to do.	2/2.9	8/11.4	11/15.7	27/38.6	22/31.4
25.	I like working in same sex groups.	21/30	27/38.6	12/17.1	9/12.9	1/1.4
26.	I like the way I was taught English in high school.	4/5.7	14/20	16/22.8	22/31.4	14/20
27.	I use the library/LL self-study rooms to study Engl.	4/5.7	10/14.3	19/27.1	26/37.1	11/15.7

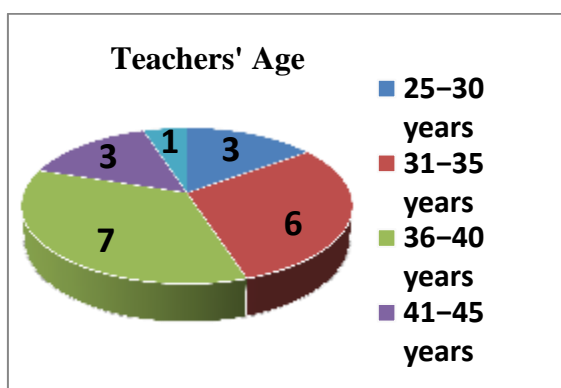
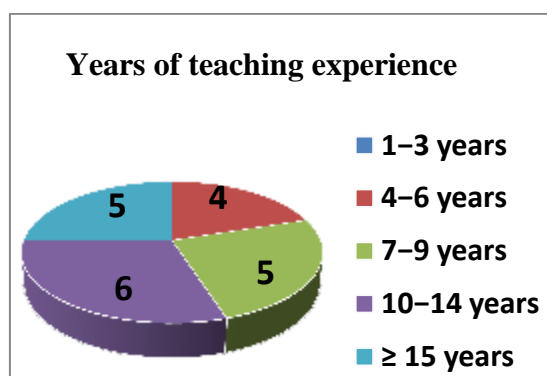
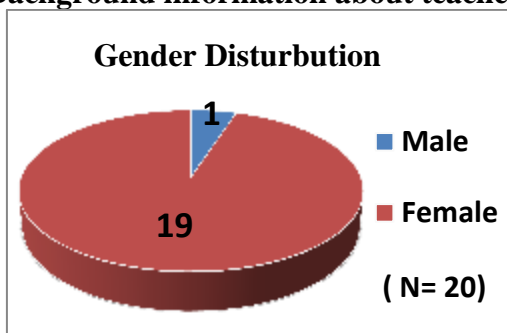
Table 2 shows detailed views of the respondents on their preferred learning style and expectations about their teachers. 15 out of 27 questions appeared in the teachers' questionnaire as well to find out their common and different beliefs on the most successful styles. There was a common agreement for items 1, 4, 5, 8, 9, 11, 14, 15, 16, 17, 18, 19, 20, 22 and 23; whereas the less preferred items seemed to be statements 25, 2, 12, 26 and 27. According to the data above, it was seen that students would like to work in groups better than individually, when teaching was closely based on a textbook and when they were given tests and much homework controlled and helped (80%) by strict teachers. Most of the respondents (92.8%) would learn better if they had good command of English language grammar which would be achieved by studying its rules and uses. The importance of using tapes, CDs, PCs, language laboratory (59 st. / 84.3%), videos and television (55 st./78.6%)

was widely accepted as means for better English learning. Many students (59 st./84.3%) also declared that learning became easier when a friendly classroom atmosphere was created by their teacher. It was clearly noticed the participants’ willingness to use and practice English language in (64 st/91.4%) and outside their classes (63 st./90%). Concerning students’ way of working within the English classes, it was found that they (52st) preferred to discover and guess the answers by themselves, not being helped by their teacher. Instead, they were pleased to help and correct each other’s work (53st/74.3%). Translation exercises were considered to be effective in English language learning by 3/4<sup>th</sup> of the students. The choice of the students to work with, as well as the sex group seemed to have less importance for the respondents. For half of the participants the way they were taught English in high school was not approved likable.

**Table 3 Background information about teachers**

A number of 20 university English teachers from the Faculty of Education and Philology were surveyed by completing a separate questionnaire consisting of 15 statements. These questions were addressed to students as well in order to obtain information from both groups on the perceptions of learning and teaching needs.

**Background information about teachers**



The charts above give information on teachers’ gender, age and university teaching experience. 13 out of 20 teachers belonged to the age of 31-40, i.e. not very young; and 16 teachers (80%) had been teaching at the university for a period from 7 to 15 years. It is worth mentioning that the participants were experienced teachers with a longtime teaching practice whose opinions could be taken into consideration.

**Table 4 Questionnaire on teachers’ beliefs and preferred teaching styles**

Nr.	Statement	Strongly disagree	Disagree	Unsure	Agree	Strongly agree
		Nr./%	Nr./%	Nr./%	Nr./%	Nr./%
1	Students do not like to express their opinions in class.		11/55	1/5	7/35	1/5
2	Students learn effectively when classroom learning is fun.	-	-	1/5	10/50	9/45
3	I think it is an advantage to use Albanian when explaining classroom activities and assignments to students.	-	4/20	7/35	7/35	2/10
4	Students learn most effectively when working in same-sex groups	8/40	7/35	2/10	2/10	1/5
5	I like students to work in pairs and small groups.	-	1/5	2/10	10/50	7/35
6	Students learn best when the teacher is very strict and controls the lesson	-	6/30	7/35	5/25	2/10
7	Students learn best when the teacher gives tests and homework.	-	-	3/15	11/55	6/30
8	I try to correct all student mistakes promptly, including oral errors.	2/10	8/40	2/10	5/25	3/15
9	I like teaching English grammar and the rules of correct English	-	1/5	4/20	8/40	7/35
10	My students learn best when I move around the class and help them individually.	-	1/5	1/5	10/50	8/40
11	Translation exercises help develop English proficiency.	-	2/10	5/25	12/60	1/5
12	Students learn best when the teacher lets them discover their own answers.	-	-	-	10/50	10/50
13	I ask students to correct their own work.	-	-	1/5	10/50	9/45
14	I like to use video and television in class	-	-	2	12	6
15	I assign homework, which makes students read English newspapers or listen to English radio programs.	-	2/10	3/15	8/40	7/35

Table 4 presents teachers’ perceptions of their students’ English learning and teaching styles. By expressing their beliefs and views on the same statements, we tried to find out if teachers agreed with their students about the factors and styles that would help them to better English language learning. It was noticed that most of the teachers (85%), like their students, preferred pair and group work better than working with them individually. Homework and tests were considered as very effective means by both students and teachers to achieve their goals in their learning and teaching process (85%) but there appeared to be a slight difference in opinion concerning the strict teachers. 72.9 % of the students believed that strict teachers would lead them to better achievements; while for only 35% of the teachers it was seen as an effective way of behavior with their students. Teachers (75%) also acknowledged the importance of teaching English grammar and its correct rules but not to the same level as students who considered them as very effective means towards success (92.8%). Both students (84.3%) and teachers (95%) agreed on the role of the classroom atmosphere; they learn better when classroom learning is fun and friendly.

The prompt correction of students’ oral mistakes (12 out of 20 teachers) and the use of Albanian language in classroom activities and assignments (11 out of 20) seemed not to be given much emphasis by the surveyed teachers but all of them agreed that students learn better when they are left to discover their own answers and correct their own work. Translation exercises were considered to be helpful for the development of students’ English proficiency at an amount of 65%.

**Table 5 Students and teachers’ points of agreement on learning and teaching styles**

N r.	Statements	Students		Teachers	
		Nr.	%	Nr.	%
1.	when they work in pairs and small groups	50	71.4 %	17	85 %
2.	when teacher is strict and controls the lesson	51	72.8 %	7	35 %
3.	when teacher gives tests and homework	63	90 %	17	85 %
4.	when they study & are taught English grammar	65	92.8 %	15	75 %
5.	when there is a friendly atmosphere in class	59	84.3%	19	95 %
6.	when tapes/CDs/PCs and language laboratory are used	59	84.3 %	18	90 %
7.	when they have translation exercises	54	77.1 %	13	65 %
8.	when teachers let students correct their own work	53	75.7 %	19	95 %
9.	when teachers let students discover their own answers	51	72.8 %	20	100%

The table above serves as a summary of this study. It presents the points of agreement between the surveyed students and teachers in terms of the preferred learning and teaching styles.

### Conclusion

Students have their preferred ways of working, thinking and learning. If their preferred approach to learning tasks is ignored, “there is a distinct possibility that their learning will not progress as efficiently and effectively as it might. (Pritchard, 2008)

But learning styles are closely connected with the teaching styles; they are all elements of the learning process whose success depends on the ability of the teacher to understand students’ needs and their learning styles.

After a careful analysis of the students and teachers’ opinions on the most favorite learning and teaching styles, we may conclude that both students and teachers think students learn best:

- when English grammar and rules of correct English are studied and taught
- when they are given tests and homework
- when there is a friendly atmosphere in class and teacher makes learning fun
- when tapes/CDs/PCs, videos and language laboratory are used
- when they have translation exercises
- when teachers let students correct their own work
- when teachers let students discover answers by themselves
- when teacher is strict and controls the lesson
- when students work in pairs and small groups

There are a few statements such as teacher’s strict behavior and the use of translation exercises with which they do not totally agree.

Although there might be some limitations, we believe this study represents and offers some preferred methods to be considered and used by students and teachers for better English language learning and teaching. We are sure the above mentioned methods are well-known



by both students and teachers but, by specifying them, we hope they could be given the appropriate attention which surely will lead to successful learning and teaching.

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## PSYCHOLOGY

## CHOICE AS AN ASPECT OF CRITICAL THINKING FOR STUDENTS WITH INTELLECTUAL DISABILITIES

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### Abstract

Choice making has been recognized as one of the components of self-determination that improves, among others, the quality of life and the development of critical skills for individuals with mild intellectual disabilities (ID) (Agran et al., 2010; Snell & Brown, 2011; Wehmeyer, 2005). A person who displays the characteristic of self-determination allows him to be the primary acting agent in his/her life. Choice making is recognized as a basic skill that should be incorporated into instructional programs for individuals with ID. Offering more choice making opportunities to individuals with ID has shown to reduce problem behaviors and improve problem-solving and critical skills. The present study aimed to gain an insight into how people with ID who are students at various Centers of Vocational Training for persons with special needs perceive their choices, the barriers they face and the ways these barriers could be lessened or removed. The sample consisted of 8 participants with mild ID who attend a Vocational Day Center in Western Macedonia, Greece. Their mean chronological age was 17.85 years ( $SD= 2.04$ ). A focus group methodology was chosen as the dynamics of groups provides opportunities for peer support and validation of common experiences (Cambridge and McCarthy, 2001). Twenty stories were presented to the students and the questions were about if they can decide by themselves at the Center and at home. The participants recounted both positive and negative experiences. This suggest that choice is a reality for some but not for all persons, or that it occurred in some settings but not others. In general, individuals with ID were able to recount examples from their choices, and how the Center teachers and the family can support these choices. Many of their proposals were in line with the aims of the educational policy and good practice (Finlay et al., 2008).

**Keywords:** choice, intellectual disabilities, self-determination

### Introduction

Choice making has been recognized as one of the components of self-determination that improves, among others, the quality of life and the development of critical skills for individuals with mild intellectual disabilities (ID) (Agran et al. 2010, Snell & Brown 2011, Wehmeyer 2005). A person who displays the characteristic of self-determination allows him to be the primary acting agent in his/her life. Choice making is recognized as a basic skill that should be incorporated into instructional programs for children with ID. In order to be an independent self-functioning adult, it is vital that children and adolescents with ID possess the ability to take advantage of choice-making and opportunities that are presented to them (Smyth & Bell 2006, Stafford 1999, 2005, Van Tubbergen et al. 2008).

Choice-making has been modified and adapted by many researchers (Shevin & Klein 2004, Van Tubbergen et al. 2008). Choice-making consists of providing several options where the individual with a disability chooses what he or she wants (Shevin & Klein 2004). Choice-making selection can begin with the selection of two or more choice options. It should be assumed that many individuals with disabilities have choices that are recognized by the individuals who surround them (e.g., parents, family, teaching staff). Delivery of choice-making should be provided in a meaningful manner including setting parameters for acceptable behavior. Choice-making can be provided in a variety of settings with a variety of objects (i.e., activities, partners, food, toys) (Shevin & Klein 2004).

Making choices is not easy for them; indeed, they may find it hard even to get the opportunity to make choices at all (Harris 2003). Exploring the perspectives held by individuals with ID on choice and its meaning in their life has the potential to expand our understanding of the relationship between choice, quality of life and critical thinking. Offering more choice making opportunities to individuals with ID has shown to reduce problem behaviors and improve problem-solving and critical skills in adulthood. For example the psychological acceptance of consumer choices has major implications for self-image, motivation, self-expression, and self-determination.

A growing number of studies have documented the desire of people with intellectual disabilities to make choices about their community activities (e.g. O'Rourke et al. 2004) and to have more friends (e.g. Froese et al. 1999). The objective of citizenship of individuals with ID and their families is 'to have greater choice and control over how they live' (Beamer & Brookes 2001). When individuals with ID are denied the right to choice-making, they are prevented from advocating for themselves and achieving desired critical thinking outcomes. Specifically, Agran et al. (2010) emphasized that adults with ID need to be supported in the area of choice-making. They need to be taught how to make choices, to assess available choice options, and to seek supports that enable them. Ultimately these choice-making skills lead to an increased quality of life (Neeley-Barnes et al. 2008). Many studies (Manhertz 2006, Salmento & Bambara 2000) have showed that when participants were presented with choice opportunities, choice abilities increased. When given choices within their daily routines by staff members they were more willing to make choice responses. These studies suggested that staff members should deliver choice opportunities within daily routines and on a consistent basis.

On the other hand, adolescents with ID face barriers to developing choice-making skills as they move from school to the community (Stalker & Harris 1998). These barriers include poor self-awareness, learned helplessness, low self-esteem, self-deprecation, and lack of recognition of one's strengths and weaknesses (Smith et al. 2005).

The present study aimed to gain an insight into how people with ID who are students at various Centers of Vocational Training for persons with special needs perceive their choices, the barriers they face and the ways these barriers could be lessened or removed. This information would serve a number of uses. It would help to support greater advocacy by these service users at both an individual and a group level. It would also challenge support staff to review the strategies they use – or fail to use – in order to give more choices and experiences of critical thinking skills to students with ID.

## **Method**

### **Participants**

The sample consisted of 8 participants with mild ID who attend a Vocational Day Center in Western Macedonia, Greece. Their mean chronological age was 17.85 years ( $SD=2.04$ ). All of the students lived with their parents at home. They didn't suffer from any kind of emotional disorders and didn't receive any drugs. Four of them were males and the other four females.

### **Tools and procedure**

A focus group methodology was chosen as the dynamics of groups provides opportunities for peer support and validation of common experiences (for a full review of the methodology used see Abbott & McConkey 2006, Cambridge & McCarthy 2001). The researcher was present for all groups, with assistance provided by two teachers who had accompanied the participants. The latter proved helpful in facilitating communication. The first session started with an explanation of what would happen in the group; the confidential nature of what was said; and that participants could withdraw at any time without giving a reason. People had the option of leaving at this point but no one did so. The group began with

everyone introducing themselves and, as an ‘icebreaker’, describing something ‘nice’ that had happened for them during the previous week. Responses were encouraged and prompted by the researcher. The idea of ‘choice’ was then introduced by showing photographs of people with and without special needs having to decide to go for shopping or to have coffee with their friends. The participants, as a group, were encouraged to describe the photographs and relate them to their own experiences of choices.

Then, they were divided into 2 smaller groups of four, and with the help of their teachers they were asked to complete a worksheet called “Do I choose this or that?” based on simple stories like e.g. Mike wanted to play football but his mother told him not to go. He told him to study first and then go out. And ... Mike made his homework but her mother didn't let him to go out for a walk. In each instance they should decide if this story can be attributed to them. Twenty stories were presented to the students and the questions were about if they can decide by themselves at the Center and at home. Examples of activities from the worksheets were transcribed onto a flipchart by the researcher as each group reported back their contributions, and the individual sheets were also collected for further analysis.

Together as a group, an interactive discussion was facilitated based around the following questions and the answers were recorded by the researcher: What activities do you enjoy doing? Do you choose them? Do you decide? Does your mother/father help you to choose? How? Give examples. Does your teacher help you to choose? How? Give examples. Describe me on day that you can do what you like.

The second part involved four participants, in each focus group discussing a series of questions about what stopped them from doing community activities and the solutions that might overcome these barriers. Again feedback was given to the whole group and comments were recorded on a flipchart. Throughout the facilitator repeated the contributions made and checked with the group if they had anything further to add.

The focus groups lasted between 2 and 2 1/2 hours, with breaks for refreshments and lunch.

## **Results**

The information from each of the focus groups was transcribed into an MS Word document, including the comments recorded both on the flipchart and on the individual worksheets. These were then analyzed using ‘latent content analysis’. This is ‘the process of identifying, coding, and categorizing the primary patterns in the data’ (Patton 1990: 22). This was done in terms of what choice meant to the participants, together with the barriers they experienced and how they might be overcome. The subthemes were confirmed by a postgraduate student who had been uninvolved with the data gathering.

Three main themes were apparent in participants’ discussions and reflections on the experiences of the participants:

- a) Choice in the Center
- b) Choice at home
- c) When I decide I am happy (decision and positive psychology-feelings).

### **Choice in the Center**

Participants gave mixed reactions, with some feeling that people in the Center give them choices, and others reporting that the personnel doesn't give choices and/or opportunities to them. They also felt that the lack of the availability of the staff inhibited community participation and vocational training choices.

“I feel I could go out by myself, but staff doesn't allow us” ... (Anne, 18 years old).

“If staff is sick, then there's not enough staff [to take you somewhere]”.. (Mary, 19 years old).

“I would like to learn how to repair cars but there is no opportunity in our Center” (Dimitrios, 17 years old).

“Mrs Stella (teacher, staff member) always asks me what I would like to do during the leisure time activities”.... (George, 18 years old).

### **Choices at home**

The same mixed reactions were mentioned about choices at home.

“There is no private room in our house where you can talk to friends”... (Peter, 19 years old)

“I would really like to go out to café more often but I don’t have friends. I am going out with my oldest brother but he is the one who decides so”... (George, 18 years old).

“My mother lets me buy chicken (my favorite food) when we go to the super market”... (Dimitrios, 17 years old).

### **Positive feelings and decision making**

Many of the students reported positive feelings about the free choices they were able to make.

“When I tell mum one of my desires and she lets me do it, I say to myself you are a man now, not a small boy”.... (George, 18 years old)

“My mother wants me to be a gardener but I don’t like. I prefer making cakes. I like it. My mum lets me do it and I am happy”.... (Peter, 19 years old).

### **Barriers to develop choice-making skills**

The participants recounted both positive and negative experiences. This suggests that choice is a reality for some but not for all persons, or that it occurred in some settings but not others. In all the focus groups, most of the discussion centered around the barriers that the participants felt they encountered in meeting with others and joining in activities they desired.

Participants appreciated that their own lack of skills created difficulties for them which further reduced their confidence and motivation. For example Peter says “Not being able to use the bus or train or taxi on my own. Not being able to go to [town] on my own to go shopping and meet my aunt”, and Mary reports “I have to ask people if there are any activities going on”. These answers have been elicited generally in the group discussions.

### **Overcoming the barriers**

The participants proposed various solutions to overcome the barriers they had identified. These have been grouped into categories, although they were elicited generally in the group discussions. Some of these were prompted by the group facilitators but on the whole participants did appear to have a clear understanding of what was required to change the situations they had experienced or were presently experiencing. Specifically, participants asked for a) access to appropriate skills training (literacy, numeracy, budgeting, independent travel), b) getting to know the neighborhood, c) encouragement from teachers to socialize, d) access and encouragement towards a healthy lifestyle/information. They also wanted from their teachers at the Vocational Center a) to support them so as to be able to make their own plans and go out independently, b) to increase their number in order to help their students achieve their goals, c) to provide up-to-date information on community opportunities. As from their home environment they wanted a) support to access local activities, b) help them to make friends and c) practical and emotional support to fulfill their choices.

### **Discussion**

Indeed individuals with ID were able to recount examples from their choices, and how the Center teachers and the family can support these choices. To sum up, this study demonstrated that individuals with ID were able to report positive and negative experiences about choices either at home or at the Center. They were also capable to identify the barriers they had experienced in their choices and they could articulate ways of reducing or removing them. Many of their proposals were in line with the aims of the educational policy and good practice (Browder et al. 1998, Snell & Brown 2011). They rightly identified their need to acquire the knowledge and competence required to become an active participant who freely

chooses. More generally the participants emphasized the need for staff to embrace a support rather than a strict “teaching” role. The latter has tended to dominate in services like Vocational Centers in Greece. In particular, a re-evaluation of approaches to free choices is required so that teachers at the Vocational Centers do not become a barrier to choice-making opportunities (Alaszewski et al. 1999).

Surprisingly there were some notable omissions from the barriers mentioned by the participants. Lack of money was mentioned only in the context of transport and the cost of taxis in particular. Additionally, only one participant viewed choice for vocational training important. There were, also, no mentions of personal characteristics such as speech problems or communication difficulties that might be thought to increase a person’s likelihood of poor choices. Nor did participants refer to any policy documents or legal requirements as a means of promoting greater social participation and choice. The probability is that they were unaware of their existence.

It appears that major life decisions continue to be made by significant others (family and teachers), while participants are restricted to a small set of choice options that will have little or no impact on their critical thinking skills and quality of life. In this respect, personal choice and autonomy are curtailed, and choice making is restricted to a relatively small pool of opportunities. Major decisions and choices continue to be externally controlled and participants have a minor role in the direction their lives take. To correct this situation, it is critical that we not only provide participants with ample choice-making opportunities but that we endeavor to provide choices that are personally meaningful and important (Stancliffe 1995).

Dibley and Lim (1999) noted that providing choice-making opportunities to students increased task initiations and reduced protests. Choice-making needs to be included in daily routines and activities for all students with disabilities. Choice-making opportunities provide students with an array of options, empowering critical thinking and decision making skills. These findings will contribute to the choice-making literature and address the need for how to teach choice-making to individuals with ID. It is vital for them to continue their progress in the area of choice-making and learn to recognize all of the choice options that they have in their everyday lives. This will assist them become productive adult members of the society.

Finally, the study had a number of limitations. The most important are: a) The findings reported here reflect the local context in which individuals live and this may be different from other regions and countries, b) there were few participants with limited verbal communication and c) The social-economic background of the participants was variable. Ongoing research is exploring the availability of a training resource on this topic aimed at support teachers at the Vocational Centers; and their need to “teach” choice experiences to their students. A range of training programmes is likely to be needed.

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## THE DEVELOPMENT OF CRITICAL THOUGHT TO STUDENTS WITH LEARNING DIFFICULTIES

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### Abstract

More and more today is paying attention to the structuring of methods and strategies of didactic teaching considering even needs of students with learning disabilities. Up to now the critical thought has been seen as an advanced process of thinking, directed only to talented students. Through scientific searches this study has to analyse how possible is the development of critical thought to children with learning disabilities and also if all this influences to the cognitive processing development. New spaces has been opening through all of this work in teaching methods directed to children with learning difficulties in normal schools, catching the attention of class and helping teachers. From study analysis in this article the abilities development in the critical thought results to help the development of cognitive processes of children with learning disabilities.

**Keywords** : critical thought, learning difficulties, cognitive processes, teaching methods

### Introduction

Thinking is a similar process with reading, writing, speaking and listening. It is an active, interactive, complicated process which includes thinking for something real. It is not something to be taught outside the content of critical thinking, it is not properly taught when it is separated by the general context of the school curricula or everyday life.

The development of critical thinking is one of the main aims which are being attempted to be achieved by the educators. Once this aim has been achieved we will have students capable of effectively tackling problematic issues and problems of everyday life. One of the challenges of the 21<sup>st</sup> century in the education field and in the pedagogic science is evidencing a curricula which includes teaching programs for the process of the critical thinking adapted for all individuals and not only for an elite group. (Larsen, 2002).

Learning critically in schools is best acquired by attempting it to assimilate content, as part of the general results and expectations of the curricula. In fact, latest research about critical thinking and learning, suggest that a pattern focused on teaching separate skills and facts, diminishes the development of the critical thinking. Brown (1989) argues that learning skills, separate by the aims and tasks of real world, give students the opportunity to perform well in an objective test, but they will not be able to use these skills in new situations.

Recently, there have been made many researches in the educational field aiming to develop skills in gifted students and also in average ones, about the cognitive strategies, problem solving and thinking. There are only a few studies on teaching strategies for the development of thinking skills in students with a learning disability and that's because there is a widespread view in the field of special education available to students who need to improve basic skills where they present difficulties. Therefore, the teaching of critical thinking skills is not seen as a priority in the field of special education (Leshowitz, Jenkins, Heaton & Bough, 1993; LaFrance, 1995); meanwhile there are studies who have demonstrated that students who have difficulty in learning can acquire skills in critical thinking with the support and guidance of the teacher.

The definition of learning and thinking is an issue that draw the attention of most philosophers, psychologists, sociologists of all time. Most of these define learning as a process that causes permanent changes in knowledge, the way of thinking and / or in the individual behavior.

Learning is effective and lasting when the knowledge gained is applied in contexts other than the original context. The best way to make this happen is when students actively participate in learning, assimilate it, synthesize and produce information on their own. Learning is extended when several thinking strategies are used. It is the use of these strategies, the experience of comprehensive learning that the students assimilate during the learning process. (Brown & Palincsar, 1989). Learning and critical thinking is broadened when the students have the opportunity to use the new learning in real tasks (Resnik, 1987). Critical thinking and learning occur when the teachers understand and value the exchange of the ideas and experiences. Critical thinking occurs when the mentality “only one answer is right” ceases to exist (Banks, 1988). Learning is extended when it is built upon previous knowledge and experience of the students, thus, they have the possibility to connect what they know with the new information to be learned (Roth, 1990).

### **Critical thinking**

Critical thinking is that mode of thinking about any subject, content, or problem in which the thinker improves the quality of his or her thinking by skillfully taking charge of the structures inherent in thinking and imposing intellectual standards upon them (Paul & Elder, 2009).

Critical thinking and the thinking processes that characterize it has many different definitions by different authors. National Council for Excellence in Critical Thinking (1987) defines critical thinking as following:

Critical thinking is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action. In its exemplary form, it is based on universal intellectual values that transcend subject matter divisions: clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth, and fairness. (Scriven & Paul, 1987)

Critical thinking according to Scriven and Paul (1987) can be thought as composed of two parts: 1) information and beliefs that generate thinking processes and 2) habit, based on intellectual commitment, to use these skills to build behavior. Critical thinking varies according to the motivation underlying it. When grounded in selfish motives, it is often manifested in the skillful manipulation of ideas in service of one’s own, or one’s groups’ vested interest.

The skills of thinking can be categorized, according to Bloom (1956), in knowledge, comprehension, application, analysis, synthesis and evaluation. Knowledge, comprehension and application are considered as low level thinking, while analysis, synthesis and evaluation are considered as high level thinking (Sanders, 1966; Kagan, 1986, Griffin, 1995).

Presseisen (1985, 1986) describes the thinking processes in a hierarchal order like Bloom (1956). Presseisen finds four types of cognitive processes: essential, first level, metacognitive and epistemological. The first two categories are considered necessary to achieve critical thinking. In the essential cognitive processes Presseisen includes basic thinking skills based on which is developed thinking such as recall, recognition, comparison, classification and inference. The author also includes in the basic skills analogical thinking, inductive and deductive reasoning, interpretation and evaluation. The latter are considered by

other researchers, like Bloom, as high level thinking. According to Linda Elder<sup>9</sup> critical thinking is self-guided, self-disciplined thinking which attempts to reason at the highest level of quality in a fair-minded way. People, who think critically, consistently attempt to live rationally, reasonably, empathically. (Elder, September, 2007). Therefore, critical thinking, as an evaluating process, is part of the individual's skills that allow him to evaluate and create beliefs that will guide him in life. From another point of view, critical thinking can be viewed as a moving gear, part of complex machinery which generates positive changes so that the individual can fit in the surroundings and the society where he is part of. The critical thinking skill is part of thinking skill, and whoever possesses this can develop the critical thinking skill as well.

### **Critical thinking skills and students with learning disabilities.**

During an interview with Linda Elder, she gave this answer to the question: “Does critical thinking apply best to gifted student or can other students benefit as well?”

Virtually all students can and should learn basic critical thinking skills. And the critical thinking fundamentals we would teach the “gifted” student are the same as those we would teach the “typical” or “learning-disabled” student, though the pace at which students learn will differ. This is true because the foundations of critical thinking are the same, no matter what the teaching conditions, no matter what level or content area, no matter how “advanced” the students. Moreover, the basics of critical thinking can easily be made intuitive to most students. Students can learn to apply them regularly to problems and situations in their lives. Depending on their level of motivation and disability, students considered average, or even learning disabled, can equal gifted students in their ability to apply and use critical thinking.

Taking under consideration the statement made by Elder, in which every student of every level can use critical thinking the question posed by this research is: “What possibility is there to develop critical thinking by the teacher to the student with difficulty in learning?” We must remember that we are not talking about a small number of students. The statistics offered by the site of Global Campaign for Education have estimated that 1 billion people live with a disability and it is also estimated that 93 million of these are children. In the USA, in the report written by the National Center of Learning Disabilities, there are 2.4 million students with learning disability (LD) integrated in public schools and who receive special education. In Albania there is no data about the children with learning disability, this mostly due to the fact that there is lack of information about the identification of the children with difficulty in learning and lack of the proper structures to diagnose these children.

Students with learning disabilities are presented as students who have difficulties in the cognitive processes and learning strategies, which impairs them to move forward in their academic career. The students that show difficulties in learning have low self-esteem, demoralization, deficiency in social skills. Other disorders that individuals with difficulties in learning have are Conduct Disorders, Oppositional Defiant Disorder, Attention Deficit and Hyperactivity Disease and Mental Retardation. Students with learning disabilities are also deficient in metacognitive, or learning to learn skills, which involve checking, monitoring and planning (Torgesen, 01 January 1977). Although students with difficulty in learning have specific needs, referring to the deficiencies presented by their disorder (in writing, reading, text comprehension, mathematical counting etc), it has been shown that they can acquire thinking skills if they are taught with the right support. Ruggiero (1988) records that even though critical and creative thinking have been associated with high level of intelligence

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<sup>9</sup> Dr. Linda Elder: educational psychologist and President of the Foundation for Critical Thinking and Executive Director of the Center for Critical Thinking.

and talent; they can also be part of the ordinary thinking processes of individuals with average intelligence. Ruggiero states also that the critical and creative skills can be taught to everyone with no exception (Ruggiero, 1988).

### **Programs for teaching critical thinking.**

Griffin (1995) lists in her thesis several projects and programs focusing on the teaching of thinking skills to students with learning difficulty among which:

A research by Valett (1986) aiming to increase thinking skill in a group of students with learning difficulties and deficiencies in cognitive processes, describes five programs oriented to the treatment of the thinking strategies which include goal clarification, previewing, organization, questioning, imagining, predicting, checking results, humor and self-monitoring techniques.

The Milwaukee Project where special educators were focused in the development of vocabulary, comprehension, prediction, critical thinking and concept evaluation, organization and reasoning for 40 children whose mothers presented signs of mental retardation.

The Glendora Unified School District (1977) recruited students with learning difficulties and students with mental retardation in a program based on Guilford’s Structure of Intellect Model (Guilford, 1967). The program included semantic problems with symbols and pictures as well as the development of the memory, evaluation and convergent and divergent thinking. The program included objectives in 5 fields a) study of feelings, b) interpersonal relationships, c) necessary steps toward meeting goals, d) predicting consequences of actions and e) applying a problem-solving model. At the end of the program it was noted that many of the students with learning difficulties had developed cognitive skill.

Feuerstein (1980) developed a program called Instrumental Enrichment that was designed to develop the cognitive abilities of slow learners, disadvantages learners and students with mental retardation at the intermediate level. Researchers have successfully used this program to improve the problem solving skills of students with learning disabilities.

Groshong (1988) developed another program created to facilitate the participation in groups and to give useful instructions for the development of the critical thinking and independent learning for students with learning difficulties. Groshong organized a series of discussions about the Great Books and used a group of students with no difficulty in learning. Groshong concluded that the students with learning difficulties and students with special needs can acquire skills in listening, group relationship and also skills in critical thinking if they have direct instructions.

A research directed by Commeyras, Pearson, Ennis, Garcia and Anderson (1992) to promote critical thinking to students with learning difficulties through Dialogical-Thinking, Reading Lessons (D-TRLs). 14 students with learning difficulties participated in the research among which only 7 took part in D-TRLs. The skills of the students were evaluated before and after the training. The focus of the researchers was to develop skills in reasoning and in the seeking and giving of explanations, clarifications. The study lasted for two months. At the end of this research it was observed, through the test results that the group trained by the checking group did not present improvement in critical thinking, such as in the use of explanations or clarification and in the use of reasoning. However, when the researchers gave the students their results in the posttest without notes about the right or wrong answers, and they were asked to reason over their answers, the students were able to justify their wrong answers. The students were justified by saying that their interpretation of the question was different by the interpretation of those who created them. The researchers concluded that during the creation of the test they had underestimated the skills of the critical thinking of the students. Thus D-TRLs had helped in the development of the skill of critical thinking to the students that participated in the program.

Another program directed by Leshowitz, Jenkins, Heaton and Bough (1993), to

develop the skill in critical thinking to the students with learning difficulties, presents positive results in the increase of the critical thinking skill in comparison with the verification group who were not treated. Middle school and high school students were selected to be part of the training program which foresaw to teach them the principles of the scientific reasoning. The building of the student-teacher dialogue was used to activate students in an active process of critical investigation of the information brought by articles and magazines, applying the principles of the scientific method. At the end of the program, the students presented improvement in the skills a) identify the principal claim made in an article or advertisement, b) graph the relevant data, c) evaluate the claims made in the article and explain their support or rejection of the claims based on data.

CoRT – Cognitive Research Trust, another program created by DeBono (1969) presents methods and means to help students with different skills, to use their skills effectively in the academic field as well as in everyday life situations. The program foresees to aid even students with special needs and students in danger. In a study performed by Melhem & Isa (2013) the authors applied the program CoRT in 93 sixth grade students with learning difficulties in mathematics. By the comparison of the results of the pre-test and post-test the authors reached the conclusion that through the CoRT program are developed the skills of critical thinking to students with learning difficulties. The authors also emphasize that the class environment where these students have been integrated has played an important role to the development of these skills.

In this article there were presented a small number of programs and studies created by different researchers aiming the development of the skill of critical thinking to students who have learning difficulties. In conclusion we can say that the development of the skill of critical thinking to these students it is not an unachievable goal. If we cited Presseisen (1986) “*The most basic premise in the current thinking skills movement is the notion that students CAN learn to think better if schools concentrate on teaching them HOW to do so*” (p. 17).

### **The development of the critical thinking in schools. Recommendations**

To develop the critical thinking in class students need ample time to express their ideas and to reflect on their answers. Time is an essential factor which affects the way ideas are expressed by students using words of their own, being clear and reflective.

When there is no active inclusion in the thinking and learning process there is a notable absence of critical thinking. The development of the critical thinking requires an active approach by students as well as a specialized preparation by the teachers.

The thought is best formulated in an environment where ideas are respected and where the students are motivated to be actively included in the critical thinking.

The teaching methods in class that include the student in reflective thinking as well as in the exchange ideas and opinions help them to participate in an active learning. By the studies and programs presented in this article we conclude that there is a great need for specific programs built specifically for students with learning difficulties, to foresee the development of the skills in critical thinking. We can also conclude that the development of the critical thinking helps the students to identify and comprehend the cognitive strategies that aid the acquisition of other skills that students have difficulties or deficiencies in.

Based on these conclusions we can recommend the creation of a special program in the teaching curricula and in the teaching methods, where it is foreseen the development of the skill of critical thinking even to the students with learning difficulties.

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## USAGE OF SOCIAL MEDIA AND CRITICAL THINKING

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### Abstract

We live in an age of information. There's so much information available that any of us could walk through life without ever having to think. Nowadays people are reading and writing in the short form, reading books only minimally and instead reading and writing in the social media shortly too. As social media has been adopted and integrated in the daily lives of an increasing number of researchers there arise debates and speculations on the impact of these new media on the activities, social relationship and especially, how social media influence our critical thinking. This research aims to argue the relation between social media and critical thinking, using literature review, referring to different scientific articles in this domain and also a semi-structured interview. In focus of this interview are different people that use social media; Facebook. The questions of this search are: Is social media making us less thoughtful? What kind of social effects can be provoked? The result of this research study conclude that our critical thinking can't be damaged by the social media, because if you genuinely participate with social sites you're engaging in the discussion and debate going on. Someone raises a question and it challenges you to think and prove your point. Your point challenges the next person in line to think harder in order to prove their point. So, this is critical thinking. At the same time the social effect that the use of social media can provoke is more positive than negative, based in the results of semi-structured interviews, can help us have more information about a subject and so to achieve a better critical thinking.

**Keywords:** Social Media, Critical Thinking, Social effects

The online world has changed our lives and those of young especially. Refereeing to “Marshall McLuhan in the 1960's, and Neil Postman in the 1980's, showed that the form of the new electronic medium negatively impacted both the content of its discourse and the thought processes of the population”. But now days, studies that are focused in effects of the new media in our life style have conclude interesting results related especially to the social media and the critical thinking. So the question are: Is social media making us less thinking? What kind of social effects can provoke?

Model of critical thinking in new media domain

Refereeing to the cognitive dimension of CMC, the Garrison's model of critical thinking (Garrison, D. R. 1992, 136-148) , as a 5-stage process, correspond closely to better explain this process in the field of new media.

So, Garrison considers the critical thinking process as a problem-solving one. The stages are: Stage 1. Problem identification Skill/ Elementary clarification Based on an initial motivation to learn, sustains interest and curiosity stimulated by interaction with others; learners observe or study a problem, identify its elements, and observe their linkages in order to come to a basic understanding. Stage 2. Problem definition Skill/ In-depth clarification Framing the problem and an approach to its solution using the experience of others. Learners analyze a problem to come to an understanding which sheds light on the values, beliefs and assumptions which underlie the statement of the problem. Stage 3. Problem exploration Skill/Inference Getting insights and understanding. The skills needed to extend beyond the

basis definition include inference: induction and deduction, admitting or proposing an idea on the basis of it's link with propositions already admitted as true. But they also include the creative skills needed to widen the field of possible solutions. Stage 4. Problem The evaluation of alternative solutions and new ideas within a social context. This needs judgmental skills of making decisions, statements, appreciations, evaluations and criticisms. Stage 5. Problem integration Skill 5. Strategy formation Proposing coordinated actions for the application of a solution, or following through on a choice or decision.

#### Social media effects in our critical thinking

Now days, there's so much information available that any of us could walk through life without ever having to think. Social media is about community and conversation. However helpful the online resources may be, we must also be aware of the effects of the new technology, especially younger, who are caught up in using the new media of Facebook. So, the big debate of now days is focused in: Is social media making us less thinking? and What kind of social effects can provoke?

Researchers are beginning to observe the negative effects of extended use of these mediums on critical thinking. (Bruning, 2004, pg180)

Some of the negatives effect of using of social media are at the center of debates of now days. Big personality like Pope and President Obama mention the negatives effects of social media especially in the domain of community organization and of the field of democracy.

Refereeing to Pope, he criticize the social media for the social isolation, that its provokes, especially in young generation. In the field of democracy, President Obama mention the negative effects of social media like a “pressure on our democracy”. The proper functioning of a democracy, after all, depends on an informed public to make good decisions and not a public caught up in social networking and suffering from deficits knowledge.

Also different studies made in evidence the lack of knowledge that the new media provoke in the field of reading and writing of new generations; basic skills for critical thinking. (<http://www.qub.ac.uk/mgt/papers/methods/contpap.html>)

Many studies right also about the positives effects of social media Turkle, S. (2004), pg 6, in the field of critical thinking. If we genuinely participate in face book engaging in a discussion and debate; at the same time all of us can take that same information and think about it and add our own thoughts to the conversation. Someone raises a question and it challenges us to think to prove our point and our point challenges the next person and so the debate start. So, critical thinking start! Also, the searching process in new media and social media can provoke a critical thinking, because during this processes we find a lot of information and at the end we all still have to make our own decisions on what we think is right and wrong.

Forum and social media are tools that can be used in positive ways and negative ways (Singer, D. (2009). 66(3), 1003-1031. Either can make it easy for someone to avoid critical thought as well as making it easy for someone to engage in critical thought.

Refereeing to some interviews (with 20 interviewers), with face book friends about the social media and critical thinking, we find out some interesting information about this subject in our contest. Most of the interviewers spend maximum 3 hours in face book network. The most preferred activities were chatting, writing messages and doing comments; . This last activities are relating with critical thinking, because we need to think if you want to be part of a conversation especially in distance. Most of the interviewers do this activities to stay in contact with peers or friends that haven't possibility to meet or live abroad. Interviewers think that using of face book and the information that it contain can't influence their opinion: “to create an idea about something I need t practice it”, said one of the interviewers.



Related to the face book and the process of critical thinking most of the interviewers argue that the critical thinking is not in danger from the use of face book: “critical thinking depend from the person, some have the capacity to do it, with or without face book”, “big social actions have started from communication in face book” said some of the interviewers.

To sum up form this interviewers and other studies we conclude that social network like face book can't damage our capacity of critical thinking. Critical thinking in the field of social network is another dimension, that we take in consideration to create an idea for something, but isn't determinative.

### **Recommendation**

New media and especially social network are part of our reality, and if we need to develop our critical thinking we can't do it right avoid new media and social network, afraid form its influence.

### **Conclusion**

In the modern age it's hardly to avoid coming in contact with a form of social media; but the same people who turn to social media as a way to avoid thinking for themselves would find a way to avoid thinking regardless of the existence of social media. So, it's up to us to use it in a way that helps to grow or not.

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## THE EFFECT OF THE INTUITIVE BELIEF BIAS ON SOLVING DEDUCTIVE SYLLOGISMS: A DEVELOPMENTAL APPROACH

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### Abstract

Recent findings have shown that intuitive beliefs concerning science are abandoned after the systematic teaching but not rejected, remaining active even during adulthood. However, we do not know under which conditions these intuitive beliefs are recruited during scientific problem solving. The current study examined whether intuitive beliefs are involved in the “beliefs bias” as children and university students solve syllogisms with science problems. Belief bias refers to individuals’ tendency to assess conclusions by empirical truth and not by logical necessity or validity of syllogism.

Dual-process theories interpret the “belief bias” as a result of the Type I processing which is based on the intuitive reasoning and is associated with the quick and easy processing. Conclusions based on empirical truth involve reflective-analytical reasoning and are associated with demanding and slow processing (Type II). Belief bias emerges in a condition of conflict, in which Type I leads to a different response from Type II. In this study 56 10-years-old, 45 12-years-old children, and 57 first-year undergraduate university students were examined in sixteen valid deductive syllogisms on concepts of school science, in half of which the conclusion was compatible with intuitive beliefs and the other half were not. Results showed that although all individuals took longer to solve correctly incompatible than compatible with intuitive syllogisms, intuitive beliefs bias emerged only at the age of 10 and 19 years. In addition, the university students were more sensitive to the belief bias than students, underperforming by both 10-years-old and 12-years-old children in solving both compatible and incompatible syllogisms. Results indicated that intuitive beliefs during adulthood are the same active as these are in childhood before instruction on science. This evidence is interpreted in the light of dual processing theory. Educational implementations are also discussed.

**Key words:** Intuitive beliefs, Belief bias, Deductive Syllogisms, Conceptual Change, Science Education

### Introduction

There is an increasing interest among cognitive developmental researchers for the role of the intuitive knowledge in concept achievement and conceptual change. For many years it was believed that the intuitive knowledge is rejected and replaced by the scientific knowledge after systematic instruction in school settings (Carey 1985). However, recent findings have shown that intuitive beliefs that supposed to be rejected and replaced by the scientific knowledge as a result of schooling are suppressed but not rejected, remaining active even during adulthood (e.g. Shtulman & Valcarcel 2012). However, we do not know under which conditions these intuitive beliefs are recruited during scientific problem solving. The current study examined whether intuitive beliefs intervene in children’s and university students’ efforts to solve quickly deductive syllogisms which their premises are referred to science problems that demand conceptual change.

### **Intuitive belief bias**

It is well known that children form intuitive beliefs to explain science phenomena such as force and motion, heat treatment, shape of the Earth, gravity, rotation day and night, etc., which are not compatible with scientific knowledge (see Driver et al. 1993). These beliefs are deeply entrenched as they are based on the daily experience and therefore the acquisition of scientific knowledge requires a construction of a new different conceptual framework that is supported by totally different presuppositions and causality. It seems, however, that, because of its intuitive basis, intuitive conceptual frameworks are particularly resistant to changes and, therefore, its rejection and reformation of a new conceptual framework that is compatible to the scientific one is extremely cumbersome. For instance, students should reinterpret the explanatory framework of intuitive beliefs that the ground is flat and that unsupported things fall in order to achieve the scientific knowledge regarding the shape of the Earth and gravity (Vosniadou & Brewer 1992). Additionally, students should be released from the constraints that the Sun moves or goes behind a mountain or is covered by clouds in order to understand the phenomenon of day/night cycle (Vosniadou & Brewer 1994). Similarly, the difficulty of understanding the scientific concept of force occurs because children associate force with movement (Vosniadou et al. 2001).

It is anticipated the various intuitive beliefs to be active during school years before the systematic teaching of scientific explanations (Vosniadou & Kempner 1993, Tiberghien & Barboux 1983, Vosniadou & Brewer 1992, Brewer et al. 1987, Nussbaum & Sharoni - Dagan 1983, Vosniadou & Brewer 1994, Watts 1983). However, it is expected these beliefs to be rejected after the systematic teaching (Watts 1983, Clough & Driver 1985, Vosniadou et al. 1996, Baxter 1989). However, there is a well-grounded evidence that intuitive beliefs are suppressed but not rejected, remaining active even during adulthood. Shtulman and Valcarcel (2012) asked third-year undergraduate students to evaluate as quickly as possible they could the scientific validity of statements related concepts of science. Results showed that participants had lower performance (low accuracy and high response time) in the statements which were scientifically correct but incompatible with the intuitive beliefs (e.g. *Ice has heat*), in relation to the statements which were scientifically correct and consistent with the intuitive beliefs (e.g. *The sun has heat*). These findings suggest that both kinds of knowledge remain as possible competitive explanations and coexist at least until adulthood (Zaitchik & Solomon 2009). Thus, contrary to our expectations, intuitive beliefs seem that are still active and they intervene even university students' inferences.

These findings provide new important evidence for our understanding basic psychological mechanisms that support learning in science and science education. However, these are limited and further evidence of this phenomenon is needed. For instance, we do not know under which conditions these intuitive beliefs are recruited during scientific problem solving.

It is well-known the tendency of *belief bias* during the assessment of validity of syllogisms, in the field of syllogistic reasoning. Belief bias refers to individuals' tendency to assess conclusions by empirical truth and not by logical necessity or validity of syllogism (Evans et al. 1983). Dual-process theories, interpret the belief bias as a result of the Type I processing which is based on the intuitive reasoning and it is associated with the quick and easy processing. Conclusions based on the empirical truth involve reflective-analytical reasoning and it is associated with the demanding and slow processing (Type II). Belief bias emerges in a condition of conflict, in which Type I leads to a different response from Type II (De Neys 2012, Evans & Stanovich 2013). So, individuals are less accurate at solving valid but incompatible with experience reasoning syllogistic problems. Moreover, individuals took longer to solve correctly valid but incompatible with experience than valid and compatible with experience reasoning syllogistic problems (De Neys & Franssens 2009).

In the current research we use the term *intuitive belief bias* to denote the difficulty of make inferences for scientific explanations in known science phenomena due to the interference of the intuitive beliefs children have before their encounter with the systematic instruction. It is assumed that the phenomenon of belief bias in judgments about the validity of the reasoning syllogistic problems could occur if premises include statements highlighting intuitive beliefs concerning science. For example, asking people to evaluate a valid syllogism, its conclusion is "A snowball is kept frozen for longer period, when it is covered by woolen material" we assume that they will response incorrectly that the conclusion does not follow logically from the premises, and that they will spend more time to response correctly, because they will be affected by the intuitive belief that woolen material generates heat because by experience they fell warmer wearing woolen clothes (Erickson & Tiberghien 1985, Vosniadou & Kempner 1993).

### **The current study**

This research aimed to investigate the *intuitive belief bias* when individuals assess the validity of deductive reasoning. We assume that individuals will be less accurate (Hypothesis 1) and will take longer to assess correctly the validity of deductive reasoning syllogistic problems (Hypothesis 2) whose its premises highlight or enhance their intuitive beliefs. We expect that these performances will occur in the period before the systematic teaching of scientific knowledge on science, after the systematic teaching them and in the period that individuals have been removed from systematic instruction of science (Hypothesis 3). In Greek Education, the systematic instruction of science occurs at the age of 11 years (5<sup>th</sup> Grade of Primary school) (DEPPS 2003).

### **Method**

#### **Participants**

A total of 56 4<sup>th</sup> Grade ( $M = 9.69, SD = .28$ ), 45 6<sup>th</sup> Grade of Primary school children ( $M = 11.7, SD = .29$ ) and 57 first-year undergraduate students ( $M = 19.3, SD = 1.76$ ) participated in the research. Parental consent was collected for children's participation. It should be noted here that most of the university students had humanities as their major courses at their high school studies.

#### **Materials**

**Syllogistic reasoning task.** The syllogistic reasoning task consisted of 16, valid and scientifically correct, syllogistic reasoning problems in domain of Science. From those, eight had a valid compatible with intuitive beliefs conclusion and eight had a valid incompatible with intuitive beliefs conclusion. In addition, the syllogistic reasoning task consisted of 16 control problems with invalid conclusions.

An example of a valid incompatible reasoning problem was:

A snowball is kept frozen for longer period, when it is covered by heat-insulating material.

Woolen material is a heat-insulating material.

Therefore, a snowball is kept frozen for longer period, when it is covered by woolen material.

The following syllogism belonged in valid compatible reasoning problems:

If we walk in our shoes on a smooth surface, we will slip easily.

The icy road surface is smooth.

If we walk in our shoes on an icy road, we will slip easily.

Participants instructed to judge as quickly as possible they could whether the conclusion followed logically from the premises or not. Accuracy and response time in assessing the validity of problems were recorded during main phase of task. Then, an aggregate score was calculated for each of the two categories (valid, compatible and

incompatible). Thus, the possible range of values was zero to eight. Furthermore, for each category, the mean reaction time in ms of the correct responses was calculated.

### Procedure

The syllogisms were presented in a computer with the E-prime program. Participants were tested individually. Standard deductive reasoning instructions were provided and it was underlined that premises and conclusion must always be considered as real. Each premise was appeared with pressing button «Space» and syllogistic problem remained on the screen until participants respond. Participants responded pressing two keys on the computer keyboard, which corresponded to phrases "The conclusion follows logically from the premises" and "The conclusion does not follow logically from the premises". Response time started from the appearing of conclusion.

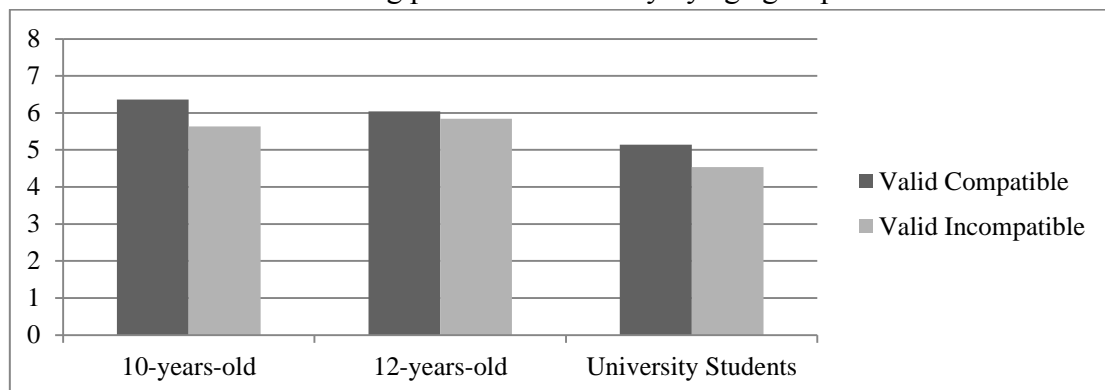
### Results

**Table 1.** Means (and standard deviations) of Science reasoning problems' accuracy and reaction time by age group.

	Age			Total
	10-years-old	12-years-old	19-years-old	
Reasoning problems	M (SD)	M (SD)	M (SD)	M (SD)
Valid Compatible				
Accuracy	6.36 (1.56)	6.04 (1.49)	5.14 (1.56)	5.83 (1.63)
Reaction time (ms)	4417 (822)	4357 (850)	3381 (641)	4026 (907)
Valid Incompatible				
Accuracy	5.64 (1.68)	5.84 (1.76)	4.54 (1.89)	5.30 (1.86)
Reaction time (ms)	5580 (836)	5334 (1073)	4288 (691)	5044 (1035)

Table 1 shows means and standard deviations of reasoning problems' accuracy and reaction time by age group. Both schoolchildren and colleges solved correctly Valid Compatible with intuitive beliefs syllogistic reasoning problems over randomness,  $t(55) = 11.27, p < .001$ ,  $t(44) = 9.19, p < .001$ ,  $t(56) = 5.51, p < .001$ , for 10-, 12- and 19-years-old respectively. In addition, both schoolchildren and university students solved correctly Valid Incompatible with intuitive beliefs syllogistic reasoning problems,  $t(55) = 7.33, p < .001$ ,  $t(44) = 7.04, p < .001$ ,  $t(56) = 2.17, p = .034$ , for 10-, 12- and 19-years-old respectively. That is, participants in each age group responded accurately at above chance level the syllogisms.

**Figure 1.** Means of Science reasoning problems' accuracy by age group

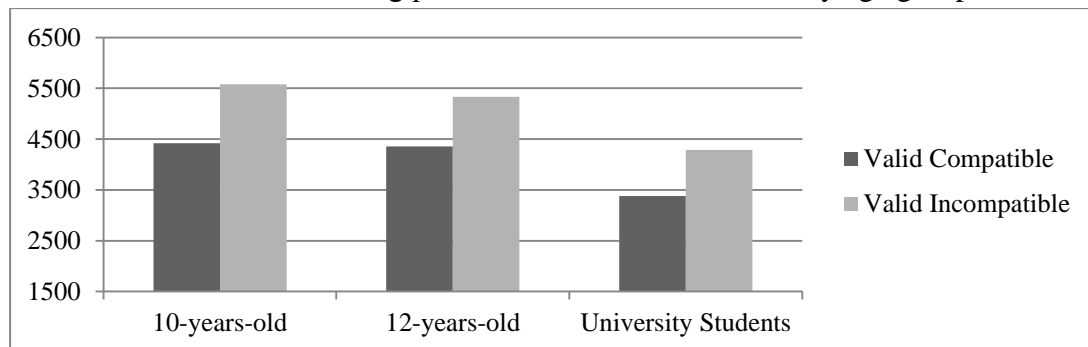


A mixed design repeated measures analysis of variance (ANOVA) with the aggregated score for the accuracy (compatibility with intuitive beliefs: Valid Compatible, Valid Incompatible) as within-participants factor and age (age group: 10-years-old, 12-years-old and university students) as a between-participants factor, revealed the factor of compatibility as significant,  $F(1.00,155.00) = 16.4$ ,  $p < .001$ ,  $\eta_p^2 = .096$ , whereas non-significant interaction between the within-participants factor and age,  $F(2.00,155.00) = 1.46$ ,  $p = .23$ ,  $\eta_p^2 = .018$  was obtained. That is, participants in each age group made significantly more syllogistic reasoning errors on Incompatible with intuitive beliefs reasoning problems (see Figure 1).

The 3 (age group: 10-years-old, 12-years-old and university students) x Valid Compatible syllogistic reasoning problems of analysis of variance (ANOVA) revealed a significant effect of age,  $F(2,157) = 9.38$ ,  $p < .001$ . Tukey's HSD post hoc test showed that colleges were underperformed by both 10-years-old and 12-years-old children in solving Valid Compatible with intuitive beliefs syllogistic reasoning problems (all  $p < .05$ ). A 3 (age group: 10-years-old, 12-years-old and university students) x Valid Incompatible syllogistic reasoning problems of analysis of variance (ANOVA) showed the effect of age as significant,  $F(2,157) = 8.29$ ,  $p < .001$ . Tukey's HSD post hoc test showed that university students were underperformed by both 10-years-old and 12-years-old children in solving Valid Incompatible with intuitive beliefs syllogistic reasoning problems (all  $p < .05$ ).

A mixed design repeated measures analysis of variance (ANOVA) with average response time (compatibility with intuitive beliefs: Valid Compatible, Valid Incompatible) as the within-participants factor and age (age group: 10-years-old, 12-years-old and university students) as between-participants factor, revealed significant the main effect of the within factor,  $F(1.00,155.00) = 216$ ,  $p < .001$ ,  $\eta_p^2 = .58$ , whereas non-significant interaction between this factor and age was obtained,  $F(2.00,155.00) = 1.31$ ,  $p = .27$ ,  $\eta_p^2 = .017$ . That is, participants in each age group needed more time to judge correctly the Incompatible with intuitive beliefs than the Compatible with their intuitions reasoning problems (see Figure 2).

**Figure 2.** Means of Science reasoning problems' reaction time in ms by age group



The 3 (age group: 10-years-old, 12-years-old and 19-years-old) x Valid Compatible syllogistic reasoning problems of analysis of variance (ANOVA) revealed a significant effect of age,  $F(2,157) = 31.3$ ,  $p < .001$ . Tukey's HSD post hoc test showed that university students spent less time for correct responses in the Compatible with intuitive beliefs reasoning problems in relation to 10-years-old and 12-years-old (all  $p < .001$ ). The 3 (age group: 10-years-old, 12-years-old and 19-years-old) x Valid Incompatible syllogistic reasoning problems of analysis of variance (ANOVA) showed significant the effect of age,  $F(2,157) = 35.04$ ,  $p < .001$ . Tukey's HSD post hoc test showed that university students spent less time

for correct responses in the Incompatible with intuitive beliefs reasoning problems in relation to 10-years-old and 12-years-old (all  $p < .001$ ).

## Discussion

This research attempted to investigate the *intuitive belief bias* as individuals assess the validity of deductive reasoning syllogistic problems, which although lead to scientifically correct and valid conclusions concerning science - were incompatible with the intuitive beliefs. For this purpose a group of school children in fourth grade and sixth grade of Primary School and a group of university students were examined.

Results showed that the phenomenon of intuitive belief bias was evident as individuals attempted to assess the validity of deductive reasoning in the period before the systematic teaching of scientific knowledge on science, after instruction and in the period that individuals have been removed from systematic instruction of science. As expected, subjects in all three age groups were more accurate at solving compatible with intuitive beliefs reasoning syllogistic problems, while they were less accurate at solving incompatible with the intuitive beliefs syllogisms. Therefore, our first assumption was confirmed.

Moreover, our second assumption was confirmed in all three age groups. Particularly, all individuals -10-years-old children, who have not taught scientific knowledge of science, 12-years-old children, who have recently taught science and first-year undergraduate university students, who have been removed from systematic instruction of science- took longer to solve correctly incompatible than compatible with intuitive beliefs syllogisms.

These results prove that intuitive belief bias is evident in the judgments of individuals on the validity of deductive reasoning, before the instruction of scientific knowledge, after instruction and in adulthood, expanding the findings of previous researches. That is, intuitive beliefs are not rejected and replaced by the scientific knowledge after systematic instruction in school settings and in adulthood, whereas these are the same active as these are before instruction on science.

These findings agree with previous findings, which showed that intuitive beliefs are active during school years before the systematic teaching of scientific explanations (Vosniadou & Kempner 1993, Tiberghien & Barboux 1983, Vosniadou & Brewer 1992, Brewer et al. 1987, Nussbaum & Sharoni – Dagan 1983, Vosniadou & Brewer 1994, Watts 1983), and also as individuals are moved from the systematic instruction (i.e. the university students) (Shtulman & Valcarcel 2012). Additionally, intuitive beliefs concerning science are not replaced by scientific knowledge but are suppressed, as people come into contact with new knowledge (Shtulman & Valcarcel 2012) and that both kinds of knowledge remain as possible competitive explanations and coexist at least until adulthood (Zaitchik & Solomon 2009).

Furthermore, we observed developmental differences in accuracy and response time as subjects assess the validity of two types of syllogisms. Both schoolchildren, who have not been taught the scientific knowledge and schoolchildren, who have recently taught this knowledge, are accurate in the same degree, and spend the same time in order to assess correctly any type of syllogisms, while university students seem to be less accurate and spend less time in order to assess correctly any type of syllogisms. These developmental differences in accuracy could be interpreted in the light of dual processing theory. It is quite possible the university students to be more sensitive to the belief bias (in relation to schoolchildren) as they understand the conflict between the two beliefs and activate the Type II processing (De Neys et al. 2011).

In the field of science education we argue that the instruction of scientific knowledge does not limit individuals' bias to assess scientific explanations by empirical truth under speeded conditions. Therefore, it is necessary a systematic instruction on intuitive belief bias

for individuals in order to be able to reconstruct the strong conceptual system of intuitive beliefs and create a new conceptual system that will include scientific knowledge. This instruction could be helpful for individuals to be more accurate in judgments on reasoning syllogisms that contradict with initially formed intuitive beliefs.

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## CRITICAL THINKING IN DEPRESSION AND ANXIETY DISORDERS: DISTINCTIVE AND OVERLAPPING FEATURES

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### Abstract

**The Purpose:** To help students reflect on their own thinking, the way they have to proceed in analyzing a given subject. In doing this, we are helping them examine the history of their thinking on that subject, helping them find the source or origin of their thinking. To help students reflect on how they support or might support the process of their thinking. In doing this, we are helping them to express the reasons, evidence, and assumptions that underlie what they think.

Depression and anxiety states are strongly correlated with one another. Despite of the strong correlation and common features, anxiety and depression are clearly not identical or transposable constructs. The differences between these two states are best viewed as relative, rather than absolute. In clinical practice, the common co-existence of these two states makes it difficult to keep them as completely distinct entities. The related dilemma of comorbidity may be discussed in the context of different levels of description: distinct disorders, comorbid disorders, overlapping syndromes, shared symptoms, common personality traits and psychosocial stress. Research on this field have shown that the distinction is more prominent at the level of disorders, where the overlap becomes more prominent at the levels of symptomatology, personality traits and psychosocial stress.

To conclude, we can assert that the process of thinking:

-has a history in the lives of particular people; depends upon a range of reasons, evidence, and assumptions,; which leads us to some direction or other, has implications and consequences,; may be related with other possible ways of processing information about something.

**Keywords:** Critical thinking, depression disorders, anxiety disorders, psychosocial stress, co-existenc

Health care professionals have long been interested in stress and anxiety and in the ways that healthy and dysfunctional persons cope or fail to cope with them. Stress

and anxiety affect the person's well-being. Various behavioral and physiologic disorders have been linked to stress and anxiety. The cost of stress and anxiety can be quite high: They can cost a woman her job, a man the love and respect of his family. When sufficiently prolonged, stress can kill.

### Stress

Stress is a part of being alive. Standing erect stresses the muscles and bones that must work together to keep the body erect; eating stresses the digestive system, which must produce enzymes and absorb nutrients; and breathing stresses the respiratory system, which must exchange carbon dioxide and oxygen. More broadly and holistically, stress designates a broad class of experiences in which a demanding situation taxes a person's resources or

coping capabilities, causing a negative effect. In this view, stress is a person-environment interaction. The source of the stress, the demanding situation, is known as a stressor. The internal state the stress produces is one of tension, anxiety, or strain.

There is no universally accepted definition of stress among stress theorists and researchers. An interactional view of stress, such as the one given above, is consistent with how nurses view human experiences. The theories of stress that follow are the perspectives in common use. Although they do tell us a great deal about responses to stressful situations, it is crucial for nurses to recognize that these explanations are not necessarily consistent with nursing's orientation. Such factors as cause, the situational context in which the stressful event occurs, and the psychologic interpretation of the demanding situation must be considered in a holistic, humanistic approach to the client.

### **The Fight-Flight Response to Stress**

Beyond the routine and essential stress of everyday life, humans risk encountering undesirable or excess stress that threatens well-being and may even be life threatening. They cope with such threats through either a fight -aggression or flight -withdrawal response.

The fight-flight response was first discussed by Walter Cannon, a physician, in 1932 when he identified stress as an actual cause of disease. Consider the following situation of extreme stress: A woman is walking down a dark, deserted street when a man with a knife emerges from the shadows just in front of her. Does she try to defend herself ? Does she run away? Whichever action she takes is a result of a variety of physiologic responses to extreme danger. According to Mason (1980), when a person faces such a situation

The heartbeat increases to pump blood throughout the necessary tissues with greater speed, carrying oxygen and nutrients to cells and clearing away waste products more quickly. As the heart rate increases, the blood pressure rises.

Breathing becomes rapid and shallow.

Epinephrine and other hormones are released into the blood.

The liver releases stored sugar into the blood to meet the increased energy needs of survival.

The pupils dilate to let in more light; all the senses are heightened.

Muscles tense for movement, either for flight or protective actions, particularly the skeletal muscles of the thighs, hips, back, shoulders, arms, jaw, and face.

Blood flow to the digestive organs is greatly constricted.

Blood flow increases to the brain and major muscles.

Blood flow to the extremities is constricted, and the hands and feet become cold. This is protection from bleeding to death quickly if the hands or feet are injured in fight or flight and allows blood to be diverted to more important areas of the body.

The body perspires to cool itself, because increased metabolism generates more heat.

Although these physiologic responses seem appropriate for the situation described, imagine the wear and tear on the body if humans responded to all stress in these ways.

### **Selye's Stress-Adaptation Theory**

Hans Selye, a Canadian endocrinologist and the most well known and widely recognized stress researcher, developed another framework for understanding how persons respond to stress. According to him, each person has a limited amount of energy to use in dealing with stress. How quickly it is used and, therefore, how quickly one adapts to stress depend on several factors such as heredity, mental attitude, and life-style, among others.

Selye defines stress as the rate of wear and tear on the body. He disputes the idea that only serious disease or injury causes stress. Selye thinks that any emotion or activity requires a response or change in the individual. Stressors can be physical, chemical, physiologic, developmental, or emotional. Playing a game of tennis, going out in the rain without an umbrella, having an argument, or getting a promotion are all examples of stressful events. Life itself is basically stressful, since it involves a process of adaptation to continual change.

Though the experience of adaptation is stressful, it is not necessarily harmful. Indeed, it can be exciting and rewarding under certain circumstances, and although we cannot avoid the stress of living, we can learn to minimize its damaging effects.

While a medical student, Selye made an interesting and important observation that became the cornerstone of his stress-adaptation theory. He observed that, regardless of the diagnosis, most clients had certain symptoms in common—they lost their appetite, they lost weight, they felt and looked ill, they were anxious and fatigued, and they had aches and pains in their joints and muscles. A long series of experiments – 1956 led to more objective evidence of actual body damage—enlargement of the adrenal glands; shrinkage of the thymus, spleen, and lymph nodes; and the appearance of bleeding gastric ulcers.

Feelings of anxiety, fatigue, or illness are subjective aspects of stress. Though stress itself cannot be perceived, Selye found that it can be objectively measured by the structural and chemical changes that it produces in the body. These changes are called the general adaptation syndrome (GAS) because when stress affects the whole person, the whole person must adjust to the changes. The GAS occurs in three stages: alarm, resistance, and exhaustion.

**Alarm reaction:** During the alarm reaction, the body undergoes biochemical reactions, such as the production of the adaptive hormones adrenocorticotropic hormone ACTH, cortisone, and aldosterone. The biochemical reactions also enlarge the adrenal cortex and lymph nodes. These changes lower the person's overall resistance.

**Stage of Resistance:** In the stage of resistance the biologic changes in hormonal levels, adrenal cortex, and lymph nodes are reversed.

The nature of this adaptation seems to depend on many psychologic and social factors. These include the stability of the personality, the morale, the sense of security and control, and the friendships, which provide emotional support.

**Exhaustion:** The third stage, exhaustion, occurs if stress continues over a prolonged time. It also occurs when multiple stressors are active simultaneously, or when the person undergoes repeated or overwhelming stress. When too many life changes occur within a short time, there is not enough time for the body to accommodate and adjust. Adaptive energy is exhausted, and the body surrenders to stress. The adrenal glands again enlarge and then are depleted. The lymph nodes enlarge, producing a subsequent dysfunction of the lymph system. There is an increase and then a decrease in hormonal levels.

Exhaustion may be reversible if the total body is not affected and if the individual is eventually able to eliminate the source of stress. However, if stress is unrelieved, or if the body's defenses are totally involved, the individual may not regain psychologic stability and may become physically ill.

The mood disorders are a group of psychiatric diagnoses characterized by disturbances in emotional and behavioral response patterns. These patterns range from extreme elation and agitation to extreme depression and a serious potential for suicide. Accurate assessment, diagnosis, intervention, and evaluation by psychiatric nurses are essential in helping clients with mood disorders attain a more comfortable, safe, and productive life.

### **Depressive Disorders**

The depressive disorders are characterized by exaggerated feelings of sadness, melancholy, dejection, worthlessness, emptiness, and hopelessness that are not warranted by reality. Depressive disorders may be expressed in a wide range of biologic, emotional, cognitive, and motor human responses. They should be differentiated from the normal sadness and grief resulting from some personal loss or tragedy.

There are several theories about the development of depressive disorders, some of which are similar to theories of the causes of bipolar disorders. Three theories specific to depression: anger turned inward, object loss, and learned helplessness.

**Anger Turned Inward** Anger turned inward is central to the theory developed by Freud -1957 to explain the neurotic depression he observed in his patients. Freud believes that the loss of a significant object or person precipitates both a loving and an angry response in people, whether adults or children. Since the mixed reaction of love and anger is either emotionally confusing or socially unacceptable, the person deals with the lost object by loving and grieving its loss and turns the anger against the self. For example, a young husband may find it unacceptable to be angry with his wife who died in childbirth, leaving him alone to care for a baby. He therefore turns his anger inward and blames himself for not loving his spouse enough or perhaps even assumes that he was in some way responsible for her death. This man might remain depressed indefinitely, withdraw socially, and never consider marriage again unless he receives help in expressing his anger toward the wife who deserted him.

**Object Loss** Object loss is the forced, often traumatic separation of a person from a significant object of attachment. Bowlby -1960 proposes that such a significant loss during infancy or childhood establishes a pattern of anxiety, grief, and helplessness, hopelessness. The person uses this pattern to deal with all subsequent losses. Since it is impossible to go through life without experiencing at least minor losses, separations, or blows to one's self-esteem, the person establishes a lifelong pattern of depression. The person feels helpless to cope with the ups and downs of life effectively and assumes a hopeless, depressed attitude toward existence.

**Learned Helplessness** Learned helplessness is one of several theories that focus on depression as a learned response to life events that are or were originally outside one's control. Some clinicians propose that depression is caused not by the trauma or loss alone but by the belief that one cannot control the important events in one's life. Others propose that depression is caused by a cognitive mind set. An extremely negative opinion of self, learned in youth, is later converted into absolutes: "No one could ever love me" or "I can't do anything right."

**Personality Structure** Arieti and Bemporad -1980 describe three types of depressive personality structures. The dominant other type of depression is experienced by persons who rely on dominant or significant others for their self-esteem. Their sense of worth is determined externally, and rewards and values are offered by dominant persons or organizations. These people lack personal goals and direction, tend to focus on problems, and are seen as passive, manipulative, and clinging. They avoid anger and confrontation so as not to anger those in charge of determining rewards. The dominant goal type of depression occurs in people who invest all of their energies and self-worth in the attainment of some inflated goal. Whether the goal is realistic or not, the problem is that the person's self-esteem is determined by goal attainment rather than an internal sense of worth. If the goal is blocked, the person's lack of self-esteem becomes evident as depression.

The depressive character structure is exemplified by people who cannot form either dominant other or dominant goal attachments. Their lives are empty, their relationships are petty and shallow, and they have a harsh, critical attitude toward themselves and others. They generally have many physical complaints and are unpleasant companions. Depression is a way of life for these people.

Like persons with bipolar disorders, people with depressive disorders can be viewed on a continuum ranging from functional to dysfunctional. Their level of functioning is often determined by how comfortable they are with themselves and how accepting and comfortable people around them are with the behavior. The nurse has no reliable way to determine the

seriousness of the stressor that precipitates depression. Only the person whose self-esteem is affected can determine the significance of the loss or stress in relation to depression.

### **Psychobiology**

Several studies document biologic shifts related to depression. Although these influences may not be causative, they can be clinically assessed in clients with depression. The following list gives only a few of the areas currently under investigation:

**Neuronal receptors:** It is widely believed that depression is associated with alterations in the sensitivity of the membranes of neuronal receptors. Furthermore, it is likely that alterations in different receptors lead to different behavioral symptoms. The change in receptor function accounts for the efficacy of certain drugs, such as antidepressants.

**Metabolism of serotonin:** Serotonin is a neurotransmitter commonly found in the central nervous system, particularly in the limbic system. Dysfunction of certain serotonergic neurons has been linked with depression. For this reason, drugs that influence serotonin metabolism, such as fluoxetine (Prozac), have found wide use in the treatment of depression.

**Measures of the hypothalamic-pituitary-adrenal axis:** Psychoendocrinology is the study of the relationship between endocrine function and mood. Over the last ten years, the relationship between hormones and mood disturbances has been actively pursued through examinations such as the dexamethasone suppression test, which measures cortisol levels. Many depressed clients demonstrate cortisol hypersecretion. Cortisol levels can be easily assessed with the 24-hour urinary free cortisol test as well.

**Measures of the hypothalamic-pituitary-thyroid axis:** The relationship between thyroid function and mood states has been long established. Recently, it has become common for physicians to prescribe a low dose of triiodothyronine to potentiate tricyclic antidepressants. The thyrotropin-releasing hormone (TRH) infusion test is now being used in the assessment of depression. This test challenges the stimulation of thyroid-stimulating hormone (TSH) with an infusion of TRH. Many depressed clients show a blunted TSH response to TRH, despite otherwise normal thyroid function. The TRH infusion test, while not specific for depression, may be useful in the diagnosis of depression.

The hypothalamic-pituitary-growth hormone axis and hypothalamic-pituitary-prolactin axis are also being investigated, but their relationship to depression is less evident.

### **Discussion**

Descriptive-categorical approach in the classification and diagnosis of mental disorders had reached a point where the dilemma of comorbidity became a crucial matter of concern and controversy. The shared and discriminating features of depressive states and anxiety states have both conceptual and clinical importance, in this respect.

Conceptual models represent either a dimensional approach, where in a unitary perspective, depression and anxiety are considered as constructs in a continuum holding various psychopathological features, or a categorical-typological approach, where a separatist perspective proposes several subtypes in both diagnostic categories.

In clinical practice, the common co-existence of these two states makes it difficult to keep them as complete distinct entities. The related dilemma of comorbidity may be discussed in the context of different levels of description: distinct disorders, comorbid disorders, overlapping syndromes, shared symptoms, and common personality traits and psychosocial stress. So, depending on the level of description these conditions may be reviewed: 1. as independent two distinct clinical entities; 2. as comorbid conditions, concomitantly meeting threshold criteria of both disorders; 3. as one having the primary diagnosis associated with the other syndrome not meeting threshold criteria; 4. as mixed states where both conditions have concomitant sub-threshold symptoms; 5. as related personality traits and psychosocial stresses. Researches in this field had shown that, the

distinction is more prominent at the level of disorders, where the overlap becomes more prominent at the levels of symptomatology and personality traits and psychosocial stress.

Whatever the level of discussion, the central finding is that depressive and anxiety states are strongly correlated with one another. Although to some extent, methodological problems may be responsible for their co-occurrence; these explanations are insufficient to reveal the strong observed correlation between anxiety and depression. Despite the strong correlation and commonalities, anxiety and depression are clearly not identical or transposable constructs. The differences between these two states are best viewed as relative, rather than absolute.

As the belief, statement, or conclusion:

All thinking has a history in the lives of particular persons.

All thinking depends upon a substructure of reasons, evidence, and assumptions.

All thinking leads us in some direction or other, has implications and consequences.

All thinking stands in relation to other possible ways to think, there is never just one way to think about something.

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## ATTACHMENT TYPES AND THE IMPORTANCE THROUGHOUT THE LIFE CYCLE

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### Abstract

Attachment is an important component in the cognitive, emotional, social and behavioral development of the individual. The aim of this study is to review the literature, which reflect the importance of attachment. This matter relates to the formation of personal internal model in early infancy and strongly influences the interaction of the individual model, with others throughout life.

For attachment as a construct various studies have been conducted. According to them, it can be categorized into two major divisions: a) secure attachment; b) insecure attachment. The category of insecure attachment in more details will be presented in three specific sub-divisions: a) fearful attachment; b) preoccupied attachment; c) dismissing attachment.

Each of the categories and sub-divisions will be accompanied with typical features, which are reflected in the functioning of the individual throughout life.

**Keywords:** secure attachment, insecure attachment, fearful attachment, preoccupied attachment, dismissing attachment.

Every human being is born with the predisposition to be attached. Based on the principles of the Bowlby's theory (1969-1988), attachment is described as innate tendency of individuals to create emotional connection with specific persons in the surrounding environment. From the moment in which the child is born, he is a social being. This being need others around him to pay attention, understand the signals sent, to respond to his needs, to speak, to play, so spend time with him. It should be emphasized that the attachment theory, turned social nature of the human being (Bowlby, 1969).

Following will be described in, the attachment reinforcements and their connecting with the socialization of the individual throughout life. Here are: encouraging messages, responsiveness to the needs, family responsibility, immediate response, parent stability in the response, positive communication. Below will explain each of them in detail.

a) Encouraging messages.

"Children give or do their best when they feel good". Stimulation through encouraging messages is an effective alternative, which attached figure can use to teach the child, the benefit of behaving in accordance with the situation. These messages can be sent to the child during the interaction, in the moment that he exhibits behavior which is considered socially positive. This will serve to create secure attachment with the child. Parents who smile when interacting with the child, is likely to raise a child smiling and happy. Happy people tend to associate positively with others following, throughout their lives.

b) Responding to needs is related with trust building.

When responding to the needs of a child, you teach him to have faith in others. By interacting positively with the child, you teach him how to relate and the socialize with others when it is an individual adult. If the child is treated with love by primary caregivers, then he will love himself, and will feel confidence and trust in it. All the mentioned factors, facilitate and contribute in making positive the children socialization process.

c) Family responsibility affects the formation of respect.

Responsible family are considered them, whom each of the members, has a good understanding of rights and duties, as well as personal space. A child raised in a family in which dominant relations of responsible, have predisposition to become a person who respects others, their space and imposes them respect for him. Of course, where there is a relationship of respect between the parties, can only be healthy.

d) The immediate reaction relates with the concept of significance. The primary caregiver should respond to any signal that the child releases. To make the child understand that he is worth a lot and is important in this world, should his immediate needs (such as a strong weeping), take precedence over other needs and parent to react immediately by being attentive and empathic.

e) Sustainability of the parent.

Attachment is greatly influenced by the stability of the parent toward the child. Emphasis is placed on whether the parent responds to the child several times and always when he needs. Sustainability of providing assistance, serves in forming secure attachment to the child not only with the primary caregiver, but also in relation to others later in life.

f) Nonverbal attitude in the response.

Attachment is influenced by nonverbal attitude that keeps the parent when the child responds to the needs. Various behavioral modes are: associating gestures with a smile, touching with love or accompaniment of verbal messages with frustration and nervously. A child grown up with love and kindness will be loving and courteous in adulthood. According to studies, this child, has many times larger the chances of having friends, than another child, which is grown in a frustrating environment.

g) Verbal communication.

Healthy attachment is influenced by verbal communication. The person with whom the child is attached, when he needs to know something, explain to him verbally. Also, should found a place where the child can explore in safe, in the present of attachment image. This figure will serve the child as "a holder" in situations where it need. All these behaviors, will make the child an individual adult, who will present the ability to maintain flexibility in verbal communication with the other. The result is the creation of healthy social relationships throughout life. Studies regarding attachment are developed in detail by Bowlby and Ainsworth in England (Ainsworth, 1969; Bowlby, 1969). According to these studies, two major divisions of attachment are:



Fig. 1  
The main divisions of attachment

Studies have shown that children who have secure attachment with their primary caregivers:

- explore the surrounding environment with fun and innovative games;
- demonstrate patience and acceptance to the tasks that were assigned;
- adopt and assimilate these new tasks with pleasure;
- feel the lack of the caregiver during the separation, but establish contact with speeds when reunited.

These research and exploration reflexes in childhood, are the basis of the early motivation for achievement. Concurrently, they are good indicators of individual cognitive abilities as:

- attention,
- concentration,
- memory,
- ability to learn.

While, the opposite side of the secure attachment is considered insecure attachment. Initially, Ainsworth introduced two main categories of insecure attachment: fearful attachment and dismissing attachment. Main and Solomon (1986, 1990) added another category to the group of insecure attachment; preoccupied attachment. This result is related to the fact that almost 15% of children can not be classified in any of the three categories specified until then for attachment.

Therefore, in summary, we can differentiate attachment into four separate types, as shown in Figure 2.

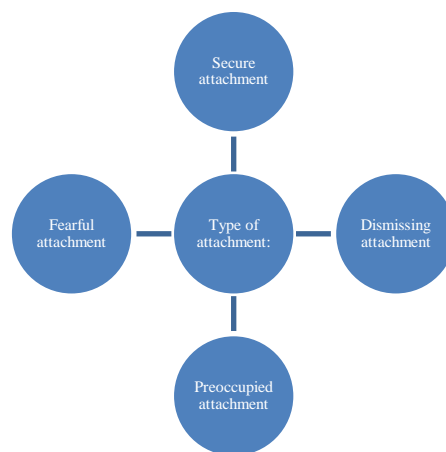


Fig. 2

#### Four types of attachment

Proceed clarification of details for individuals who have created each of the three types of insecure attachment. Thus, children with fearful attachment seek contact with their parents after separation, but are unable to find tranquility. These children glued after parents, cry or have outbursts of anger. They use extreme strategy to secure the attention of others. Since an early age, have internalized a model of thinking, which is dominated by failure and rejection by others. They have less emotional and cognitive resources to invest effectively, given that a large part of the spending power to meet their psychological needs (Mikulincer, 2000). Thus, it can be said that the individual with fearful attachment, predicts a bleak picture of his future.

He not only thinks it unsuccessful, but predicts failures and refusals by others. There is a constant concern of not being rejected by others. This pattern of thinking, causes fears in interpersonal relationships, associated with beliefs that: will fail in all initiatives that will undertake; is not capable to prove something new; will not succeed. This makes the individual initially focus not on purpose of an initiative, but to its failure. As a result, he avoid this new initiative. Also, low expectations, affect in setting weak goals, not challenging for all life.

Another category of insecure attachment is dismissing attachment. People with dismissing attachment are characterized by positive self model and negative model for the other. Those since in infancy, have had the experience of a "rejectionist" mother, that has not

responded readily, effectively and warmth requests for help and comfort. These individuals form a mental model of themselves as a man not worthy of being loved. This model corresponds to the prejudice that must rely only on himself. Model that he has for the mother was it of "a bad person, from whom not have to wait who knows what." Positive model of individual with dismissing attachment, leads to having high self confidence without interest in the other judgment. The negative model that has for the other, does it give the impression that doesn't appreciate other persons appearing ever more cynical or critical.

He devalues the importance of the relationship and underscores the importance of independence, freedom and confirmation. These features lead him that in stress situations, not to rely on others and used poor solutions to problems (Diehl, 1998). Another type in insecure attachment is preoccupied attachment. It is characterized by a negative model for themselves and for others. It's an attachment pattern, associated with an abuse and maltreatment child history, by attachment image. Children who experiment this kind of connection, present during the experimental phase, abnormal behavior:

- stand still,
- shaken,
- covering eyes from watching caretaker,
- develop a set of stereotyped behaviors,
- exhibit confusion and incoherence during childhood.

The consequences of these experiences affect adulthood, in schemes for interpreting the events of reality. Catastrophic vision is dominant. The negative model that the individual has about self, leads to having low self-esteem and appearance of many uncertainties to self and others. The negative model that has for the other, leads to avoidance of requests for assistance in stress situations, since they perceive that they will be rejected by others (Main, 1986).

Attachment affects relationships and emotional functioning of the individual throughout life (Moller, 2002). Starting in infancy, the individual forms as a result of interaction with his mother, mental representations on trust and security. These representations, affect the child's attachment behavior in his future (Kobak, 1999). Secure attachment of adults refers to a close affectionate and intimate double, that is based on interaction, feelings of trust and respect. Trust is a key element in the formation of secure attachment. Attachment of adults is relaps of the relationship, that this individual has been in the early stages of infancy with primary caregivers. Secure attachment with the primary caregiver, brings with it:

a-In childhood and school:

- high scores;
- easily creation of society and its storage;
- passage of time with peers;
- high self-assessment and self-esteem;
- readiness for positive cooperation;
- recognition and reward to love and how close the others.

b-In adultery and family:

- clear and balanced perspective for parents;
- flexibility in relation to others;
- healthy concept of intimate relationships (are romantic and stable);
- willingness to engage in couple relationship;
- predisposition to be supportive and loving parents;
- predisposition to form a secure attachment with their children.

Meanwhile, social spheres under the influence of insecure attachment, appear damaged. Thus, from childhood to adulthood can be mentioned:

- the game is unorganized and short;
- with friends / teachers build problematic relationships;
- close friendship turns unstable;
- relationships appear stressful, volatile ("not consistent characters");
- in the organizational context, presented maddening for chiefs and subordinates.

From what was discussed above, we come to the conclusion that secure attachment promotes the achievement of autonomy and exploration. In addition, individual shows willingness to achieve effective social competence and predisposition for high academic achievement (Bernier, 2004). Adults with secure attachment, perceive themselves as loving to others and effective in the environment where they live. When a problem occurs, they expect to receive support from figures which have created attachment (Perrine, 1998). More specifically, secure attachment in adults simplifies the development of self-confidence, self-efficacy and problem-solving skills (Hazan, Zeifman, 1999).

Meanwhile, attachment and academic achievement have been studied by various authors. Findings show that preoccupied attachment correlates negatively with success in academic achievement (Bernier, 2004). Preoccupied attachment, according to them, is accompanied with: high level of stress, distrust, difficulties to seek help during university.

A Larose study (2005) found that attachment was positively associated with academic success, measured by average. Students participating in this study, who felt were not sufficiently skilled in specific academic situations, do not spend a lot of time for preparation and thus become anxious when faced with grade ratings. They do not perceive themselves as capable and were vulnerable to the criticism of others.

In the study, those resulting from the Adult Attachment Interview (Main, 1985) with preoccupied attachment, had lower average than all the others. Consequently, the above-mentioned studies show that adults with secure attachment, is more likely to succeed in their academic achievements than those with insecure attachment. Another important area where strong attachment influences, is also intimate area.

Research shows that an adult in intimate relationships is the product of attachment, who created the first years of life, with its primary caregiver. According Bartholomew and Horowitz model (1991), have:

A person with secure attachment	<p>Is relatively easy for him to establish close emotional relationship with others.</p> <p>The individual feels comfortable from being dependent on others and when others depend on it.</p> <p>He does not care if others do not accept as is or staying alone.</p>
A person with dismissing attachment	<p>The individual feels comfortable without close emotional relationships. It is very important for him to feel independent and self-fulfilling. He does not want to depend on others nor others to depend on him.</p>
A person with preoccupied attachment	<p>The individual wants to be totally intimate with others, yet others find often unavailable to create a close one.</p> <p>The individual is not comfortable without involvement in close relationships, yet sometimes</p>

	afraid that others do not appreciate as much as he appreciates them.
A person with fearful attachment	Someway, the individual feels uncomfortable in close relationship with another person. He wants a close relationship, but has difficulty in fully understanding the other. Also, the person has difficulty in depends on others, despite ever wants this to happen.

Tab. 1. Attachment styles in intimate relationships according Bartholomew and Horowitz (1991)

In conclusion, it can be noted that the attachment is an important component in the cognitive, emotional, social and behavioral development of the individual. This matter relates to the formation of personal internal model in early infancy and strongly influences the interaction of the individual model, with others throughout life. For attachment as a construct, various studies have been conducted. According to them, it can be categorized into two major divisions: a)secure attachment; b)insecure attachment. The category of insecure attachment in more detail can be presented in three specific sub-divisions: a)fearful attachment; b)preoccupied attachment; c)dismissing attachment. Each of the categories and sub-divisions can be accompanied with typical features, which are reflected in the functioning of the individual throughout life.

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## ENRICHING THE BRAIN AND CRITICAL THINKING IN EDUCATION

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### **Abstract**

Eric Jensen set up truly provocative and essential questions for enriching the brain and maximizing every learner’s potential. As educators, we should ask ourselves: Have we institutionalized mediocrity? Are we shrinking our student’s brain? Should we reconsider the educational myth that each child has fixed brain power? Is our brain power supposedly determinate by our genetic inheritance, and cannot therefore be changed over a lifetime? A majority of people give up because they think they are stuck with the brain power they have. But it is obvious that we do change our brain and our brain changes us every day. Our life experiences change our brain, and the changed brain changes our life. Our first guideline in actual schools should be that the brain is not static. In fact, good teachers are brain changers. Can all students become enriched, every single day? Yes, they can. It is possible. Many schools are actually trying to do that. Most brains can be enriched, and so-called slow learners actually benefit from an enriched environment just as much as the so-called regular or gifted learners. In fact, every brain can be enriched. It is a matter of degree of enrichment and in what areas. Enrichment for some scientists has mostly a literal meaning (a wider range intelligence), whereas, for others, it has a vertical meaning (a deeper, stronger intelligence). If we offer to the impoverished brain a rich environment for a considerable long period, the effect can last for years, right through adulthood. Does enrichment include positive factors such as parenting, nutrition, emotional support, hope, education and learning? Enrichment, in fact, is a positive biological response to a constructive environment, in which measurable, synergistic and global changes have occurred.

**Keywords:** enriching the brain, critical thinking, education

### **Montessori environment increases knowledge**

Montessori develops a curriculum that utilized experience and hands-on manipulation of materials versus the direct instruction that typically took place in schools. It was this concept of teaching children to experience the world by using the five senses and extending the input to thought processes that Montessori considered to be the most valuable asset to children’s learning. Montessori claims that it is through movement and manipulation of the senses that children would gain knowledge of language, abstract thought, critically thinking and problem solving skills, math skills, independence, practical life skills, and discipline. If students only learn how to manipulate the environment without learning how to understand the meaning of their senses, we as educators, “...have only led these children to adapt themselves to a low order of life (almost a vegetable existence)... [need to lead] the idiot from the vegetative to the intellectual life, ‘from the education of the senses to general notions, from general notions to abstract thought, from abstract thought to morality’ (MM, 41).

The environment that students would manipulate knowledge and gain experience was an important part of Montessori’s vision. Montessori claimed that the environment influences knowledge. The school is the ideal place to provide a child with more experiences with the physical and social phenomena of the world. It is the collaboration of the physical and the social and the ability to critically think about the experiences that increases knowledge.



### **Interaction between Montessori structured materials and the environment**

Montessori created materials such as color cards, spool rods, sandpaper numbers, and 3D shapes and these materials needed to be in places that children could see, hear and work with at his/her own leisure. Montessori’s ultimate aim in the development of these materials and her detailed methodology of education was to “...help children prepare for life with a more organized approach to academic skills and problem solving and the development of the child’s independence, self-discipline, and interest in learning” (Hainstock, 1997, 37). It was the interaction between the structured materials and the environment that a student would gain knowledge. To simplify to its purest sense, knowledge is the result of the learning process.

Most of her theory allows for the children’s freedom of expression within the prepared environment of a Montessori school.

### **Montessori - Learning is the process of experiencing the world around us and interpreting that sensory input in a cognitive and analytical way**

We must establish the difference between education and schooling. To educate someone is to deliberately teach them something new. Schooling is the formal setting in which education takes place (Clabaugh, 2011). Now that the definitions of education and schooling have been established, Montessori’s thoughts on who is to be educated and who is to be schooled can be adequately established.

Montessori curriculum was meant to teach sensory education, language, writing and reading, arithmetic, imagination, and fantasy, art and music, physical education and nature.

Montessori advocated for the education of early childhood children. She thought that if young children learned how to critically think, manipulate, and analyze the world around them before entering primary school, they would become life-long learners and therefore “better” members of society. It was in the home and in the school that this learning should take place.

Learning is the process of experiencing the world around us and interpreting that sensory input in a cognitive and analytical way. It is not possible because everyone experiences and interprets the world differently and in turn, we learn to read the world around us and generalize knowledge that could help transform society. Consensus would ultimately mean that the learning process has stopped and people no longer critically think about the world and how to live in it.

Montessori modeled her educational method around the experience of the individual. She believed that the individual must construct their own knowledge by manipulating their environment. As a result of this belief, Montessori would have said that the individual’s opinion takes precedence. In the case of education that individual is the child.

Knowledge, according to Montessori, is created out of the ability to analyze, criticize, examine, observed, and interpret information in a meaningful way. Knowledge is the manipulation of the environment, the critical reflection of the senses, and the ability to make meaning of the analyzed information. Knowledge is earned through research, motivation, hard work, and interest.

The child is an active participant in the development of knowledge because they manipulate their own environment. In regards to beliefs, these are often imparted to the student by others. Montessori would want students to use the knowledge learned through the manipulation of their environment to examine the beliefs imparted to them by others. Montessori would believe that knowledge is much more important than beliefs.

She would say that when children work with the environment they will naturally make mistakes and often those mistakes are a critical part of the learning process. It is the repetition of the activity that the child will gain mastery and learn the concept.

### **Teacher’s role in Montessori classroom**

The teacher in a Montessori classroom is supposed to only interject when the child needs further stimulation or the teacher observes the need for the child to move onto more complex materials and concepts. The teacher “...must intervene to lead the child from sensations to ideas – from the concrete to the abstract, and to the association of ideas...” (MM, 224). The teacher is to show the child how to work with the materials and then allow them to work independently and with others. It is with the observation and repetition of the exercises that the child learns. The teacher must make sure that they do not insist on repeating lessons and they do not make the child feel as if they have made a mistake. According to Montessori, it is through mistakes that we learn.

“Each child discovers mistakes through feedback given by the project materials rather than by the teacher. The teacher avoids pointing out mistakes in favor of self-evaluation by each child. Instead of judging and correcting, the teacher advises the use of different complementary project materials, or “teaches again,” presenting a material from a different angle” (Rosanova, 2003, 9). Learning is doing. It is to experience through discovery, through manipulation, through critical thinking, through mistakes and through problem solving skills. In the process of learning children can gain self-esteem and generalization skills prior to the first grade that will prepare them to become a life-long learner.

Montessori also had strong opinions on how a teacher should look in her classroom: “...the teacher also must be attractive, pleasing in appearance, tidy and clean, calm and dignified...The teacher’s appearance is the first step to gaining the child’s confidence and respect...” (AM, 277-278). It is imperative in a Montessori classroom that the teacher takes the role of the observer. Student’s gain knowledge through work and play and the teacher must facilitate that process. The directress of a Montessori classroom is an observer of student behavior. She watches the children manipulate the materials and only interjects when necessary. Montessori clearly outlines how a teacher should conduct “lessons” in the classroom: “...the teacher must not limit her action to observation, but must proceed to experiment...In this method the lesson corresponds to an experiment...The lessons...are individual, and brevity must be one of their chief characteristics...Another quality is its simplicity....The third quality of the lesson is its objectivity. The lesson must be presented in such a way that the personality of the teacher shall disappear. There shall remain in evidence only the object to which she wishes to call the attention of the child (AM, 108)...The teacher shall observe whether the child interests himself in the object, how he is interested in it, for how long, etc., even noticing the expressions of his face. And she must take great care not to offend the principles of liberty (MM, 107-109). ...*The essential thing is for the task to arouse such an interest that it engages the child’s whole personality* (AM, 206).”

### **Montessori - human potential is limitless**

With the aspects of Montessori’s theories of education and the importance of practical life skills, she would likely determine that human potential is limitless. A child that learns to manipulate their environment and develop knowledge to critically analyze and learn from that manipulation makes a person a life-long learner in society.

The theories of the time were that of Darwin who determined that people had fixed intelligences and predetermined destinies. Darwin’s theory of fixed intelligence (i.e. intelligence was predetermined by heredity and therefore early education could not change later intellectual development) was popular at the time that Montessori began advocating early childhood education. Montessori would have disagreed with Darwin’s theory because she believed that every child had the ability to learn through experience. The experiences a child has can be limitless if they are made available to them, making human potential limitless.

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## IDENTIFICATION AND TREATMENT OF CHILDREN WITH SPEECH AND LANGUAGE DISORDERS

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### **Abstract**

The aim of this paper is a summary of theoretical and practical facts about the role of parents, teachers, psychologists and speech-language therapist in identifying and treating children with speech and language disorders. The paper elaborates in details the case of the identification and treatment of a seven year old girl from Gjakova suffering from severe speech and language disorders, respectively from dysphasia. Dysphasia appears in children from birth to the age of ten. It is characterized with articulation disorder, poor vocabulary, disorder or lack of sentence, limited attentiveness, motor disorder, etc. These disorders occur as a result of the damage to the central nervous system. Evidence gathered through this research shows that the role of parents, teachers, psychologists and speech-language therapists in identifying and treating children with speech and language disorders is more than necessary. Such cooperation would enable both, prevention and elimination of many speech and language disorders which would pose great obstacles in the education of these children in the future. It is recommended to raise the awareness of the general public regarding the role of speech-language therapists in education institutions and to continue cooperation between parents and speech-language therapists, in order to reduce the number of children with special needs in general.

**Keywords:** speech and language disorders, identification, treatment, speech-language therapist, psychologist.

### **Speech and Language development**

Of all child development milestones, speech and language development is the most amazing. A child begins to cry, coo, gurgle, and babble in two stages - marginal and canonical - then begins to use words in the form of idiomorphs and forms utterances and sentences beginning in the holophrastic stage (i.e., skeletal sentences). Psycholinguistically, a child begins to acquire language from people around him/her (until the age of 6 prospectively) and then to learn the language (school-age, from either 5 or 6 to 18). According to the CPH (Critical Period Hypothesis), the first 12 years are the most important for acquiring and learning a native language. Sociolinguistically, a human begins uttering, speaking, talking, conversing, communicating, arguing, discussing and debating. Neurolinguistically, a child's brain must function properly, without any damage or congenital disorder that may delay or prevent linguistic or accompanying cognitive abilities (Alduais at al. 2012: 477).

### **Speech and language aspects**

According to Lerner (1997: 363-365), several aspects of speech and language are:

\*phonology - the system of speech sounds in a language. The smallest unit of sound is a phoneme;

\*morphology - the system of meaning units in a language. The smallest unit of meaning is a morpheme;

\*syntax refers - the grammar of language-the way words are strung together to form sentences;

\*semantics - refers to word meanings in language;

\*pragmatics - is the social side of language, dealing with the relationship between the speaker and the context.

### **Speech and language forms**

According to Silver (1992), two forms of speech and language are used in communication, spontaneous and demand forms. You use *spontaneous* speech and language in situations where you initiate whatever is said. Here you have the luxury of picking the subject and taking some time to organize your thoughts and find the correct words before you say anything. In a *demand* speech and language situation, someone else sets up a circumstance in which you must communicate. Now you have no time to organize your thoughts or to find the right words. You have only a split second in which you must simultaneously organize, find words, and answer more or less appropriately. Children with a speech and language disability usually have no difficulty with spontaneous speech and language. The inconsistency can be quite striking. A youngster may initiate all sorts of conversations, may never be quiet, in fact, and may sound quite normal. But, put into a situation that demands a response, the child might answer “Huh?” “What?” or “I don’t know” (pp. 35-36).

### **Speech and language disorders**

Speech and language disorders refer to problems in communication and related areas such as oral motor function. These delays and disorders range from simple sound substitutions to the inability to understand or use language or use the oral-motor mechanism for functional speech and feeding. Some causes of speech and language disorders include hearing loss, neurological disorders, brain injury, mental retardation, drug abuse, physical impairments such as cleft lip or palate, and vocal abuse or misuse. Frequently, however, the cause is unknown. According to [National Dissemination Center for Children with Disabilities](#) (2004: 1), it is estimated that communication disorders (including speech, language, and hearing disorders) affect one of every 10 people in the United States.

### **Specific Language Impairment (SLI)**

Specific Language Impairment (SLI) is the diagnostic category for children who fail to develop age-appropriate language despite being apparently normal in other respects. By definition, these children are thought to have no obvious hearing, cognitive, or neurological deficits, yet they learn to talk relatively late. When they do begin to talk they produce fewer utterances than expected for their age and intelligence; and they exhibit deficits in several aspects of language including some or all of the following:

\*phonology - affected children have difficulty producing words with complex clusters of consonants (like *spectacle*), or analyzing the phonological structure of a word (such as saying what sound follows the /p/ in *split*);

\*morphology - children with SLI are often impaired at tasks involving the generation of past tenses or plurals, particularly for novel words such as *wug* and *blick*;

\*syntax - affected children have difficulty analyzing sentences with complex syntactic structures, such as datives (*Sally showed Henry to Bill*) and passives (*Frank was hit by Bob*) (Joanisse et al. 1998: 240).

Language Impairment may present with a wide range of different disturbances in language processing, depending on the linguistic level (phonetic, phonological, morphological, syntactic, semantic, or even pragmatic) or the modality of language use (linguistic comprehension vs. production) that can be selectively compromised. One approach to dealing with this heterogeneity involved the identification of clinical subtypes of SLI. For example, the 10th Edition of the International Classification of Diseases (ICD-10, cited in

Marini et al. 2008: 2816), distinguishes the following amongst 4 different subgroups of Specific Language Impairment:

-*specific speech articulation disorder* - characterized by selective deficits in articulatory development;

-*expressive language disorder* - in which the child's ability to use expressive spoken language falls below the normal range, whereas language comprehension is within normal limits;

-*receptive language disorder* - characterized by comprehension deficits usually associated to a production impairment;

-*acquired aphasia with epilepsy* - in which the child loses both receptive and expressive language skills and the onset of the disorder is accompanied by paroxysmal abnormalities on the EEG.

### **Developmental Dysphasia**

A substantial amount of literature has been generated regarding retarded language development in seemingly normal young children. The syndrome is commonly referred to as developmental dysphasia. Although numerous other *classifications* such as congenital word deafness, developmental speech disorder syndrome, alogia, congenital auditory imperception, idiopathic alalia, and idioglossia have been applied, reflecting the many different perspectives on the problem, it seems that the problem being addressed is the same (Benton, 1978: 51).

*Definitions* of developmental dysphasia vary in breadth and depth regarding the manifestations of language difficulties to be considered. According to Wyke, (1980: 40), in children with developmental dysphasia, speech difficulties may have either an external or internal structure. The delayed language development is always the most fundamental symptom. In the internal structure the areas of semantics, syntax, but also grammar could be interfered, which means, for instance, wrong word-order, faulty use of inflections and restricted vocabulary. Leonard et al. (1992: 1077), stressed that developmental dysphasia, or specific language impairment (SLI), is a developmental language disorder in which children display delayed or abnormal language development but have normal non-verbal intelligence and no gross perceptual, behavioral, or neurological deficits. Dysphasics form a relatively heterogeneous population and there may in fact be a variety of related disorders all grouped under the rubric of SLI. Nonetheless, many children with SLI have a similar linguistic profile - a mild to moderate deficit in a range of language areas and a more serious deficit in the use of morphology. Hoeffner (1993: 38), pointed that developmental dysphasia (also referred to as specific language impairment) is a developmental language disorder in which children display delayed or abnormal language development but have normal non-verbal intelligence and no gross perceptual or neurological disorders. According to Lyon (1996: 402), developmental language disorders constitute an extremely complex and large domain of study that can occur outside of the diagnostic net used for learning disabilities, whereas more subtle linguistic deficits co-occur with different types of language disorders. Developmental dysphasia, according to Sarno (1998: 453), refers to the developmental language disorders or specific language impairment is manifest when a child fails to learn to talk normally, but a frank neurological basis is not apparent.

### ***Research on Familial and Genetic Aspects***

According to Gilger (1992, cited in Toppelberg, 2000: 147), *familiarity* of developmental language disorders and phonological disorders has been found in more than 7 studies. The only exception is a study comparing 2- to 3-year-old children with expressive language delay to controls, but expressive language delays (“late talkers”) is considered a risk factor, not a diagnosis, and only a minority of these children have developmental language disorders at follow-up. In developmental language disorders, differing family patterns have been identified: higher prevalence in siblings; higher in fathers, brothers, and sisters (around

29%) than in mothers (7%); and a higher but not sex-biased distribution. These differences may be due to developmental language disorders heterogeneity. In phonological disorders, 24% to 46% of a clinic sample of basic speech delay presented family aggregation. Pragmatic deficits are common among the first-degree relatives of autistic children, but no researchers have addressed whether similar aggregation is found in children with semantic-pragmatic disorder.

*Genetic factors* could make a significant contribution to developmental disorders of speech and language; the analysis of compiled background variables indicates that speech-language problems are genetically influenced (gender and family aggregation). Dlouhá (2007: 332) study of group of 300 children and find positive family history in 185 cases.

Over the years, several studies have identified potential *genetic loci* based on specific phenotypic data for SLI. According to Flax at al. (2003: 531), two genome scans for SLI-susceptibility loci found genome-wide suggestive evidence for loci on 16 and 19 and significant evidence for linkage to 13. O'Brien at al. (2003), pointed that *foxp2* was the first gene characterized in which a mutation affects human speech and language abilities. In their study, samples from children with SLI and their family members were used to study linkage and association of SLI to markers within and around *foxp2*, and samples from 96 probands with SLI were directly sequenced for the mutation in exon 14 of *foxp2*. No mutations were found in exon 14 of *foxp2*, but strong association was found to a marker within the *cftr* gene and another marker on 7q31, both adjacent to *foxp2*, suggesting that genetic factors for regulation of common language impairment reside in the vicinity of *foxp2* (p. 1536).

### **Professional roles and activities of speech-language pathologists psychologist and teacher**

According to American Speech-Language-Hearing Association (2007: 5), *speech-language pathologists* serve individuals, families, and groups from diverse linguistic and cultural backgrounds. Services are provided based on applying the best available research evidence, using expert clinical judgments, and considering clients' individual preferences and values. Speech-language pathologists address typical and atypical communication and swallowing in the following areas:

- *speech sound production* – articulation, apraxia of speech, dysarthria, ataxia and dyskinesia;
- *resonance* – hypernasality, hyponasality, cul-de-sac resonance and mixed resonance;
- *voice* - phonation quality, pitch, loudness and respiration;
- *fluency* – stuttering and cluttering;
- *language* (comprehension and expression) – phonology, morphology, syntax, semantics, pragmatics (language use, social aspects of communication), literacy (reading, writing, spelling), prelinguistic communication (e.g., joint attention, intentionality, communicative signaling), and paralinguistic communication;
- *cognition* – attention, memory, sequencing, problem solving and executive functioning;
- *feeding and swallowing* - oral, pharyngeal, laryngeal, esophageal, orofacial myology (including tongue thrust) and oral-motor functions.

Speech-language pathologists provide clinical services that include the following: prevention and pre-referral, screening, assessment/evaluation, consultation, diagnosis, treatment, intervention, management, counseling, collaboration, documentation and referral.

American Psychological Association (2002: 2), states that Ethics Code applies only to psychologists' activities that are part of their scientific, educational, or professional roles as *psychologists*. Areas covered include but are not limited to the clinical, counseling, and school practice of psychology; research; teaching; supervision of trainees; public service; policy development; social intervention; development of assessment instruments; conducting assessments; educational counseling; organizational consulting; forensic activities; program

design and evaluation; and administration. This Ethics Code applies to these activities across a variety of contexts, such as in person, postal, telephone, Internet, and other electronic transmissions. These activities shall be distinguished from the purely private conduct of psychologists, which is not within the purview of the Ethics Code. Psychologists are committed to increasing scientific and professional knowledge of behavior and people's understanding of themselves and others and to the use of such knowledge to improve the condition of individuals, organizations, and society. Psychologists respect and protect civil and human rights and the central importance of freedom of inquiry and expression in research, teaching, and publication. They strive to help the public in developing informed judgments and choices concerning human behavior. In doing so, they perform many roles, such as researcher, educator, diagnostician, therapist, supervisor, consultant, administrator, social interventionist, and expert witness.

According to Wallace et al. (1992: 260), through interviews, observations, and teaching, *teachers* can also gather valuable information about a student's language use. By engaging in what is known as diagnostic teaching, the teacher can become an invaluable participant in the ongoing assessment and remediation of a child's language deficiencies. It is important, however, for teachers to be thoroughly familiar with the developmental milestones of normal language functioning. Obtaining a case history of the child (in most cases, from the parents) can also be valuable in the initial stages of assessment. Knowing in detail how the child's language has developed can yield information relevant to the problem and includes gaining an understanding of the early stages of the disorder, any physical or emotional condition that may have been or be involved, whether the disorder occurs in other settings and, if so, how it manifests itself, and any insights the parents may have into how best to assess and work with their child.

#### **The case of the identification and treatment of seven year old girl**

In the following, we are going to elaborate the case of a young girl E. B., born in Gjakova, on 22.03.2007. Information provided by parents of the girl during the visit to the speech therapist and the psychologist show that she was the first child. The girl was born normally and timely. According to parents, psycho-physical development of the girl has been normal, however in the verbal aspect the girl has shown constant stagnation. Parents confirmed that there were other cases of this nature in their families. The girl is attending a preschool institution and she is sociable but extremely egocentric.

The girl E. B. has been advised to see a psychologist for psychological examination twice by the speech therapist. The first time before the speech therapy sessions started, and the second time after the conclusion of 20 speech therapy sessions.

The opinion and conclusion of the psychologist after the *first psychological examination* was:

-The child has a slight stagnation in the development of mental and cognitive processes, where the calendar age is CA -7 years and 7 days, while the achieved result shows a mental development of a child of a Mental Age MA - 4 years and 9 months, where the Mental Development Coefficient is MDC - 70. The girl demonstrates infantile behavior and abilities below calendar age. However, no autistic behavior has been detected in her behavior. The most evident deficit has been noted in her speech and articulation.

The opinion and conclusion of the psychologist after the *second psychological examination* was:

-The child has a slight stagnation in the development of mental and cognitive processes, where the Calendar Age is CA -7 years 2 months and 27 days, while the achieved result shows a mental development of a child of a Mental Age MA - 5 years and 6 months, where the Mental Development Coefficient is MDC - 77. The girl demonstrates infantile behavior



and abilities below calendar age. However, no autistic behavior has been detected in her behavior. The most evident deficit has been noted in her speech and articulation.

The psychological report of the girl E. B. shows that there was an overall increase of her abilities. It is worth pointing out that this was achieved owing to, not only the girl's personal engagement during speech therapy sessions, but also the engagement of her close family circle and a broader social circle of the girl.

### **Conclusion**

Based on the evidence collected from this research, it becomes evident that the role of parents, teachers, psychologists and speech-language therapists in identifying and treating children with speech and language disorders is more than necessary. Cooperation among these actors would enable the prevention and elimination of many speech and language disorders which would pose great obstacles in the education of these children in the future.

The research recommends to raise the awareness of the general public on the role of speech-language therapists in education institutions, and cooperation between parents and speech-language therapists in order to reduce the number of children with special needs in general.

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## **SCIENCE, MATH., ICT**

## THE IMPORTANCE OF TEACHING CRITICAL THINKING TO NURSE STUDENTS

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### **Abstract**

The article is a systematic review of the literature about the needs of the healthcare provider- nurses in this case, to be trained during the faculty in order to be able to develop critical thinking after graduation. Nursing is not only a profound human act of care but also a cognitive process that has as final purpose the best patient-centered care. The article is focused on the numerous aspects of nursing process that are inevitably part of a critical thinking process. Studies have shown some of the specific teaching methods which are more effective in teaching critical thinking to this category of students- the nursing students. Critical thinking in nursing is an essential component of professional accountability and quality nursing care. Teaching to nursing students how to think in the decision-making situations prepares them better for their future profession and opens the way for understanding that medical related profession requires life-long learning, which can only be approached by early developing critical thinking abilities to nursing students.

**Keywords:** critical thinking, nursing process, teaching methods, nursing students.

### **The importance of critical thinking skills in nursing field**

Nursing process and critical thinking are connected to one another. When you have the profession in nursing, it is important to be critical. The nurses have the high responsibilities and their responsibilities are increasing from time to time. The increase of the responsibilities affects the additional educational prerequisites and also the core requisites those must be achieved in order to get the degree of nursing. *The standard that has been set and the critical thinking in the nursing process become two things that will be supporting each other in the nursing standard and nurses will need to become the critical thinkers.*

The huge amount of knowledge today, and its continuing exponential growth, precludes a nurse from being an effective professional for long if he or she attempts to function only on the information acquired in school. The information explosion is one factor pointing to the need for lifelong learning (Schank, 1990). Because learning is a life-long process, it is more important that nurses and nurses students be taught how to think rather than what to think.

Critical thinking skill is considered as one of the important skills in nursing field. Nurses are frequently facing some complex situations. They need to have critical thinking skill to analyze situation, to provide some alternative, to consider some other ideas, to develop the taking of a decision. Also they need to reconsider the decision, to evaluate and responsible for that decision and become innovative. Those are part of being thinking critical (Edwards, 2007). Additionally, critical thinking skills will support nurses to provide the most appropriate intervention which will enhance the quality of care. Interestingly, a study which set up to seek the understanding of being a good nurse with nursing students as the sample reveals that one of the characteristics of becoming a good nurse is having critical thinking skills. They contend that by having this skill, nurse will ethically make the right decision and provide the most suitable intervention for their patients (Smith & Godfrey, 2002). Additionally, it is important for nurses to do the self-correction and working based on evidence than personal preferences or beliefs (Profetto-McGrath, Hesketh, Lang, & Estabrooks, 2003).

There is no universally accepted definition of critical thinking; however the Delphi report published by the American Philosophical Association gave us a description of critical thinking in terms of cognitive skills and affective dispositions that was generic with no domain-specific implications. This resulted in a definition of critical thinking "as the process of purposeful, self-regulatory judgment; an interactive, reflective, reasoning process" (Facione, 1990).

The Delphi report described the ideal critical thinker as one who is habitually inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded in evaluation, honest in facing personal biases, prudent in making judgments, willing to reconsider, clear about issues, orderly in complex matters, diligent in seeking relevant information, reasonable in the selection of criteria, focused in inquiry, and persistent in seeking results which are as precise as the subject and the circumstances of inquiry permit.

Critical thinking in nursing is an essential component of professional accountability and quality nursing care. Critical thinkers in nursing exhibit these habits of the mind: confidence, contextual perspective, creativity, flexibility, inquisitiveness, intellectual integrity, intuition, open-mindedness, perseverance, and reflection. Critical thinkers in nursing practice the cognitive skills of analyzing, applying standards, discriminating, information seeking, logical reasoning, predicting, and transforming knowledge” (Scheffer & Rubenfeld, 2000).

Doenges & Moorhouse (2003) described the concept of the nursing process as resolution by reflection, i.e., the nurse makes an assessment of the problem. During the assessment phase data is collected. Next a diagnosis is made using a knowledge base. A plan of action is then developed. Intervention follows based on the diagnosis and action plan. The last phase is reflection on the choices made and then evaluation of the effects of the interventions used. Reflective critical thought, a tenet of critical thinking as a basis for decision making, was also supported by Paul & Heaslip (1995). They saw reflective thought as necessary to insure that the nurse has the depth of knowledge needed to immediately comprehend the practice situation he or she is faced with. The ability to deliver safe, effective and quality nursing care to patients is contingent on the nurse having the necessary knowledge upon which to base decision making.

Critical thinking has been discussed widely by some scholars such as Walters, Alfaro-Laferve, Daly and Clark-Birk (Edwards, 2007). Interestingly, the definition and explanation from those scholars of critical thinking are overlapped; having some similarities and differences. Some people are still confused and misused critical thinking with some other terms like reflective practice, problem solving and decision making. In fact, those terms are related but different. However, those scholars have one similar idea that critical thinking goes beyond those terms (Edwards, 2007). Critical thinking is the *process of way of thinking*, not just solving the problem or making the decision.

O'Connor (2001) defines critical thinking as transferring and applying knowledge and skills in a new situation. She notes that critical thinking is “critical” in nursing since it engages the process of critique and evaluation in the thinking process (O'Connor, 2001). Valiga (2009) acknowledges that there are so many definitions and perceptions about critical thinking. However, she prefers to admit critical thinking as a power in mind to view the world in a discerning way. Indeed, she notes that critical thinking values the interactions with the world which also means considering other ideas, being more curious and aware with other people’s value (Valiga, 2009). Also, critical thinking skills will encourage nurses to be more open mind to other alternatives and innovations (O'Connor, 2001; Valiga, 2009).

The process of nursing will contain with several criteria and they are; assessment, diagnosis, planning, implementation and also evaluation. These five things are the things those will require the burses to be the proficient at critical thinking. It is important to check

on these things when the critical thinking is needed by the nurses. The critical thinking is needed in a lot of aspects of the nurses' job such as when the nurses need to provide the precise identification in the specific problems had by the patients. They need to be detail and also critical to themselves in every time in order to be able to provide identification precisely.

The nursing process is synonymous within the discipline of nursing. It is an organized, systematic approach used by nurses to meet the individualized health care needs of their patients. Alfaro-LeFevre (1999) states that: the nursing process is a systematic method of giving humanistic care that focuses on achieving desired outcomes in a cost-effective fashion. It's systematic in that it consists of five steps. It's humanistic in that it's based on the belief that as we plan and deliver care, we must consider the unique interests, ideals, and desires of the health care consumer (person, family, community). The nursing process is used by nurses worldwide to describe the delivery of nursing care. Its origin can be traced back to 1955 when Hall a nursing theorist described nursing care as a process.

According to Wilkinson (1996), the term nursing process was used to describe a series of steps describing the process of nursing by several nursing authors such as Dorothy Johnson, Ida Jean Orlando, and Ernestine Wiedenbach. The characteristics of the nursing process as defined by Wilkinson (1996) are: dynamic and cyclic; client centered; planned and goal-directed; universally applicable; problem-oriented; and a cognitive process. It is recognized as the foundation for professional nursing practice, and provides the professional nurse with a framework for decision making and problem solving in everyday practice and situations. This process consists of five phases namely: assessment, diagnosis, planning, implementation and evaluation. Alfaro-LeFevre (1999) provides a brief description of the steps of the nursing process as follows:

**Assessment :**

You collect and examine information about health status, looking for evidence of abnormal function or risk factors that may contribute to health problems such as smoking. You also look for evidence of client strengths.

**Diagnosis (Problem Identification):**

You analyze the data (information) and identify actual and potential problems, which are the basis for the plan of care. You also identify strengths, which are essential to developing an efficient plan.

**Planning:**

Here, you do four key things:

**Determine immediate priorities:**

Which problems need immediate attention?

Which ones can wait? Which ones will nursing focus on? Which ones will you delegate or refer to someone else? Which ones required a multidisciplinary approach?

**Establish expected outcomes (goals):**

Exactly what do you expect the patient or client to accomplish, and in what time frame?

**Determine interventions:**

What interventions (nursing actions) will you prescribe to achieve the outcomes?

Record or individualize the plan of care.

Will you write your own plan, or will you adapt a standard plan to meet your patient's specific situation?

**Implementation:**

You put the plan into action-but you don't just act. You act thoughtfully:

Assess the person's current status before acting. Are there any new problems? Has anything happened that requires an immediate change in the plan?

Perform the interventions, monitoring the person carefully and making changes as needed.

What's the response? Do you need to change something? You don't wait until the "formal" evaluation period to make changes if something needs changing today.

### **Report and record**

Are there any signs you must report immediately? What are you going to chart, and where and how are you going to chart it?

To become a professional nurse requires that you learn to think like a nurse. What makes the thinking of a nurse different from a doctor, a dentist or an engineer? It is how we view the client and the type of problems we deal with in practice when we engage in client care. To think like a nurse requires that we learn the content of nursing; the ideas, concepts and theories of nursing and develop our intellectual capacities and skills so that we become disciplined, self-directed, critical thinkers. Nurses will learn about the critical thinking through the application and also experience because experience is always the best teacher in any professions. But first, the nurses will need to know the correct application and the correct application must be ensured to be taught in the institutions. In this requirement, the new nurses will take time of orientation that will allow them to learn more about the procedures, documentation and also the policies of the institution they will be working for. These new nurses will have the mentor who are highly experienced and will evaluate the details of the work of the new nurses.

Nursing education involves adult learners as students. Knowles theorized that adult learners are capable decision makers who need to be active participants in the learning process. The adult learning environment reflects a relaxed and informal climate where process activities and collaboration are encouraged and evaluation is by the teacher, oneself, and peers. Adult learners construct knowledge by linking concepts together in meaningful ways based on former learning and life experiences.

Clinical experience is the most important learning strategy in developing clinical judgment. You cannot learn that skill from a book. Moreover, the clinical experience provides opportunity to observe other healthcare professionals in the healthcare field who are known for their competence and ability.

The most important teaching/learning strategies in the development of clinical judgments have been observing procedures being done then having to do them myself, and then basic repetition from there. Each time that someone perform procedures, and take care of patients, he/she have seen new things and learned more. So, a person's judgment has become more in tune and accurate from this. You see that a student can read it in a book a thousand times but until the student sees it demonstrated and implement it himself, it is just a bunch of words. You would definitely say that having more clinical experience would help develop better critical thinking skills in regard to clinical judgments.

The nursing process is seen as a decision making approach that promotes critical thinking in nursing. It is compared with the scientific method of solving problems. The steps are similar in the two approaches, as they proceed from identification of the problem to evaluation of the solution. One difference though is that the scientist identifies the problem first and then collects the data. By contrast, the nurse collects the data and then determines the problem.

Wilkinson (1996) equated the cognitive skills required by nurses to the intellectual skills used in the nursing process namely: creative thinking, critical thinking, problem solving and decision making. The critical thinking concepts, described by authors identifying the problem, gathering pertinent data, identifying and challenging assumptions, beliefs, ideas and issues and imagining and exploring alternatives creatively can be paralleled with the steps of the nursing process as described earlier

## Conclusion

The teaching and learning strategies that students described as facilitating development of clinical judgment areas follows: case studies that can be displayed on concept maps; having in-depth discussion with instructors while observing clinical dynamics; and making joint decisions on care. The development of these strategies is critical in the learning environment and lies heavily on the quality and quantity of the interactive discussions students have with faculty and other nurses who openly reflect what they know, how they know it, and who they are in nursing.

However, no strategy was perceived as more important from the data than the desire for “more clinical time and experience.” The challenge for faculty is identifying appropriate clinical facilities despite the challenges often encountered in the evolving healthcare environment

Developing excellent critical thinking skills for nurses takes time, patience and a commitment to view our role beyond the tasks of being a nurse. The quintessential gifts nurses bring to the delivery of health care are the ability to assess, anticipate risk, and intervene appropriately.

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## **‘YOUNG SCIENTISS’ IN THE AREA OF FLORINA: A BOARD GAME OF ELECTRICITY, MIXTURES AND LOCAL HISTORY**

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### **Abstract**

In this poster we will describe a ‘Scientific’ board game that was developed during the school year 2013-2014 in the 4<sup>th</sup> grade of Vevi’s Primary School in the broader area of Florina. The kit integrates the local history of Vevi with basic concepts of electricity and mixtures. In the poster we are going to: (i) present the different parts of our board game, (ii) explain its rules (iii) analyze the integration of the three different topics (history, electricity, mixtures) and (iv) discuss the multiple learning tasks for developing critical thinking.

In particular, we will present the dashboard of the board game that is a three-dimensional model of the Prefecture of Florina as well as three boxes which include the materials of mixtures and electricity and the tasks for the local history. We will also describe the main characteristics of learning environment in which the ‘Scientific’ board game was developed: nine primary students with cooperation with two primary student teachers created the board game in a playful inquiry environment. Each player of the board game is a ‘researcher’ of Florina, passes by several villages and is asked to pass successfully some tests, as to turn on the lights from the car using conductors and not using insulators, to distinguish with the right way a mixture in its constituents and to answer correctly in questions that are related to town of Florina. In this context we will discuss specific tasks that promote students’ critical thinking such as, collecting data, making questions, listening different ideas and solutions, writing a poster, presenting orally a “scientific” kit.

**Keywords:** Science Festival, critical thinking, interdisciplinary approach, open inquiry learning environment, primary education

### **Introduction**

For the implementation of the 2<sup>nd</sup> Festival of Science and Technology, we worked for a school year in the 4<sup>th</sup> grade of Vevi’s Primary School, that it had nine students (six boys and three girls).

Regarding the issue «Young Scientists’ in the area of Florina: a board game of electricity, mixtures and local history», it came of discussion with our students about their interests and occupations. Even if these three issues (mixtures, electricity and local history) seem to be unbounded, we tried to integrate smoothly within a board game.

### **Theoretical Background**

The theoretical background of our work is separated in three sections: Interdisciplinarity, open inquiry learning environment and Science Festival.

*Interdisciplinarity* involves the combining of two or more academic disciplines into one activity. It is about creating something new by crossing boundaries, and thinking across them. It involves researchers, students, and teachers in the goals of connecting and integrating several academic schools of thought, professions, or technologies—along with their specific perspectives—in the pursuit of a common task. Julie Klein (1990) attests that "the roots of the concepts lie in a number of ideas that resonate through modern discourse—the ideas of a unified science, general knowledge, synthesis and the integration of knowledge".

Interdisciplinary teaching is a method, or set of methods, used to teach a unit across different curricular disciplines. There are many different types, or levels, of interdisciplinary teaching. On one end, schools might employ an interdisciplinary team approach, in which teachers of different content areas assigned to one group of students who are encouraged to correlate some of their teaching (Vars, 1991). The most common method of implementing integrated, interdisciplinary instruction is the thematic unit, in which a common theme is studied in more than one content area (Barton & Smith, 2000).

*Inquiry-based learning* (IBL) starts by posing questions, problems or scenarios -- rather than simply presenting established facts or portraying a smooth path to knowledge. Inquirers will identify and research issues and questions to develop their knowledge or solutions IBL includes problem-based, and is generally used in small scale investigations and projects, as well as research (Centre for Excellence in Enquiry-Based Learning, 2012).

An important aspect of IBL is the use of *open learning*. Open learning has no prescribed target or result that people have to achieve. There is an emphasis on the individual manipulating information and creating meaning from a set of given materials or circumstances (Hannafin et al., 1999). Open learning has many benefits. It means students do not simply perform experiments in a routine, but actually think about the results they collect and what they mean. With traditional non-open lessons there is a tendency for students to say that the experiment 'went wrong' when they collect results contrary to what they are told to expect. In open learning there are no wrong results, and students have to evaluate the strengths and weaknesses of the results they collect themselves and decide their value (Hmelo-Silver, 2004)

A *Science Festival (SF)* is a festival that shows themes of science and technology with the same freshness and flair that would be expected from an arts or music festival. Events can be varied, including lectures, exhibitions, workshops, live demonstrations of experiments, guided tours, and panel discussions. There may also be events linking science to the arts or history, such as plays, dramatised readings, and musical productions. The core content is that of science and technology, but the style comes from the world of the arts. SFs are also aimed at playing an important and informal part in education. Many have events specifically aimed at students and/or teachers, such as workshops or offering curriculum-linked workshops, and science shows to regional schools throughout the year. SFs are organized in many countries, as United Kingdom, Italy, Sweden, Slovenia, United States and Canada (Orkney International Science Festival website, 2012)

### **Developmental Phase of the project**

The developmental phase took place in the classroom in 12 two-hour meetings. For the easier processing it can be divided into four subsections:

***Familiarization Step:*** This stage is our first two-hour meeting. We decided to play with the kids to get out of the traditional non-open lessons and we discussed their interests and occupations. So, we decided the topic that we were going to deal with. We thought that it would be better for the children to choose their own topic, so their interest remains undiminished throughout our collaboration.

***Contact with the objects:*** At this stage the students came into contact with the theoretical framework of local history and they became familiar with electricity and mixtures. More specifically, we tried to divide each two-hour meeting at the theoretical and the practical part. So, in the first place children learned about local history and in the second they became familiar with electricity and mixtures through experiments and games. In addition, our students were trying to become familiar with the scientific terminology of each object.



**Picture 1:** Experimental task concerning electricity

**Construction Step:** After we completed the course of familiarization of students with the objects, we passed to the creation of our educational kit and the construction of our board game, which we will analyze in the next chapter.

**Reflection Step:** After the construction of our board game and completion of our educational kit, we asked to the students to record their impressions and we discussed throughout our collaboration. In addition, we prepared for the presentation of our educational kit in the Festival of Science and Technology that followed.

At this point we must emphasize to the active participation of all students in each subsection of this phase and to our effort to develop critical thinking of our students through this topic of interdisciplinary approach. During the program, the students collected data to create their board game, made questions to learn more about mixtures and electricity and listened different ideas and solutions from each other.

### **The Educational Kit**

Our educational kit's name is «Young Scientists' in the area of Florina» includes the dashboard of our board game and three other smaller boxes. The dashboard is a three-dimensional model of the Prefecture of Florina and it is made from materials that children easily found. We tried to construct mountains, river, lakes, houses and roads with paper, glue, different types of cardboards, colourful markers and pins. Also, we made pions and dice from colourful papers.

As the three boxes, they include the materials of mixtures and electricity and the tasks for the local history. Especially, the box of mixtures includes the materials for making and distinguishing mixtures, such as funnel, strainer, filters, magnet, fasteners, rice, beans, lentils, water and semolina. The box of electricity includes conductors and insulators and a model of a car. We made the car from wood, cardboards, photos of a car and an electricity circle that includes two bulbs, two batteries and cables.

As the story of our game, each player is a 'researcher' of Florina, passes by several villages and is asked to pass successfully some tests, as to turn on the lights from the car using conductors and not using insulators, to distinguish with the right way a mixture in its constituents and to answer correctly in questions that are related to town of Florina.



**Picture 2:** The 3D model of the Florina area



**Picture 3:** The educational kit entitled “Researchers’ Kit”

### **Participation in SF**

The second SF was implemented on the World Environment Day. So SF took place at the river, Sakouleva, in Florina in the centre of the city with the presence of all the schools and residents of Florina.

In fact that day the students came early and happily greeted guests. They explained the rules, played with guests and willingly answered their queries and questions. Moreover, the students visited other groups that involved, knowing their work and coming in contact with different disciplines.

In conclusion, we found out that the students presented successfully their kit. Even, they used critical thinking by the questions were put to them and upon their contact with the work of other groups.



**Picture 4:** A scene of the SF

### **Discussion**

In this poster we described a pilot implementation of an interdisciplinary project. Our main focus was on the applicability of activities. So we did not put any specific research questions. However through the involvement with students we can conclude that the whole process seemed to help the students as follows:

- All of them, even those which were marked as weak, willingly participated in learning cognitive subjects and the construction of the educational kit.
- Improved their individual behavior and their behavior when they working in groups, as well the whole construction were based on teamwork.
- Developed the four language skills and their critical ability through discussions on the subjects, activities and the ultimate rethinking of the program.
- Dealing with science in an open, exploratory and interdisciplinary environment helped students think that teaching these courses is not only in the narrow confines of the textbook and the classroom, where the teacher explains and students simply memorize.
- They developed the ability of oral presentation and the ability to understand and answer the questions of visitors.
- They came into contact with other people, ideas and subjects which reinforced their critical thinking and a sense of respect towards the ideas and interests of others.
- They understood deeper the subjects they dealt with.

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## MATHEMATICAL GAMES WITH LETTERS OF ALBANIAN AND GREEK LANGUAGES

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### Abstract

Mathematics is the basis of a large number of sciences and also a great help to many scientific areas. In this paper we will make a connection between mathematics and the alphabet letters (the Albanian alphabet and the Greek alphabet). This may be called a mathematical game with letters of Albanian and Greek languages.

So, with the numbers written in Albanian language, for example NJË, DY, TRE, etc., and the numbers written in Greek language, for example the numbers ENA, ΔΥΟ, ΤΡΙΑ, etc., we will create different equations and numerical equalities, which will have a linguistic and also a mathematical meaning. The essence of this game is the replacement of letters of Albanian and Greek alphabets with digits of decimal numerical system, in a way that different letters correspond to different digits and the equations or equalities created have a linguistic and also a mathematical meaning.

As an illustration, we introduce two of them, one with the letters of the Albanian alphabet and other with the letters of the Greek alphabet. The problem is to replace the letters of the Albanian and Greek alphabet, with a digit of decimal numerical system in a way that every letter must belong a different digit and the following equalities have mathematical meaning:

$$6+2 \cdot \text{NJË} = \text{TETË},$$

$$7 \cdot \text{ENA} = \text{EITTA}.$$

**Keywords:** Digits, divisibility, decimal numerical system

In a book that contains entertaining mathematical problems, we noticed two particular problems, the solution of which requires knowledges from the number theory. Below we present these problems without solutions.

Replace the letters of the English alphabet, with a digit of decimal numerical system in a way that every letter must belong a different digit and the following equalities have a mathematical meaning:

1.  $9 \cdot \text{ONE} = \text{NINE}$

2.  $\frac{\text{SIX}}{\text{NINE}} = \frac{2}{3}$ .

As a solution to the first problem, we have  $\text{ONE} = 650$  and  $\text{NINE} = 5850$ , while for the second problem we have  $\text{SIX} = 942$  and  $\text{NINE} = 1413$ .

In this paper we take similar kind of problems, but using the Albanian and Greek alphabet letters. Exactly, we will present three problems with Albanian alphabet letters and three problems with Greek alphabet letters. The requirements are the same, the problem is to replace the letters of the Albanian and Greek alphabet, with a digit of decimal numerical system in a way that every letter must belong a different digit and the equalities have mathematical meaning.

Five of the six problems that we will present have an unique solution.

**Problem 1.** Replace the letters of the Albanian alphabet, with a digit of decimal numerical system in a way that every letter must belong a different digit and the following equalities have a mathematical meaning:

$$\frac{TRE}{PES\ddot{E}} = \frac{3}{5}.$$

Proof. Since

$$PES\ddot{E} = \frac{5}{3} \cdot TRE \leq \frac{5}{3} \cdot 987 = 1665,$$

then,  $P = 1$  and  $E \leq 6$ . By the conditions of the problem, we have:

$$5 \cdot TRE = 3 \cdot PES\ddot{E},$$

therefore,  $5 \mid PES\ddot{E}$ , namely  $\ddot{E} = 0$  or  $\ddot{E} = 5$ .

For  $\ddot{E} = 0$  have:

$$50 \cdot TR + 5 \cdot E = 3000 + 300 \cdot E + 30 \cdot S,$$

therefore:

$$10 \cdot TR = 600 + 59 \cdot E + 6 \cdot S.$$

From this equality it follows that digit  $E$  is even number and  $10 \mid 59E + 6S$ . Since  $\ddot{E} = 0$  and

$E \leq 6$ , then  $E = 2, 4, 6$ . For  $E = 2$ , considering that  $10 \mid 59E + 6S$ , we take  $S = 2$  or  $S = 7$ .

But  $S = 2$  is unacceptable because  $S \neq E$ . Also for  $S = 7$ , we have:

$$10 \cdot TR = 600 + 59 \cdot 2 + 6 \cdot 7 = 760 \Rightarrow TR = 76,$$

which is unacceptable because  $S \neq T$ . For  $E = 4$ , considering that  $10 \mid 59E + 6S$ , we take

$S = 4$  or  $S = 9$ . But  $S = 4$  is unacceptable because  $S \neq E$ . Also for  $S = 9$  have:

$$10 \cdot TR = 600 + 59 \cdot 4 + 6 \cdot 9 = 890 \Rightarrow TR = 89,$$

which is unacceptable because  $S \neq R$ . For  $E = 6$  since  $10 \mid 59E + 6S$  we take  $S = 1$  or  $S = 6$ .

But  $S = 1$  is unacceptable because  $S \neq P$ . Also  $S = 6$  is unacceptable because  $S \neq E$ .

Since all the values for the digit  $E$  do not provide acceptable solution to the problem, then it follows that  $\ddot{E} \neq 0$ , namely  $\ddot{E} = 5$ .

So far, we have  $P = 1$ ,  $\ddot{E} = 5$  and  $E \leq 6$ . Have:

$$5 \cdot TRE = 3 \cdot PES\ddot{E} = 3000 + 300E + 30S + 15,$$

from which it follows that:

$$TRE = 600 + 60E + 6S + 3 \Rightarrow 10 \cdot TR = 603 + 59 \cdot E + 6 \cdot S.$$

The digit  $E$  must be odd number. But, since  $E \leq 6$  and  $E \neq 1, 5$ , we have  $E = 3$ . Have:

$$10 \cdot TR = 603 + 59 \cdot 3 + 6 \cdot S = 780 + 6 \cdot S,$$

from which it follows that:

$$5 \cdot TR = 390 + 3 \cdot S.$$

Then  $5 \mid S$ , namely  $S = 0$  (the value  $S = 5$  is unacceptable because otherwise  $\ddot{E} = 5 = S$ ).

Replacing above we have:

$$5 \cdot TR = 390 + 3 \cdot S = 390 \Rightarrow TR = 78,$$

namely  $T = 7$  and  $R = 8$ .

The only solution to the problem is  $P = 1$ ,  $\ddot{E} = 5$ ,  $S = 0$ ,  $T = 7$ ,  $R = 8$  and  $E = 3$ :

$$\frac{TRE}{PES\ddot{E}} = \frac{783}{1305} = \frac{3}{5}. \blacksquare$$

**Problem 2.** Replace the letters of the Albanian alphabet, with a digit of decimal numerical system in a way that every letter must belong a different digit and the following equalities have a mathematical meaning:



$$\frac{PES\ddot{E}}{N\ddot{E}NT\ddot{E}} = \frac{5}{9}.$$

Proof. Since:

$$N\ddot{E}NT\ddot{E} = \frac{9}{5} \cdot PES\ddot{E} \leq \frac{9}{5} \cdot 9876 < 17777,$$

we have  $N = 1$ . Also, from the equation:

$$9 \cdot PES\ddot{E} = 5 \cdot N\ddot{E}NT\ddot{E},$$

it follows that  $\ddot{E} = 0$  or  $\ddot{E} = 5$ , because  $5 \mid PES\ddot{E}$ .

For  $\ddot{E} = 0$ , dividing both sides by 10, we have:

$$9 \cdot PES = 5 \cdot NONT = 5 \cdot 101T.$$

Since:

$$562 < \frac{5 \cdot 1012}{9} \leq PES \leq \frac{5 \cdot 1019}{9} < 567,$$

it follows that  $P = 5$  and  $E = 6$ . Replacing the found values, we have:

$$9 \cdot 56S = 5 \cdot 101T \Rightarrow 9S = 10 + 5S.$$

But, since  $5 \mid S$ , then  $S = 5$  which is unacceptable. Consequently the value  $\ddot{E} = 0$  do not provide an acceptable solution to the problem.

Until now we have  $N = 1$  and  $\ddot{E} = 5$ . Have:

$$PES\ddot{E} = \frac{5 \cdot N\ddot{E}NT\ddot{E}}{9} = \frac{5 \cdot 151T5}{9},$$

so that:

$$8391 < \frac{5 \cdot 15105}{9} = PES\ddot{E} = \frac{5 \cdot 15195}{9} < 8442,$$

it follows that  $P = 8$ . Replacing the found values, we have:

$$9 \cdot 8ES5 = 5 \cdot 151T5,$$

and making appropriate simplifications it follows that:

$$90 \cdot E + 9 \cdot S + 2 = 350 + 5 \cdot T.$$

It is clear that  $5 \mid 4S + 2$ , from where we get  $S = 2$  or  $S = 7$ . For  $S = 2$  have:

$$90 \cdot E + 20 = 350 + 5 \cdot T \Rightarrow 18 \cdot E = 66 + T,$$

it follows that  $T = 6$  and  $E = 4$ , because  $6 \mid T$ . So we get the solution  $PES\ddot{E} = 8425$  and

$$N\ddot{E}NT\ddot{E} = 15165. \text{ For } S = 7 \text{ have:}$$

$$90 \cdot E + 65 = 350 + 5 \cdot T \Rightarrow 18 \cdot E = 57 + T,$$

which doesn't give solution in the set  $\square$ .

Finally, the problem has the unique solution:

$$\frac{PES\ddot{E}}{N\ddot{E}NT\ddot{E}} = \frac{8425}{15165} = \frac{5}{9}. \blacksquare$$

**Problem 3.** Replace the letters of the Albanian alphabet, with a digit of decimal numerical system in a way that every letter must belong a different digit and the following equalities have a mathematical meaning:

$$(1 + NJ\ddot{E})^2 = KAT\ddot{E}R.$$

Proof. Since:

$$10234 \leq KAT\ddot{E}R \leq 98765,$$

and

$$101 < \sqrt{10234} \leq 1 + NJ\ddot{E} \leq \sqrt{98765} < 315,$$

then the values of digit  $N$  are 1, 2 or 3.

The digit  $\ddot{E}$  is different from 9, because otherwise the number  $KAT\ddot{E}R$  would end with two zeros. Taking one by one values of digit  $\ddot{E}$ , we have:

$\ddot{E} = 0 \Rightarrow R = 1$ , the number  $KAT\ddot{E}R$  ends with 01,

$\ddot{E} = 1 \Rightarrow R = 4$ , the number  $KAT\ddot{E}R$  ends with 14,

$\ddot{E} = 2 \Rightarrow R = 9$ , the number  $KAT\ddot{E}R$  ends with 29,

$\ddot{E} = 3 \Rightarrow R = 6$ , the number  $KAT\ddot{E}R$  ends with 36,

$\ddot{E} = 4 \Rightarrow R = 5$ , the number  $KAT\ddot{E}R$  ends with 45,

$\ddot{E} = 5 \Rightarrow R = 6$ , the number  $KAT\ddot{E}R$  ends with 56,

$\ddot{E} = 6 \Rightarrow R = 9$ , the number  $KAT\ddot{E}R$  ends with 69,

$\ddot{E} = 7 \Rightarrow R = 4$ , the number  $KAT\ddot{E}R$  ends with 74,

$\ddot{E} = 8 \Rightarrow R = 1$ , the number  $KAT\ddot{E}R$  ends with 81.

- The cases when the number  $KAT\ddot{E}R$  ends with 14 and 74 are excluded, because these numbers are divisible by 2, but not by 4. The case when the number  $KAT\ddot{E}R$  ends with 45 is excluded, because is divisible by 5, but not by 25.
- The case when the number  $KAT\ddot{E}R$  ends with 01. For  $\ddot{E} = 0$ , taking one by one values of digit  $J$ , we find  $J = 5$ . But, none of the numbers 151, 251 and 351 satisfy the conditions of the problem, so that in this case we do not get any solution.
- The case where the number  $KAT\ddot{E}R$  ends with 29. For  $\ddot{E} = 2$ , taking one by one values of digit  $J$ , we find  $J = 2$  or  $J = 7$ . But, none of the numbers 123, 223, 323, 173, 273 and 373 do not satisfy the conditions of the problem, so even in this case we do not get solution of the problem.
- The case when the number  $KAT\ddot{E}R$  ends with 36. For  $\ddot{E} = 3$ , taking one by one values of digit  $J$ , we find  $J = 4$  or  $J = 9$ . But, none of the numbers 144, 244, 344, 194, 294 and 394 do not satisfy the conditions of the problem, so that in this case we do not get solution of the problem.
- The case where the number  $KAT\ddot{E}R$  ends with 56. For  $\ddot{E} = 5$ , taking one by one values of digit  $J$ , we find  $J = 1$ . But, none of the numbers 116, 216 and 316 not satisfy the conditions of the problem, so that in this case we do not get solution.
- The case where the number  $KAT\ddot{E}R$  ends with 69. For  $\ddot{E} = 6$ , taking one by one values of digit  $J$ , we find  $J = 3$  or  $J = 8$ . But, none of the numbers 137, 237, 337, 187, 287 and 387 do not satisfy the conditions of the problem, so that in this case we do not get solution of the problem.
- The case where the number  $KAT\ddot{E}R$  ends with 81. For  $\ddot{E} = 8$ , taking one by one values for the digit  $J$ , we find  $J = 0$  or  $J = 5$ . In this case, from the numbers 109, 209, 309, 159, 259 and 359, only the numbers 209, 309 and 259 satisfy the condition of the problem, so that we get three solutions of the problem:

$$(1+258)^2 = 67081, \text{ where } N = 2, J = 5, \ddot{E} = 8, K = 6, A = 7, T = 0, R = 1.$$

$$(1+208)^2 = 43681, \text{ where } N = 2, J = 0, \ddot{E} = 8, K = 4, A = 3, T = 6, R = 1.$$

$$(1+308)^2 = 95481, \text{ where } N = 2, J = 0, \ddot{E} = 8, K = 9, A = 5, T = 4, R = 1. \blacksquare$$

In the problems below, we will take letters from the Greek alphabet.

**Problem 4.** Replace the letters of the Greek alphabet, with a digit of decimal numerical system in a way that every letter must belong a different digit and the following equalities have a mathematical meaning:

$$\frac{TPIA}{ENNEA} = \frac{1}{3}.$$

Proof. Since

$$ENNEA = 3 \cdot TPIA \leq 3 \cdot 9876 = 29628,$$

Then  $E = 1$  or  $E = 2$ . From the equation  $ENNEA = 3 \cdot TPIA$ , it follows that the possible values of digit  $A$  are  $A = 0$  or  $A = 5$ . We have the following cases:

- The cases where  $A = 0$  and  $E = 1$ . Have

$$10000 + 1000 \cdot N + 100 \cdot N + 10 = 3000 \cdot T + 300 \cdot P + 30 \cdot I,$$

$$1000 + 110 \cdot N = 300 \cdot T + 30 \cdot P + (3 \cdot I - 1).$$

Then  $10 \mid 3 \cdot I - 1$ , from where we get  $I = 7$ . Replacing, we have

$$100 + 11 \cdot N = 30 \cdot T + 3 \cdot P + 2,$$

from where we get  $10 \mid 3 \cdot P - N + 2$ . Replacing  $N = 2, 3, 4, 5, 6, 8, 9$  we get:

$$N = 2 \wedge 10 \mid 3 \cdot P, \quad N = 3 \wedge 10 \mid 3 \cdot P - 1, \quad N = 4 \wedge 10 \mid 3 \cdot P - 2, \quad N = 5 \wedge 10 \mid 3 \cdot P - 3,$$

$$N = 6 \wedge 10 \mid 3 \cdot P - 4, \quad N = 8 \wedge 10 \mid 3 \cdot P - 6, \quad N = 9 \wedge 10 \mid 3 \cdot P - 7.$$

All allowed cases are:

$$N = 6 \wedge P = 8 \text{ and } N = 8 \wedge P = 2.$$

For  $N = 6 \wedge P = 8$  we have

$$100 + 66 = 30T + 26 \Rightarrow T = \frac{14}{3},$$

Which is not allowed. For  $N = 8 \wedge P = 2$  have

$$100 + 88 = 30T + 8 \Rightarrow T = 6.$$

In this case we have the solution  $A = 0, E = 1, I = 7, N = 8, P = 2, T = 6$ .

- The cases where  $A = 0$  and  $E = 2$ . Have

$$20000 + 1000 \cdot N + 100 \cdot N + 20 = 3000 \cdot T + 300 \cdot P + 30 \cdot I,$$

$$2000 + 110 \cdot N = 300 \cdot T + 30 \cdot P + (3 \cdot I - 2).$$

Then  $10 \mid 3 \cdot I - 2$ , from where we get  $I = 4$ . Replacing have

$$200 + 11 \cdot N = 30 \cdot T + 3 \cdot P + 1,$$

from where we get  $10 \mid 3 \cdot P - N + 1$ . Replacing  $N = 1, 3, 5, 6, 7, 8, 9$  we get:

$$N = 1 \wedge 10 \mid 3 \cdot P, \quad N = 3 \wedge 10 \mid 3 \cdot P - 2, \quad N = 5 \wedge 10 \mid 3 \cdot P - 4, \quad N = 6 \wedge 10 \mid 3 \cdot P - 5,$$

$$N = 7 \wedge 10 \mid 3 \cdot P - 6, \quad N = 8 \wedge 10 \mid 3 \cdot P - 7, \quad N = 9 \wedge 10 \mid 3 \cdot P - 8.$$

All allowed cases are:

$$N = 5 \wedge P = 8, \quad N = 6 \wedge P = 5, \quad N = 8 \wedge P = 9, \quad N = 9 \wedge P = 6.$$

For  $N = 5 \wedge P = 8$  we have

$$200 + 55 = 30T + 25 \Rightarrow T = \frac{23}{3},$$

which is not allowed. For  $N = 6 \wedge P = 5$  we have

$$200 + 66 = 30T + 16 \Rightarrow T = \frac{25}{3},$$

which is not allowed. For  $N = 8 \wedge P = 9$  we have

$$200 + 88 = 30T + 28 \Rightarrow T = \frac{26}{3},$$

which is not allowed. For  $N = 9 \wedge P = 6$  have

$$200+99=30T+19 \Rightarrow T=\frac{28}{3},$$

which is not allowed. Consequently, the cases  $A=0$  and  $E=2$  give no solution.

• The case where  $A=5$  and  $E=1$ . Have:

$$10000+1000\cdot N+100\cdot N+10+5=3000\cdot T+300\cdot P+30\cdot I+15,$$

$$1000+110\cdot N=300\cdot T+30\cdot P+3\cdot I.$$

Then  $10 \mid 3\cdot I$ , from where we get  $I=0$ . Replacing, we have:

$$100+11\cdot N=30\cdot T+3\cdot P,$$

from where we get  $10 \mid 3\cdot P-N$ . Replacing  $N=2, 3, 4, 6, 7, 8, 9$  we get:

$$N=2 \wedge 10 \mid 3\cdot P-2, \quad N=3 \wedge 10 \mid 3\cdot P-3, \quad N=4 \wedge 10 \mid 3\cdot P-4, \quad N=6 \wedge 10 \mid 3\cdot P-6,$$

$$N=7 \wedge 10 \mid 3\cdot P-7, \quad N=8 \wedge 10 \mid 3\cdot P-8, \quad N=9 \wedge 10 \mid 3\cdot P-9.$$

All allowed cases are:

$$N=2 \wedge P=4, \quad N=4 \wedge P=8, \quad N=6 \wedge P=2, \quad N=7 \wedge P=9, \quad N=8 \wedge P=6,$$

$$N=9 \wedge P=3.$$

For  $N=2 \wedge P=4$  we have

$$100+22=30T+12 \Rightarrow T=\frac{11}{3},$$

which is not allowed. For  $N=4 \wedge P=8$  we have

$$100+44=30T+24 \Rightarrow T=4,$$

which is not allowed because  $T=N$ . For  $N=6 \wedge P=2$  have

$$100+66=30T+6 \Rightarrow T=\frac{16}{3},$$

which is not allowed. For  $N=7 \wedge P=9$  have

$$100+77=30T+27 \Rightarrow T=5,$$

which is not allowed because  $T=A$ . For  $N=8 \wedge P=6$  have

$$100+88=30T+18 \Rightarrow T=\frac{17}{3},$$

which is not allowed. For  $N=9 \wedge P=3$  have

$$100+99=30T+9 \Rightarrow T=\frac{19}{3},$$

which is not allowed. Then, the case  $A=5$  and  $E=1$  makes no solution.

• The case when  $A=5$  and  $E=2$ . Have

$$20000+1000\cdot N+100\cdot N+20+5=3000\cdot T+300\cdot P+30\cdot I+15,$$

$$2000+110\cdot N+1=300\cdot T+30\cdot P+3\cdot I.$$

Then  $10 \mid 3\cdot I-1$ , and we get  $I=7$ . Replacing have

$$200+11\cdot N=30\cdot T+3\cdot P+2,$$

getting  $10 \mid 3\cdot P-N+2$ . Replacing  $N=0, 1, 3, 4, 6, 8, 9$  we get:

$$N=0 \wedge 10 \mid 3\cdot P+2, \quad N=1 \wedge 10 \mid 3\cdot P+1, \quad N=3 \wedge 10 \mid 3\cdot P-1, \quad N=4 \wedge 10 \mid 3\cdot P-2,$$

$$N=6 \wedge 10 \mid 3\cdot P-4, \quad N=8 \wedge 10 \mid 3\cdot P-6, \quad N=9 \wedge 10 \mid 3\cdot P-7.$$

All allowed cases are:

$$N=0 \wedge P=6, \quad N=1 \wedge P=3, \quad N=6 \wedge P=8.$$

For  $N=0 \wedge P=6$  we have

$$200 = 30T + 20 \Rightarrow T = 6,$$

which is not allowed because  $T = P$ . For  $N = 1 \wedge P = 3$ , we have

$$200 + 11 = 30T + 11 \Rightarrow T = \frac{20}{3},$$

which is not allowed. For  $N = 6 \wedge P = 8$  have

$$200 + 66 = 30T + 26 \Rightarrow T = 8,$$

which is not allowed because  $T = P$ . Then, the cases  $A = 5$  and  $E = 2$  do not provide solutions.

Finally, the problem has unique solution:

$$\frac{TPIA}{ENNEA} = \frac{6270}{18810} = \frac{1}{3}.$$

**Problem 5.** We have the words:

$\Delta Y O$ ,  $\Pi E N T E$ ,  $E \Pi T A$ ,  $O K T \Omega$ ,  $E N N E A$ ,  $\Delta E K A$ ,  $E N \Delta E K A$ ,  $\Delta \Omega \Delta E K A$ ,

In which have been used ten letters from the Greek alphabet. Replace the letters of the Greek alphabet, with a digit of decimal numerical system in a way that every letter must belong a different digit and the following equalities have a mathematical meaning:

$$2 \mid \Delta Y O, 5 \mid \Pi E N T E, 7 \mid E \Pi T A, 8 \mid O K T \Omega, 9 \mid E N N E A,$$

$$10 \mid \Delta E K A, 11 \mid E N \Delta E K A, 12 \mid \Delta \Omega \Delta E K A,$$

Proof. Since  $10 \mid \Delta E K A$ , then  $A = 0$ . Also, since  $5 \mid \Pi E N T E$  and  $E \neq A$ , then  $E = 5$ .

Since  $9 \mid E N N E A$ , then the number

$$E + N + N + E + A = 2N + 10,$$

should be multiplier of number 9. But, since  $10 \leq 2N + 10 \leq 28$ , then have:

$$2N + 10 = 18 \Rightarrow N = 4,$$

or

$$2N + 10 = 27 \Rightarrow N = \frac{17}{2},$$

namely  $N = 4$ .

Since

$$E \Pi T A = 5000 + 100 \cdot \Pi + 10 \cdot T = 7(714 + 14 \cdot \Pi + T) + 2 + 2 \cdot \Pi + 3 \cdot T,$$

And  $7 \mid E \Pi T A$ , then  $7 \mid 2 + 2 \cdot \Pi + 3 \cdot T$ .

Since  $4 \mid \Delta \Omega \Delta E K A$ , then two-digit number  $KA = 10 \cdot K + A = 10 \cdot K$  should be multiplier of number 4, namely the digit  $K$  should be even number. So  $K \in \{2, 6, 8\}$ . Since  $3 \mid \Delta \Omega \Delta E K A$ , then the number

$$2\Delta + \Omega + K + A + E,$$

should be multiplier of number 3, namely  $3 \mid 2 \cdot \Delta + \Omega + K + 2$ .

Since  $8 \mid O K T \Omega$ , then the three-digit number  $KT\Omega$  should be multiplier of number 8, namely  $8 \mid KT\Omega$ .

Since  $2 \mid \Delta Y O$ , then the digit  $O$  must be even number.

Since  $11 \mid E N \Delta E K A$ , then the number

$$E - N + \Delta - E + K - A = \Delta + K - 4,$$

should be multiplier of number 11. But, since  $-4 \leq \Delta + K - 4 \leq 14$ , then  $\Delta + K = 4$  or  $\Delta + K = 15$ . If  $\Delta + K = 4$ , then  $\Delta = 1 \wedge K = 3$  and  $\Delta = 3 \wedge K = 1$ , which are not allowed

because the number  $K$  is an even number. Consequently,  $\Delta + K = 15$ , so we get  $\Delta = 7 \wedge K = 8$  and  $\Delta = 9 \wedge K = 6$ . We have the following cases:

- The case where  $\Delta = 9$  and  $K = 6$ . Since  $A = 0$ ,  $E = 5$ ,  $N = 4$ , and also  $7 \mid 2 + 2 \cdot \Pi + 3 \cdot T$ ,  $3 \mid 2 \cdot \Delta + \Omega + K + 2$ ,  $8 \mid K T \Omega$ ,  $2 \mid O$ , conclude that this case makes no solution.
- The case where  $\Delta = 7$  and  $K = 8$ . Considering the conclusions  $A = 0$ ,  $E = 5$ ,  $N = 4$ , and also  $7 \mid 2 + 2 \cdot \Pi + 3 \cdot T$ ,  $3 \mid 2 \cdot \Delta + \Omega + K + 2$ ,  $8 \mid K T \Omega$ ,  $2 \mid O$ , we find the unique solution of the problem:

$A = 0$ ,  $Y = 1$ ,  $O = 2$ ,  $\Pi = 3$ ,  $N = 4$ ,  $E = 5$ ,  $\Omega = 6$ ,  $\Delta = 7$ ,  $K = 8$ ,  $T = 9$ ,  
namely

$\Delta Y O = 712$ ,  $\Pi E N T E = 35495$ ,  $E \Pi T A = 5390$ ,  $O K T \Omega = 2896$ ,  $E N N E A = 54450$ ,  
 $\Delta E K A = 7580$ ,  $E N \Delta E K A = 547580$ ,  $\Delta \Omega \Delta E K A = 767580$ .

**Problem 6.** We have the words:

$\Delta Y O$ ,  $T \Pi A$ ,  $\Pi E N T E$ ,  $E \Pi T A$ ,

corresponding respectively to the numbers 2, 3, 5, 7 which are the first four prime numbers. In this words are used ten letters from the Greek alphabet, the digits of numerical decimal system. The problem is to replace the letters of the Greek alphabet, with a digit of decimal numerical system in a way that every letter must belong a different digit and, the four numbers are prime numbers, the digits 2, 3, 5 and 7 be used more than once and if  $x < y$ , then the digit  $x$  must not be used more than digit  $y$ .

Proof. In this problem we will need to have a list of the prime numbers.

The ten letters repeated as below:

$\Delta$	$Y$	$O$	$T$	$P$	$I$	$A$	$\Pi$	$E$	$N$
↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
1	1	1	3	1	1	2	2	3	1

Since only the letters  $T$ ,  $A$ ,  $\Pi$  and  $E$  are repeated more than once, then we have  $\{T, A, \Pi, E\} = \{2, 3, 5, 7\}$ . But, since  $2, 3 < 5, 7$ , the letters  $A$  and  $\Pi$  are repeated twice while the letters  $T$  and  $E$  are repeated three times, then  $\{A, \Pi\} = \{2, 3\}$  and  $\{T, E\} = \{5, 7\}$ . Since the only prime number ended with digit 2 is number 2, then we have:

$A = 3$  and  $\Pi = 2$ .

For the same reason we have:

$T = 5$  and  $E = 7$ .

So we have

$E \Pi T A = 7253$ ,

which is prime number.

About the number  $\Pi E N T E$ , replacing  $E = 7$ ,  $T = 5$  and  $\Pi = 2$ , have:

$\Pi E N T E = 27N57$ ,

where the letter  $N$  take values  $N = 0, 1, 4, 6, 8$  or  $9$ . Only for  $N = 4$  we get the prime number  $\Pi E N T E = 27457$ .

About the number  $T \Pi A$ , we have  $T \Pi A = 5 \Pi 3$  and the letters  $P$  and  $I$  takes values  $0, 1, 6, 8$  and  $9$ . Proving one by one all possible values of  $P$  and  $I$ , we have the only prime number:

$T \Pi A = 5683$ ,

Namely  $P = 6$  and  $I = 8$ .

About the number  $\Delta Y O$  remains the digits 0, 1 and 9, but the only prime number which has in its composition such digits is the number 109, therefore

$\Delta Y O = 109$ ,  
namely  $\Delta = 1$ ,  $Y = 0$  and  $O = 9$ .

The unique solution to the problem is

$\Delta Y O = 109$ ,  $T P I A = 5683$ ,  $\Pi E N T E = 27457$ ,  $E \Pi T A = 7253$ .

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## SCIENCE AND TECHNOLOGY EDUCATION. TEACHERS' PERCEPTIONS FOR TEACHING SCIENCE AND TECHNOLOGY

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### Abstract

Although teaching of Science has a dominant position in curricula, nonetheless it seems that students encounter considerable difficulties in both declarative and procedural knowledge of Science. This inadequacy of most students in understanding these concepts may be due to the fact that a large number of “concentrated meanings” is given in short time. Knowledge provided is quite abstract and unlinked with their every day’s life. Also, secondary education is more focused on pupils’ examination rather than on their education. Something similar happens with technological education, where the majority of students are graduating technologically illiterate and therefore inadequate for their participation in technologically developed society. It is obvious, therefore, that the status quo for the education of Science and Technology needs to be changed.

In this paper are presented the trends on the relationship of science and technology in education including a literature review that focuses on teaching issues of Science and Technology Education in Greece and abroad, as well as the relationship between Science and Technology education and a qualitative research focused on teacher’s perceptions for the relationship between

these subjects in education, which designed and carried out in academic year 2010-2011.

The tool used for data collection is the semi structured interviews and analysis of data was performed by the method of grounded theory.

Although the results of this research are not generalizable because of the small and unrepresentative sample, however, revealed the following conclusions:

All participating teachers recognized that there is a relationship between Science and Technology regardless of their theoretical background there is not a systematic attempt from Greek educational policy to correlate these two fields in education it should be a connection between these two thematic fields educational programs involving issues Science - Technology and Society are more attractive for students.

**Keywords:** Science education, Technology education, teachers’ perceptions

### Introduction

Although teaching of Science has a dominant position in curricula, nonetheless it seems that students encounter considerable difficulties in both declarative and procedural knowledge of Science.

This inadequacy of most students in understanding these concepts may be due to the fact that:

- ✓ a large number of “concentrated meanings” is given in short time
- ✓ the provided knowledge is quite abstract and unlinked with their every day life (their schemata) also,
- ✓ secondary education is more focused on pupils’ examinations rather than on their education (Bencze 2001).

Something similar happens with technological education, where the majority of students are graduating technologically illiterate and therefore inadequate for their participation in technologically developed society (van Eijck & Claxton, 2009).



It is obvious, therefore, that the status quo for the education of Science and Technology needs to be changed.

Many teachers all over the world, interested in improving the quality of curricula in both Science and Technology, argue that it should be a closer relationship between these fields. Therefore require that curricula give more emphasis to capacity for a more "practical culture" (Gardner 1993).

#### **The relationship between science and technology**

According to Gardner's classification (1994a), the relationship between science and technology is given below:

- ✓ Science precedes Technology.
- ✓ Science and Technology are independent
- ✓ Technology precedes Science
- ✓ Technology and science interact with each other.

The above classification was based on the assumption that Science and Technology are not the same thing. Bencze (2001), believes that science and technology is a single field called “technoscience” making any distinction useless.

#### **The relationship between science and technology in education**

##### ***Technology and Science as distinct fields***

Proponents of this approach want Science and Technology to be two different fields that do not overlap each other. They employ theoretical arguments which claim that the nature of scientific and technological knowledge is completely different, as well as the goals of technology and Science education. (Polanyi 1958; Wolpert 1992).

##### ***Technology as an example of applied Science - Technology in the Service of Science***

For many years training in science has been a rather abstract issue where it was difficult for students to recognize the connection of the knowledge taught in Science lessons to their everyday lives. This relationship is obvious mainly via technological products found all around us. Therefore, there was a tendency in Science Education to demonstrate how scientific knowledge is applied in technological products (de Vries 1994b).

Studies have shown that activities focused on technological achievements provide good conditions for learning Science because, these activities give many opportunities to students to develop representational idioms associated with Technology and Science (Roth 2001). In this kind of approaches teaching Technology is of less importance than the understanding of science (Layton 2000).

##### ***The integrated study of Science and Technology***

Bencze, proposes a combined training program of Science and Technology called “**technoscience**” where science and technology are treated as equivalent. The approach has the potential to help students achieve access to society as well as to scientific and technological achievements.

##### ***Programs Science - Technology - Society***

During 1980s, many researchers have proposed the integration of Science - Technology and Society (STS) into the curriculum of science in order to focus on social issues.

#### **The qualitative research**

##### **Research questions**

The main research question of this qualitative research was:

What are the perceptions of teachers' of Science and Technology in secondary education, for the relationship between Science and Technology focused on secondary education.

This question was specialized on the following individual sub-questions:

✓ What are the perceptions of teachers on the relationship between Science and Technology ?

✓ What are the perceptions of teachers on the relationship between the fields of science and technology into the existing curriculum?

✓ What are the recommendations of teachers on the relationship between the fields of science and technology in the curriculum? And

✓ What are their perceptions for Science - Technology – Society programs?

### **Research approach**

The research tool used for data collection was the semi structured interviews.

#### **Sample**

In this research involved six secondary school teachers who teach Science lessons and six teachers who teach Technology in Gymnasium or Lyceum. The theoretical background of these teachers is studies in Science Education and in Technical University. Because this kind of studies include a wide range of specialties, the selected sample were teachers from as many different disciplines as possible. These specialties were chosen because of the relevance of their studies and their teaching subject with the present survey.

### **Procedure for data analysis**

Data analysis was performed by the **method of grounded theory**. The strategies used were essentially **constant comparison** and **coding procedures**. This research though was mainly inductive character nevertheless contains elements of deductive reasoning as well as the findings of the literature were guided this research to some extent.

### **Conclusions**

Although the results of this research are not generalizable because of the small and unrepresentative sample, however, revealed the following conclusions.

All participating teachers recognized that:

✓ there is a relationship between Science and Technology regardless of their theoretical background

✓ there is not a systematic attempt from Greek educational policy to correlate these two fields in education

✓ it should be a connection between these two thematic fields

✓ educational programs involving issues Science - Technology and Society are more attractive for students.

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## STUDENTS' EVALUATION, A CHALLENGE BETWEEN OBJECTIVITY AND SUBJECTIVITY

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### Abstract

Human behavior is so complex that they cannot be described or summarized by an isolated note. The implementation of new evaluation methods, the usage of teaching methods that enhance the continuous and criterional assessment will significantly improve the objectivity of the process and the quality of students' training.

The survey deals with the importance of objectivity of continuous and final evaluation of students in comparison with the difficulty and subjectivity of teachers through theoretical data methodological, statistical and quantitative analysis.

In this case a descriptive design was used through interviews and questionnaires with a random choice of subjects. Open-ended questions and closed questions were used during the research. The survey included 20 teachers and 110 students of the University “F.S Noli” Korçë.

Application of an interactive philosophy, the construction of criterional evaluation's instruments, formalization of objectives and a closer cooperation teacher-student will result in a more objective evaluation of the student.

A good evaluation system (continuous) allows the students to develop their skills of self-evaluation, to verify the acquisition of knowledge and competence, to effectively set objectives, to understand the philosophy of higher education, to verify the validity of their methods of work, to be prepared for the final evaluation, to analyze the causes of failure, and to prepare for professional life.

On the other hand, it allows the teacher to develop professional skills, apply the philosophy of interactive higher education, to accompany the students toward success, to verify its working methods, to conduct a qualitative analysis of the results, to analyze the causes of failure, to modify the teaching objectives.

**Keywords:** evaluation, objective, subjective, student, teach

### Introduction

Why Evaluation?

Student preparation begins, continues and ends with the assessment. The greatest difficulties between students and teachers are encountered during the evaluation process. Abuses, voluntary and no voluntary deviations made to this process by persons competent or not, motivated us to realize this research.

Our reflection on the reality in terms of quality of student's formation highlights a number of problematic issues that deserve attention and a research work. One of these problems is the process of student assessment that directly affects the quality of education that is the quality of the final formation at the university.

This process is often followed by subjectivity, while the opposite should happen. The person who makes the estimation (lecturer) is therefore a subject so he is disposed to subjectivity, but how can we resist this tendency which is often present intentionally or involuntary when assessing a student?

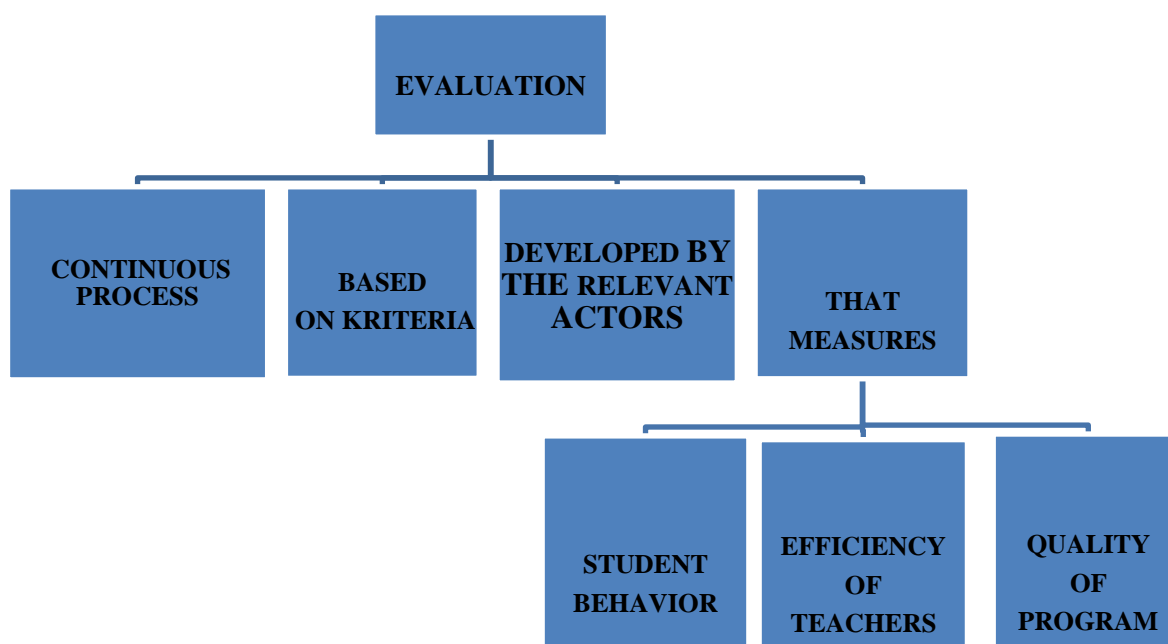


In order the assessment to be efficient there should be applied the best techniques and best psychological principles.

Since many years it is known that spiritual readiness is a necessary element in learning process. A student is receptive if he understands and accepts the values and goals that are set.

It is already known that people tend to participate in activities in which they are successful. This phenomenon is known as "The Law of Thorndike effect." Students should understand how to behave in order to succeed. Thus for example, if a teacher elaborate tests which need a strong memory, students need to learn by heart. As a conclusion "The evaluation system determines the educational activity that students will use during the lesson".

According to the experiments it was concluded that individuals learn better if they are evaluated regularly, this helps them understand whether they work well or not (formative assessment).



## Methods

There is a difference between desired continuous evaluation (formative) and semester evaluation realized by the pedagogues, which causes a disorder in pedagogical tracking of the student which should be at the center of our attention.

The creation of standard evaluation instruments, the application of an interactive education philosophy, formalization of objectives and a closer cooperation between the lecturer and the student will lead to an objective continuous assessment.

The data collection is realized through interviews and questionnaires to randomly selected subjects.

For interviews, it was determined this distribution: 10 pedagogues, 10 students of University Fan S. Noli Korce, Nursing Department.

For interviews, it was determined this distribution: 20 pedagogues, 100 students of University Fan S. Noli Korce, Nursing Department.

### **Preparation of instruments for data collection process.**

In relation to the interviews I prepared in advance some open questions about the scope of the study and its key concepts. (Evaluation, objectivity, subjectivity, and the reality).

In the framework of the structured survey I prepared a questionnaire with 10 closed questions with some alternatives which aimed at collecting information on how to assess students, criticism and complaints of the students and pedagogues about this process, transparency of continuous evaluation, the impact on the final assessment, the strengths, weaknesses and the factors that influence this process.

Through a structured questionnaire with 11 questions divided in two subject categories we aimed to understand their level of involvement in this process, their willingness to apply successfully the continuous student evaluation and the interactive teaching philosophy in higher education. We also aimed to point out the weaknesses, potential obstacles and necessary conditions for improvement and qualitative changes.

### Results and discussion

30% of students do not know about the continuous assessment, one reason may be the fact that some of them are in the first year, and it shows a lack of information or they have neglected it because of their lack of knowledge about student’s regulations where it is explained the continuous assessment. A small number of mainly part-time pedagogues give too much of importance to final evaluation and neglect continuous evaluation.

In terms of providing information about ongoing student assessment, at the end of the semester, 50% of them do not know how many points they have received in continuous assessment. This requires a greater involvement of the teachers, because this expresses a lack of transparency on their part.

In terms of pedagogue’s objectivity in continuous evaluation process 20% of students think that pedagogues are not objective, 10% did not know, while 70% think for the impartiality of pedagogues. Despite the fact that we may not have an absolute recognition of student’s competencies and their degree of subjectivity, these data show us that there is still much work to be done on our part to reduce the degree of subjectivity. 20% is a figure that should be taken in consideration, so there is enough space for change and improvement.

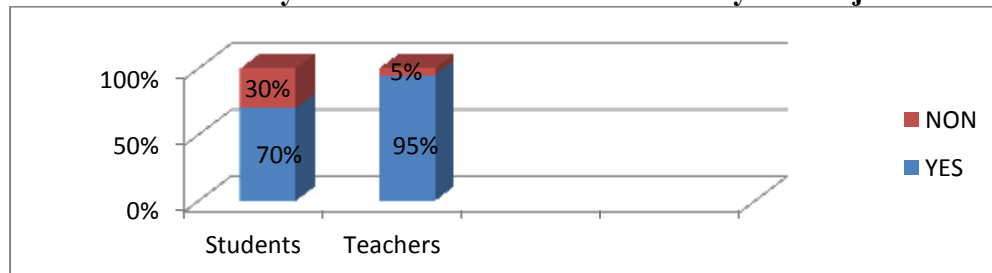
In many responses from the two categories it emerges the need for changes and improvements in three main aspects in terms of ongoing evaluation.

- In methodological aspect
- Types of evaluation instruments
- In transparency and exchange of information

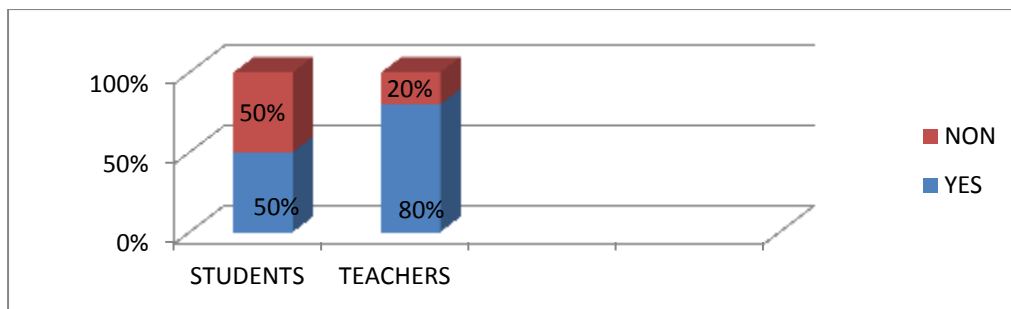
Lecturers are the first to take on the change, and in fact they have the opportunity to change and improve teaching methods for the benefit of students who should be at the center of our attention.

### Graphic presentation of results

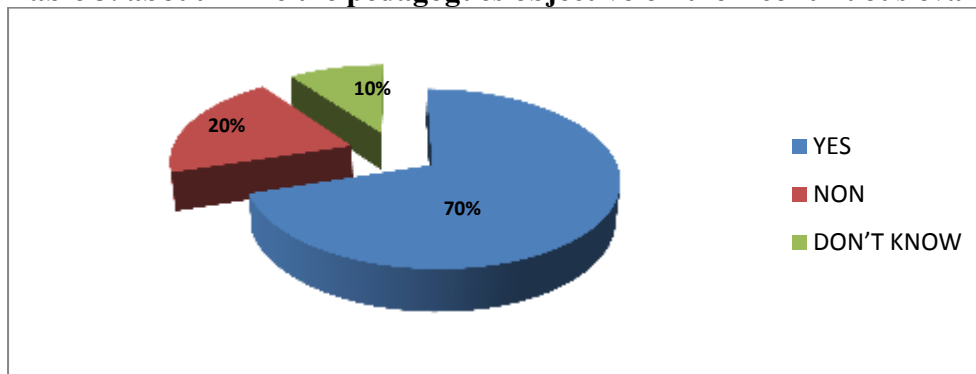
**Table 1 about: “Do you use continuous evaluation in your subject?”**



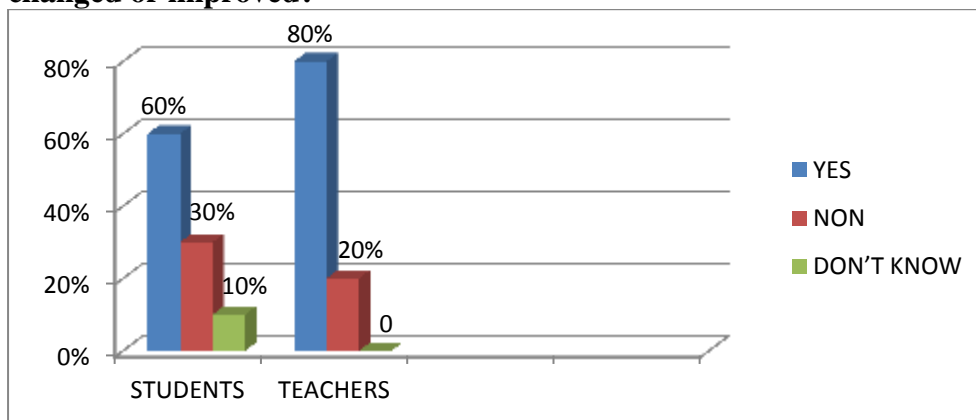
**Table 2. about “Are you informed by the pedagogue on the results of continuous evaluation at the end of the semester?”**



**Table 3. about “ Are the pedagogues objective on their continuous evaluation?”**



**Table 4. about “Do you think that the instruments of continuous evaluation must be changed or improved?”**



### Conclusion

We can never find a single way or a solution in the form of a miracle, it is important to try, and use our skills and those of our colleagues.

A good evaluation system (continued) allows the student:

To develop his skills of self-evaluation, to verify the acquisition of knowledge and competence, effective to fix objectives, to understand the philosophy of higher education, to verify the validity of his methods of work, to be prepared for the final evaluation, to analyze the causes of failure , to prepare for professional life.

On the other hand allows the teacher:

To develop professional skills, apply the philosophy of interactive higher education, to accompany the student toward the success, to verify its working methods, to conduct a qualitative analysis of the results, to analyze the causes of failure, to modify the teaching objectives.

Paolo COELHO says: “When we travel toward a target, it is very important to pay attention to the road we travel. This road teaches us the best way how to act and enriches the journey that we do”.

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## IN-SERVICE PRIMARY TEACHERS' VIEWS AND PRACTICES FOR PROMOTING INNOVATIVE TEACHING-LEARNING ENVIRONMENTS ABOUT SCIENCE

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### Abstract

In the last two decades numerous papers and books focused on innovative inquiry teaching-learning environments that could support students to develop critical reasoning abilities, including the ability to pose questions and investigate them, to select, record and interpret data and information from multiple sources, to be able to analyse and link their data and information, to reach conclusions seeking out evidence, as well as to understand the purpose and methods of science.

This paper focuses on teachers' views related to parameters which facilitate the innovation of Science teaching in primary school, so that students can invent some “higher rationale” to explain the world. The research follows the qualitative paradigm, aiming at deepening in the teachers' views. A semi-structured interview was applied to 10 primary school teachers (5 men and 5 women), having experience from the fifth and the sixth grades in the area of Florina. The 26 questions of the research tool referred to subjects pertaining to the aims and content of Science teaching, the procedures that the teachers use, the evaluation of teaching approaches they apply, and the context of their instruction.

The collected data reach conclusions concerning the Science textbooks, the connection of the instruction with the geographical and social context of Western Macedonia, the need for cooperation among teachers, the enrichment of teaching practices through the ICT, as well the use of visual literacy and interdisciplinary approaches. According to the teachers' views, students should be more intensively engaged in learning approaches through experiments, get used to the development of argumentation which includes scientific terms, get more used to ICT, and link their experiences and interests with Science concepts and laws. The conclusions will be correlated to a three-dimensional model focusing on the pedagogical content knowledge that Science teachers should have.

**Keywords:** Science teaching in primary education, pedagogical content knowledge in Science, teachers' views, reflection

### Theoretical background: Science and Critical thinking

Inquiry teaching-learning environments (ITLEs) are considered to be one of the science education hallmarks for promoting critical thinking (CT) and reflection as well as for understanding science concepts and phenomena (Flick 2006, Sherin, Edelson & Brown 2006, Carin, Bass & Contant 2005). Consequently, ITLE can facilitate students' inventing some “higher rationale” (Hastie & Davies 2001: 313) to explain the world, especially in the framework of science teaching.

A variety of science inquiry activities are incorporated in the Primary School programme, which correspond to a range from simple fundamental skills for the first four grades to more complicated ones in the upper grades. For instance, skills of inquiry for students of grades 1-4 are: pose a question about objects or organisms, plan and conduct a simple investigation, observe, use a simple tool to gather data, communicate and critique orally or written or drawn, etc. Respectively, the fundamental abilities of inquiry that correspond to grades 5-8 are: design and conduct a scientific investigation, analyse and interpret data, develop predictions, design and use models, interpret data and information from multiple sources, reach conclusions seeking out evidence, think critically and logically

to make the relationships between evidence and explanations, recognize and analyse alternative explanations, writing, editing collaboratively or keeping science journals (Carin 2005, National Research Council (NRC) 2000, Sutman, Schmuckler & Woodfield 2008). As far as the ICT use is concerned, in the earliest years students are expected to develop skills “in the use of computers and calculators for conducting investigations” (NRC 2000: 162), while in the later period (grades 5-8), they are anticipated to “gather, store, retrieve, and organize data, using hardware and software” (NRC 2000: 164).

The above inquiry characteristics are in congruence with critical thinking skills, as described in a definition for CT delivered by The Critical Thinking Community: *CT is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action* (Scriven & Paul 2007: 1). Yet, the attainment of CT is not a simple enterprise, regardless of the definitions, one might adopt for this concept (Moon 2008: 19-23). Even at the college level, we often realize that students fail to reach to deeper conceptions of CT (Moon 2008: 113-121), e.g. to analyse the credibility of information or to reflect on their conclusions critically (Shraw et al. 2006). It is necessary then for stakeholders to apply systematic inquiry on this subject from the beginning of students’ schooling. For example, they should study the critical thinking ability of students while integrating different types of learning skills, such as problem solving and cognitive strategies, with metacognition and students’ self-efficacy concerning their engagement in multiple tasks and in different contexts, e.g. hands-on or minds-on out-of school activities (Anderson, Nielsen & Nashon 2009, Schraw, Crippen & Hartley 2006).

On the other hand, students’ achievement is related to qualifications of teachers (Zimmerman 2007, Osborn & Dillon 2008), who should be able to integrate innovative approaches in their teaching within ITLEs. They are expected to keep up with developments related to their own skills, knowledge and pedagogy (Osborn & Dillon 2008), as well as students’ learning readiness and diverse backgrounds with regard to perspectives of good teaching (Vermunt and Endedijk 2011). These practices seem to shift from traditional, lecture based teaching to active, self-regulated student learning. As a result, teachers’ pedagogic role demands their ability to apply student-centered learning approaches, to promote metacognitive regulative strategies for students, to design assignments, to coach project groups and to monitor and reflect on learning and thinking strategies of students (Bakkenes, Vermunt & Wubbels 2010).

### **The research framework**

According to the above rationale, the Action "SCIENCE TEACHERS EDUCATION" of the Project "ARISTEIA the II", being held in the Department of Pedagogy, University of Western Macedonia, Greece (2014-2015) aims at examining in depth the factors which influence the adoption of innovative ITLEs by teachers in the compulsory education. Emanating from the large amount of research data collected, in this paper we confined our research lens and narrowed down the topic, so that it will be in correspondence with the concept of inquiry learning. Consequently, we focused on the factors that contribute to the promotion of students’ CT within ITLEs.

More precisely, based on the assumption that there should be some parameters which facilitate the adoption of innovations, so that students can think critically in science, we try to explore the teachers’ views and practices which denote –directly, potentially or implicitly– a crucial significance for the promotion of students’ critical thinking skills about science. In a word, our reasoning follows a rationale as illustrated in **Fig. 1**.

Fig. 1 The focus of our research

The study set out to answer the following research questions:

What are the primary teachers’ views and practices about ITLEs for science education?  
To what degree primary school teachers’ views and practices about ITLEs are correlated to the enhancement of students’ critical thinking skills?

### **Research method**

According to the theoretical background described in the previous section, we examined certain inquiry learning-related issues in the light of critical thinking skills. For this purpose, we followed a qualitative research method as the most suitable to achieve depth and richness in the results concerning the teachers’ views and practices (Patton 2002: 385-391).

#### *Sample*

Ten primary school teachers (5 male and 5 female) participated in our research. All of them had experience in science teaching in grades 5-6 of schools in the broader area of Florina.

#### *Research tool*

The initial data was collected with the use of a semi-structured interview, which consisted of 26 questions. In this paper, we focus on the teachers’ statements concerning their views and practices as far as the following five thematic axes of ITLEs are concerned: expected learning outcomes, students’ activities, assessment methods and difficulties that students meet when being taught science.

#### *Data analysis method*

The research produced both quantitative and qualitative data. We applied the method of content analysis (Basit 2010: 194-196) in order to analyse the produced data. The teachers’ answers (raw data) were recorded during the interview and were transcribed into written texts, which were later analysed on the basis of our themes of interest (Miles & Huberman 1994).

### **Results**

Regarding the expected learning outcomes that teachers pose in their instruction, we recognize four conceptual categories concerning attainments related either to procedures, knowledge or attitudes on part of the students. These outcomes can be more concrete if we see them in combination with teachers’ related answers, as illustrated in **Table 1**.

Table 1 about Primary teachers’ views about the expected learning outcomes in science lessons

Concerning the kind of activities the teachers usually ask their students to implement, we classified the participants’ statements into two categories depending on the extent to which they include detailed descriptions in their statements (**Table 2**).

Table 2 about Primary teachers’ statements about their students’ activities in science lessons

It is obvious that the majority of teachers give general descriptions about the students’ activities. Since the most frequent answer refers to the students’ use of ICT (9), it is worth noticing some representative examples in their answers which underline ICT advantages, such as: “the subject matter becomes visible and understandable”, “the students’ interest is increased” or “the students become more confident, since they succeed”. However, they don’t give answers corresponding to a detailed use of ICT, such as collecting data, writing notes or representing virtually a science phenomenon. Moreover, they don’t connect the use of ICT with investigation and experiments.

It is also worth mentioning that teachers’ general descriptions –especially their statement “learn to investigate”– are in line with the frequent expected learning outcome “learning to do inquiry” (see Table 1). In any case, 7 teachers admitted that there is no a science laboratory in their school, while 3 stated that the only available laboratory is that of the ICT.

On the other hand, the specific descriptions of students’ activities, as identified in the teachers’ answers, are related to the inquiry learning environment. It is worth mentioning,

however, that only one teacher refers to the “control of variables” as a strategy that he occasionally implements in his classroom, which is a representative inquiry process for promoting CT.

Concerning the methods teachers use in order to evaluate their lessons, we organized our collected data in three assessment categories related to students reflection, emotions and cognitive procedures, as illustrated in **Table 3**.

Table 3 about Teachers’ statements about the methods they use to evaluate their science lessons

In the first column we included aspects which we met more than one times in the teachers’ entries, while in the second column we include aspects which we met only once in each category. Firstly, we can see that the categories of “students reflective responses” and “students’ emotional responses” include 7 and 6 aspects respectively, while the category of “students’ knowledge evaluation” includes only 2 aspects. The teachers’ evaluation seems to be based mainly on the student’s reflective and emotional responses to the instruction and less on parameters that could be used for the control of the acquisition of the subject matter knowledge. However, if we take into account the number of teachers’ entries which correspond to these aspects, we find out that in 5 cases teachers choose to evaluate their science lessons on the basis of students’ “answer to questions” and in 4 cases they give emphasis to the students’ “enthusiasm with the lesson”.

As for the difficulties the students face while approaching science concepts and phenomena, the teachers’ entries correspond to three categories of answers (**Table 4**).

Table 4 about Teachers’ views about students’ difficulties to approach science content

The majority of them underline the problem of language appealing, for example, that the students cannot use scientific terms. They also refer to the abstract or concrete character of scientific concepts and phenomena, such as the propagation of light and the concept of energy. Last but not least, teachers focus on the importance of using senses in order for the students to understand the phenomena and properties of nature; otherwise, they argue that students develop difficulties in understanding the taught science content.

### **Conclusions and discussion**

As far as the first research question is concerned, the participant teachers refer to ITLEs for science education as a framework of experiments and experiential learning, which supports students in order to pose and investigate questions, to make experiments and reach to conclusions, to understand concepts and science phenomena, to develop citizenship awareness concerning natural environment and to have a positive attitude to science. The teachers give priority to procedural knowledge (e.g. learning to do inquiry), as well as to cognitive and emotional students’ development. They do not refer, though, to more analytical procedures that are not ensured within the ITLEs, such as the students’ ability to accurately record and interpret data and information from multiple sources, to analyse and link their data and information, to make conclusions seeking out evidence, as well as to understand the purpose and methods of science (Sutman, Schmuckler & Woodfield 2008).

With regards to the second research question, taking the research data into consideration, we can argue that the participants’ views and practices about ITLEs do not seem to promote the students’ critical thinking skills in a balanced way. We could say that the teachers mainly refer to critical thinking skills using a simple and general wording, without mentioning in detail parameters which could help students to enhance inquiry and improve their ability to think critically, e.g. making accurate measurements, deciding what evidence should be used, recognizing alternative explanations etc. Furthermore, they do not deepen and do not refer analytically to the concrete ways in which they use simple materials and the ICT. We can assume, then, that the use of ICT in science teaching supports simple inquiry skills and does not help students to think critically in high level (Moon 2008: 52).



Moreover, the teachers pay attention to the students’ interest in science and their personal communication with them in the matter of their satisfaction from the instruction. This adds a critical thinking dimension to the teachers’ themselves estimations, which are mainly based on the connection between CT and emotions or CT, curiosity and reflection (Moon 2008: 67-73, 75).

On the other hand, the teachers argue that the students develop difficulties in understanding science concepts and phenomena due to factors related to cognitive development and language reasons; at the same time, they maintain that the students’ lack of experiential learning does not facilitate their efforts. At this point there seems to be a contradiction in the teachers’ statements, since the students participate in experiments to a great extent, as they had argued before.

Moreover, the teachers do not refer to skills that could facilitate students’ understanding of science concepts and phenomena and language skills development at the same time, such as describing observations, clarifying ideas, reviewing or summarizing data, forming logical arguments about the cause-and-effect relationships in the experiment etc. The role of language in CT, though, is extremely important, in the sense that “the communication of the thinking is conveyed, distorted, precise or not precise, clear or not clear, subject to manipulation, filled with assumptions, and so on” (Moon 2008: 73).

All in all, we could argue that the participants encapsulate –actually they denote the encapsulation of– a number of dimensions of CT into a simple descriptive framework that underpins the manner they orchestrate their teaching and students’ learning within ITLEs.

Having summarized the most significant issues we identified in the teachers’ answers, we can go a step further in order to connect the teachers’ statements with the fundamental abilities of inquiry, as they are put forward by the NRC (2000). Some points that are worth to be commented are as follows:

- All teachers give emphasis to experiments. However, they do not deepen in the functions of an experiment, such as the systemic observation, the clarification of ideas etc.
- The teachers do not use pedagogical terms in order to analyse their views; instead, they draw up examples from their personal experience, especially when they need to clarify theoretical pinpoints of their teaching methodology.
- To a great extent, the teachers develop assessment procedures without using standard criteria (e.g. work sheets), so as to prove the efficiency of their instruction. Their estimations seem to be based on intuitive parameters, since they mainly take into consideration the students’ emotional responses and the general impressions they themselves form with regard to the students’ reflection to the instruction.
- The participants perceive the concept of ‘innovation’ in a narrow sense, since they only refer to external/observational characteristics of teaching. They just leave out the analytical procedures which are responsible for the clarification of terms, e.g. differentiation between description and explanation.

Therefore, the teachers of our sample mostly refer to fundamental abilities of inquiry which correspond to low grades of primary school, as they are described in the NRC (2000). These are procedures that involve ‘rule-following’, thus being unlikely to achieve real depth of CT (Moon 2008). For example, it is worth noting the statement of a teacher according to whom “the experiments are not always successful and learning is successful when there is a result”. In the above sense, the participants’ views and practices reveal concepts and activities that seem to reflect low depth of CT, which is mainly descriptive and superficial. On the other hand, achieving depth of CT is more “holistic and organic”; in particular, it is related to an individual’s state of “epistemological understanding” (Moon 2008: 115).

The above conclusions lead to the need for further in-depth study of teachers’ practices with regard to inquiry learning which helps students to be critical thinkers

(Enthoven & De Bruijn 2010). This could be related to recent findings, according to which Greek science teachers are dedicated to the idea of “students’ manipulation” and neglect domain specific qualities of their professional profile in their everyday practice (e.g. situational constraints such as the use of science laboratory at school, emphasis on pedagogical content knowledge etc) (Anastasiadou & Dimitiradou 2013).

In an effort to offer new insights or expand the ways we followed in facing the research problem, we maintain that in their everyday school practice, primary teachers should ask themselves an ever remaining question: What do we need to know about CT in order to support it properly within inquiry teaching-learning environments? (Moon 2008: 6).

The conclusions of this research will be correlated to a three-dimensional model focusing on the pedagogical content knowledge that primary teachers should have. This correlation is expected to introduce innovations in Science teaching and connect these innovations to different, upgraded frames of reference for CT.

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## IN-SERVICE SECONDARY TEACHERS' IDEAS AND PRACTICES ABOUT TEACHING AND LEARNING IN SCIENCE EDUCATION

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### Abstract

This study aims to explore in-service teachers' ideas about teaching organization and the respective teachers and students' activities affecting teaching and learning in secondary science education. Data were collected from ten in-service secondary teachers (6 female, 4 male) through the use of semi-structured interviews each one lasting about 50 minutes. All interviews were audio-taped and transcribed verbatim and bottom up categories were developed. Analysis revealed that teaching is mostly based on the conduction of experiments (9) and the use of book (5), while less than half of teachers prepare a lesson plan (4). Only a few teachers start with an example from the everyday life (3), set goals (2), introduce mathematics formulas (2), organize the necessary ICTs (2) and summarize at the end of the lesson (3). On the other hand, many of them consider experiments (5) and software accompanied with working sheets (3) as the most effective practices. In particular, they believe that the role of experiment is important and assisting (5), creating queries and giving satisfaction to students (4). During science classes, students are interested about sciences (9), discussion and argumentation (9), doing experiments (4), learn to investigate (4), and working in groups (3). However, there is a significant number of teachers (3) reporting that their students are boring during the lessons. Teachers use various ways to support their students when they face difficulties with concepts (10), provide them opportunities for argumentation and expression (9), while they use various ways to increase their interest (7). In addition, teachers consider that their students learn to inquire through the way of their teaching (4). In summary, further teachers' support is needed in order to incorporate in their teaching the scientific practices and reinforce in such a way learning in science education.

**Key words:** secondary teachers, science education, teaching organization, in-service teachers' view

### Introduction

Inquiry has become a central term in the rhetoric of last decades science education reforms (Abd-El-Khalick et al. 2004). There is accumulating evidence that, inquiry-based learning allows learners to develop key scientific ideas through learning how to investigate and build their knowledge and understanding of the world by using skills employed by scientists such as “raising questions, collecting data, reasoning and reviewing evidence in the light of what is already known, drawing conclusions and discussing results (NRC 2000, 2012).

In parallel, science education reforms emphasize teacher education by promoting social constructivist learning and teaching approaches in which science is described as a way of knowing about natural phenomena and science teaching as facilitation of student learning through science inquiry (Kang 2008). Consequently, there are plenty of studies that investigate teachers' ideas about teaching organization and the difficulties that teachers confront in the classroom. For example, Ramnarain (2014) found that teachers of physics and chemistry in South Africa are in general positive for inquiry-based teaching and learning.

Nevertheless, an important amount of teachers are in favour of a more didactic vs. the inquiry-based approach.

According to Tseng et al. (2013), among the experienced science teachers, two patterns emerged. One pattern focused on a systematic way of implementing inquiry-based science teaching that is preparing students with strong content knowledge and knowledge of all aspects of inquiry-based teaching practice. The other pattern focused more on conveying the thinking or competency of inquiry. In this second pattern, teachers were concerned more with students having a meaningful learning experience and their concern was whether they used inquiry to facilitate students' learning. However, Gyllenpalm et al. (2010) found that teachers do not differentiate methods of teaching and methods of inquiry. As a result the teachers do not focus on inquiry as 'ends' but only on inquiry as 'means'. Moreover, pre-service teachers confront difficulties in understanding the constructive inquiry nature of knowledge and the dynamic and interactive relationships between learners and their environment, that is, knowledge is neither fixed, nor terminal, nor linear (Kim & Tan 2011). For instance, the desire for certainty and a belief in the authority of scientific knowledge in current education systems are significant barriers to conducting inquiry-based practical work. Bryan (2003) on the other hand, revealed a complex nest of ideas and beliefs about science teaching and learning which consisted both by inquiry-based and traditional, didactic approach practices, but also being incompatible and in conflict between them.

Fletcher and Luft (2011) note that the first years in the classroom of an early career teacher, are becoming more important in science teacher education. Their research showed that pre-service programs that aspire to produce reform-based graduates should be attentive to the individual student, and should provide opportunities for sustained examination and challenge of belief structures. Early field experiences that are grounded in practice and reflection on reform-based instruction can challenge and begin to shift teacher beliefs, but competing factors in the schools can quickly cause the teacher to revert to traditionally held conceptions. So, a strong focus on reform-based instruction, support from university faculty and cooperating teachers, and a clear programmatic focus, can help beginning teachers abandon contemporary beliefs (Fletcher & Luft 2011) and adapt inquiry-based teaching and learning practices (Lotter et al. 2007).

In summary, despite teachers' ideas and beliefs about inquiry-based teaching practices, their application in real classroom is constrained by several factors such as teachers' limited experience (Ramnarain 2014, Appleton 2002), limited background concerning science content knowledge (Appleton 2002), their beliefs (Fitzgerald et al. 2013), lack of resources and large number of students per class (Ramnarain 2014), teachers' desire for certainty and a belief in the authority of scientific knowledge (Kim & Tan 2011). In parallel, effective approach for preparing teachers to teach science in an inquiry-based approach is to focus a) on key aspects of reform-based science teaching such as modelling-centred inquiry (Schwarz 2009), b) on teachers' reflection about their teaching practices (Harlow 2014), and c) on the apprenticeship of pre-service with experienced teachers (Melville & Bartley 2010).

Based on the above, present study aims to explore Greek in-service teachers' ideas about teaching organization and the respective teachers and students' activities affecting teaching and learning in secondary science education.

## **Methodology**

### *Participants*

A convenient sample of ten in-service secondary science teachers, six females and four males, with a teaching experience ranging from 5 to 20 years were participated in the study.

### *Research tool*

Face to face semi-structured interviews were used to gain in-depth views of teachers' ideas and practices about teaching and learning in science education. An interview protocol, developed by a larger research group in which all authors were included, was used to prompt teachers' ideas on predefined areas and topics of interest. Probing and follow up questions were further elicited teachers' views, while teachers could also discuss science education issues that although were not included in the interview protocol, were considered as critical. Each interview lasted about 50 minutes. All interviews were audio-taped and transcribed verbatim.

#### *Analysis*

A mixed methods approach was used to analyse collected data, as both top-down and bottom-up analysis was performed. More specifically, in the first phase, using Excel spread sheets, all teachers' answers to the same interview questions were cross tabulated. In such a way teachers' views regarding the pre-defined topics and areas of interest were grouped together (top-down approach).

In the next phase, within these groups of teachers' ideas on specific issues and topics, a bottom-up approach was implemented by identifying the qualitative different meanings expressed by each teacher. These qualitative different meanings were the unit of analysis and for each teacher categories of ideas were established. In the third phase, an effort was made to merge conceptually similar categories of ideas, by grouping together ideas expressed by different teachers. The final categories that developed are illustrated in tables 1-4 accompanied by the number of teachers expressing the particular category.

The reliability of the analysis process was established as in all of its phases the two first authors were independently worked, and at the end of each phase all three authors performed a crosscheck. In few occasions (less than 20%) where discrepancies were observed, a discussion was taking place upon reaching a common agreed place. During this crosschecking, the third author was acted as a referee resolving the very few disagreements.

#### **Results**

In the following paragraphs, teachers' categories of ideas for the issues under study are presented, organized in sections corresponding to the predefined areas and topics of interest. Within each of these subsections, the bottom-up developed categories are discussed in detail.

#### *Method of Teaching – Teaching Transformation*

Analysis revealed that when secondary teachers organize subject content of teaching they mostly are based on curriculum (6), student's book (4) and less on the educational material they could find on the internet (3) (see table 1). To a lesser degree they take into account both the level of their students (3) and their own previous teaching experience (3). Moreover, a teacher mentioned that in order to choose the teaching content he also considers the Ministry's syllabus (1) and another one the relevant literature (1).

In respect of content transformation, the vast majority of teachers responded that they change the subject's organization (9), the content and the goals (9). For instance, some of them reorder sections or paragraphs aiming to be more understandable (2), explain in more detail the reproductive system as students face difficulties and revise content from previous classes (2) (e.g., acids). Moreover, half of teachers stressed that although keep unchanged the learning goals, they adapt them to students' needs, mainly due in year by year differences observed in students' academic level (5). Other main reasons of goals' revision are the diversity and the academic level of their students (7), the better understanding of science and its applications (7), as well as teachers' personality and their requirements from students (3).

#### **Table 1.** Method of Teaching – Teaching Transformation

*Pedagogical content knowledge (PCK): Strategies, ways and processes of teaching science*

According to table 2, teachers heavily base their teaching on experiments (9) and the use of students' textbook (5). Only a few prepare a lesson plan (4), start their teaching with an example from the everyday life aiming to stimulate their interest (3), and summarize at the end of the lesson (3). Only two out of ten set goals (2), introduce mathematical formulas (2), and organize the necessary ICTs (2). In addition, various other strategies were also mentioned, however on an individual basis.

On the other hand, experiments (5), software associated with working sheets (3), student-initiated classroom discussions [2] and the feeling of safety with science [2] were considered by teachers as the most effective teaching practices. In particular, they believe that the role of experiment is important and assisting (5), creating queries and giving satisfaction to students (4) as visualizes theory and get it into practice.

**Table 2.** Methods of teaching – Pedagogical Content Knowledge (PCK)

*Student's actions and the role of teachers*

During science classes, students are interested about science (9), discussions and argumentation (9), making experiments (4), learning to inquire (4), and working in groups (3) (see table 3). However, there are also a significant number of teachers (3) reporting that their students are boring during the lessons. This situation is not unusual as not only Oon and Subramaniam (2011) mention several reasons of student's interest reduction, but also Fitzgerald et al. (2013) refer a decreasing trend in students' interest for science and that students avoid studying science. Furthermore, students are curious about their surrounding and pose questions emerging from their everyday life (2). Moreover, they solve exercises (2) and they like much the laboratory lessons (2). Several other students' activities and behaviours were also mentioned, however rarely occurring during science classes, like surfing on the internet, interest only for good grades, and impressive experiments, low ability for classroom discussion and mathematical calculations, while occasionally recall previous knowledge gained in elementary school.

**Table 3.** Students' and teachers' actions during the lesson

As far as what teachers do during science classes is concerned, all of them claimed that they use various ways to support their students when they face difficulties with concepts. For example, they use paradigms from their everyday life, videos, visual materials and simulations, and devote extra time to explain these impregnable concepts. Moreover, the vast majority of them provide opportunities to students for argumentation and expression (9), while they use various ways to increase their interest (7), either through issues considered interesting for their age, or through experiential activities or assigning them active roles (e.g., to be an assistant in teaching). However, less than half of teachers consider that their students learn to inquire through the way of their teaching (4), and one clearly claims that his students do not learn to inquire (1).

Other scarcely occurring practices of teachers were also mentioned, like the total absence of experiments (1) or the conduction of them only when they were indicated by school textbook (1), the teaching of the experimental procedure itself (1), and the teaching outdoors (1).

*Teachers' needs and recommendations*

Since the study is carried out under the framework of ARISTEIA II (a science teachers education project) it is extremely important to reveal their needs for in-service training. According to table 4, the majority of them mention the lack in material and technical infrastructure in their school (7), they welcome any help provided by other colleagues (3), School Advisors or other more experienced teachers (2). This support could be implemented through regular in-service training (3), seminars and interactive workshops (2), as well as conferences and meetings (1). Most of the reasons for pursuing such support are associated

with their desire to improve their teaching (3) and to use alternative teaching approaches (2), while only a few of them realize their shortages in teaching (2).

**Table 4.** Teachers’ needs and suggestions for their in-service support

#### **Discussion and conclusions**

Summarizing, the above results indicate that teaching is mostly based on the conduction of experiments and the use of a textbook, while less on the preparation of a lesson plan. Only a few teachers begin their course with an example from the everyday life, set goals, organize the necessary ICTs and summarize the main points at the end of the lesson.

On the other hand, many of them consider experiments and software accompanied with working sheets as the most effective practices. Specifically, they believe that the role of experiment is assisting, creating queries and giving satisfaction to students. Changes in content made by teachers are mainly small in scale and they are related to the re-organization of the course, its contents and goals. In general, teachers seem to implement a more didactic teaching approach than an inquiry-based, which is in accordance with Ramnarain (2014) findings with south-African teachers.

During science classes, students are interested about science discuss and argument, do experiments, learn to investigate, and work in groups. However, there are some students who are getting bored during the lessons. Even when students are interested in science, they meet difficulties in some concepts, mainly in abstract and theoretical ones, along with some specific concepts in Chemistry and Physics. In those cases, teachers apart from stressing the need for better material and technical infrastructure (Ramnarain 2014), they also implement various ways to support their students by providing them opportunities for argumentation and expression, while they use various ways to increase their interest. Nevertheless, only some teachers consider that their students learn to inquire through the way of their teaching. It seems though that all these efforts are difficult as the dynamic of the class changes year by year. Similar approaches does not seem to promote actual inquiry-based learning (Tseng et al. 2013) and do not apprehend the dynamic and interactive relationships between learners and their environment, where knowledge is not fixed or terminal (Kim & Tan 2011).

In summary, emphasizing to teachers’ expressed in-service training needs, further support is needed, especially from more experienced science teachers, in order that teachers get familiarized with modern teaching practices of science education and put them into praxis. So, we claim that Fletcher and Luft (2011) recommendations for a strong reform-based instruction, supported by university faculty and cooperating teachers, could help teachers change their current beliefs and adapt inquiry-based teaching and learning practices (Lotter et al. 2007).

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## TEACHERS' BELIEFS AND PRACTICES REGARDING SCIENCE TEACHING AND LEARNING IN EARLY CHILDHOOD EDUCATION

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### Abstract

There is widespread acceptance of the idea that critical thinking should be an important dimension of science education since one of its goals is the promotion of science as inquiry. This research presents an initial exploration of early childhood education (ECE) teachers' beliefs and described practices regarding the teaching of science. Data were collected from 14 ECE teachers from the prefecture of Florina through semi-structured interviews. Basic themes of the interview were the aims and goals of teaching Science in ECE, teachers' and children's actions during teaching, organization of experiments and evaluation methods and criteria for children's learning in science education. Data were analysed through the constant comparative method to show similarities and differences both across cases (14 ECE teachers) and within each case (consistency of beliefs across different themes). Results showed that while all ECE teachers referred to children's acquisition of procedural knowledge and scientific skills as one of their main goal, the description of their and children's actions as well as reported evaluation methods and criteria for assessing children's learning were not always consistent with their goals and aims. Thus ECE teachers' beliefs about the aims and goals of science teaching were not necessarily in accordance to their pedagogical content knowledge. In addition, the 14 ECE teachers of our study gave emphasis in their teaching to enhancement of exploring, planning and communication skills rather than recording and interpreting skills, showing that they did not support the whole range of scientific skills in the same way in their teaching. These results are discussed in relation to their in-service education of ECE teachers to foster an active and exploratory role for children during their learning in Science teaching.

**Keywords:** science teaching, early childhood education, teachers' beliefs and practices

### Introduction

Developing scientific literacy is a complex and wide-ranging issue as science learning should have human and philosophical significance along with scientific and personal significance (Devereux, 2000). Scientific significance is related to how well the content of school science explains how scientists model the world in order to understand it. Human and philosophical significance refers to how science contributes to learners understanding of the world, illuminates the way that scientific ideas are developed over time and shows the impact of scientific ideas on the way we live. Personal significance of science is related to children's preparation as future citizens in a technological world and to the development of ideas within appropriate social, personal and industrial contexts. If the scientific literacy is based on highlighting its personal, philosophical, human and scientific aspects, it becomes of crucial importance in our roles as citizens, workers and family members.

During the last decades, the emphasis in school science changed from a body of knowledge to be mastered, to something more like the way science was actually made by scientists. In other words, the emphasis nowadays is on the learning of the scientific process and the skills that are part of producing science knowledge. Arguments supporting this shift varied from viewing process as a relief of a content-laden and dominated curriculum, to a process as being more relevant in a world where there is an ever-changing (content) knowledge base. In addition, the shift was in favour of a learning process as more relevant to

a “science for all” curriculum, and more representative of the nature of “real” (as opposed to “school”) science (McKormick, 1997).

According to Johnston (2014) like all practical processes, the scientific process develops in a holistic way, but this does not mean that individual skills cannot and should not be taught to enhance specific development. Some of the skills are generic as they are of use in other aspects of our lives (e.g. observation, interpretation), whilst others are quite specific to inquiry in science and other related subjects (e.g. classification, handling variables). Padilla (1995) grouped science process skills into two types – basic (observing, inferring, measuring, communicating, classifying, predicting) and integrated (controlling variables, defining operationally, formulating hypotheses, interpreting data, experimenting, formulating models). The basic (simpler) process skills provide a foundation for learning the integrated (more complex) skills. Recently Johnston (2014) classified scientific skills – known also as inquiry skills - according to scientific process in: 1) exploring skills (such as classifying, raising questions, observing), 2) planning skills (such as planning, predicting, hypothesizing, handling variables, measuring), 3) recording skills (such as preparing graphs – charts - tables, writing reports, drawing pictures and diagrams), 4) interpreting skills (such as interpreting, analysing, concluding), 5) communicating skills (such as displaying ideas and results, presenting ideas and results, explaining ideas and conclusions).

There is some emphasis in scientific process skills in Greek ECE curricula. Specifically, in the current early childhood education curriculum there is not an explicit reference to scientific skills and their development. However, some of them (e.g. observation, classification, hypothesizing) are reported as a means to investigate or a way to know the world. The new “pilot” Greek ECE curriculum’s section in science education refers to scientific skills (observing, collecting, recording, analyzing and interpreting data, measuring, testing hypothesis, predicting) as teaching strategies serving both the adoption of an investigative attitude to everyday experience and problems and an understanding of science as a social endeavor working under constant rules and procedures.

It is known that if we leave children to develop skills without focus, the probability is that skills will be underdeveloped. Consequently, there is a need for teachers to understand what the skills are and how they develop (Johnston, 2014). The explicit instruction of skills integrated into scientific topics and the opportunities to implement the skills in different contexts are important and necessary for improving students’ scientific literacy (Spektor-Levy et al., 2009). There are several studies related to the teaching of generic and scientific skills for young children. The need for children to understand scientific skills like exploring and observation in scientific and everyday contexts is stated (Eberbach and Crowley 2009). In addition, other studies identified what skills of observation looked like in young children, how observations influenced other scientific skills and what actions supported the skill of observation for young children (Johnston 2009). Regarding the ways to develop scientific skills in young children, we can refer indicatively to an action research of a group of first-grade teachers as they tackled the science process of classification and developed performance assessment standards for the scientific processes in curriculum (Novakowski 2009). Furthermore, in the Greek context, Temertzidou et al. (2014) investigated the development of the skill of classification and secondarily of the hypothesis skill in the topic of magnets and their properties. However, a research that explored the ECE teachers’ everyday classroom practices when they introduce young children to science (Kallery and Psillos, 2002) showed that several scientific skills were used by the teachers while children were only watching. Children were given limited opportunity to use only some of these skills by themselves and in only a small percentage of activities. Children had therefore limited opportunity to participate in the processes of the development of scientific skills.

Classroom teachers serve a key role in modeling, guiding and supporting scientific process skills for young children (Gelman, Brennenman, Macdonald & Moisés, 2010). A wealth of research evidence has shown that teachers’ beliefs about teaching and learning influence their teaching practices (Fang, 1996). In this body of research, studies concerning ECE teachers’ beliefs and practices are sparse. Recently, Spektor-Levy et al. (2013) investigated ECE teacher's opinions about science and scientific curiosity regarding pre-school children. Earlier, Kallery and Psillos (2002) explored the classroom practices which early years teachers adopt when they introduce young children to science. Both studies found a gap between the proposed and the implemented curriculum and identified a number of factors that were not optimal. In this strand of research, two competing theses are recurring, “consistency” versus “inconsistency” between teacher beliefs and practices. One view is that teacher actions represent one aspect of a teacher’s beliefs and should not be perceived as a separate entity from their belief system. That means what a teacher actually does in the classroom is representative of her beliefs (Wallace & Kang, 2004). However, the other set of research indicates that teachers’ actions are not always consistent with their beliefs. Fang (1996) suggested that there may be inconsistencies between teachers’ beliefs and practices due to the complexities of classroom life, which may constrain teachers’ abilities to follow their beliefs and provide instruction that is aligned with their theoretical beliefs. A research which studied to what extent do science teachers’ beliefs correspond to their practices (Mansour, 2013) indicated that teachers perceived themselves as student-centred but were teacher-centred in their classroom actions, and did not realize or reconcile this inconsistency.

Whatever the reasons are for such an inconsistency among teachers’ beliefs and practices, these studies show that despite, the existence of a curriculum that may support the development of scientific skills in Science early childhood education and research that shows that the teaching of scientific skills to young children is plausible, ECE teachers’ practices are not necessary in accordance to the teaching of scientific and inquiry skills. We have also shown that research in ECE teachers’ beliefs and practices is scarce and needs further exploration. It is therefore interesting to study ECE teachers’ beliefs concerning the goals and educational practice of Science education taking into account the national ECE curriculum for Science education.

Therefore, the main research questions of this study are:

- What are ECE teachers’ aims and goals concerning the teaching of science in ECE?
- Are these aims and goals related with a “science as process” teaching model and what are the specific inquiry skills that ECE teachers refer to in their teaching?
- Are the actions of both children and teachers consistent with teachers’ declared goals and aims?
- To what extent do early childhood teachers’ aims as well as actions correspond to criteria and forms of evaluating their actions?

#### **Research methodology**

This is an exploratory study of early childhood teachers’ beliefs about their goals and ways of teaching Science in the Greek context (teachers’ and children’s actions in Science education activities, criteria and forms of evaluation). 14 ECE teachers, all working in the prefecture of Florina, voluntarily participated in the study through semi-structured interviews lasting from 30 to 50 minutes. ECE teachers had varying teaching experience as well as varying knowledge of Science education teaching in early years (i.e. some have attended in-service education in teaching science in early childhood education). In this way, participants were not homogeneous in their beliefs and teaching expertise and were approached as 14 different case studies (Yin, 1994).

The interview was designed based on the theoretical framework of Schulman (1986, 1987) regarding pedagogical content knowledge and related research about pedagogical

content knowledge in the teaching of Science. Basic themes of the interview were the aims and goals of teaching Science in ECE, teachers’ and children’s actions during teaching and evaluation methods and criteria for children’s learning in science education. The interview was structured with open-ended questions asking teachers to describe and reason their opinions and stated practices regarding the teaching of science education. The interview was conducted in a friendly and relaxed atmosphere and ECE teachers had ample time to describe their beliefs and practices, reason them and provide examples.

Data were analysed through the constant comparative method (Glaser & Strauss, 1967) to show similarities and differences both across cases (14 ECE teachers) and within each case (sustainability of belief in different themes). Data were initially coded and then compared to formulate specific categories with meaning for each theme of the interview. The interview themes were goals and aims for science teaching, teacher’s actions and children’s actions during science teaching, criteria and forms for evaluating science teaching (ST). For example, coding of ECE’s response to the theme “goals and aims in ST” and comparison of the different coding led to a categorization of their goals in relation to their emphasis on the enhancement of declarative or procedural (inquiry skills) knowledge. Although this is a qualitative analysis, the reference of ECE teachers to each category was quantified to give a clearer image of the trends in ECE teachers’ thinking and declared practice. Last, the consistency of teacher’s thoughts and practices across these themes was examined to discuss possible antiphases that could shed light to our understanding of ECE teachers’ beliefs and practices regarding Science teaching.

### **Results**

Regarding our first research questions, it was interesting that ECE teachers put a special emphasis on the acquisition of procedural knowledge by children in relation to declarative knowledge. This is understood by the frequency all 14 ECE teachers refer to specific inquiry skills rather than knowledge transmission as their goals throughout their interview. Specifically, table 1 shows that the most frequently stated scientific skills refer to exploring, planning and communication skills in science teaching following the classification of Johnston (2014). However, especially in relation to recording skills, only four ECE teachers refer specifically to children keeping records and not themselves recording in tables or graphs. In addition, 4 out of 10 ECE teachers refer to themselves making experiments rather than children experimenting.

#### **Table 1** about ECE teachers’ goals in Science Teaching

Therefore, ECE teachers generally seem to adopt the philosophy of the ECE curriculum and be in alliance with the current trends in the teaching of Science in ECE. Thus, they seem familiar with the new trend in ST. However, they do not refer to the whole range of inquiry skills with the same frequency and this makes us hypothesize that they do not teach scientific skills as a process for knowledge production in a systematic way.

However, what one observes when tracing the description of teachers’ and children’s actions in relation to teachers’ goals is that an inconsistency is found since in many cases teachers do not describe how they put their goals in action. For example, they do not describe how they encourage children to co-operate in experimentation or make questions (communicative skills), only 6 out of 12 describe how they support children’s observation and most of them do not explain how they assist children in drawing conclusions or searching for solutions. This finding may be related to our previous hypothesis about how systematic the teaching of inquiry skills is in science teaching in ECE.

Last, ECE teacher’s evaluation criteria of ST and learning were often mixed and combined affective (i.e. if learning is associated with pleasure and children’s willingness to participate), cognitive (i.e. related to the observed children’s learning outcome and attainment of goals), transmission (i.e. children remembering or giving the right response)

and normative (i.e. children being quiet and attending without speaking to peers) criteria. When looking at criteria in relation to the ECE teacher’s goals we note an inconsistency in the cases where teachers either put an emphasis on the affective side of children’s learning (i.e to be pleased, show interest and want to repeat the activity) or the attainment of teachers’ goals rather than the attainment of children’s thinking and inquiry skills as these were stated in their goals.

An example showing this inconsistency is evident in case 9. In her statement of goals the teacher said: “I want them to know different phenomena, to reflect, to experiment, to make hypotheses and to redefine their previous ideas”. Her evaluation criteria were: “Their wish to do what we did again, to be pleased, to realize why we did this and to succeed my aims”. Her forms of evaluation were open-ended working sheets, evaluation on the spot by looking if children arrived at the right conclusion and discussion with the children.

**Table 2** about ECE teachers’ different criteria and forms of evaluation

In addition, in some cases there was a clear inconsistency because of the use of teacher centred criteria as important in science teaching (i.e. children paying attention and being quiet, children remembering) that oppose to their stated goals to enhance children as autonomous thinkers through the learning of scientific skills. In these cases teachers used only working sheets, most often close-ended.

For example, in her statement of goals, teacher 10 said “I want them to observe, discover and understand the world around them through hands on activities, to be able to explain some phenomena in a simple way”. However, her evaluation criteria were children’s attention and the fact that they did not speak to each other. The teacher used open and close-ended working sheets as her only way of evaluating her teaching in science education.

However, in some cases there was a consistency between goals and evaluation criteria since reference was made to the evaluation of children in relation to scientific skills such as recording (case 3) or in relation to the way children observed or experimented (case 13) or reflected upon the process of experimentation (case 7).

It is interesting that 9 out of 14 ECE teachers used working sheets which is considered as a quick evaluation tool which is however static and requires children’s commitment (Boardman, 2004). Working sheets serve clearly cognitive goals and are not usually differentiated according to children’s needs and interests (Stalvin, 1983; Johnson et. al., 1981). In our case it is important that most forms of evaluation did not evaluate scientific (inquiry) skills but declarative knowledge. However, ECE teachers also used very frequently different representative/visualising techniques but again these measured outcome versus process skills. In some cases (1, 2, 3, 7, 13 and 14) ECE teachers focused on their observation during children’s exploration and experimentation process that was linked closer to an evaluation of children’s thinking and scientific skills.

**Conclusion**

This exploratory study showed that while ECE teachers may be familiar with the new trends in Science education that value the process of learning about Science as important, they do not systematically teach all of the basic scientific skills systematically to children. ECE teachers refer to the teaching of inquiry skills as their goal but they do not describe specific ways for supporting children’s learning during the educational process. However, we know that basic skills such as observing, inferring, measuring, communicating, classifying and predicting are plausible to teach in early childhood and are also presuppositions for the development of more complex skills. Last, inconsistency found among goals and criteria/ forms of evaluating ST highlights the need for teachers’ in-depth understanding of the ‘science as process’ teaching model as well as their practical support in its implementation. We expect that in the continuation of our study within the framework of ARISTEIA “Science Teachers’ Education” we will have the opportunity, based on our initial

understanding presented in this paper, to support effectively ECE teachers to rethink their practice and plan systematically the teaching of inquiry skills for young children.

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## **IN-SERVICE TEACHERS’ PROFESSIONAL DEVELOPMENT ON SCIENCE EDUCATION: DESIGNING PRINCIPLES OF A RESEARCH PROJECT**

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### **Abstract**

Bearing in mind the scores Greek students achieved in PISA, we assume that a major factor for this deficit might be science teachers’ dependence on the school textbook or the respective teachers’ guide, instead of designing teaching based on their students’ needs and characteristics. Another cause might be that, unlike the instructional tradition in other countries, Greek teachers focus their instruction mainly on teaching concepts and phenomena rather than on the methodology that scientific thought follows (i.e. procedural and epistemological knowledge). To change this tradition, a focused in-service training project is necessary to help teachers change their entrenched instructional practices and adopt the new ones that integrate the practices other countries with better scores in PISA currently use. The Science Teachers’ Education (STED) program aims to study the conditions and the prerequisites of teachers’ professional development on designing science teaching and expand their way of thinking and acting within an innovative class setting. Some key designing principles that should guide this endeavor are presented in this paper. For a successful in-service professional development program a recording of teachers’ views, needs and practices is needed. It is expected that this constructive professional development would increase teachers’ efficiency to design Teaching Learning Sequences (TLS) adapting them to the needs of their class, providing their students with the necessary skills to build scientific knowledge based on the learning goals set in the science curriculum.

**Keywords:** Professional Development, Teaching Learning Sequences (TLS), Science Teachers

### **Introduction**

It is widely known that PISA assessment ranks Greek pupils’ performance at the lowest positions among the participated countries in the assessment (PISA 2010). For this reason, there is an ongoing effort to change the curricula of compulsory education in Greece (Neo Scholeio 2011). Another equally important factor for pupils’ success is teachers themselves and the way they design their teaching. The commonly used method of teaching science in Greece aims to transfer the knowledge presented in the text books to students, without considering, either pupils’ needs, their prior knowledge and abilities, or the current ideas for science education (Science education NOW 2007).

Previous research into teachers’ professional development placed harsh criticism on top-down in-service training deeming it ineffective trying to improve or change teachers’ practice (Fullan 1991). The need to accommodate learning to the needs of schools and teachers and increase teacher autonomy through active participation has been among the main objectives of alternatives to top-down practices since Stenhouse (1983). The understanding that teachers ‘learn best by sharing ideas, planning collaboratively, critiquing each other’s

ideas and experiences’ (O’ Hair et.al. 2000, cited in O’ Hair & Veugelers 2005:1) led to new ways of enhancing professional development such as collaborative action research. The effective collaborative action research approach aspires to ensure the close collaboration of teachers, researchers and external advisors, the enhancement of reflection during the whole process, dialogical practices (focus group discussion, individual conversations during observation of their teaching), as well as their emotional support in risk-taking situations.

An in-service professional development course is needed to be developed so that in-service compulsory education teachers become able to design science teaching based on several factors – concepts suggested by the current approaches in Science Education. It is important to ensure that compulsory Science Education is based on the inquiry of phenomena and everyday life situations, related to Technology and Environment, rather than on the memorization of facts and concepts. To achieve inquiry-based instruction, teachers should enrich and broaden their pedagogical content knowledge (PCK) and strengthen their reflection capacities. This presupposes that their education in designing, implementing and evaluating Teaching Learning Sequences (TLS) is regarded as small scale science curricula. Although there are proposals on the design of teaching based on inquiry, ICT, etc, we believe in the innovative character of this project which is based upon its holistic nature that suggests an overall and dynamic interplay of these factors.

In this paper, we will present some key designing principles that should guide a successful in-service professional development program to constructively increase teachers’ efficiency to integrate new practices in their teaching.

### **Literature review**

Recent curricula (Science Education NOW 2007, Millar & Osborn 1998, Unesco Project 2000+, Project 2061) focus on scientific and technological literacy, incorporating aspects of the previous proposals such as constructivism or STSE. These curricula, propose a unified content of Science, Technology and Environment, Society and Environment as an integrated approach to apply scientific and critical reasoning to confront real, technological, social and environmental problems. A basic prerequisite for these curricula to succeed is teachers’ education, so that they gain valid PCK and become able to reflect on their teaching design experience (Park & Oliver 2008).

Most of these curricula strongly support inquiry as a teaching approach. The realization of inquiry in science classrooms could be distinguished as “inquiry as means”, that is inquiry as an instructional approach or pedagogy and “inquiry as ends”, that is inquiry as a set of instructional outcomes for students (Abd-El-Khalick et al. 2004). “Inquiry as means”, has recently been referred to as Inquiry-Based Science Education (IBSE) (Science Education NOW 2007).

Given the content and the teaching approach, activities’ development comes from Design- Based Research (DBR). This is the manifestation of a current trend in designing a sequence of activities in a specific domain. Design-based research blends empirical educational research with the theory-driven design of learning environments. It is an important methodology for understanding how, when, and why educational innovations actually work. Design is central in efforts to foster learning, create usable knowledge, and advance theories of learning and teaching in complex settings (Design-Based Research Collective 2003). Relevant Science Education approaches are Educational Reconstruction (Duit et al. 2005) and TLS (Meheut & Psillos 2004). Our research group has a significant contribution (Psillos & Kariotoglou 1999, Kariotoglou 2002, Zoupidis et al. 2012) in this field, that is, the development and redesign of TLSs in an iterative way.

Still, what are the characteristics of a teacher who is going to apply the aforementioned proposals? Pedagogical Content Knowledge (PCK) and reflection are fundamental prerequisites in teachers’ professional development (Shulman 1986). Beyond

this, reflection has been suggested as a notion strongly connected with any effort to understand the theory and practice of learning/teaching (Schön 1983). Reflective teachers can see the correspondence between everyday actions and scientific concepts and are able to utilize theory in order to change their own practice (Fook & Gardner 2007).

A contemporary trend in science education focuses on how reflective thinking affects the development of PCK. Research findings show that “as a teacher develops PCK through reflection, the coherence among its components is strengthened” (Park & Oliver 2008). These findings reveal that teacher reflection is a main prerequisite for an integrated development of their own PCK, though it is still difficult to have a clear picture of the interrelation between them (Park & Oliver 2008).

As previously stated, new trends in science curricula place emphasis on the informal aspect of education, and out of school activities, especially those related both to the Environment and Technology. Therefore, an additional problem arises: how will teachers handle the informal aspect of education, given its special features such as the lack of assessment and the novel physical context? According to the literature, teacher learning should be conceptualized as a career-long endeavor and might be best served by a continuum of professional development (PD), sensitive to teachers’ pedagogical needs from pre-service and throughout their career (Astor-Jack et al. 2007). The main PD models are training, observation and assessment, study groups, mentoring, action research, and individually guided activities (Astor-Jack et al. 2007). Relevant ideas negotiated in recent PhD thesis conducted in our research group (Karnezou 2010, Karnezou et al. 2013), given the major contextual differences between classrooms and science museums, it is not surprising that teachers may find it difficult to adapt their practices to the museum setting (DeWitt & Osborne 2007). Supporting and reinforcing teachers in using the facilities offered in a museum setting comprises one of the basic issues in science education (Chin, 2004). Nonetheless, it seems that though teachers’ education in various contexts might broaden the way they perceive teaching and learning, the process of integrating ideas and practices from an informal learning venue into the classroom is far from simple (Putnam & Borko 2000).

Over the last two decades, there has been increased interest in the socio-emotional aspects of learning and instruction. Interventions that have taken into account this perspective have had encouraging results (Conduct Problems Prevention Research Group 1999, McIntosh et al. 2000). Finally, motivation theories have stressed the necessity of co-accounting students’ psychological needs (i.e. autonomy, competence, and relatedness) to develop their motivation in education. Recent evidence in our research group, that took place within a European research program (FP6), has confirmed the effectiveness of these aspects in relation to children’s interest and motivation towards science education and we formulated “the personal needs hypothesis” (Loukomies et al. 2013). In this proposed project we are keen to explore this hypothesis further and investigate how teachers understand and implement it with the socio-emotional aspects of their teaching.

Conclusively, students’ learning in Science should be supported by inquiry and models, using ICT, both in formal and informal settings. In order to enable teachers design such teaching – learning environments they should broaden their PCK, be educated in reflection and in designing, applying and assessing TLSs.

### **Aims and contend of an in-service teachers professional development project**

A project should have a developmental – educational and a research component which are interconnected. It should aim to broaden teachers’ profile towards the use of a variety of teaching methods. This profile should include not only lectures and demonstrations but also teaching methods like assigning students to seek information, undertake experiments, and initiate group discussions thereby drawing conclusions from their investigations. Moreover, it should strive to underscore the value of informal education, pupils’ enjoyment, meeting

students’ psychological needs, the cumulative effect of these visits on their future careers, and learning with respect to the content of the visit. These aims underline the need to broaden the content of teaching, i.e. not only concepts and facts, but also procedures and thinking skills (e.g. investigation skills), epistemological knowledge (e.g. models, the nature of science), and even modern content, such as materials science and nanotechnology, since they relate to modern lifestyle and future careers.

To accomplish these goals, at first, teachers should have skills, and thus should be trained in tested – standardized teaching materials in the type of core TLS, which subsequently they themselves will implement in their classes, after having completed the detailed design, in a participatory design with the researchers. After implementation, the teachers would critically reflect upon this and discuss it systematically with the research team. A change in their profile is expected, regarding the issues mentioned before (teaching approach, content, formal / informal education). During the next phase, the teachers will design their own TLS, discuss them with the research team during participative work and implement them in their classes. The final discussion and the critical reflection on their education course would reinforce the changes in their profile and allow the research team to reveal the learning pathways of the participating teachers. This way, the conditions and the prerequisites for a successful in-service teachers’ education are expected to be revealed together with the factors influencing it. Then, teachers should be requested to propose a course curriculum (TLS) related to in-service science teachers’ professional development on the design of Science, Technology, and Environment teaching, which will be the final product of the project. In order to ensure the quality of all the products, all the 3 TLSs’ components (sequences, methods, materials) should be accompanied with proper sets of standards i.e. design principles, quality indicators, descriptions of good practice and evaluation criteria. These standards would be, also, useful for teacher reflection and self-assessment and helpful in increasing their self-efficacy. Teachers from all levels of compulsory education (preschool, primary and secondary) should be involved in the project, since it is important to support continuity in the content, objectives and means of education – a trend promoted in the New Greek Curricula (Neo Scholeio 2011).

The whole endeavor should be schedule during the 3 phase (6 months each) proposal is as follows:

### **1st Phase**

In the first phase of the proposal, teachers’ views, practices and needs when designing and implementing teaching, through semi-structured interviews should be captured, using appropriate protocols (1st measurement). The results of the previous data analysis would be validated by experienced school advisors. The teachers that will participate in our research will be chosen according to their experience and their desire for training. These teachers will be observed in class and their teaching practices will be taken down on a specially developed recording sheet. Additionally, the three TLSs would be designed (or adapted already existing). During this process, researchers should standardize the TLS design and development procedure, through reflection. For this reason, the similarities (general principles, procedural and psychological needs) and the differences (content specific principles) between the 3 TLSs should be systematically be encoded. This will allow the organizers/researchers to identify the common elements which could be included in the final course curriculum.

### **2<sup>nd</sup> Phase**

During the second phase of the proposal, the researchers would discuss with the teachers the current trends of Science Education: the elements of Inquiry Based Science Education (IBSE), the role of students’ representation and ICT in effective teaching, integration of Science and Technology, the concept of a TLS. Afterwards, the teachers would be trained in the specific three TLSs, as examples of good practice. The teachers would

discuss with the researchers the difficulties they face and possible refinements in order to implement the TLSs in class. There upon, the teachers will implement the TLSs in class, and his / her teaching practices could be taken down on a specially developed recording sheet. The teachers and researchers would evaluate students’ learning with pre –post questionnaires. The researchers should interview all the teachers with an appropriate protocol, aiming to record the possible changes of teachers’ views and practices after the second phase of the project (2<sup>nd</sup> measurement). A reflective discussion between the teachers and the researchers would be held. Finally, both the teachers and researchers’ diary notes would be used in order to triangulate the findings from the 2<sup>nd</sup> measurement. In addition, the findings will be validated by school advisors.

### **3<sup>rd</sup> Phase**

During the third phase of the project, the teachers in pairs should be able to design a new TLS. A reflective discussion between teachers and researchers on these new TLSs would help the teachers to improve their TLS and the researchers to trace teachers’ design principles. Each teacher would implement the new TLS in class and his / her teaching practices would be taken down on a specially developed recording sheet. The teachers should evaluate students’ learning through relevant pre –post questionnaire in close collaboration with the researchers. The researchers would interview all the teachers with an appropriate protocol, aiming to record the potential changes in teachers’ views and practices due to the third phase of the project (3<sup>rd</sup> measurement). A reflective discussion between the teachers and researchers should be held, in order to enhance teachers’ learning. Finally, the teachers and researchers’ diary notes will facilitate the processes of triangulation the findings from the 3<sup>rd</sup> measurement. Additionally, the findings should be validated by school advisors.

Following the above schedule in the professional development, we assume that the quality of science education at compulsory level would be improved if teachers moved from a traditional perspective namely, the transfer of knowledge following the textbook to a designed approach for teaching and learning, thereby broadening their teaching repertoire in order to include factors like: student – centered teaching, inquiry based learning, reflection on their teaching, students’ collaboration, using ICT in education, and the creation of rich environments to meet students’ psychological needs.

The above assumption is difficult to be assessed within the context of such a project. However, it should be easy to examine whether teachers would broaden their teaching repertoire after their involvement over a long period in a project aiming to improve and change their teaching practices towards the enhancement of their pupils’ achievement in Science. This support includes teacher education in examples of good practice, design and application of their teaching, and reflection on their experiences. This would be achieved through a participatory research design and gradual teacher autonomy in the development and evaluation of teaching approaches in Science Education. The teachers’ education comprises experimental design, teaching models and modeling and exploitation of pupils’ representations, as well as, ICT. More specifically, the evaluation of the projects could address at least the following research questions:

- What are the science teachers’ needs when they design their teaching?
- What are the changes of the science teachers’ profile, after a teacher education program on the design of their teaching?
- What are the factors affecting the changes of the science teachers’ profile, after a teacher education program on the design of their teaching?
- What are the key elements in science teacher education, which should be included in a relevant course curriculum?
- What are the characteristics of a science TLS as an example of good practice? (e.g. Standards: building blocks, concepts, procedures).

Finally, the project needs researchers with expertise in different disciplines. For instance, teachers’ existing views and practices, as well as their needs when designing their teaching would be conducted with carefully designed semi-structured interview protocols, which should be analysed using a bottom up approach (grounded theory). The teachers and the researchers would keep semi-structured diaries for their actions e.g. following instruction, implementing or attending teaching, designing their teaching, etc.

These results should be validated by experts who would be able to write theory driven reports (e.g. school advisors). Moreover, to trace the teachers’ learning pathways, in other words, the changes in their teaching design and practices, reflective discussions between teachers and members of the research group should be held. The results should be triangulated with those of the researchers and teachers’ diaries, as well as, advisors’ remarks. To trace students’ results, both researchers and teachers, should be able to use pre, post and post-post written questionnaires, which is necessary to be assessed using appropriate statistical methods.

To reveal the characteristics of a science TLS as an example of good practice, as well as the key elements in science teacher education, the researchers and teachers’ diaries should focus on the important actions and decisions during both phases of designing and implementing the TLSs.

In this paper, we presented the key features of designing an in-service professional program aiming to enhance teachers’ knowledge and skills to design, apply and evaluate TLS taking into the account the current trends in science education. Moreover, in order to learn from this procedure, it is suggested that a systematic study of each phase and reflection on the pros and cons of the choices should be adopted.

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## CRITICAL THINKING APPLIED IN NURSING

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### Abstract

Thinking is an ongoing activity for professional nurses. The nurse is required to be able to establish a reliable diagnosis and implement an appropriate intervention or plan of care that is responsive and timely to the clinical situation. In order for nurses to be able to achieve this domain, they require a sound knowledge and experience base that is informed by clinical standards and research evidence, an ability to exercise sound critical thinking and diagnostic reasoning skills in addition to the ability to develop the therapeutic relationship with the patient. A brief description of the methods used: This article presents information about critical thinking, an overview of the nursing process, and elements that compose each step of the process. What it also included is a discussion on how the nurse uses critical thinking in each step of the nursing process and on the relationship between problem solving, decision making, and the nursing process.

The theoretical result of this article is to help with the Curriculum design. The practical result is preparing nursing competencies on applying critical thinking skills when assessing, designing, managing, implementing and evaluating outcomes of nursing interventions in order to critically evaluate research-based findings as evidence to improve practice.

Expected results of the study are to design curricula to meet national and international education criteria, professional and regulatory requirements for practice. Students outcome after they complete the undergraduate training, the graduates will be able to integrate concepts of critical reflection, collaboration, and evidence based practice to foster independent judgment and decision making in one’s practice.

**Key words:** critical thinking, nursing process, nursing competencies, design curricula

### Review of critical thinking in nursing and its assessment

Critical thinking has been discussed in depth in the literature and despite the agreement regarding the importance of critical thinking, there is no agreement on the definition of critical thinking. Numerous definitions are found in the literature today. The purpose of this paper will be to identify the definition of critical thinking followed by a discussion of the instruments that are used to measure critical thinking as evaluation of nursing competences.

The American Philosophical Association accepts the following definition, which is based on the conclusion of a two year Delphi project directed by Facione (1990). “Critical thinking is the process of purposeful, self-regulatory judgment, which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological or contextual considerations upon which that judgment is based”.

**The Foundation for Critical Thinking** defines critical thinking as that mode of thinking about any subject, content, or problem in which the thinker improves the quality of his or her thinking by skillfully analyzing, assessing, and reconstructing it. Critical thinking is self-directed, self-disciplined, selfmonitored, and self-corrective thinking.

In the nursing literature, there is a wealth of information related to critical thinking, in part, due to the need to be able to think critically to practice professional nursing (Abbate, 2008). The nursing literature also presents numerous definitions of critical thinking. A definition is important because it provides a foundation for nurse educators to implement pedagogical strategies that will facilitate the development of critical thinking and it creates a context for developing evaluative measures for recognizing its effects in practice.

The National League for Nursing (2011) defines critical thinking in clinical nursing practice as “a discipline specific, reflective reasoning process that guides a nurse in generating, implementing, and evaluating approaches for dealing with client care and professional concerns”. Application of critical thinking to nursing practice is demonstrated by the ability to interpret, analyze, evaluate, infer, and explain (National League for Nursing, 2011).

In response to the need for a consistent definition for critical thinking, Scheffer and Rubinfeld (2000) developed a consensus statement about critical thinking in nursing based upon the results of a Delphi Study. A panel of 55 experts in nursing from nine different countries determined

Critical thinkers in nursing exhibit these habits of the mind: confidence, contextual perspective, creativity, flexibility, inquisitiveness, intellectual integrity, intuition, open-mindedness, perseverance, and reflection. Critical thinkers in nursing practice the cognitive skills of analyzing, applying standards, discriminating, information seeking, logical reasoning, predicting and transforming knowledge.

Despite the differences in terminology, it is well documented that the ability to think critically is necessary for new graduate nurses.

The *Essentials of Baccalaureate Education for Professional Nursing* (AACN, 2008) states “baccalaureate generalist graduates should be prepared to use critical reasoning and clinical judgment skills to address simple to complex situations” As a result, the Commission on Collegiate Nursing Education (CCNE) requires nursing programs to address all components listed in the *Essentials of Baccalaureate Education for Professional Nursing*, including critical thinking, for accreditation (CCNE, 2009). In order to maintain accreditation, evidence must be submitted that shows students are meeting these requirements. The National League for Nursing (NLN) requires accredited programs demonstrate that their students are developing the skills of analysis, reasoning, decision making, and independent judgment which are necessary components of the critical thinking process (NLN, 2005).

The American Nurses’ Association (2004) also emphasizes critical thinking in its *Nursing: Scope and Standards of Practice*. The language of critical thinking is addressed in the Association’s scope statement and integrated throughout all of the standards.

*Critical thinking, clinical decision-making, clinical judgment, clinical reasoning, critical reflection, and problem solving* are terms that are often used interchangeably, but there are distinctions between the concepts. *Clinical decision-making* is concerned with problems of a clinical nature (Simpson & Courtney, 2002).

*Clinical judgment*, defined by Jackson, Ignatavicius and Case (2006) is the “development of opinions in the clinical practice setting, based on experience and knowledge, to guide the decisions you will make regarding the care of the patient”. These definitions differ from Thompson and Stapley (2011) who believe clinical judgments symbolize evaluation.

Rochmawati and Wiechula (2010) provide a more detailed definition by defining *clinical reasoning* as “the practitioner’s ability to assess patient problems or needs and analyze data to accurately identify and frame problems within the context of the individual patient’s environment” .

*Critical reflection.* Schon (1987) describes two types of reflection. The first is reflection *in* action, which involves thinking about actions while engaged in them, and the second is reflection *on* action, which involves looking back on a situation to learn from it. Reflection facilitates the assimilation of theory with clinical practice to help the nurse become a critical thinker (Butler, 2004).

*Problem solving* focuses on a problem and finding solutions to resolve the problem (Boychuk-Duchscher, 1999; Simpson & Courtney, 2002). Questioning serves as an important tool during the problem solving process (Boychuk-Duchscher, 1999). Questioning helps to identify primary issues; it looks at reasoning, inquires into the uncertainty of the language defining the problem, places importance on the examination of value conflicts, and facilitates the challenging of assumptions (Boychuk-Duchscher, 1999).

### **Measurement of Critical Thinking**

**Standardized instruments.** A variety of standardized tests are available for evaluating critical thinking, but they frequently are not based on descriptions of critical thinking in nursing. Instead, they capture more general descriptions of critical thinking (Rubinfeld & Scheffer, 2010; Staib, 2003). First, the skills of logic are effectively measured when standardized instruments are administered, while the critical thinking skills necessary for clinical practice may be more difficult to measure.

*The Watson-Glaser Critical Thinking Appraisal* (WGCTA) developed by Goodwin Watson and E. M. Glaser in 1925 (Think Watson, 2012) is one of the most widely used standardized tests to measure critical thinking. It produces a single score that denotes critical thinking abilities based upon the assessment of five critical thinking skills: inference, recognition of assumptions, deduction, interpretation, and evaluation of arguments. Results using the WGCTA to measure critical thinking in undergraduate nursing students have been inconsistent and questions regarding the validity of this instrument have been raised Banning, 2006; Kintgen-Andre(ws, 1991).

Angel, Duffey, and Belyea (2000) utilized the WGCTA to evaluate changes in the acquisition of knowledge and the development of critical thinking skills based on teaching strategies of a structured or unstructured format for a weekly health pattern assessment course. The results indicated that interaction between learner strategy and the characteristics of the learner were more significant in determining knowledge improvement than the particular strategy used.

Daly (2001) completed a study with the purpose of exploring and developing an alternative domain-specific method for identifying critical thinking in student nurses' reasoning processes. The study utilized the WGCTA in addition to a “think-aloud” technique incorporating a videotaped client simulation, a cognitive task, and a stimulated recall strategy and found no significant differences in the pre- and post-program .

*The California Critical Thinking Skills Test* (CCTST) consists of 34 multiple choice questions designed to be completed within 45 minutes. The CCTST is based on the Delphi Expert Consensus definition of critical thinking . Each correct answer is given one point. The five subscales, which are based on the cognitive skills dimension of critical thinking, are analysis and interpretation, inference, evaluation and explanation, inductive reasoning, and deductive reasoning. It is currently considered one of the premier critical thinking skills tests available today. A limitation of this instrument for the purposes of the current area is that it does not contain any discipline-specific content.

In a study conducted by Chau et al. (2001) that utilized videotaped vignettes, it was observed that students' knowledge, measured by a nursing knowledge test, significantly improved between years 1 and 2 of their program. No significant difference was found in the pre- and posttest CCTST scores for critical thinking between years 1 and 2.

These results are similar to those obtained by Saucier, Stevens and Williams (2000) who also used the CCTST to evaluate critical thinking scores after using computer-assisted instruction as compared to a written nursing process. They found there was no increase in critical thinking scores for either of the two educational strategies.

The above studies differ when compared to the results found by Ravert (2008). Ravert used the CCTST to evaluate critical thinking scores for three different groups of baccalaureate nursing students: a human patient simulator (HPS) group, a non-human patient simulator (non-HPS) group and a control group. All three groups experienced a moderate (control group) to large (HPS and non-HPS) effect size change in critical thinking scores.

*The California Critical Thinking Disposition Inventory* (CCTDI) is designed to measure the affective, attitudinal dimension of critical thinking. It is often used in conjunction with the CCTST. In the CCTDI, each subscale measures a mental attribute, specifically the seven critical thinking dispositions that were identified by the Delphi panel (Bondy et al., 2001). The seven subscales are truth-seeking, open-mindedness, analyticity, systematicity, self-confidence, inquisitiveness, and maturity (Bondy et al., 2001; Stone et al., 2001). A score is reported for each of the seven subscales and an overall score, which is derived from mathematically equal contributions from each subscale (Facione, Facione, & Sanchez, 1994). Factor analysis procedures were utilized to assess the construct validity.

Hicks-Moore and Pastirik (2006) acknowledge that the CCTDI has been used in several nursing studies, but has shown conflicting results. Fero et al. (2010) utilized a convenience sample of 36 nursing students to measure critical thinking skills and simulation-based performance using videotaped vignettes (VTV) and high-fidelity human simulation (HFHS). To provide greater study power and to reduce error variance associated with individual differences, Fero et al. (2010) chose a quasi-experimental cross-over design. However, a statistically significant relationship was found between overall high-fidelity human simulation performance and CCTDI scores (Cramer's  $V = 0.413$ ,  $p = 0.047$ ).

Wangensteen et al. (2010) studied whether background data had any impact on the critical thinking dispositions among new graduate nurses in Norway. They found that graduate nurses had an overall mean CCTDI score of 300.3, which indicates a positive inclination towards critical thinking.

*Health Education Systems Incorporated* (HESI) exam. (Elsevier, 2006) was developed to assess students' knowledge and their ability to apply nursing concepts within specific content areas. HESI offers two types of exams. Specialty exams are designed to measure a student's ability to apply concepts related to specific clinical nursing content areas. These exams usually consist of 50 test items. The other type of exam is the HESI exit exam. The exit exam is more comprehensive and is designed to be administered at or near the completion of an academic program. It is longer, with 150 multiple choice items (Lavandera et al., 2011). The exit exam is frequently used by nursing programs as a predictor of student preparedness for the National Council Licensure Examination (NCLEX) for registered nurses..

According to Morrison et al. (2008), the concepts from Paul's critical thinking theory and Bloom's cognitive taxonomy serve as the basis for the development of critical thinking test items for both of the HESI exams. The test items are written and reviewed by nurse educators and clinicians who evaluate the merit of the items as current measures of nursing practice. Every test item is then categorized by several subject areas and each subject area provides subset scores.

The psychometric properties of the HESI exams are well established. Morrison et al. (2008) indicates HESI determines the reliability of both exams by conducting an item analysis on each exam that is administered and returned to the company for a composite report of the aggregate data. To measure the exams' overall reliability, a Kuder Richardson

Formula 20 is calculated for every exam that is administered. Data obtained from these calculations are subsequently used to estimate the reliability of an exam prior to administration. Reliability estimates are recalculated every time a HESI exam is scored. Validity of the HESI exams is an ongoing process and determined by an assessment of content validity, construct validity, and criterion-related validity as described in classical test theory. Morrison et al. found this to be a limitation and concluded that additional approaches are necessary to establish quantifiable evidence of validity.

A limitation of this instrument in relation to the current project is that it was not designed to measure critical thinking skills. Rather, it was designed to assess student competency and evaluate achievement of curricular outcomes. It is important to note that in both the Lavandera et al. (2011) study and the Harding (2010) literature review, the HESI scores were not helpful in predicting NCLEX failure.

**Health Sciences Reasoning Test (HSRT)** is designed specifically for health sciences and health care professional preparation programs. The test consists of 33 multiple-choice questions designed to be completed in 50 minutes (Insight Assessment, 2011). The HSRT assesses five critical thinking cognitive skills identified by the Delphi experts and includes interpretation, analysis, evaluation, explanation, and inference with subscales for inductive and deductive

reasoning. HSRT have been found to predict successful professional licensure and high clinical performance ratings. Insight Assessment (2011), which was established by Peter A. Facione in 1986 as the California Academic Press, indicates the HSRT total score targets the “strength or weakness of one’s skill in making reflective, reasoned judgments about what to believe or what to do” .

Sullivan-Mann et al. (2009) tested the effect of simulation on nursing students’ critical thinking scores using the HSRT. The HSRT was given as a pretest and posttest to both the experimental and control groups. The researchers found that for the experimental group, critical thinking scores on the HSRT posttest increased, after exposing nursing students to three additional simulation scenarios compared to the control group who did not answer significantly more questions correctly on the posttest than the pretest.

***Holistic Critical Thinking Scoring Rubric.***

Facione and Facione (2011) developed a four level Holistic Critical Thinking Scoring Rubric (HCTSR) based on the CCTST and CCTDI to assess critical thinking skills and some of the dispositions identified by the Delphi project. The HCTSR provides criteria for assigning a rating to one of four levels ranging from strong to weak critical thinking. These four levels can then be used to score critical thinking demonstrated by students in essays, projects, presentations, group

decision making activities, or clinical practices. To achieve overall success, many items must come together including critical thinking, content knowledge, and technical skills. In scoring, however, the focus of the evaluation is only on critical thinking, excluding the other two items (Facione & Facione, 2011).

Hicks-Moore and Pastirik (2006) used the HCTSR to measure six key competencies of critical thinking: interpretation, analysis, evaluation, inference, explanation, and self-regulation. They found the HCTSR was a reliable tool for evaluating critical thinking in nursing students.

There were limitations to using the HCTSR. First, the HCTSR had not previously been used in nursing. Second, the HCTSR uses generic terms to describe critical thinking competencies, which makes it difficult to translate to nursing and the concept map process. This limitation would require some modification of the tool to increase its applicability and usefulness to nursing practice. Lastly, despite training to the use of the HCTSR, some faculty had difficulty interpreting the terms and applying the rubric specifically to concept maps.

**Minnesota Test of Critical Thinking (MTCT)** is “designed to measure both critical thinking skills and a key disposition of critical reasoning: the willingness to evaluate arguments that are congruent with one’s own goals and beliefs critically”. The MTCT is a fairly new tool and was designed to measure critical thinking skills consistent with the American Philosophical Association’s definition and taxonomy of critical thinking. The items address the six skills defined by the Delphi Study: interpretation, analysis, evaluation, inference, explanation, and self-regulation. They conclude that this instrument has potential, but would benefit from further revisions and refinement. Interestingly, no additional research could be found in the nursing literature that utilized this instrument.

### **Conclusions**

Despite the variety of different educational strategies available, current research findings in the literature document that the effectiveness of their use for developing critical thinking skills is inconsistent. Reliable and valid instruments for measuring critical thinking are needed. Yet, one of the challenges of measuring critical thinking is the lack of instruments designed specifically for nursing. Based on this review of instruments to measure critical thinking, there is a need to develop accurate and reliable measures of critical thinking in nursing students and new graduate nurses. The instruments reviewed were not specifically designed to be used in nursing, and as a result, may lack a connection to the unique context of nursing practice. Standardized instruments fail to show objectively that students learn critical thinking in nursing school. A key reason for this inability is that standardized tests lack validity for nursing because they are not based on a conceptual definition of critical thinking for nursing. Further the potential exists for a language barrier for nurses who are not fluent in English because many of the instruments are only available in the English language. Despite these limitations and the inconsistent research findings, standardized instruments are still currently used.

However, based on this review, the Health Science Reasoning Test (HSRT) (Insight Assessment, 2011) has the best potential because it is designed specifically for the health sciences and health care professional preparation programs compared to some of the other instruments reviewed.

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## TEACHERS' BELIEFS FOR THE EMOTIONS EXPERIENCED BY CHILDREN IN THEIR CLASS

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### Abstract

Recent research shows that emotions' regulation in class settings create fluctuations on the executive functioning with possible consequences in academic achievement. Thus, the interest of the research is focused on intra-individual variations in the cognitive resources within class settings. However, what is the degree of sensitiveness that allows teachers to capture emotions experienced in the class? Teachers that are sensitive about children's emotions might be on the first step towards a proper class management, aiming at prevention of fluctuations with negative consequences in children's academic achievement. The aim of this study was to investigate teachers' beliefs for the emotions experienced by children in their class. One hundred seven primary school teachers questioned for the emotions could be experienced by children in their class. Two of them were positive (challenge and pride) and two had negative valence (frustration and boredom). For each emotion teachers considered factors such as (a) how often children experience this emotion in their class, (b) to what a degree can this experience change children's emotional mood and (c) how often they express these emotions loudly in class. Teachers answered in a four point Likert-type scale (1= never/improbable to 4 = very often/very probable). Teachers answered at above chance level that the four emotions are experienced in their classes, and, when they experienced these emotions, the children's mood changes. However, although the frustration, boredom and pride are expressed loudly in the class, children are less likely to express their emotions when the experience becomes challenging. Results attained in this study show that teachers are sensitive enough to capture a variety of emotions experienced in their class. The question is whether they are sensitive enough to manage them in a proper way. The results are discussed in the light of current approaches for the role of emotions in formulation of the class climate and how can teachers benefit from emotions experienced in classrooms.

**Keywords:** Class management, emotions, emotion regulation, achievement emotions

### Introduction

One of the major influential factors that contribute to the class climate is the teacher of the class (Pianta & Hamre 2009, Pianta et al. 2008b). Particularly the emotions that are experienced in class mediate the whole learning procedure with effects on the academic achievement (Pekrun 1992, Pekrun et al. 2014, Reyes et al. 2012). It is known that the regulation of emotions experienced in class settings has negative effects on children's cognitive resources such as their executive functions (Pnevmatikos & Trikkaliotis 2013) that are involved in problem solving and facilitate school learning. In order to formulate a positive class climate, the teacher should be aware of what acts generate wishful emotions and which emotions should be avoided due to their negative effects on academic achievement, in order to be able to regulate her/his emotions and to teach her/his students how to regulate their emotions too (Jennings & Greenberg 2009). We argue that, in order to be efficient in their teaching, teachers should be sensitive to capture children's emotions and to be able to understand the facts that generated them. Moreover, the role of emotions in the learning

process should be part of their personal theory (Hargreaves 2000, 2005). The aim of this study was the investigation of the teachers’ beliefs for the achievement emotions that are generated in class settings and whether students suppress and regulate them or they express them. Teachers’ sensitivity to capture and manage efficiently students’ emotions might be crucial for a positive emotional class climate with consequences in their academic achievement.

### **Emotional Class Climate**

The main characteristic of a positive emotional climate in class settings is the establishment of reciprocal respect and pleasure to work together between students and their teacher (Andersen et al. 2012). In order to establish a positive emotional climate, the teacher should go further from teaching the matter subject and include acts that involve emotional and social aspects of the students’ selves (Sugai & Horner 2008). Teachers that are sensitive to the emotional aspects of their students have less behavioral problems in their class (Brackett et al. 2011), while whenever teachers do not involve emotional aspects in their teaching they face more behavioral problems in their class (Galanaki & Vassilopoulou 2007, Hamre et al. 2008). For instance, students should feel safe in their class and any uncertainty and imposition should be avoided (den Brok et al. 2005). Students that denote the experience of uncertainty are usually isolated from the other students and have lower achievements that they could potentially have (Lynch & Cicchetti 1997, Pianta 2011).

The perceived emotional climate by students contributes to their sense of autonomy, their emotional and academic self-regulation (Jia et al. 2009), as soon as to the development of cognitive skills (Pianta et al. 2008a). For instance, when students experience stress in their class they consume their cognitive resources to regulate their stress and this has an impact to their self-regulation (Frijda et al. 1989), and their inhibitory control (Eysenck et al. 2007, Derakshan & Eysenck 2009). On the contrary, the cognitive flexibility is increased whenever individuals experience situations that have positive emotional valence (Ashby et al. 1999), and enhances their insistence to the goals of the activities that are involved (Fredrickson 2001).

### **Achievement emotions**

According to the Control-Value Theory of Achievement Emotions theory students experience a variety of emotions that influence their academic achievement (Pekrun et al. 2007). Thus, teachers should incorporate in their class management acts that generate positive emotions that might help students to save recourses that would be used for their efforts for academic achievements, and avoiding those, namely the negative emotions, that deplete their cognitive resources (Pekrun et al. 2002, Pekrun & Schutz 2007, Pekrun & Stephens 2009). Among the most frequent emotions experienced in class settings are mentioned the emotions of frustration, boredom, challenge and pride (Smith & Ellsworth 1985, Pekrun et al. 2002, Pekrun et al. 2007).

*Frustration* is an unpleasant emotion that demands enough effort to be regulated (Smith & Ellsworth 1985). Students’ experience frustration in class settings when the situation of stress and uncertainty, where the possibility to expect positive and negative results is equal, follows a negative result (Frijda et al. 1989) and the expectations have not been fulfilled (Smith & Ellsworth 1985).

*Boredom* is also an unpleasant emotion with low demands in effort to be regulated (Smith & Ellsworth 1985). Boredom is experienced when some acts are repeated monotonously (O’ Hanlon 1981, Smith 1985) or the activities demand lower level of cognitive resources than those that the students have (Smith & Ellsworth 1985). The way teachers manage boredom in their class could affect the learning efficiency (Belton & Priyadharshini 2007) as boredom affect students’ motivation, effort, self-regulation and the learning strategies that are used, and finally the academic achievement (Pekrun et al. 2010).

Sometimes students protest for some activities because they perceive as boring. The efficient management of students' boredom could reinforce their interest (Rude 2001) and help students reflect on the activity (Harris 2000) or look for an exit from the boring situation (Pianta & Hamre 2009, Pianta et al. 2008b).

*Challenge* is an emotion with positive valence that demands a great effort in order to be managed (Smith & Ellsworth 1985). Challenge is experienced before individuals are involved in an attractive and interesting achievement, providing the individual with satisfaction from the expected results (Lazarus 1991, Lazarus & Folkman 1984, Lazarus et al. 1980, Ortony et al. 1988) and from their reciprocation (Van der Stigchel et al. 2011). The efficient management of students' challenge contributes to the optimal involvement of students' cognitive resources (Pekrun et al. 2007, Pekrun & Stephens 2009).

*Pride* is also a pleasant achievement emotion but demanding low effort to be appraised and regulated (Smith & Ellsworth 1985). Individuals experience *authentic pride* when they have succeeded in a goal and they attribute their success in their efforts but it is also possible to react with narcissism and in a snobbish way (Tracy & Robins 2007a, 2007b). Pride could potentially contribute to the self-image improvement (Brown & Marshall 2001) to enhance individuals' physical, mental and cognitive resources (Fredrickson 2001) and to the achievement of social goals (Keltner & Buswell 1997, Tracy & Robins 2004). Students might experience pride in class settings when they receive encouragement and an award for their previous achievements from their teacher and thus, they enhance their expectations for future achievements and their involvement to the new academic goals (Pekrun et al. 2007, Pekrun & Stephens 2009, Smith & Ellsworth 1985).

In sum, teachers who are sensitive to consciously involve in their class management acts that create a positive emotional climate and their students benefit from the generated emotions. Through the teacher – student interaction students become aware of their teachers' sensitivity and behave more efficiently. The current exploratory study aimed to investigate whether Greek teachers are sensitive to capture emotions that are generated during their interaction with their students. Specifically, we were keen to see whether teachers are sensitive to generate achievement emotions in their class and in what extend these are perceived to change their students' emotions. Moreover, as the regulation of these emotions consumes cognitive resources, we were wondering if teachers are aware of their students' reaction on these emotions.

## **Method**

### **Participants**

One hundred seven primary school teachers participated in the study. Teachers were recruited from a semi-urban area of North Greece.

### **Questionnaire**

Three questions were addressed for each one of the four achievement emotions examined here, namely, frustration, boredom, challenge, and pride. The questionnaire involved questions about (a) the frequency of the appearance of each episode that generates the emotions in the class, (b) whether these are able to change students' emotions and (c) the frequency that students express (or suppress) these emotions in their class. Teachers used a 4-point Likert type scale to denote their beliefs (1=never/not possible, 2=sometimes/rare, 3=frequently/possible, and 4=very frequently/very possible).

### **Results**

Descriptive statistics are presented on the Table 1. Teachers at above chance level,  $t(106)=3.669$ ,  $p<.001$ , denoted that in their class episodes which might generate frustration to their students appear frequently ( $MO=2.74$ ,  $TA=.69$ ). Moreover, teachers denoted at above chance level,  $t(106)=13.841$ ,  $p<.001$ , that whenever students are involved in this kind of episodes it is possible to change their emotions ( $MO=3.21$ ,  $TA=.53$ ). Finally, at above chance

level,  $t(106)=3.621$ ,  $p<.001$ , teachers denoted that their students sometimes express their frustration ( $MO=2.22$ ,  $TA=.81$ ). The fact that students only sometimes express their frustration that generated from their teachers is indicative of their efforts to regulate this emotion and of their avoidance to express it to their teacher. The regulation of this unpleasant and demanding effort (Smith & Ellsworth 1985) to be regulated consumes cognitive resources and, therefore, could have negative consequences in their academic achievement (Pnevmatikos & Trikkaliotis 2013).

**Table 1:** Descriptive statistics for the emotions appeared in class settings.

Emotions appeared in class settings	Mean	SD
How frequent an episode that generates frustration to your students could happen in your class?	2.74	.69
How frequent an episode that generates boredom to your students could happen in your class?	2.90	.75
How frequent an episode that generates challenge to your students could happen in your class?	2.75	.66
How frequent an episode that generates pride to your students could happen in your class?	3.19	.69
How possible is an episode that generates frustration to change the students' emotions?	3.21	.53
How possible is an episode that generates boredom to change the students' emotions?	2.92	.62
How possible is an episode that generates challenge to change the students' emotions?	3.22	.55
How possible is an episode that generates pride to change the students' emotions?	3.68	.51
How frequently do students that experience frustration express their emotions in the class?	2.22	.81
How frequently do students that experience boredom express their emotions in the class?	2.72	.72
How frequently do students that experience challenge express their emotions in the class?	2.59	.69
How frequently do students that experience pride express their emotions in the class?	3.06	.74

Teachers at above chance level,  $t(106)=5.469$ ,  $p<.001$ , denoted that in their class episodes that might generate boredom to their students appear more frequently ( $MO=2.90$ ,  $TA=.75$ ) than those that generate frustration. Moreover, teachers denoted at above chance level,  $t(106)=6.904$ ,  $p<.001$ , that whenever students are involved in this kind of episodes, it is possible to change their emotions ( $MO=2.92$ ,  $TA=.62$ ). Finally, at above chance level,  $t(106)=3.147$ ,  $p<.005$ , teachers denoted that their students frequently express their boredom ( $MO=2.72$ ,  $TA=.72$ ).

Teachers at above chance level,  $t(106)=3.810$ ,  $p<.001$ , denoted that in their class episodes that might generate challenge to their students appear with the same frequency ( $MO=2.75$ ,  $TA=.66$ ), with those that generate frustration. Moreover, teachers denoted at above chance level,  $t(106)=13.370$ ,  $p<.001$ , that whenever students are involved in this kind of episodes it is possible to change their emotions ( $MO=3.22$ ,  $TA=.55$ ). However, teachers did not pass the chance level,  $t(106)=1.414$ ,  $p>.05$ , concerning the frequency their students

express their emotions when they are challenged for an activity ( $MO=2.59$ ,  $TA=.69$ ). This could be indicative that teachers manage differently the situations that aim at challenging their students.

Finally, teachers at above chance level,  $t(105)=10.252$ ,  $p<.001$ , denoted that in their class episodes that might generate pride to their students are the most frequent among the achievement emotions that were examined in the study ( $MO=3.19$ ,  $TA=.692$ ). Moreover, teachers denoted at above chance level,  $t(103)=23.520$ ,  $p<.001$ , that whenever students are involved in this kind of episodes it is possible to change their emotions ( $MO=3.68$ ,  $TA=.51$ ). Finally, at above chance level,  $t(106)=7.733$ ,  $p<.001$ , teachers denoted that their students frequently express their pride ( $MO=3.06$ ,  $TA=.74$ ).

### **Discussion**

The current study aimed to investigate whether Greek teachers are sensitive to emotions that are generated in their class as a result of the way they manage their class. Specifically, four achievement emotions, namely frustration, boredom, challenge and pride, were examined. The study showed that during the class management episodes that might generate these achievement emotions are happening frequently in Greek classes. Teachers denoted that the episodes that might generate pride and boredom in their students are among the most frequent in their classes. The less frequent episodes are those that might generate frustration and challenge to their students. Thus, although challenge has been among the emotions that could motivate students for higher academic achievements, based in teachers' statements, are not so much frequent in their classes. On the contrary, situations that might generate boredom are more frequent in the Greek classes. This could interpret the lack of motivation children have for academic achievements in many Greek classes.

Moreover, there was a clear tendency for the impact these episodes might have on students' emotions. Specifically, teachers denoted that these episodes are able to change students' emotions. Greek teachers denoted that boring episodes are less likely to change students' emotions. This could be interpreted that boredom is the prominent emotional situation in the class and another boring episode could have less impact on their emotions than the other episodes.

Finally, teachers denoted that their students express more frequently their pride and boredom, they suppress their frustration, while there was not clear tendency for whether students express or suppress their emotions when they experience challenge. Frustration and challenge demand more effort to be appraised and regulated than pride and boredom. Their regulation could consume cognitive resources, and hence have negative effects on students' academic achievement.

Teachers seem that are sensitive to capture emotional aspects in their class. For most of the parameters examined in this study, teachers were found to share common experiences in their classes. The only aspect where teachers were found to differ in their statements was the way their students expressed their emotions when they are being challenged. The agreement between the teachers shows that teachers experience similar situations in their classes and they manage them at a very similar way. However, the frequent appearance of episodes that generate frustration shows that teachers probably are not aware of the negative consequences these situations might have in their cognitive resources (Pnevmatikos & Trikkaliotis 2013). Teachers' sensitivity for the generated emotions, however, is a very important first step for the improvement of the emotional class climate, and could contribute to their professional development (Neophytou et al. 2011).

This study, however, examined only four emotional situations from the amount of possible achievement emotions that could be experienced in class settings. Future research should examine more emotional situations and with qualitative approach to understand better the assumptions of the current study.

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## AN INQUIRY APPROACH FOR TEACHING SOUND IN PRIMARY SCHOOL EMPLOYING EDUCATIONAL ROBOTICS CONSTRUCTION TECHNOLOGY

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### Abstract

Current educational approaches seem to fail in raising students' interest in Science and the processes of scientific methodology. The need for new learning environments that engage students actively in the learning process, using new educational tools and methods is urgent. The main research goal of this study was the design, implementation and evaluation of Teaching-Learning Sequence (TLS) about sound concepts in an inquiry-based environment with the use of educational robotics construction technology. The participants of this study were nine 6<sup>th</sup> Grade students.

In this paper we describe the TLS, namely the structure of the lessons, the taught content of sound, the educational materials and the learning tasks which support students' critical thinking in specific inquiry issues e.g. how to test a variable that could affect the pitch of sound? In addition, we describe students' experience in presenting the TLS tasks to a Science Festival.

The evaluation of TLS effectiveness was conducted by both: the evaluation of the degree of understanding and use of the Control-of-Variables Strategy (CVS), and the improvement in understanding about sound concepts by students. Moreover, we explored students' views during their end product presentations in the Science Festival. Data were collected through pre and post questionnaires, questions from students' worksheets, individual interviews, written notes and the Science Festival Evaluation Questionnaire.

The results of our study indicated a significant improvement in all learning areas after the implementation of the TLS. Students appeared to have understood and be able to use efficiently the CVS for problem-solving. Finally, students' involvement in non-formal learning procedures also demonstrated the dynamics of developing positive attitudes and increased participation in Science.

**Keywords:** Teaching Learning Sequence, Sound concepts, Inquiry learning, Elements of Educational Robotics, Control of Variables Strategy

### Introduction

Sound content is one of the main thematic areas in New Greek Science Curriculum (NGSC) in primary education aiming students to understand sound concepts and phenomena in multiple social, technological and environmental contexts (Plakitsi et al. 2014). Generally, NGSC emphasizes students' engagement in critical thinking skills, such as reflecting on how a science content (e.g. sound) relate with human civilization, exchanging argumentations, investigating the factors affecting on a phenomenon, using ICT for measuring or collecting data, self-evaluating of learning paths etc. In this paper, we present our attempt to design, implement and evaluate a TLS (Psillos et al. 2004) concerning the content of sound in 6<sup>th</sup> Grade students, which is compatible with the NGSC. The basic characteristic of this TLS is the combination of an inquiry learning environment with the use of educational robotics materials in order to promote critical thinking. After the implementation of TLS in school, students participated in the 2<sup>nd</sup> Science Festival at Florina, presenting their findings in poster.

### Theoretical Framework

In recent years in the domain of Science Education, an attempt is made to develop

students’ skills in the use of scientific procedures, e.g. design and conduct an investigation, analyse, data, predict, use models, collect information from multiple sources, make conclusions, make relationships between evidence and explanations, recognize alternative solutions, keep science journals etc (Duggan & Gott 2002, Hew & Brush 2007, Lederman 2008, Sutman et al. 2008, UNESCO 2009, Zimmerman 2000). In this paper we focus on a basic scientific procedure the Control of Variables Strategy (CVS); during this procedure a student has to deal with a variable that is probably affects to a system holding constant all the other variables (Boudreaux et al. 2008, Chen & Klahr 1999).

In the context of our research we negotiated the sound concept of pitch for promoting students’ ability to implement successfully the CVS. We also chose the combination of direct teaching of the CVS with the simultaneous students’ engagement in conducting experiments, since scientific results emphasize on its effectiveness (Chen & Klahr 1999, Lorch et al. 2010, Zohar & Peled 2008).

The pitch of sound is defined as a sensory attribute that allows us to describe music sounds as high (acute), or low (deep). The pitch of sound in percussion instruments may change depending on the size and the tension of the membrane, the type of the drum sticks, etc. Similarly in string instruments, pitch may vary depending on the tension, the length and the thickness of the string (Hewitt 2005, Pierce 1983, Rossing 2008).

However, in literature, we found many students’ alternative ideas concerning pitch. Students attributed certain properties on different materials and used those to describe sound. For some students, metals allow sound to travel faster, while for others they obstruct sound due to their density. These properties are incorrectly applied to what they have learned about tension or pitch (Menchen 2005). In another research (Menchen & Thompson 2009) pitch’s dependence from the distance is indicated as another alternative idea. Some students suggest that pitch is changing due to the distance it has to travel, claiming it would be lower. Watt and Russel (1990) indicated that students’ ideas about the mechanisms for the production of sound in a drum are completely context-dependent and can be classified into three different categories:

- Those that included the physical characteristics of the object (e.g. stretching the drum).
- Those that referred to the strength needed to produce sound (e.g. the action of striking a drum).
- Those that included oscillations (e.g. plucking a guitar string).

In order to help students overcome these alternative ideas, we chose to combine teaching about sound with robotics constructions and Engineering. Several research results outpoint the benefits from combining Science and Robotics-Engineering, such as the promotion of problem-solving skills, understanding and testing of scientific and designing principles (Bauerle & Gallagher 2003, Wagner 1998 in Chambers et al. 2007). This combination and the engagement in robotics constructions can offer students a more meaningful learning, increase their interest and curiosity, while promoting continuous learning from their side (National Research Council 2011).

In this study, we followed basic aspects of the design of «Science through LEGO Engineering Design a Musical Instrument: The Science of Sound» of TUFTS University (Barnett et al. 2008). This curriculum consists of 9 units, where students conduct guided inquiries to discover how sounds are produced and transmitted and how sounds from different sound sources vary. Students use the LEGO NXT Mindstorms kit and some craft materials for the construction of their musical instruments. In our TLS, Engineering’s design part and Robotics’ constructive part complement students’ investigations on the way to achieve knowledge about sound and sound effects.

Furthermore, special attention was given to the CVS. The elements of CVS taught were: a) the identification of the variables that affect a system, b) in order to determine whether a variable affects a system or not, we conduct two tests, in which the control variable changes while the other variables remain constant, c) in case the result of the experiment differs before and after the change of the variable, then this variable affects the system (Boudreaux et al. 2008).

### Structure and Content of the TLS

Our TLS consists of 9 lessons, each of which lasts approximately 90 minutes. In the first 4 lessons, students conduct guided and open-ended inquiries in order to discover how sounds are produced and which factors affect the pitch in different audio sources (drums, guitar), using LEGO NXT Mindstorms kit and complimentary materials. After an initial phase of familiarizing with students’ interests and experiences, students are asked to empirically distinguish the different sounds of a drum. Finally, groups’ assignment is presented in a poster "How to construct a musical instrument that produces three different pitches".

In lesson 1, after a familiarizing with LEGO NXT Mindstorms kit phase, students conduct inquiries to discover how sound is produced in the drum, by observing what happens to the lentils on the surface of the drum when they hit it (Picture 1). An introduction of the term “oscillation” follows, as well as a video where the oscillation in liquid becomes obvious.



**Picture 1.** Students experimentation with lentils on the drum’s membrane

In lesson 2, students discuss, predict and record on the cardboard, with the support of the researcher, the variables that may affect the pitch of the drum. Students construct LEGO drums for their inquiries. A demonstration about how to conduct an experiment to test a variable is done by the researcher, where the CVS is being explained step-by-step to the students. Then, following the approach Predict-Observe-Explore and the steps of CVS, they conduct four guided experiments, in which scaffolding is applied, to check if the tension of the membrane, the size of the drum, our distance from it and the type of the drum sticks, are all factors that influence the pitch of the drum. Finally, there is a discussion about the factors that remained stable and those changed and each factor is marked on the cardboard with a  $\checkmark$  or an X if it affected the pitch of the drum (Picture 2).



**Picture 2.** Cardboard with the variables that affect or not the pitch of the drum

In lesson 3, students conduct another guided experiment to check if the distance you hit from the center of the membrane affects the pitch of sound. In an open inquiry level, students are asked to check the variable material of the membrane after they design their own experiment (Picture 3). Followed by a familiarizing phase, students’ are introduced to the guitar lesson. In the construction phase of the lesson, students construct a two-string LEGO guitar for their upcoming inquiries.



**Picture 3.** Students designing their experiment to test the variable “material of the membrane”

In lesson 4, students discuss, predict and record on the cardboard, with the support of the researcher, the variables that may affect the pitch of the guitar. Then, following the approach Predict-Observe-Explore and the steps of CVS, they conduct four guided experiments, in which scaffolding is applied, to check if the length of the string, our distance from it, the thickness and the tension of the string, are all factors that influence the pitch of the guitar. To check the variable "tension of the string" students construct a LEGO motor guitar (Picture 4). At the open inquiry level, students are asked to check the “material of the string” variable, after designing their own experiment. Finally, there is a discussion about the factors that remained stable and those changed and each factor is marked on the cardboard with a  $\checkmark$  or an X if it affected the pitch of the guitar.



**Picture 4.** Students testing the variable “tension of the string” using a motor guitar LEGO.

In lesson 5, images of musical instruments are projected and there is a plenary discussion about their characteristics and the ways in which different sounds are produced. Students use the knowledge they gained in the previous lessons to design their own musical instrument that produces three different pitches (Picture 5).



**Picture 5.** Design of the musical instrument maracas – each group of maracas testing a different variable

In lesson 6, students proceed to the construction of their musical instrument, using the materials they have chosen (Picture 6).



**Picture 6.** Three groups of maracas ready

In lesson 7, students work in groups to decorate their science boxes, in which they will place their works and bring them to the Science Festival.

In lesson 8, students work in groups to construct a poster in order to present in the most effective and creative way how their musical instruments work and what parts of them produce different pitches (Picture 7).



**Picture 7.** Students presentation poster

In lesson 9, students watch videos of Science Festivals in Greece and abroad, in order to become familiar with the environment and the process of presentations. Then, they get prepared and practice the necessary skills to present their musical instruments and the knowledge they gained that contributed to its design, both in classroom's and Science Festival's public.

## Method

### Research Questions

In this paper we present one research question of our study:

- *In what level do students understand the Control of Variables Strategy after implementation of the TLS?*

### Participants

In our study participated nine 6<sup>th</sup> Grade students (11-12 years) of the 5<sup>th</sup> Primary School of Florina, of which four were boys and five were girls. The students were chosen randomly from a list of 6<sup>th</sup> Grade students.

### Instruments

To achieve these goals, both quantitative and qualitative methods of data collection were used, i.e. pre and after questionnaire and individual interviews.

### Data Collection and Procedure

The pre-questionnaire was administered to students two weeks before the beginning of the TLS, to record their initial knowledge and ideas. The lessons were held between February and May 2014 and had a duration of 16 teaching hours. One week after the last lesson of the TLS individual interviews were conducted. Post-questionnaires were filled in two weeks after the end of the TLS in order to record students' learning outcomes.

### Results

In this paper we present results about the efficiency of our TLS in developing students' inquiry skills and understanding of the CVS. In the pre and post questionnaire students were asked to describe what they would do in order to check if the variable “length of a string” affects the sound produced by a guitar (Table 1).

Table 1: Students Allocation According to the Categories of their Answers in Questions of the Pre and Post-Questionnaire.

Categories of answers	Pre-test	Post-test
	f	f
Category 1: Scientifically accepted answers	1	8
Category 2: Partly-Scientifically accepted answers.	2	1
Category 0: Ambiguous, Incomplete or no answers.	6	0
Total	9	9

Students' answers before the TLS, show that most of the students could not describe correctly the CVS and draw a conclusion from this procedure. Some students gave partly-scientifically accepted answers, like “Helen is right because in order to play a guitar you have to firstly attune the strings to have the sound you want” and “Helen is right because if the string is small, it produces deeper sound and if the other string is smaller it produces higher

sound”, while other students gave ambiguous responses or without further reasoning “Helen is right because the length of a string in a guitar affects the kind of sound that is produced”.

After the TLS, the majority of students are able to describe the CVS, while two groups of answers were formed, suggesting two alternatives in the category of scientifically accepted answers (Table 1). In the first group of answers, only one string was used “Helen is right. I would check the variable “length of the string”. The thickness and the tension would remain constant. If I put my fingers in different fingerboards, it produces different pitches”. In the second group of answers, students used two strings “I would take two strings of different length, I would put the same tension on both and I would check which one is right by the sound they would produce”.

We also present the results from two questions of the four individual interviews regarding the control of the variable “tension of the membrane” and the selection of the appropriate materials for the test (Table 2). Two students described correctly the control of the variable process, each choosing different materials, one a big balloon and the other two same sized balloons, “I would build two drums with small balloons of the same size. In the first, the membrane would be much stretched and in the second it wouldn’t be stretched, it would have wrinkles. I would strike both drums to see if the pitch would change”. One student, described correctly the control of the variable process and the design of the experiment, “I would take a drum, I would let the membrane loose and I would take another drum with regular membrane, I would strike both membranes and I would check” but during the experiment didn’t keep constant the variable “material” to check only the variable “tension”, saying “I would take a surgical glove and a balloon. I would stretch them both to check”. Another student, while choosing the right materials and describing the control of the variable strategy correctly, she did not describe the whole process with the results “I would take a balloon and I would put it on the drum. I would put it stretched and I would put it not so stretched”.

Table 2: Students Allocation According to the Categories of their Answers in Questions 4 and 5 of the Individual Interviews.

Question 4: “If I asked you whether the tension on a balloon’s membrane affects the pitch of the sound, what would you do to check it?”

Question 5: “Experiment related to Question 4: In front of the student there are different material that can be used as membranes for a drum and the student is asked to choose those that would help him test the variable”.

Categories of answers	Question 4
	f
Category 1: Scientifically accepted answers: correct description of the CVS and correct materials for the test.	2
Category 2: Partly-Scientifically accepted answers: Correct description of the CVS but testing the wrong variable. Incorrect materials for the test.	1
Correct description of the CVS with no conclusions. Correct materials for the test.	1
Category 0: Ambiguous, Incomplete or no answers.	
<b>Total</b>	<b>4</b>

## Discussion

For the students of the research, the dynamics of this TLS derived from the ability to create rich opportunities for experimentation such as: explanation of how things work, extended inquiries with physical objects and their impacts on observable phenomena (scientific inquiry about the variables that affect the pitch in the drum and the guitar) and original planning and construction close to students’ interests (designing and constructing their musical instruments). Students had the opportunity to get engaged in scientific inquiries and be able to design, describe and conduct an experiment in order to test a variable.

As discussed above, the results of this research, the integration of design, the inquiry and the prolonged experimentation can provide a rich set of experiences in which students can rely on when conducting scientific reasoning and argument and constructing scientific knowledge. This environment has benefited students greatly in developing their critical thinking and scientific skills.

It is recommended a future application of this TLS to be in continuous program without long periods between successive lessons of the TLS, for better understanding and connection of the contents by the students. Another proposal is to enrich the program with additional material for wind instruments, which were left out for lack of time planning. It is also proposed to extend the content with more inquiry activities for sound phenomena such as diffusion, reflection and absorption.

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## MEASURING SOURCE DIVERSITY IN WSN

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### Abstract

Wireless Sensor Networks (WSNs) consist of distributed, autonomous nodes that work together to observe some phenomenon of interest by taking sensor readings of factors such as temperature, humidity and radiation. Data is collected in a WSN by transferring it from source nodes that generate data to sink nodes that collect it. The nodes are battery powered once the energy has been exhausted from a node, it ceases to function and its loss may inhibit other nodes in the network. In many applications, data is transferred by routing which may consume the majority of the battery life and potentially render the WSN unusable. As it is known, in many applications, the usefulness of a WSN at a particular instant is considered to be proportional to the source diversity of data that it collects. It is hypothesized that by routing using node reliance, it is possible to achieve high source diversity for longer than with other routing protocols. In order to determine how good a routing protocol is at solving this problem, it is necessary to have some metric that measures the level of source diversity over some period of time. This paper examines the measurement of source diversity. A new metric known as Connectivity Weighted Throughput (CWT), which is used to gauge the efficiency of applications that benefit from high source diversity for long period of time, is presented in Section 2. Section 3 discusses methods for comparing routing heuristics and protocols for maintaining high source diversity. Finally, Section 4 explains the simulation configuration that was used for the experiments in this thesis.

**Keywords:** WSN protocol.sl, CWT, Routing heuristic, source diversity

Connectivity Weighted Transfer (CWT) is a new metric that may be used to measure source diversity over time. It rewards the connection of as many sources to sinks for as long as possible and is able to compensate for the source-forwarding and data aggregation problems.

### Definition of Connection

A source is connected while it is active and a sink is receiving the data it generates. WSNs typically transmit discrete data packets rather than continual streams of data. Therefore, an abstraction must be used to represent the discrete data packets as streams of data. The operational time of the network is split up into non-contiguous frames. A source is connected to a sink for the entirety of a frame  $F$  if any sink receives a packet from that source during frame  $F$ . When one frame ends, another does not begin until a sink receives a packet from a source. Delaying the creation of a frame until it is required makes it less likely that a source will connect at the end of an otherwise empty frame, reducing the perceived connectivity of the sources. For example, consider a network with a frame length of five seconds. If data is received by source A and source B at times 4 and 6 respectively then they will be perceived to be simultaneously connected if the frame starts at time 4, but not simultaneously connected if the frame begins at time 0.

### Metric Theory

The CWT metric combines the quantity of transferred data and the number of sources that have provided the data. The metric does not consider the length of time for which a source has been connected, since this is application dependent, e.g. an application that

generates 95 data every one second will expend energy more quickly than an application that generates data every five seconds and so will remain connected for less time. By avoiding any application dependent variables from the metric, two application scenarios can be compared using the CWT result. In order to represent the connectivity of sources, the metric should reflect the number of sources connected within a single frame. However, to compensate for the sourceforwarding problem discussed in Section 5.1.1 there should be a non-linear relationship between the number of sources connected in a frame and the result of the metric. For example, having 10 sources connected for one second must be more highly rewarded than having 1 node connected for 10 seconds.

### Formal Description

Formally, the CWT metric for a network may be expressed as:

$$\sum_{i=1}^f n_i^x (b_i \cdot n_i)$$

where:

- $f$  is the number of frames from activation of the network until all sources expire
- $i$  is the frame number
- $n_i$  is the number of connected sources in frame  $i$
- $b_i$  is the average number of bytes transferred per source in frame  $i$
- $x$  is a weighting factor, which is discussed further in the next section

The metric multiplies the total data transfer during a frame by an enhancement function, i.e. the number of connected sources raised to the power of  $x$ . This total is then added across all frames to produce the CWT value for the application. Many choices were available for the enhancement function. The function  $n_i^x$  was selected due to its versatility and scalability. The  $n_i^x$  function is versatile. Depending on the choice of weighting factor  $x$ , the function could be made to encourage connectivity to any required extent. Thus, a large range of application behaviours can be examined, including those for which improved connectivity is irrelevant, desirable, essential or even undesirable. The proposed enhancement function is also scalable, since its growth rate is relatively slow. Consequently, a single weighting factor may allow the comparison of both large and small networks for a single application. Conversely, functions such as  $xn$  grow very quickly and it may be impossible to find a weighting factor that would allow the analysis of an application in networks whose size varied.

### Weighting Factor

The weighting factor  $x$  is used to bias whether it is desirable to have more sources connected for shorter periods of time or fewer sources connected for longer. Depending on the value assigned to it, the metric can be made to operate in different ways. For values of  $x > 0$ , the bias is in favor of having many sources connected for a short period. For values of  $x < 0$ , the bias is in favor of having a small number of sources connected for a long period. For  $x = 0$ , no bias is applied. In this case, CWT simplifies to the total data transfer metric. For an example of weight assignment, consider a scenario in which the number of connected sources and the total data transfer are consistent across all frames. The user indicates that it is  $c$  times more preferable to have  $n$  sources connected for one second rather than one source connected for  $n$  seconds. With such a value,  $c$ , the user can determine the weighting factor as follows:

$$\sum_{i=1}^1 n^x (b \cdot n) = c \sum_{i=1}^n 1^x (b \cdot n)$$

The sigma operators can be trivially expanded, since the frame number does not affect any of the variables. Thus:

$$n^x(b \cdot n) = cn \cdot 1^x \cdot (b \cdot 1)$$

By combining and simplifying:

$$n^x = c$$

Finally, it is possible to solve for x by taking the natural logarithm of both sides of the equation:

$$x = \frac{\ln(c)}{\ln(n)}$$

By substituting the last equation into the first equation, it is possible to derive an equation that allows the user to quantitatively express how much more desirable it is to have multiple sources connected over longer periods of time. For example, if the user wishes to set the weighting such that having 10 sources connected for one second is 50% more desirable than having 1 source connected for 10 seconds, then the value of  $x = \ln(1.5)/\ln(10) = 0.18$ . A domain expert for whom the data is being collected may best determine the weighting

### Simulation

This section uses an example to illustrate the limitations of common metrics as well as demonstrate the effectiveness of the CWT metric. The network shown in Figure 1a is used as an example, and contains one sink node (Z) and nine source nodes (A-I). For convenience, it is assumed that communication between nodes is perfect and bidirectional. Thus, an edge between two nodes in the diagram indicates that those nodes can communicate with each other.

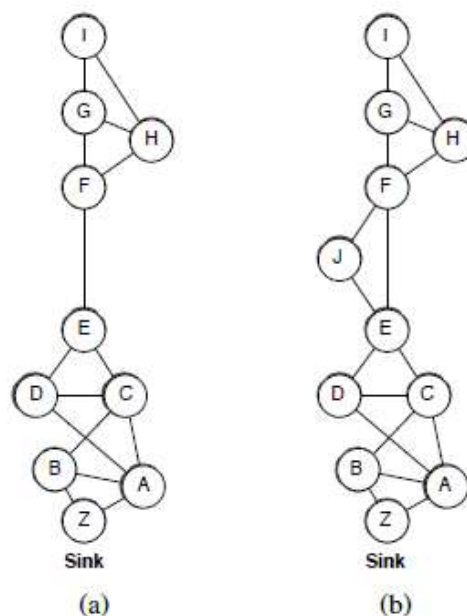


Figure 1

The proposed application mimics that of Tolle’s redwoods microclimate [1] project in which the sink node is placed at the bottom of a tree and the sources are placed at different heights. Every five seconds, sources generate a piece of data, and send it via the minimum hop path towards the sink. Since Tolle does not specify a data packet size and sources may produce data packets of different sizes, particularly in different deployments, the simulation randomly determines each packet’s data size between 2 and 100 bytes. The aim of the

application is to calculate a temperature gradient of the tree for as long as possible. Thus, the application benefits from having more sources (to produce a higher resolution temperature gradient) for longer. The application is simulated using the Castalia 1.3 simulator. The nodes are based on the TMote sky [2]. However, in order to reduce the simulation time, each node is given only 14.58 J of energy as opposed to the 29160 J that would be provided by a pair of AA batteries. The sink is given as much energy as the simulator would allow. Experimental observations are shown in Table 1:

Time	Event
32539	Source C Expires
33905	Source D Expires
103735	Source A Expires
125923	Source B Expires

Table 1

Source C is the first node to expire. However, its loss is unlikely to render the network unusable since source D can be used in place of source C for routing. When source D expires, only sources A and B remain connected to the sink. However, it may be possible to estimate the temperature gradient at future times using only A and B. If the network remains usable with only sources A and B, then its useful network lifetime (35 hours) is almost four times greater than n-of-n lifetime suggests. The network can be modified to that shown in Figure 1b by inserting an additional source J to the void between sources E and F in order to obtain a higher resolution temperature gradient. The observations are shown in Table 2.

Time	Event
28511	Source C Expires
29450	Source D Expires
105538	Source A Expires
122628	Source B Expires

Table2

By adding source J, source C is required to forward additional data originating from other sources (the source-forwarding problem). Sources C and D expire 13% more quickly than in the initial scenario. However, during that time the temperature gradient is more precise due to the presence of source J. Over the entire experiment, the introduction of J causes the total data transfer to drop from 4.39 MB to 4.35 MB. Thus, the total data transfer metric may be ineffective at representing the usefulness of the network. Conversely, the CWT metric with  $x = 2$  increases from 2:45 108 to 2:93 108 (19.6%).

Thus, the CWT metric correctly reflects the improved temperature gradient that can be achieved by the introduction of source J whereas the total data transfer metric incorrectly suggests that the addition of source J has a negative effect on the application, despite the increased temperature gradient resolution that can be achieved.

### Conclusion

Existing metrics are unsuitable for comparing two WSNs to determine which is better at maintaining a high source diversity for a long period of time. Classical approaches such as total data transfer or sink connectivity do not compensate for the increased energy expenditure caused by sources routing data on behalf of other sources (the source-forwarding problem). A new metric, known as CWT has been introduced, which can be used to reward networks that maintain high source connectivity. By utilizing a user defined weighting, an application's performance can be measured according to its ability to keep numerous sources connected. It has been shown how the metric may be simply adapted to be used in several

varieties of WSN application, including those that use continual data streams, discrete packets and delay tolerant networking. A user can design a network that maximises the CWT by constructing their network such that no sources have any intermediate nodes in common (for a positive weighting factor) or such that each source must route through as many other sources as possible (for a negative weighting factor) and vice-versa for minimising CWT. For example, a network in which no sources have intermediate nodes in common can be achieved in a star topology in which each source is a direct neighbour of a sink. Conversely, an example network in which sources must route through many other sources is a linear network.

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## PROBLEM SOLVING SCIENTIFIC MODES USED WHEN DOING WORD PROBLEMS

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### Abstract

The negative attitude towards Mathematics may present an obstacle in students' learning and may limit their potentials. Many students become discouraged when they hear that the Natural Sciences entail knowledge of mathematics. Although the teacher and some more gifted students find the word problems easy, most students do not feel so. Instead, they develop aversion to the word problems regardless of the fact that they are essential in solving scientific problems. Word problems solving is a complex task which entails the integration of many concepts, facts and methods. Unlike to arithmetic problems presented with standardized symbols and requiring specific algorithms application, word problems are very diverse and can often be solved in several ways. Translation of word problems into math symbols is one of the most difficult parts in word problems solving, but also the most important one. Without it, math would be impossible to apply with real problems solving. This paper presents several methods for solving word problems which contribute to the development of critical thinking with students.

**Keywords:** scientific skills, word problems, translation/interpretation, natural language, mathematical symbols

### Introduction

The negative attitude towards Mathematics may present an obstacle in students' learning and may limit their potentials. Many students get discouraged when they hear that the natural sciences demand knowledge in mathematics.

Even though the teacher and some more gifted students find the word problems easy, most students do not feel so. Unfortunately, aversion is being developed with students towards the word problems the command of which is essential in solving scientific problems. In practice, the problems do not show up in the form of arithmetical equations. In order to be solved they must be translated from a natural language into mathematical symbols.

Solving word problems is a complex task which demands integration of a large number of concepts, facts, and methods. Unlike to arithmetic problems presented with standardized symbols and requiring specific algorithms application, word problems are very diverse and can often be solved in several ways.

Translation of word problems into math symbols is one of the most difficult parts in word problems solving, but also the most important one. Without it, math would be impossible to apply with real problems solving.

In the natural language, students firstly learn how to recognize words, then phrases, and finally the sentences. A similar approach is applied in solving word problems. The students firstly learn the vocabulary, and after that they go onto the phrases and sentences.

### Translating words into mathematical symbols

One of the greatest challenges in solving word problems is translating them into symbols. In table 1.1 words that refer to specific mathematical operations are presented.

**Table 1.1** Word problems terminology for specific mathematical operations

+	-	.	:	xy	?	=	( )
adds	change	by	divides	cubed	how much?	is	all
and	decreased	double	cuts	(x3)	how far?	are	grouped
plus	difference	times	percent	exponent	what?	matches	quantity
sum	less	multiplies	quotient	at a degree	when?	is equal to	taken together
together	minus	from	relation	squared root	what value ?	the same as	
total	subtracts	product of	divide by	(x0,5 )		was	
addition	extracts	repeats	reciprocal	squared		were	
with	takes out	by factor	value	(x2)		will be	
more	owes	percent	a third of			makes	
increased by	decreases	of	a part			gives	

We always have to see the context in interpretation of word problems, because there is not always a linear relationship between words and symbols. In the next exercise, the words are used in their most general meaning. Figure 1.1 presents how the Pythagorean Theorem can be translated from a natural language into symbols. Presentation in symbols is much simpler than presentation in a natural language.

**Exercise 1.1** *Translating the words into mathematical symbols*

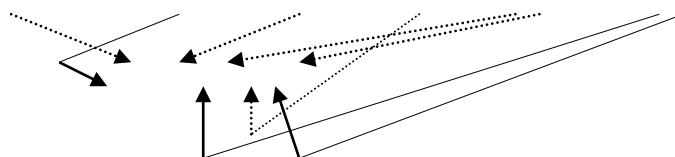
In the list that follows, words that are common in word problems are shown. Translate the most common mathematical meaning of each of the following words and mark it with an appropriate symbol: addition (+), subtraction (-), division (:), exponentiation ( $x^y$ ), unknown (?), even (=) or parentheses ( ).

adds	decreases	how much?	part	extracts	same as
all	separated	total	to	reciprocal	third of
likewise	difference of	increased for	plus	value	triple
addition	double	what?	degree	repeats	was
equal to	divides	less	product of	divides	what?
and	equal	more	squared	decreased for	will be
matches	exponent	minus	quarter of	squared root	when?
are	times	multiplies	quotient	subtracts	with
by	gives	divides	at a degree	sum	gives
cubed	to group	decreases	relation	together	is
owes	half of	percent of	cuts		at a degree



$c^2 = a^2 + b^2$   
 In every right triangle **the square of the hypotenuse is equal to the sum of the squares in the cathetus**

$$c^2 = a^2 + b^2$$



**Picture 1.1 Translating the Pythagorean Theorem from a natural language into mathematical symbols**

**Translating the natural language into algebraic expressions**

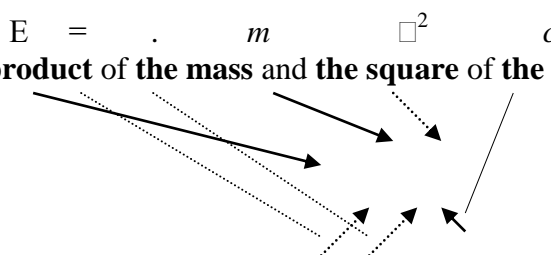
Arithmetic is a main branch in mathematics, and the algebra is a tool for presenting arithmetics in a general form.

The algebra is an irreplaceable tool for solving word problems, and even though the algebraic equations are more simple expressions in the natural language, the process of translating from the natural language into algebraic expressions is not that simple.

Figure 2.1 shows how a natural language can be translated into mathematical symbols. The equation is much simpler. To be successful in solving tasks, students must learn how to translate the textual descriptions into algebraic expressions.

$E = mc^2$   
**The energy is a product of the mass and the square of the speed of light in a vacuum**

$$E = mc^2$$



**Picture 2.1 Translating a sentence into a relativity equation**

The following exercise is designed for practicing translation of phrases into algebraic expressions. Students will learn to solve the problems better as they master the translation of phrases into algebraic expressions.

**Exercise 2.1 Matching phrases of natural language with algebraic expressions**

Read the phrase on the left and match it with the appropriate expression on the right. The first phrase is solved for an example.

Natural language	Algebraic expression
1. Sum of two and unknown x	d1 – d2
2. Reciprocal value of the temperature	s : t
3. Distance difference	x6
4. A relation between path and time	3h
5. The sum of lengths decreased by 5	m / 2
6. A square root of the difference a-b	1 / T
7. Height by factor 3	(d1 + d2) – 5
8. The product of two lengths squared	$\sqrt{a - b}$
9. Degree higher from x3	(11 · 12)2
10. Half of the mass	2 + x

**Exercise 2.2 Formulating phrases of algebraic expressions from a natural language**

Figure 2.1 shows how an algebraic expression can be formulated from a description of

a natural language. Formulate the algebraic expressions for each of the following definitions. See table 1.1 to see the correlation between the terms and the mathematical operations.

1. The perimeter of the circle ( $L$ ) with radius  $r$  is equal to the product of its diameter ( $2r$ ) and the number  $\pi$ .
2. The area trapezoid ( $P$ ) is a product of the half-sum of its bases ( $a, b$ ) and the height ( $h$ ).
3. The area of the rhombus ( $P$ ) with diagonals  $d_1$  and  $d_2$  is equal to half the product of the diagonals.
4. The pressure ( $P$ ) is a relation between the force ( $F$ ) and the area ( $S$ ).
5. The product of the sum and the difference of both expressions ( $A, B$ ) is equal to the difference of its squares.
6. The force ( $F$ ) is equal to the product of the mass of the body ( $m$ ) and its acceleration ( $a$ ).
7. Work ( $W$ ) is a product of the force ( $F$ ) and the distance ( $d$ ) on which the force has effect.
8. Density ( $\rho$ ) is the relation between the mass ( $m$ ) and the volume ( $V$ ).
9. The area of the square ( $P$ ) is equal to the length of the square's side ( $a$ ).
10. The current ( $I$ ) is proportionate to the voltage ( $U$ ), but is inversely proportionate to the resistance ( $R$ ).

### Translating algebraic expressions in natural language

It is sad to say that many of the students see the equations in textbooks as they were hieroglyphs. Luckily, they can learn to interpret them. All equations which are given below are algebraic expressions which include addition, subtraction, multiplication, division, exponentiation, or nth root. The problem is that the names of the variables are not  $a, b, c$  or  $x, y, z$ , which are most commonly met in the mathematics textbooks. Even though the symbols are different, the principles and operations are the same. Science requires that concepts expressed in a natural language be translated into algebraic expressions whereas those expressed in algebraic expressions be translated into a natural language.

The following exercise focuses on the second skill: translating algebraic expressions into a natural language.

#### Exercise 3.1 Formulating phrases of algebraic expressions from a natural language

This following exercise is designed for training translation of algebraic equations in a natural language. Two expressions are given for each equation; one is correct, and the other one is incorrect. Explain the algebraic expressions and circle the correct expressions.

1. $G = mg$	(a) As the mass increases, the weight decreases. (b) The weight of the body is a product of the mass and Earth's acceleration.
2. $E = mc^2$	(a) A small amount of material presents a large amount of energy. (b) As the mass increases, the energy decreases.
3. $P = \frac{ah_a}{2}$	(a) The area of the triangle is proportionate to the height. (b) The area of the triangle is inversely proportionate to the basis.
4. $a^m \cdot a^n = a^{m+n}$	(a) The product of degrees with equal bases is a degree with the same basis, and an index equal to the sum of the indexes of the multiplier. (b) The product of degrees with equal bases is a degree with the same basis, and an index equal to the product of the indexes of the multiplier.

5. $V = \frac{3}{4}\pi r^3$	(a) If the radius of the ball increases 2 times, the volume will increase 8 times. (b) The volume of the ball is the sum of $\frac{3}{4}$ and the product of $\pi$ and the radius cubed.
6. $\rho = \frac{m}{V}$	(a) The density does not depend on the volume and the mass. (b) The density is the relation between the mass and the volume.
7. $P = ah$	(a) The area of the rhombus is proportionate to the height. (b) The area of the rhombus is the relation between the basis and the height.
8. $\sin \alpha = \frac{a}{c}$	(a) Sine of an acute angle in a right triangle is a relation of the opposite cathetus of the angle and the hypotenuse. (b) Sine of an acute angle in a right triangle does not depend on the hypotenuse.
9. $P = \pi r^2$	(a) The area of the circle is inversely proportionate to the radius. (b) If the radius of the circle increases 3 times, the area will increase 9 times.
10. $T = 2\sqrt{\frac{l}{g}}$	(a) The period of the pendulum does not depend on the mass of the pendulum. (b) As the length is increased, the period of the pendulum is decreased.

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## SETTING A FESTIVAL ENVIRONMENT FOR PROMOTING CRITICAL THINKING IN PRIMARY SCIENCE EDUCATION

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### Abstract

In this paper we describe an Inquiry Learning Environment (ILE) for promoting critical thinking to primary students regarding Science. Specifically, we focus on the procedure of organizing a Science Festival within the area of Florina. The procedure included two main phases: (i) firstly students were asked to express their interest about a science topic in order to create a ‘Scientific Kit’ e.g. a model of a train and (ii) secondly, they were asked to prepare themselves for presenting their own ‘Scientific Kit’, within the framework of a Science Festival. Five schools participated in two Science Festivals, which took place during the School Years of 2012-2014. The above mentioned enterprise was implemented throughout the close collaboration among researchers of Science Education, primary student teachers, a school counselor and teachers of the participating schools.

This presentation aims at introducing the theoretical background of a Poster Session of the Conference entitled the “Young Scientist!” which comprises a number of ‘Scientific Kits’. Particularly, it analyzes the characteristics of the Festival ILE, taking into account the principles of authentic learning as well as the main issues of the educational approach of Science-Technology-Society-Environment (SSE). Following this analysis, we will present the ‘Scientific Kits’ of the festival and we will focus on representative ILE examples in order to reveal substantial pedagogical characteristics which support the development of critical thinking skills e.g. collecting information and data from multiple sources. In addition, we will discuss the results of this research concerning the characteristics of a Festival’s learning environment that promotes the development of primary students’ critical thinking. In additions, we will present primary students’ views about their experience during this Science Festival.

**Keywords:** Inquiry Learning Environment, Authentic Learning, Critical Thinking, Science Festival, Science-Technology-Society-Environment approach.

### Theoretical Framework

During the last 40 years, science education stakeholders have revealed the importance of understanding the interrelation between Science, Technology, Society and Environment (STSE) by future citizens (Pedretti & Nazir 2011). Since, under the umbrella of STSE, an increasing attention toward the development of scientific literacy underlines basic educational perspectives such as the idea of “science for all” in which science is approached within multiple contexts such as cultural, political, and social (Pedretti & Nazir 2011).

Furthermore, the development of scientific literacy is still an open research issue including supplementary considerations. For example, the achievement of understanding science concepts and phenomena is considered as a product of cognitive processes where students construct their knowledge (Kyriakopoulou & Vosniadou 2004). In addition, it is documented that “*emotional factors of interest and enjoyment can play a special role in stimulating and supporting science learning motivation*” (Lin et al. 2011: 26). Consequently, in order to promote scientific literacy we need to focus on multiple learning contexts beyond classroom such as science centers, out-of-school activities, and science festivals, which they can help students enjoy their engagement in science content (DeWitt & Osborne 2010, Velayutham et al. 2011). In this paper we discuss the implementation of a Science Festival

(SF) within the perspective that SF is a learning environment which students engage in authentic and enjoy inquiry tasks.

Indeed, SF is an increasingly global phenomenon, especially in Europe and the USA, offering significant opportunities for engaging public audiences in science and technology issues. Today, it is a common viewpoint that science festivals constitute a rich research area, giving motivation for further research in the future (Bultitude et al. 2011). There is no an explicit, accepted definition of the Science Festival (SF, Science Festival / Science Fair). According to Baltitude et al. (2011), the SF is a type of communicative and popular event, characterized by transient and local character, which gives emphasis on science as a way of entertainment.

Moreover, research on critical thinking asserts that teachers have to recognize students' interest, expectations and needs in order to plan authentic learning activities for promoting their critical thinking (Pithers & Soden 2000). A student that is able to think critically is curious, analytic and reflective thinker, problem solver, flexible as well as active. Also, he/she asks questions, seeks information, and makes links to relevant questions. (Pithers & Soden 2000). Authentic learning means that students explore, discuss and construct meanings and meaningful relationships in contexts involving real-world problems that are intimate to them. Students use their minds “well”, while they are intrinsically motivated, that leads to spontaneous and active learning (Donovan et al. 1999). Under this consideration the design, preparation and implementation of a SF could be a representative authentic learning experience for students.

According to Lombardi (2007), authentic learning relates to solving real complex problems through a variety of approaches such as role play, collaboration, creative activities, exploration and experimentation. In such an environment students have to face a ‘realistic’ task e.g. managing a city, build a house, flying an airplane. Thus, they learn by acting as active members of a multidisciplinary environment using different perspectives and variant ways of working. Authentic learning takes place in a real learning context so that it can be later applied to real situations.

Composing literature findings we resulted in formulating the following principles that are consistent with the model of Authentic Instruction (Newman & Wehlage 1993, Peterson 2002):

✓ ***Authentic purpose – Students' interest - Connectedness to the World:*** The actions of the students are valuable and meaningful beyond the classroom. Children face real-world problems or use personal experiences as scope of knowledge, produce a product in order to influence a wider audience, or a product with a utilitarian or aesthetic value.

✓ ***Substantive conversation:*** Students discuss issues concerning the group, students express their ideas, leading to generalizations, formulate questions, without following a typical schedule. The dialogues are being structured based on the ideas of participants and promotes optimal collective discussion. The focus is on children's interests.

✓ ***Social Support*** by the teacher and members of the group that is aiming to students' success: high expectations, respect, inclusion of all students in the learning process. The classroom is a collective learning community where the students build their knowledge on their strengths, as the teacher takes into account of the different learning styles and multiple intelligence.

✓ ***Reflection and learning:*** Students constantly engage in reflection on their own learning. Students use a critical, reflective attitude in the process of their learning. Also, the tasks have a close relationship with students' lives, feelings, opinions and perspectives (Peterson 2002:4)

✓ ***Development of high cognitive functions:*** Current classroom practices provide students higher order thinking and depth of knowledge and understanding. In more

detail they solve problems, develop arguments, construct explanations, dealing with complex meanings, criticize, draw conclusions, assessing etc (Newman & Wehlage 1993).

✓ **Developing skills:** Emphasis is given, inter alia, on skills development, such as use of measuring instruments, effective materials handling etc.

✓ **Interdisciplinarity:** The context of learning is interdisciplinary and wide and not attached to a specific cognitive content.

✓ **Presentation to an Audience:** The products of students’ investigations are valuable beyond the context of a classroom and are designed to influence the wider public e.g. presenting their tasks to a SF.

✓ **Assessment:** This procedure is implemented during all the process.

It is a common assumption that student’s critical thinking abilities can be developed more effectively in the course of teaching subject matter content. Students in this context should be feeling free to consciously reflect on their core ideas and be encouraged to analyze these ideas (Pithers & Soden 2000). The science’s classroom practice provides the opportunity to develop young’s people ability to construct argument (Driver et al. 1998). We chose the content of Science, as we considered that it can be combined with activities that promote critical thinking of students (inquiry, problem solving, reasoning). The figure 1 describes our open inquiry learning environment. We suggest that within the framework of a SF, based on authentic learning activities, critical thinking can be promoted.

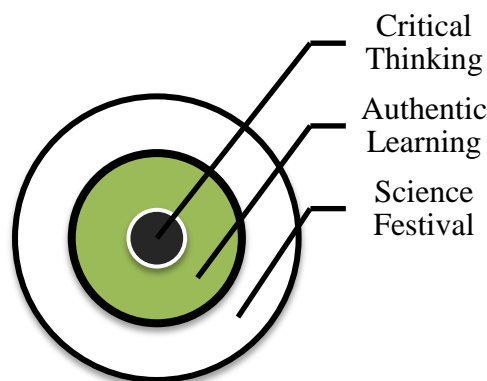


Figure 1: The characteristics of an open inquiry learning environment for promoting primary students’ critical thinking in Science

In summary, this paper aims at presenting and discussing a framework for promoting students’ critical thinking in primary schools’ classrooms. More specifically, we suggest the learning environment that occurs during the development and implementation of a SF that is appropriate for enhancing students’ critical thinking.

#### Science Festival

The current SF is organized and implemented (2012-2014) by the collaboration of science researchers, the school counselor of the 3<sup>rd</sup> Educational District in Florina, primary student teachers and four elementary schools of this town.

This idea gained momentum when we decided to make an effort to introduce the University to society, something that was the expectation of the schools. Along with the organization of the SF, there was another key objective, namely the creation of ‘Scientific Kits’ and furthermore the creation of ‘School Scientific Corners’ for placing the kits.

The development and implementation phases were:

*Phase 1: Dividing into groups - Detection of interests and prior knowledge - exploring school area and materials*

The first meetings of student teachers and students were concerned with the introduction and briefing about what will follow in the next steps. Assigning the students the role of "young scientists", they were given a strong motivation to participate in this project. During these meetings we divided students into small groups, got to know each other, talked about students' interests. Also, we tried to detect students' prior knowledge and explore the objects and materials of the school. Students in cooperation with pre-service teachers searched materials, books, posters, etc., which could be useful in a scientific corner. After the classification of the identified materials in broad categories (e.g. electricity, rocks, magnetism, mixtures, etc.), students placed them in separate boxes which they have brought to school themselves. Students chose a box or boxes that were interested in and so began the thematic engagement within the content of Science.

*Phase 2: Proposals-ideas, research and data collection*

Students studied the content of the box and their knowledge and experiences on the current subject have been substantially improved by watching videos, painting ideas, reading fairytales - fables, playing related games. Alongside, they asked questions and expressed concerns on the subject. The role of pre-service teachers was particularly important at this point, as they should, without interfering with the spontaneous learning of students, offer a variety of experiences in order to gain the attention and participation of all students into them, combining and using the different interests of the members of the group. In addition, the educators had to coordinate the discussions and provide feedback to students in order to continue learning and working without distraction. The discussions of most of the teams were based on the idea of constructing - creating something that they could show in the SF, something both interesting and entertaining. Thus, following suggestions, processing and often constitution of different proposals, the group was concluded in the work that would be created.

*Phase 3: Implementation of the idea, «learning by doing»*

At this point, children's ideas began to be implemented. First, we had to arrange the technological part of the constructions, to list the materials that will be needed for the construction, to test and choose the appropriate materials, to think about the construction method etc. At the same time, they had to process the scientific part of the work: How will it work? What can be learned by someone who handle or play or observe the structure? The pre-service teacher's guidance, provision of ideas and approaches of knowledge in this part of the process was necessary and valuable.

*Phase 4: Preparing for SF*

The students' groups, after they had completed their constructions, had a meeting in the school. At this meeting the teams were encouraged by the head professor, each group presented its work, making a "rehearsal" for the festival. Students learned how to use language for this particular communicative circumstance and potential problems have been discussed, so that students can deal with them and improve their role during the festival. In addition, students had the opportunity to ask questions and obtain information on the various issues raised in their schools.

*Phase 5: The Science Festival's Day:*

This festival usually takes place within a framework of a social event that concerns the public (e.g. Workshop within a university event or Celebration of Global Environment Day). The students' visit to the location of the festival is being combined with a guided tour (e.g. in the University students can visit the halls, laboratories, library, etc.) Then, each group prepares its pavilion in order to get ready to welcome the visitors and the festival begins. Students also have the opportunity to leave their pavilion and visit other groups which participate in the festival.

It is also necessary to underline that we had meetings every week (the student teachers and the head science researcher) in order to organize and implement the festival. In addition, all the student teachers were given guidance by the coordinator, who was writing down the progress of the meetings on an observation calendar. Finally, the student teachers were giving a written summary- report to head science researcher after each meeting with the students, in which the progress of their students was being rated, using a skills scale.

### **Research Methodology**

#### *Research Question*

Which characteristics of the SF learning environment promoted the development of primary students' critical thinking?

#### *Participants*

In the 1<sup>st</sup> Science Festival (2012 – 2013) participated 88 primary students, 3<sup>rd</sup> to 6<sup>th</sup> grade, and in the second (2013 – 2014) 190, 1<sup>st</sup> to 6<sup>th</sup> grade, from five primary schools of the area of Florina.

#### *Data collection and analysis*

The data collection was derived from researcher's observation notes during the sessions. More specifically, the researcher noted systematically primary student teachers' activities as well as primary students' activities, questions, types of cooperation, reactions, controversies, interesting, skills development, and degree of participation of each student.

The initial attempt was to categorize the data according to the forms of the kits. So, we found 7 forms of kits e.g. board games (table 2). Afterwards, we collected all the activities of each form which promote critical thinking. For example, in the case of board games, we noted students' activities such as those which included in the design procedure of the kit.

## **Results**

### ***Scientific Kits and Representative Examples***

During the two SFs, 54 'Scientific Kits' were produced by the participating groups. In table 1, we present the thematic of the content in alphabetic order. We can recognize 19 different subjects.

**Table 1:** Thematic Content of Scientific Kits

✓	Animals & Plants, Astronomy, Dynamic Interactions
✓	Electricity, Energy, Environment, Geography, Geology
✓	Human Body, Interdisciplinary kits, Light,
✓	Magnetism, Mechanics, Mixtures, Nanotechnology
✓	Robotics, Sound effects, States of matter, Thermal phenomena

Most of the 'Scientific kits' were board games with scientific content made by the primary students. Also, several groups chose to make models about their task, while other students chose to present scientific experiments. In Table 2 you can see the wider categories of the educational materials that students produced and their relation with students' critical thinking by giving some examples, drawn from the researchers' observations.

**Table 2:** 'Scientific Kits' Forms and Related Characteristics

<b>Forms</b>	<b>Characteristics</b>
Board Games	Students were entirely responsible for the game design: construction method, instructions and rules of the game, as well as knowledge content questions. For example, students decided that the most enjoyable way to learn the scientific content by the SF visitors was to participate in their game. So, they were constantly looking for ways to make the game more attractive and functional.



Models	This form includes models of: the human body organs, musical instruments, phenomena, manmade and natural environment. During modeling students obtained information from various sources and decided through discussion what kind of model would be able to represent a concept, phenomenon or process in a better way. Additionally, they may have to revise proposed models, in cases where they consider that these are not appropriate for the desired representation.
Scientific Experiments	Some students chose to create a kit that would contain simple ingredients and instructions for conducting experiments to understand phenomena e.g. thermal equilibrium. These activities are appropriate for the development of critical thinking, for example while they are searching information, making hypothesis, testing variables, making observations and drawing conclusions.
Multimedia – video	This category includes films or dialogs directed, filmed and edited by student groups. The process of creating a film has motivated students’ critical thinking skills, for example during the substantive discussions about films’ form in order to be attractive and affect a wider audience.
Posters – Concept mapping	Some students created posters or conceptual maps <b>in order to raise issues that they dealt with. The creation of a multimodal text was a conscious choice of the students. The target audience of the SF covers a wide range of ages. For this reason the creation of such posters could be attracting and enable more people to understand the contents of the kit.</b>

Furthermore, we recognized an integration of the aforementioned forms. For example, one group which was working with sound effects created multiple materials such as poster – conceptual map, an ear model, hearing aid model, experimental tasks about propagation of sound

Thus, we conclude that the characteristics of the learning environment of this festival which promote critical thinking of children, arising from the open inquiry character of activities and from the tasks’ connection to authentic questions which have personal meaning for students in the current context.

In the Poster Session entitled “Young Scientists”, which the theoretical background is introduced in this paper, we will present five representative examples of “scientific kits” (Table 4) with a view to highlight concretely the way in which the students promoted their critical thinking through their involvement in the authentic tasks of the festival.

**Table 3: Representatives Examples**

Scientific Kit	Form
Bilingual kit of electricity	Board
Interdisciplinary game about electricity, mixtures & local history	Game
Train	Model
Four Seasons	
Sustainable Village	

### Conclusions - Discussion

As it is being emphasized by researchers, current classrooms practices do not provide significant opportunities for students to develop their critical thinking skills and their abilities to construct arguments. Also, it is being underlined that there are not so many organized activities aiming at whole class substantive discussion, in which students express their opinions, influencing the interpretation of events, experiments or social issues (Driver et al. 1998). However, studies provide evidence that critical thinking can be encouraged into the

framework of a school, especially if the students are able to monitor their involvement in group activities.

The above mentioned is what we aimed at, when we began to organize and implement the SF. In conclusion, according to our positive results, we argue that open inquiry learning environments, that are consistent with the principles of authentic learning are able to promote, among others, students' critical thinking.

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## **FOUR SEASONS PHENOMENON: DESIGN AND DEVELOPMENT OF A ‘SCIENTIFIC KIT BY PRIMARY STUDENTS**

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### **Abstract**

The starting point of this study was the results of many researches, who have concluded that students develop many alternative ideas about the Four Seasons Phenomenon (FSP) especially if they had been taught with traditional teaching methods.

This poster describes the design, development and evaluation of a ‘Scientific kit’ which is the product of a group of five students enrolled in the 5<sup>th</sup> grade of a Primary School in the region of Florina. The main aim of the process was the reconstruction of the students’ alternative ideas in relation to the FSP, through critical thinking in an open inquiry learning environment for the creation of a ‘Scientific Kit’ and its presentation at the Science Festival, held in the town of Florina.

Firstly, the theoretical framework, which concerns the identification of the problem, the mental models of students and the educational context, is going to be discussed. Afterwards, the teaching methodology will be analyzed step by step and the educational material (a 3-construction and experiment) will be presented. The 3-D construction describes the FSP and it consist of a lamp (model of Sun), dressed in yellow paper in the center and four sphere-models of the earth around the Sun. The materials used in the experiment were an infrared lamp, an electronic thermometer and a colored ball (the Earth model). Furthermore, this poster includes the results of drawings and questionnaires, which were used as control of the whole process.

According to the data collected the following conclusions were derived: a) students moved to the scientific mental model and understood the FSP, b) students constructed secondary meanings (axis, equator, Earth's orbit, etc.) related to the phenomenon, c) students have developed positive feelings from their participation in the Science Festival and were eager for their participation in the next one.

**Keywords:** Four Seasons Phenomenon, Science Festival, Alternative ideas, Critical Thinking, Open inquiry

### **Introduction**

With the term Season we call each of the four periods in which the year is divided by the equinoxes and solstices. The seasons are caused by the tilt of Earth's axis of rotation in combination with her annual rotation around the sun (Chalkia 2006).

The hemisphere which is tilted towards the Sun receives vertical -and therefore more concentrated- solar radiation compared to the hemisphere that deviates from the Sun, which receives lateral and thus sparser rays (Hewitt 2004). The result is the emergence of summer and winter, which along with the intermediate stages of spring and autumn constitute the Four Seasons Phenomenon (FSP) (Chalkia 2006).

In recent years within the constructivist epistemological perspective for learning, there have been many studies on the perceptions of pupils, students and teachers on various astronomical phenomena (Bailey & Slater 2003). Some of these studies include the FSP (Vosniadou 1991, Lee 2008, Starakis & Chalkia 2010).

It is well documented that students of all ages, including students and adults have difficulties in understanding the cause of the seasons (Lee 2008). Some distinguished researchers (Posner et al 1982) have concluded that the traditional teaching approach to these

phenomena -emphasis on declarative knowledge, unchallenged pre-existing ideas, transfer model of teaching- is not satisfactory. Thus, in this poster, we present briefly a teaching approach about FSP aiming to create scientifically literate and critically minded students in an inquiry based-learning environment.

According to the evaluation framework of PISA 2006, scientific literacy refers to:

- The student's scientific knowledge and his/her ability to use this knowledge to recognize scientific questions acquire new knowledge and explain phenomena scientifically.
- The understanding of science as a form of human knowledge and exploration.
- The awareness of how science and technology shape the material, spiritual and cultural environment.
- The willingness of student involvement and active participation as citizens in matters relating to science

**Developmental phase**

The teaching approach took place in the primary school of Ammochori, Florina within the 2<sup>nd</sup> Science Festival. The group consisted of five (5) students enrolled in the 5<sup>th</sup> grade that had not attended any related content. A total of 17 meetings, two teaching hours each, were held. These meetings can be divided into five (5) stages, as shown in Table 1.

*Stage 1: Reflection and Research*

Initially, the class separated into groups and thus our five-member team was created. The group was named "Astronomers", which was a first introduction to the subject.

In the next lesson, artists inspired by FSP were studied and afterwards the students created their own works for this phenomenon. At the last meeting of the first stage, the students created drawings for the FSP (Initial drawings).

*Stage 2: Planning and Experimenting*

The beginning of the second stage was an experiment. The materials used were: one infrared lamp, iron mounts, electronic thermometer and a volley ball. Students were instructed to set up the base of the lamp, to fasten it securely and to think and design an experiment to simulate the phenomenon.



Picture 1: Experiment

**Table 1:** Teaching Approach Summary

Stages	Activities
1st Stage	Creation of “Astronomers” Team – Introduction Drawings for the emergence of alternative ideas
2nd Stage	Searching on the internet – Brainstorming Trial and Error Experiment

3rd Stage	Decision for the Structure Construction Improving the Experiment
4th Stage	Rehearsing for the Festival Final Drawings
5th Stage Science Festival	Presentation of the Structure and the Experiment Visiting the other “Science Groups”

Students placed the ball sideways to simulate the tilt of Earth's axis. Three measurements were taken in the northern and southern hemisphere (Picture 1), starting at zero, one and two minutes. In this way, they found that even in such a simple model, the angle of incidence of the rays plays a very important role (Table 2).

**Table 2:** Results of the Experiment

Hemispheres/Time	t=0s	t=60s	t=120s
North	20o C	23,6o C	28,2o C
South	20o C	24,8o C	30,5o C

At the following meeting the planning of the construction began. After searching the internet and brainstorming, the making of a rotating Earth – Sun Model was decided. Afterwards, students started testing different materials (Picture 2) in order to decide what to use but after a while it became clear that the construction of such a model had many technical difficulties, so another alternative was followed.



Picture 2: Testing Materials and Models

*Stage 3: Construction*

First task was to paint the base (solid paper sheet) and the 4 Earth models. Next in line was the painting of the Earth's orbit around the Sun. Then, the Sun was “dressed” with yellow paper (Picture 3). Finally, the structure was finished after the drawing of the constellations on the sides and top of the box and gluing the pieces of the box together.

Next in line was the improvement of the experiment. After a discussion, one student suggested taking two different sets of measurements for the northern hemisphere. The first set of measurements was to be made while the northern hemisphere was experiencing winter – lateral rays- and the second one while it was experiencing summer –vertical rays-. This was the central idea on which the experiment was set up.

Picture 3: Dressing the Sun in yellow paper

**Stage 4: Preparation for the Festival**

To prepare for the Festival students presented their work to their classmates. The presentation went on well and the students were found to have functional knowledge of all the concepts needed for the presentation.



In the last meeting at the school, students were asked to create drawings about the FSP as if they were to explain it to someone, as they had done in the first stage. Students painted the final drawings, which were collected by the teacher (author of this paper) and analyzed.

### **Educational kit**

The structure (Picture 4) is a model explaining the phenomenon of the four seasons, it consists of a lamp (Sun), dressed in yellow paper in the center and four models of the earth around included in a box that is open at the front.



Picture 4: FSP Model

The materials used in the experiment (Pictures 5) were an infrared lamp, an electronic thermometer and a colored ball - the Earth model. The processes of the experiment are described in the previous chapter – Developmental Phase (Stage 3).

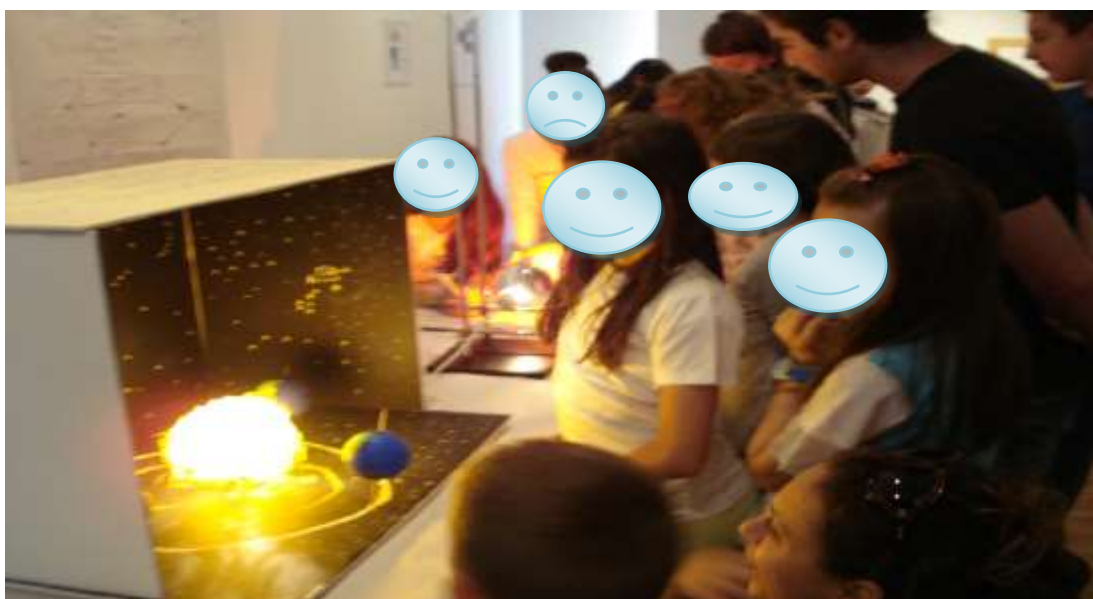


Picture 5: Experiment

### **Participation in science and technology festival**

The 2<sup>nd</sup> Festival of Science was held on June 5, 2014, the International Day for the environment, at the open space of the river Sakouleva Florina. Two students were not present, so our team was consisted of three students. At our "corner" students were welcoming and explaining the FSP to the guests (Picture 7).

After the presentation they were asking the guests if they would like to conduct an experiment. The experiment was conducted by the visitors themselves, under the guidance of students. If the guests had any difficulty they were aided by the students.



Picture 7: Guests observing the structure and performing the experiment (background)

### **Research methodology**

#### *Research Questions*

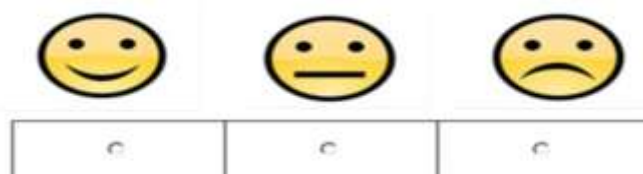
To validate the success of the teaching approach and Science Festival, two research questions were created, as shown below.

- 1) How did the students' ideas on the FSP evolve through the teaching approach?
- 2) What feelings did the students experience in the Science Festival?

The first research question will be checked using the initial and final drawings and the second using a questionnaire.

The data were collected through students' drawings and a questionnaire. The drawings (initial and final) were collected at the beginning and end of the teaching approach and were used to determine whether the initial perceptions of the students have improved. In order to create the drawings the students were instructed to draw about the FSP as if they were to explain it to someone.

The questionnaire was handed out to the students in order to check the success of the Festival itself. Specifically, the questionnaire was created in order to record the feelings of the students in the Science and Technology Festival. The first question was: What feelings were created by your experience at the Science and Technology Festival? Choose one of the three faces.

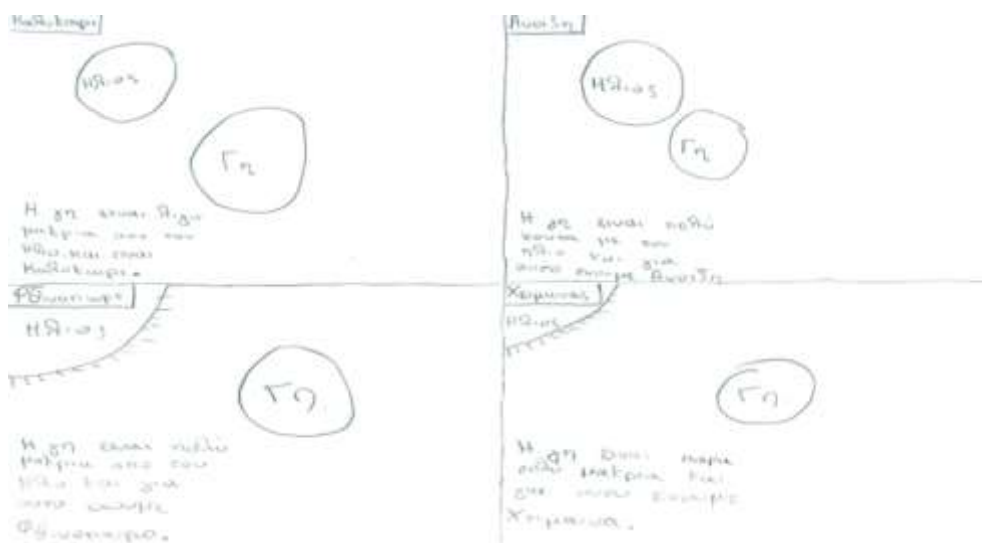


### **Results and discussion**

#### *Pre and post drawings*

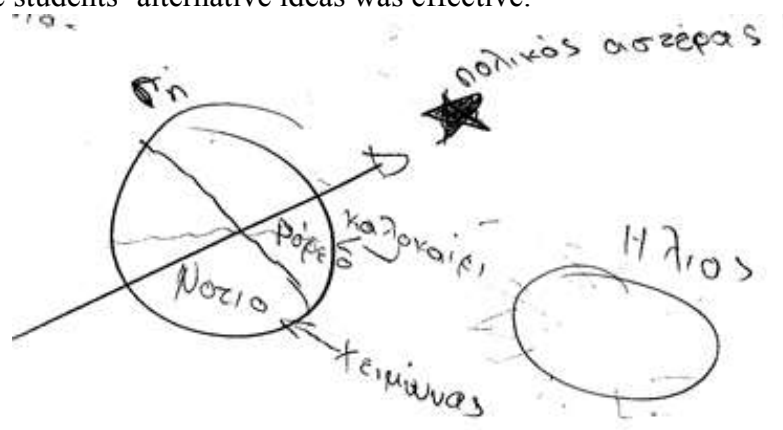
The first research question was concerning the development of students' ideas on the FSP through the teaching approach. According to the literature survey it was expected that due to the age of the students they would construct Synthetic models to explain the

phenomenon, usually dependent on the distance, which was confirmed by the initial drawings (Picture 7).



Picture 7: Initial drawing (Earth is close to the Sun in summer and far away in winter)

After the teaching approach all students were moved to the scientific mental model (Picture 8), this argues with the success of the teaching approach. Also positive is the fact that they adopted the scientific model, so it is more likely that they obtained functional and not mechanical understanding of the phenomenon. In conclusion and according to the results, the improvement of the students’ alternative ideas was effective.



Picture 8: Final drawing (the tilt of the axis causes the seasons)

*Questionnaire*

All students responded positively about their experience at the Festival as shown in Chart 1.

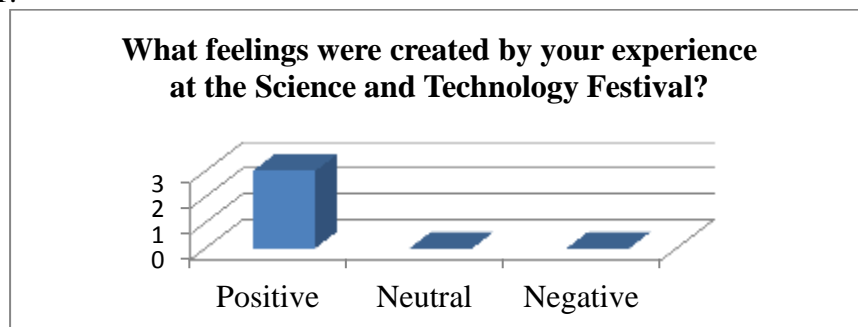


Chart 1: Questionnaire Results



According to the results, we conclude that the basic objectives of the festival, which involved strengthening the confidence of students, developing presentation skills and “love for science”, were achieved.

Last but not least, from the authors’ point of view the participation in the Festival had more upsides for the students. Specifically, they gained a lot from the whole process; because apart from developing skills and acquiring new knowledge they also improved their sociability and self-confidence because of the positive feedback they received by most visitors.

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## A VIEW ON SOME MICROSOFT EXCEL ADD-INS AT LINEAR ALGEBRA

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### Abstract

It is common these days that professors incorporate computer algebra system in the teaching and learning of a first Linear Algebra undergraduate course.

While acknowledging the strengths and capabilities of powerful mathematical programs like Sage, Matlab, Maple, or Mathematic for teaching linear algebra, Excel also offers some nice advantages.

Microsoft Excel Software is an excellent tool for the study and application of mathematics.

This paper examines three Microsoft Excel add-ins at Linear algebra: vMxLinear Algebra Excel Add-In; Matrix.xla; Perceptrics LLC Linear Algebra Excel add-in.

Using Excel shows that we can do substantial mathematics without needing specialized software.

**Keywords:** Linear Algebra, Excel add-in, vMx, Matrix.xla.

### Introduction

Although main aim at the education is the teaching of concepts, the role of technologies and software in their demonstrations is big. It is common these days that professors incorporate computer algebra system in the teaching and learning of a first Linear Algebra undergraduate course.

Popular tools such as Matlab (and its open-source counterpart, Octave), Sage, Matlab, Maple, Mathematica are often used for algorithm development and prototyping in academic as well as industrial research contexts (Sanderson 2010).

While acknowledging the strengths and capabilities of powerful mathematical programs like Sage, Matlab, Octave, Maple, or Mathematica for teaching linear algebra, Excel also offers some nice advantages.

Using Excel for computations and graphing helped to clarify concepts, techniques, and definitions in a more basic linear algebra class (Arganbright,X).

Excel is readily available, which is a special advantage for students or when the funding that is needed for special purpose software is limited.

- While its mathematical undergirding may not seem as sophisticated as some software, Excel nonetheless provides very good interactive computational and graphic capabilities.

- In using Excel, students gain skills and experience in using the principal mathematical tool of the workplace, a tool that they will continue to use after their university years.

- Most students are familiar with Excel, reducing the time needed to learn the use of supporting software.

- The spreadsheet format often closely matches the way that we do and view mathematics.

This paper examines three Microsoft Excel add-ins at Linear algebra

- vMx Linear Algebra Excel Add-In
- Matrix.xla
- Perceptrics LLC Linear Algebra Excel add-in

### Microsof Excel

The few Excel functions that do support linear algebra functions and operations are:

Array addition, subtraction, scalar multiplication	+, -, *
Inner product	SUMPRODUCT
Inner product	SUMPRODUCT
Array transpose	TRANSPOSE
Matrix multiplication	MMULT
Matrix determinant	MDETERM
Matrix inverse	MINVERSE

However it is not recommended to solve square systems of linear equations using matrix inversion and multiplication. It is more efficient and accurate to factor and solve the system using triangularization with column pivoting. Nor is it recommended to solve linear least-square (regression) problems by solving corresponding normal equations. Instead, an orthogonal factorization method or singular value decomposition should be used for greater numerical stability.

#### **About Matrix.xla**

Matrix.xla is an Excel add-in that contains useful functions and macros for matrix and linear Algebra:

- Norm. Matrix multiplication. Similarity transformation. Determinant. Inverse. Power. Trace. Scalar Product. Vector Product.
- Eigenvalues and Eigenvectors of symmetric matrix with Jacobi algorithm. Jacobi's rotation matrix. Eigenvalues with QR and QL algorithm. Characteristic polynomial. Polynomial roots with QR algorithm. Eigenvectors for real and complex matrices
- Generation of random matrix with given eigenvalues and random matrix with given Rank or Determinant. Generation of useful matrix: Hilbert's, Houseolder's, Tartaglia's, Vandermonde's
- Linear System. Linear System with iterative methods: Gauss-Seidel and Jacobi algorithms. Gauss Jordan algorithm step by step. Singular Linear System.
- Linear Transformation. Gram-Schmidt's Orthogonalization. Matrix factorizations: LU, QR, QH, SVD and Cholesky decomposition.

#### **vMx Linear Algebra Excel Add In**

vMx is a free linear algebra Microsoft Excel add-In for operating, decomposing and solving matrices. vMx stands for Vector Math in Excel. The Add-in consists of 45 functions and a Ribbon toolbar. Excel is one of the most powerful tools for analyzing data but it does not offer much support for solving linear algebra problems. vMx seeks to fill this void.

vMx is a free Excel add-in that can be downloaded from the website [www.vmxaddin.com](http://www.vmxaddin.com).

vMx is available as an add-in for Excel 2007 or 2010. vMx can be installed on 32 or 64 bit systems. However, vMx can only be installed on Excel 32 bit version. Excel 32 bit version can run on both 32 and 64 bit systems. Excel 64 bit version can run on 64 bit systems only.

The vMx functions provide the following functionalities:

- Decompose a Matrix A into LU, QR, Cholesky or SVD decomposition
- Calculate the Eigen values or vector of a matrix
- Solve linear equations for  $Ax=b$  for both square and non-square matrices
- Add, subtract, divide or multiply up to 10 matrices with one function
- Calculate the co-variance, correlation or standard-deviation matrix for a given data set

- Create random matrices with integer or real numbers
- Calculate matrix rank
- Calculate matrix determinant
- Transpose a matrix
- Check if matrix type is square or symmetric
- A Ribbon toolbar for working with array formulas

## **LAPACK**

LAPACK is a freely-available, peer-reviewed computational linear algebra software library that provides routines for solving systems of simultaneous linear equations, computing least-squares solutions of linear systems of equations, and computing eigenvalue and singular value decompositions. (Anderson, E. et al, 1999)

LAPACK has been used in or as a starting point for implementation of linear algebra computing environments and is a standard by which other libraries and computing environments are often compared.

### **Perceptrics Linear Algebra Excel Add-in (PcLinAlgXLL)**

The purpose of the Perceptrics Linear Algebra Excel add-in is to provide LAPACK linear algebra computations as worksheet functions augmenting or replacing those provided as built-in Excel functions. This add-in:

- Provides peer-reviewed and publicly documented LAPACK algorithms to Excel users as scalar and array worksheet functions supporting double-precision, real matrices.
- Implements these scalar and array worksheet functions using the public-domain CLAPACK library from the Netlib Repository.
- Supports Microsoft Windows platforms running Excel 2007 and later.

#### **Provided Worksheet Functions**

- Scalar-valued matrix functions (metrics).
- Linear system solvers.
- Singular value decomposition.
- Eigenvalues and eigenvectors.
- Matrix creation and extraction.
- Alternative matrix multiplication and transformation operations

## **Discussions**

Currently, however, open source software are not mature enough to completely replace proprietary systems. Stability is often a crucial drawback to using Open Source software. This is because of inconsistent coding quality. Stability should eventually be improved as part of the development process.

For the scientist or academic, high configuration overhead is sometimes desirable, giving more control over the operation of the package, while precise language is sometimes helpful, belying the actual underlying math being performed by the tool.

## **Conclusions**

It is common these days that professors incorporate computer algebra system in the teaching and learning of a first Linear Algebra undergraduate course.

This paper examines three Microsoft Excel add-ins at Linear algebra.

- vMx Linear Algebra Excel Add-In
- Matrix.xla
- Perceptrics LLC Linear Algebra Excel add-in

Open-source linear algebra software allows students to experience such systems without the need to acquire costly licenses.

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## HOW PRESCHOOL CHILDREN LEARN MATH?

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### **Abstract**

Modern understanding of the elementary mathematics are based on modern understandings of psychological, primarily cognitive development of a young child, and also of the modern theories of learning and teaching. In recent years, especially rapid development marked psychological research on the development of cognitive functions and intelligence. However, there is still no set off attitude about what factors are decisive in mental, intellectual development of the individual.

Different interpretations of this problem mostly go in three directions as follows: first direction – according to which cognition over all knowledge reduced to external conditions, of the experience and audio visual performances; the other direction emphasizes the importance of here diary factor and inner maturation, so the role of education is reduced to practice what is established from the beginning and the third, which emphasizes the creative nature of man, with special emphasis on children's activities, which must be directed.

The findings about visual, acoustic and spatial sensitivity are particularly important for understanding spatial relationships, and characteristics of attention, memory, thought and speech of preschool children.

In this paper, using the method of theoretical analysis, descriptive method and based on participatory observation conducted in some kindergartens in Stip, we tried to find answers to several questions: How preschool children learn math? How child/student learns, experiences and adopt mathematical terms? Which and what strategies, methodological approaches applied educators? What needs to change?

**Keywords:** strategies, preschool child, mathematical concepts, integrated learning

*"All those who intend to take up high positions in the city should be practiced in the science of numbers, not like ordinary people, but also to include their thoughts in the nature of numbers, not for buying and selling as it is dealing dealers and resellers, but to ourselves to ease the way towards a truth."*

Socrates- Platoons dialogues

### **Introduction**

The famous UNESCO recommendation "Mathematics and its style of thinking must become an integral part of the culture of modern man, regardless of whether he will perform actions that require math or not," points to the need for mathematics and mathematics education in the life of man.

In fact, the society development, civilization, in general, cannot be imagined without the emergence and development of mathematics. It lies at the basis of the technique and hence its determination as "the mother of the technique," and is one of the foundations of the natural sciences, but also an integral part of their structure.

Mathematics enters and in the field of social sciences. This is due primarily, to the tendency to what is happening in the natural, in the social environment, everything what you get as a result of scientific research, to express, to present with precise values, quantitative,

numerical values. To be able to use this knowledge, the child, pupil must be trained to acquire adequate mathematical culture and methodology adopted for their application.

In this context, the essential question is when to start to work on forming the initial concepts of mathematics or on which stage of psychological development is the child, which is allowed to work on the formation of early math concepts? How preschool child learn math and how learn child of primary school age? What strategies are applied by the tutor / teacher in the implementation of the initial content of mathematics education?

The answer to these and other closely related issues with them will be the subject of theoretical debate and research on this paper.

### **Meaning of mathematics and mathematics education**

Meaning of mathematics education is multiple:

- Contributes to the development of logical-mathematical structures of thinking;
- Encourages cognitive motives in children, awakens curiosity;
- Contributes to the development of children's personality in terms ensures his attitude to work: diligence, self-initiative, conscientiousness, self- confidence, persistence, discipline, creativity etc.
- Contributes to the orderly socio-emotional development – admiration of task solving, the pride of success, cooperation, friendship;
- Allows the child / student to manage with their time and resources and act in everyday situations that involve people (example: calculating how much time we need to come to school, how much food is needed for our family, etc.)
- Contribute to problems solving and building important decisions;
- Allows the use of technology (example: calculators, computers) to solve problems;
- Enables pupils to detect the essence of mathematics to science and society, enables them to independently find the quantitative and spatial elements and their relationship to nature and society. Pupils need to gain a clear insight that mathematical creations are natural creations and not imposed from outside of nature;
- Orientation of math teaching to the needs of life, proper motivation and necessity of possessing mathematical knowledge, awakening and developing interest for mathematical phenomena;

To enable pupils to understand numerically the environment. This means that mathematics enables pupils to perceived numerical relationships, their order and accuracy in appearance, also to implies a higher degree of intellectual development;

Systematic development and improvement of mental functions at pupils - developing the ability of observing, fuller present and concept, the ability of post-analysis and synthesis, abstraction, induction and deductive thinking, thought- logical forms of conclusion;

Development of functional thinking;

- Endeavor to find the easiest and quickest way that leads students to an understanding of rationality in the work, rationality needed in life in general;
- Clear and accurate speech, some choice words that accurately indicates the term;
- Persistence - the matter work that led to the end;
- A sense of accuracy, timeliness, transparency in the work (written and graphic works of pupils);
- Self-confidence, proper assessment of own forces;
- A sense of nice – directs students to detect the geometric creations of compliance;
- Improve practical knowledge (teach pupils to assessment by eye a different distances, how performed various measurements, how to use a ruler, compass and learn to construct geometric figures, etc.);
- Facilitates the understanding of all other sciences that use mathematical language and symbolism.

According to the above mentioned, we can conclude that mathematics and mathematical knowledge is the basis for the development of the child, the individual, the development of science and in general, development of society.

**When to start to work on early math concepts?**

Early access to pre-school education leaves their mark on the whole further education of each individual, of her building as a positive, creative and active person, person who will believe in own self, respect for herself and others around her. Existing contemporary curricula of preschool education, kindergarten, help children to acquire basic knowledge, notions and concepts from all educational areas, to form the basic cultural and hygienic habits, enriching their experiences contribute to their socialization.

In this sense, preschool education is very important and has great significance and role in the formation on the basics and foundations of which are built: notions, concepts, knowledge, skills and habits, and on the development of creative abilities of children, create the basis for proper and comprehensive education and upbringing of children, the basics of a successful start in primary school.

For new and contemporary math that gets into every part of human life, whose pace of development and degree of application are running high, man has to be prepared since preschool. Namely, with the numerous mathematical terms the child meets from the earliest age. Do not be uncommon examples when the mother in daily communication with the child - infant 1-12 months, in feeding, dressing, playing, singing with the child, uses mathematical concepts. The process of formation of mathematical concepts even more intensified in the preschools, where through various activities especially activities of educational areas - math, and across different types of games, in an organized way run this process.

**How the child from preschool learn math?**

The child from their early age can recognition certain terms such as: number of years, fingers, feet, but these notions don't have expressed mathematical dimension. Exactly hence, the essence of mathematics education is expanding fund of concepts and relationships as well as training for their expression by mathematical symbols. Child / pupil should be put into situation to comprehend, understand mathematical concepts, not to reproduce and store. Bearing into consideration the abstractness of mathematical concepts, the efforts in contemporary mathematics education, is, first to go to learning mathematical concepts through the application of specific, concrete objects, and later adoption of abstract concepts; application an inductive approach - allowing the child / pupil not only to determine the conditions, but also to reveals some cause and effect relationships, to recognizes elements of the so-called mathematical causality, enables compliance with the principle of gradation, going from the concrete to the abstract; development of logical thinking, the way which allow to quality and permanent learning with understanding. Exactly hence, we put the question: how learn math child from preschool age?

In that hence, we ask how the child from preschool age learn math.

The notion of learning is different identified by different authors. We emphasize the determination from Kamenov (1987: 25-2)), according to whom learning is "consciously directed process of collecting, understanding and adoption of facts, conclusions, opinions, generalizations about objects and phenomena and the manner of treatment to them, processed, generalized and arranged in a system of knowledge. Learning implies the processing and shaping of experience, understanding, and discovery and pervades into the essence of phenomena, the restructuring of the already existing knowledge and establishes associations between knowledge. On that way the learning is a condition and way of acquisition and development of knowledge, skills, habits and skills necessary for the child's life, including social relations, formal education and self-improvement", and the determination of Lazarovski J., (1980: 171) from whom "learning is progressive and



relatively permanent change of an individual which arises under the influence of the environment and which is caused by the need of the individual that is changing."

Based on these and other goals of the learning can be concluded that learning is understood as a process that begins and ends not once and for all, but as a continuous, ongoing process, a process that is determined by the needs of the individual, a process that depends on numerous factors: environment, the activity of the individual, a process that leads to changing of the individual, his growth, maturation, maturation..

Regarding to the understanding of the learning process in contemporary professional literature vary several groups of learning theories such as: behavioral theory according to which learning comes through creating links between stimulus and responses, reaction, and by association, so any learning is learning in certain situations to react in a certain way. According to this theory in which learning leads to changes in individual behavior, is a huge role of the teacher in modifying the behavior of the pupils. He is the one who leads the pupils through organized, predefined learning activities, according to which set forth the specific reactions of pupils, reactions that are measurable.

Precisely on these theories was based the traditional concept of educational / teaching work in math. Namely, Barodi and Irvine (2000) point out that in the traditional approach to teaching mathematics based on behavioral theory denotes the application of reward or positive support when children learn mathematics. Attention is directed to the "consequences of behavior" rather than a true understanding of mathematical processes.

In learning math's nurture psychology in which the emphasis is on training sets the capacity and the ability to memorize and reproduce, leading to the creation of a situation of fear and hostility towards mathematics, "mathematics is bogeyman", "not everyone can grasp, and understand".

The second group of theories that explain the process of cognitive learning theories whose representative is Tollman, that "learning in its founding base contains relations that exist between stimuli and situations, and that it is a process of cognitive nature (Lazarevski, J., 1980: 202).

For child math education are particularly important constructivist theories of cognitive development and their implications. The same emphasis placed on the individual activity. According to them, the individual should be active in the learning process. One of the representatives of this theory Piaget believes that learning cannot be reduced only to the accumulation of knowledge in a particular subject.

Namely, according to the constructivist understanding knowledge represent a construction of one who acknowledges and is based on mental activity. Child previously created notional framework, and new learning must be included in this framework. Child / pupil actively participate in problem solving and critical thinking marked as learning activities in which child investigate relevant and pleasant. Child / pupil constructs their knowledge with testing ideas and approaches based on previous knowledge and experience and apply them in new situations, so he integrate new knowledge based on pre-built constructs.

In the process of teaching children / pupils will be allowed to come to their own answers rather than to tell them answers. Every child /pupils constructs meaning, the meaning of what is being taught. Particularly great importance in this process has interactivity; special meaning has two way communications. Vygotsky, Piaget especially emphasizes the importance of social interaction. Social interaction allows the child with an adult, to do something, in the area of next development, which cannot independently make in the area of current development. The child should be actively participating in the process of interaction in an equal joint activity with an adult teacher. Activities should be challenging, and the teacher should help pupils if the need arises from this, that directs them.

Developing a positive attitude towards mathematics and confidence in their own performance are key components of children's learning and future achievement in this area. The learning environment can support and encourage positive attitudes, assumptions to promote critical thinking, strengthen mathematical skills and help children / pupils in building connections with their previous mathematical knowledge and the world around them.

Of particular importance is the theory of experiential learning which actualizes approach directed towards the child / pupil that not only understand not only from the previous experiences of the child / pupils but implies to take into account their needs, interests and abilities., An approach that involves learning with action (learning by doing), learning based on direct interaction with the phenomenon that is learned in real-life situations. According to representatives of experiential learning, learning is a holistic process that includes the integrated functioning of the whole person (not just some separate parts).

All these theories essentially advocate the use of so-called research approach. Research approach understands that children must experience mathematics, but mathematics that is understandable to them, arising from the reality of the context which for them makes sense. The tasks are chosen to be interesting, motivating for children, to promote the activity, to research.

Child / pupil better learn math through activities that allow him to play, describes, classifies, explains, analyze, synthesize, generalize, thinking about what is explained, to explain how he, or she, alone comes to solving tasks, set and solve problems, when he/she establishing contact between what are provided to learning, set rules about it and with their own prior experience. A very important part of learning math is learning how to solve problems. In this sense, before children are placed problem situations that stimulate their curiosity and research spirit, to use influence research, affect the development of their reasoning and the ability to learn how to go further in solving problems. They learn that there may be more than one way to solve the problem and more than one answer. Also learn how to express them clearly when explaining their solutions.

Therefore it is necessary, to the child, to form a positive attitude and positive emotional orientation toward mathematical concepts that are available for anyone who will show interest toward them.

Developing a positive attitude towards mathematics and confidence in their own performance are key components of children's learning and future achievement in this area. The learning environment can support and encourage positive attitudes, assumptions to promote critical thinking, strengthen mathematical skills and help children / students in building connections with their previous mathematical knowledge and the world around them. Developing and promoting of such work environment is a matter of the whole community.

Which and what strategies are necessary for learning math?

The idea of monitoring strategies applied in the initial mathematics education emerged from previous, frequent contact with teachers in child-care institutions and perceived differences (based on practical students work) that exist between them in terms of strategies applied in the process of forming the mathematical concepts. The objective of the research was to obtain qualitative information on the strategies applied by the subjective factors in the formation of early mathematical concepts

The selection of children's institution was intentional. It is a preschool institution Vera Ciri Viri Trena in Stip, R. Macedonia, oldest child institution in our community. Director and staff in children's institution showed from the outset, readiness for cooperation, assistance, openness, and collegiality.

During the research are create new hypotheses, generate new questions are repeated several stages in the research. During research were realized, numerous visits, were monitored many activities in which processed new content aimed at establishing the initial mathematical concepts. At the same time we observed strategies which were applied from both parties (educators / children) in the initial adoption of mathematical concepts, were observed relationships between members in classes, educational groups, conversations with educators, Director, representatives of professional services.

The monitoring strategies in the initial mathematics education were conducted in the form of descriptive and focused observation. Descriptive observation led to the data of the environment and working conditions under which work educators and children, and focused observation led us to the data for the specific strategies used in educational work in the initial mathematics education.

Given the impossibility of presenting all the data in a paper, limitations of the number of parties, we decided to present the selected presentation of the most typical data which allow for clear ideas about the strategies applied in the initial mathematics education.

### **The results of research**

October 17, 2012

First day with the children of the great educational group. After the warm reception by the teacher and the warm welcome from the children who were familiar with my visit, planned activities began. That day in the educational math realized the activity “smaller, larger and equally.” The children gathered around their tables by the request of the teacher and carefully listened and observed.

T: What according to you kids is the greatest? Let’s know what your head think?  
Stephen: The biggest is building.

D.D.: Many know, I saw large skyscrapers on television.  
T: And according to you, what is the smallest in the house, at home? What is something great that surprise you, and what is the smallest?

Anna: The biggest one was when the truck when I traveled to Kicevo.  
Stefan: And I saw on TV a hippo. And least I saw a black mouse.

T: Please Stefan would you describe it?

Stefan: It was small with a long thin tail.

T: And now I'll ask you something. I put on this table (three sets fruits pears, different in size) and please nice to look at. Now, Ivana, please take the big pear and gave him to the Dimitri.

T: Stephen, you take it and give smaller pear to Ivana. Dimitri you take the smallest pear and gave it to Stephen!

All this made the children without hesitation. As from early age to have accepted the terms smaller, bigger, biggest.

T: Now on the table I will put three cups. Please, one of you will come and should deploy in size, from largest to smallest.

D1: Properly set the glasses.

T: And now in this basket I will put some fruits and I will ask you to sort. Some of you will close your eyes, and you have to guess which fruit it is. Then children will ask you something else.

Children with closed eyes, touching them, recognized the fruits.

T: Now everyone, please, view the fruits that your buddies hold you in their arms and the size of the fruits to arrange ranging from the largest to the smallest fruit. Who first of their friends who hold hands in most fruit should stand?

D2: Successfully deployed the fruits of their friends who held in his hands. The activity ended with the game "hunting", looking for the greatest items in teaching room and sort them by size.

October 27, 2012

Today, in the words of the teacher, was to be successful and interesting for pupils

T: Today children, here we will play with dolls in our theater corner. Shout of joy and amazement from children. Each of them looked nice fit on the chair and find a better position from which to follow what happens in theater corner.

T: But before you ask something: Have you seen these shapes (points) here around you?

D: Well we play every day with them, ball and cube it. Such has in "angry man"

T: Well, now pupils, see what they did, what they discussed. Followed the presentation of the educator, booth the quarrel between the ball and the cube

After the presentation, the teacher asked for their importance in their lives and the more you play.

Followed also reviewing and highlighting its characteristic.

Stephen: It is round, jump, has a beautiful red color.

D1: There are other colors and large and small for football, basketball.

U2: For volleyball, handball.

T: What about a cube? Let's take a look. What is this (points to the sides) and how many?

D: Number: One, two ... six sides.

T: Let's try to roll.

D: It have corners, only the ball rolling.

Further activities continue with the game "Magic Case" and "Train" - educator simulated sound of a train in which children were charged according to the image, subjects ball and cube, taken from the magic bag when the train passed them despite all. In the final part of the children were divided into two corners. In the first corner contrasted puzzles, and in the second played game in pairs "garage" - Ball and Cube, "Who is faster and why in the entrance to the garage?"

December 1, 2012

T: Today children I will tell you a captivating story. Yesterday I left here when I heard an unusual whisper. When I looked I saw a triangle, rectangle, square and circle as talk. They said: The children didn't want us. We are logic boards, the children not seen us, not talk with us.

T: And, I my child, taught today and I said, "I'll see if my children know the logic boards?" (Meanwhile teacher shows them in the logical tiles) Let's see if it does as you might think (it shows logical tiles) ? Children recognize and give answers.

Metalip: This is a triangle.

Angelka: This is a square.

Ivana: This is round.

Sanja: This is a rectangle.

T: Well, now kids and I was assured that you really know the logic boards in shape. But if the children know that they are different to each other and something else.

DG: We know that there are a variety of large and small, fat and thin, blue, yellow, red, saw in the box of my brother, he is second grade. I play at home with them.

T: Yes, children, and you really much you know. Now I will show you that they really are different in color, shape, size and thickness (showing application). Let's look at the triangle?

Stephen: The triangle is large, yellow and thin.

Mirko: red circle is small and thin.

Alexander: The rectangle is blue, big and thick.

T: Now I'll show you other pictures. Ivana, Come Go ahead and give you a picture. Diddy, will come and he has a photo. Vladimir, and you? Now your friend Ivana will show you, and you need to tell us what you see on the picture, and if you hit, Ivana will explain.

Vladimir: It is square, yellow, thick, big.

T: Stefan?

Stefan: It's a triangle is red.

Alexander: Small and thick it is.

Christina (also has a picture in his hands), and affect: Mirko-blue, Simon, slim, Martin-large triangle.

T: Now we will do something else. You play a game that is called "Something Missing?"

Show rectangle. Please now refer to you and asks you to tell me what are its features and what is missing.

D: It is rectangular, thin, and small and lacks color.

T: How can it be in color?

DG: select one of the colors (red, blue, yellow).

What followed was playing the game "this little step" through logical tiles. Children have a task to checked in the logic boards and determine their characteristic. If you guess you are going to the next step, if you do not step forward one step back to move forward.

The activities continued with the game 'miracle bag ', which are detected by the geometric forms and they affect children. Followed by a question asking whether the educator of logic tiles can make a set of glued on the magnetic board. Children responded affirmatively that was supported by the establishment of a set using Venov diagram. Then the teacher asked them, "Are all these logical tiles belong to the set, the answer yes, because they do not have a model that will show specifically that logically belong tiles, so not belong in the set. Then the teacher explained that actually need to mark the model. Educators also asked whether children from parts of the body can be formed logical forms, so they remind us of.

D: Head-round, hands, feet-thick, thin.

The children grew and personally presented them pointed shapes.

The next thing is the establishment of the sets of logic tiles under certain signs displayed on the models. Activities continued on. There was integration of content with art education with children geometric forms made of paper collage according to various signs.

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Previous analysis strategies applied in the implementation of content aimed at establishing the initial mathematical terms, the dominant methods of operation, established communication and interaction between the subjective factors are reflected in the way of learning, experience and adoption of mathematical concepts.

The child / pupils are allowed to count, compare, and measure, analyze, synthesize, classify, explain, and solve problem tasks. The investigation approach allows the child / pupils to trace, using multiple sources, discover, collaborate, ask questions, let alone come to new insights.

In the process of adopting early mathematical concepts, constantly create conditions and opportunities which enable the child as an individual to become in direct contact and relationships with their classmates, teachers.

The application of the strategy of cooperative learning also provides opportunities for constant communication of multiple relationships, both within the existing group and outside of her. Everyone work with everyone, asks for help, help and cooperate

#### Teacher role.

Great is the role of the teacher / educator, who should be master of his craft, which will allow children active approach, gradually entering into the world of entertainment and interesting math. He is the one who has the role to enable the child to use the selected strategies, to use different approach to adopt new math concept.

- What need to do, to be good, effective math teacher?
- To enable pupils to learn the most important mathematical concepts;
- To work effectively with different pupils;
- To finding numerous mathematical activities;
- To assess the knowledge of the pupils and on that base to build new;
- To evaluate and organize a different sources and materials that are available and needed by pupils;
- To support the communication of multiple relationships;
- To facilitate cooperative and individual work that will detect;
- Focus on building desire for togetherness, trust, sharing;
- Capacity for evaluation of children's mathematical thinking.

#### Conclusion

The analysis of the theoretical discussions of this problem and the empirical data that came up in the survey carry us to the following data:

- Previous questions, found their answer in theoretical debates as well as the data from the realized study;
- The conclusion of this research should not be accepted as categorical, because they relate to the specific sample in a certain time period. However, they still should be accepted in order to improve, enrich the strategies applied in the initial mathematics education.
- The application of different methods of educational work in mathematics (demonstration, illustration, text method, ..) as well as different forms of educational work in mathematics (frontal, group, individual) positively affect the independent work of the child / pupils, their interest and motivation to work and the possibility of better communication and constant feed back
- Actively introduce mathematical concepts, methods, language, across a broad range of experience and some teaching strategies.
- Planning and implementation of activities that will stimulate research, independent work of the pupils;
- Supporting children's learning through constant evaluation of children's mathematical knowledge, skills and strategies.
- Provide an environment that supports and courageous learning mathematics - "every pupil can successfully learn mathematics depending on the instructive strategies and encouragement."

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## **‘ELECTRICIANS’ GAME: ELECTRICITY CORNER CONSTRUCTION THROUGH A SCIENCE PROJECT IN A FOREIGN LANGUAGE**

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### **Abstract**

In this paper we present an inquiry-based project for promoting critical thinking in Science. Specifically, the project was implemented to the 6<sup>th</sup> grade of the primary school of Ammohori, near the town of Florina through the school year 2013 – 2014. More specifically, seven pupils cooperated with a primary student teacher to develop a “bilingual kit of electricity” (English – Greek). The aim of this enterprise was the presentation of the kit in a Science Festival by the pupils themselves.

The basic elements which were combined and formed the whole project framework are open inquiry-based environment with experimental and research activities and “Content and Language Integrated Learning” (CLIL approach). In this way, the learning of the subject content (electrical appliances and electric circuits) was achieved through the learning of a foreign language (English). Thus, in an interdisciplinary learning environment the objectives set were a) learning electricity concepts b) learning English vocabulary c) development of critical thinking on science e.g. designing and constructing an electrical circuit. Based on all the above objectives, the development of critical thinking was required both for the experimental and research activities; the construction of the bilingual kit and for its complete presentation to the Science Festival in Greek and English, too.

Of particular interest are the outcomes which were emerged through such a project. Pupils’ critical thinking was gradually developed to a significant extent which was proved by their whole improvement. As shown, pupils improved their knowledge about electricity and English, significantly developed their ‘science’ skills and also experienced pleasant feelings.

**Keywords:** Electricity corner, Open Inquiry-based Science environment, CLIL, Critical Thinking, Science Festival

### **Introduction**

The rapid growth of the scientific knowledge requires individuals of modern societies to develop skills so as to be able not only to get informed about the new research data but also elaborate and adjust themselves according them. Searching and collecting data, using technology, learning foreign languages and proper managing of information provide an excellent way to approach in-depth and critically the emerged data. Within this context, a project was designed and carried out, with main objective to promote critical thinking about Science in primary school. This paper presents this inquiry-based project in which pupils practiced their science and language skills.

### **Theoretical Background**

In order to keep up with the renewal of scientific knowledge, teaching of science aims not only at teaching and learning of the content of a subject, but mostly at the familiarization of the nature of science and the adoption of the *scientific way of thinking* (Chalkia, 2010: 121). The appropriate context to make pupils act like scientists is provided by the Inquiry-based Science Education (IBSE).

IBSE starts with a question or problem which should be solved by pupils, who conduct their investigation and finally discover and understand the world around them developing their critical thinking. There are not specific steps to follow but only some basic



stages, which are common in its various forms: selection of the question or problem to discover, action planning, action performing, drawing conclusions, presentation of results, reflection (Karagianni & Psillos 2013). Pupils get involved into scientific procedures and work like scientists. Depending on the level of pupils’ self-motivation, the approach can be “constructed”, “guided” or “open”.

The mental and physical skills which are activated when children try to link and test their ideas in relation to new experience can be called “science skills”. To describe them “in action”, Harlen and Elstgeest (2005) give us a complete list of ten scientific procedures within which the corresponding skills are developed. The list of skills is: questioning, investigating, drawing and constructing, predicting, observing, handling tools and material, measuring and calculating, interpreting findings and drawing conclusions, hypothesizing, communicating. These skills are not innate but can be gradually developed making the role of teacher determinant. Teacher should provide appropriate activities to give children the opportunity to practice and realize them and also observe them and assess their progress.

We should bear in mind “language” skills (wondering, explaining, discussing, reading, writing, editing, and revising) which give pupils the ability to use high levels of language and practice more effectively the science skills (Sutman et al. 2008). Taking the above into consideration, interdisciplinary approaches, which combine science and language, have special importance.

One of them is CLIL. “CLIL is a dual-focused educational approach in which an additional language is used for the learning and teaching of content and language with the objective of promoting both content and language mastery to predefined levels” (European Framework for CLIL Teachers Education, 2011: 11). More specifically the objectives set are a) content learning b) language learning c) development of language skills, relevant-to-the-content skills and critical thinking.

### **Developmental Phase**

This paper presents an IBSE and CLIL project for promoting critical thinking. Specifically, the project implemented to the 6<sup>th</sup> grade of the primary school of Ammohori, near the city of Florina through the school year 2013 – 2014. The project lasted in total 31 teaching hours. More specifically, seven pupils cooperated with a primary student teacher for developing a “bilingual kit of electricity” (English – Greek).

Main aim was the combination of science and language through the simultaneous and inseparable teaching. It was an attempt to prove that this combination although traditionally considered as infeasible, not only is achievable but can also lead to beneficial outcomes. As regards science, the subject of the project was “electric circuits” and the particular subsections were as follows: electrical appliances, simple circuits-switches, series connection, parallel connection, conductors and insulators, electrical safety. As regards language, English was chosen as learning subject and language of instruction, too.

In this way, the learning of the content of a subject (electric circuits) was achieved through the learning of a foreign language (English). Thus, in an interdisciplinary learning environment the objective set was development of science and language skills and critical thinking.

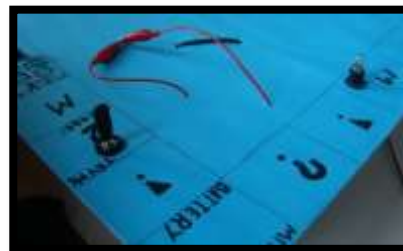
In general, each meeting followed a basic skeleton of three stages:

- 1-Introduction to the topic (familiarization with vocabulary, expression of existing ideas)
- 2-Implementation of tasks or games (planning, performing, presenting conclusions, reflection)
- 3-Application of new data to the “bilingual kit”, presentation, reflection

During the meetings emphasize was given both to subject and foreign language. In order to understand science concepts children had to understand at first English and use it for reading and writing, in various types of texts and listening and speaking, in oral

communicative situations. Specifically, the use of language by students should achieve to be understandable with an appropriate vocabulary and not necessarily correct grammar and syntactic structure.

The aim of this enterprise was the presentation of the kit in a Science and Technology Festival by the pupils themselves. Base of the whole process was the development of critical thinking, which was required both for the experimental and research activities and the construction of the bilingual kit and for the complete presentation of it to Science and Technology Festival in Greek and English, too.



### **Educational Kit**

In order to develop the “bilingual kit of electricity” pupils were divided into two groups and each group attempted to make its own board game about electricity. To complete it successfully children of each group constructed on their own using simple materials all the necessary parts: dice, pawns, cards (Questions, Commands, Missions) and board. At the back side of the board they incorporated three electric circuits, a simple, a series and a parallel circuit using batteries, wires, bulbs and switches. Their bulbs and switches were seen at the upper side, so they could be used during playing the game. The special feature of children’s board game is their bilingual character: pupils used both Greek and English language to write the cards, the rules, the contents, the inscriptions and the poster of their game.



*Picture 1: The board game of group B (upper and lower side)*



*Picture 2: The board game of group A*

### **Participation in Science and Technology Festival**

The final aim of the whole project was the presentation of the “bilingual kit of electricity” in the 2<sup>nd</sup> Science and Technology Festival, which was organized in Florina. Each group was responsible for the presentation of its board game to the visitors. The two languages of presentation were Greek and English and were chosen depending on the knowledge of the visitors. Pupils were explaining the way of construction of the game and the materials they used, displayed how to connect a complete electric circuit, were giving instructions for playing the game and they were answering to people’s questions.



*Picture 4: 'Young Electricians' at the Festival*



*Picture 3: The presentation of the board game to other pupils*

### **Research methodology**

To collect data about the development of skills and critical thinking, a checklist was designed based on that of Harlen and Elstgeest (2005) and used for teacher’s observation of pupils’ behavior. The skills assessed were 1. Organizing data, 2. Drawing and constructing, 3. Communicating. The checklist was filled in with marks 1-5 for each pupil after the end of each meeting and data collected by 4<sup>th</sup>, 7<sup>th</sup> and 13<sup>th</sup> meetings were analyzed to reach the conclusions.

### **Results and discussion**

Of particular interest are the outcomes which were emerged through such a project. As regards organizing data, all pupils were gradually able to classify information in tables or in their mind, make connections and organize adequately the information collected.

Concerning Drawing and Constructing skills pupils were increasingly able to recognize and detect the faults made through experiments and constructions and also showed large willingness to correct them.

Communicating consisted of two axes: a) presenting data b) reflection and metacognitive skills. At first, they were hesitant and could not use the language very well to present their work in the whole class in an understandable way. 3 of 7 pupils gradually showed bigger willingness and made a better presentation while the rest of them were remained with the same grade.

The most important information was collected during the presentation of the kit at the Science Festival. Pupils revealed their full potential and tried with the maximum of their capacities to present their game in an understandable way and impress the visitors. They explained adequately and also displayed how to connect the electric circuits they handled their knowledge successfully to find the most appropriate vocabulary and thereby, showed the substantial development of their critical thinking.

Moreover, at first meetings, pupils could not answer reflection questions and describe the way they worked. English created bigger problems in expressing their ideas. However, gradually all pupils showed significant progress in describing their actions and difficulties but half of them could not express their ideas in English adequately and sometimes tried to use a mixed code.

In general, the application of this methodological combination was successful and brought beneficial effects to pupils’ potential and Science and Technology Festival was a non-formal education activity which contributed greatly to skills development. All pupils gradually developed to a significant extent their science and language skills and they increasingly used them with consciousness and also their critical thinking which was proved by their whole improvement.

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## PHYSICS INTERACTION WITH DIALECTICAL MATERIALISM

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### Abstract

The development and refinement of physics is realized through its integration with other sciences. Thus, physics not only helps other sciences, but also borrows concepts from them. Application of Statistical Physics laws in the field of economy creates a new branch, Econophysics. This means that physics, as the most universal science of studying the laws of matter, plays a primary role in explaining and predicting phenomena that are not yet discovered.

Further development of Physics is influenced by the doctrines of dialectical materialism which helps physics to formulate its basic concepts more appropriately.

Namely, the dialectical law of "Unity and struggle of opposites" best explains not only the nature of the development of matter and specifies the basic concepts of physics, but gives it also a sound basis to build new theories, necessary to discover the secrets of the construction and development of matter; mysteries facing physics today:

1. What is black matter and black energy?
2. What is the chronological timeline of the development of the Universe?
3. What is its future?

This article aims to find some cross points between physics and materialist dialectics and also to guide students in the chosen areas.

The method used is analytical, comparative and deductive.

By properly combining the basic concepts of physics to the laws and concepts of materialist dialectics it is argued that physical phenomena in nature will be understood correctly by students. A typical case of this is the General Theory of Relativity, Astrophysics and Quantum Mechanics.

**Keywords:** Concept, Physics, dialectical materialism

### Introduction

The history of the development of physics shows very well how important it is to define the right scientific concepts that describe any physical phenomenon. It is known that the Michelson-Morley experiment shook the foundations of physics towards the end of the nineteenth century. To save the theory of cosmic ether, many scientists whom preserved old concepts about space and time, tried to resolve the discrepancy between theory and experimental data.

Lorentz equations tried to escape the "throne" of old physical concepts, but in fact they testify to the space contraction and time dilation for moving systems. These space-time changes become visible when the portable system speed is close to that of light.

It was Einstein and his genius mind who "descended from Plato's Olympus" the fundamental ideas of thought in the natural sciences (Albert Einstein, 1961). He removed any taboo about popular concepts in science, such as time, space, movement etc... Referring to Mach (Albert Einstein 1961), Einstein gave a clear concept on space, based on the distance between any two neighboring points measured simultaneously.

While for Newton and other physicists of early twentieth-century space and time remain unchanged and are not influenced by the relative movement of systems and the masses of troops, to Einstein Space-Time continuum is influenced by the movement and action. It is monumental t Einstein's observation: "Mass bends space and then space forces mass to move".

Critical reviewing of any concept in physics led, not only in the accuracy and further development of it, but also to the emergence of new scientific theories, rapid development of mankind which led many steps forward towards recognizing the mysteries of matter.

### **The law of unity and struggle of opposites**

It is a universal law of development of objective reality, one of the most important laws of dialectical materialism-constitutes the foundations, "core" of materialist dialectics (Dictionary of Philosophy, 1974). This law explains the internal objective source of development of any movement of matter, understanding this as self-movement and self-development is the basis of any discovery and the birth of any scientific theory. Concretely, the science of physics proves best action of this law in nature.

According to this law, the development process is realized through the "struggle" of opposites which, in moments, through, trends that exist objectively in things and phenomena themselves, are in unity, in dialectical relation to each other, mutually exclusive and penetrate each other mutually. There is no opposite that are not related to each other in a certain unity, which inevitably initiates the fight between them. The unity of opposites is relative, while the struggle that disrupts the unity, the relationship between opposites, which makes it possible to resolve the contradictions and the transition from a lower quality at a higher quality, is absolute. "There is no unity of opposites without their struggle and there is no struggle of opposites without their unity; development is the struggle of opposites" (Lenin, 1977).

Until the mid-twentieth century, only elementary particles that constitute matter were discovered. According to this law, the existence of antiparticles, thus their opposites should also be predicted. The experiments conducted proved their existence. Soon came the discovery of the positron, anti-proton, anti-neutron etc...

The formation of electron-positron pair when the falling photon with energy greater than 1022 klv passes close to the atomic nucleus, shows not only the existence of antiparticles (in this case positron), but also for mass-energy unity. This energy accumulated in the photon is converted under certain circumstances (strong electric field of the nucleus), into matter. So we have a new unity: matter-energy.

The question arises: Are these two realities in a struggle with each other? This is a question as difficult to solve as the Unified Field Theory, for which Einstein worked until late in life as well as many other prominent physicists who are still working in this direction (Michio Kaku 2004). De Broglie's theory on the dual nature of each particle, matter type and wave type, which is experimentally verified, gives us another fact about the unity of matter and field.

On the other hand, the field itself has mass, momentum and energy just as matter itself. Famous experiment of "assimilation" of particles, showed no disappearance of matter (the term "assimilation" is wrong), but its transformation from matter into field, which is again a form of existence of the matter.

Based on this important law, we state that, just as matter has its opposite, the anti-matter (in the form of antiparticles), so should field have anti-field as its opposite. The question arises: So what features should it have? It is an interesting fact the red shift discovered by Hubble in 1929, which showed that the universe is expanding. Up until then it was believed that Newton's Gravity keeps galaxies in static condition thanks to the attractive gravitational force. Expansion of the Universe shows that the galaxies are under the influence of an anti-gravitational force, which now prevails over the gravitational one.

This fact demonstrates the existence of not only anti-matter, but also of anti-field, which is in unity with the field and also at a struggle with it. The law itself is "Unity and struggle of opposites", admits that opposites do not exclude each other. This means that the opposites, thanks to the struggle between them dominate over each other occasionally, furthering the development of matter.

We believe that based on this law, Physics should revise its concepts regarding space-time, with the infinite, etc... This means that physics should be built precisely on the basis of this law.

### **What dialectical materialism borrows from Physics**

Let's focus on the basic concepts of dialectical materialism such matter, space, time, movement. The question arises: Will the same concept on the matter remain after the emergence of antimatter, (anti-matter + anti-field)? Since Einstein sought to create a physical theory "purely" geometric, the philosophical concepts on matter, space-time and motion should consider these data from physics.

According to dialectical materialism, *"matter is a philosophical category that serves to demonstrate the objective reality which is given to man in his senses, which is copied, photographed, reflected by our senses, but which exists independently of them"* (Lenin, 1976).

Matter is defined as the infinite number of phenomena, objects and their systems; it is all that exists outside our consciousness and despite of it. Matter is eternal and endless in space, it is indestructible.

Ancient times materialists understood matter as a concrete object (water, air, fire), materialists of 17<sup>th</sup>-18<sup>th</sup> century called matter that which consisted of indivisible atoms, while dialectical materialism, gives matter meaning by relating it with its basic trait: to exist objectively, outside and apart from man. Movement, time and space are intrinsic properties of matter and the basic forms of its existence.

Movement is the most important property of matter, an attribute of matter, a form of its existence. Movement includes all processes of change that occur in nature and society. It is generally any change of matter, every interaction of material bodies. Movement as well as the matter is of a general nature, objective, diverse, and not creatable and indestructible (Dictionary of Philosophy, 1974).

According to dialectical materialism, matter cannot be thought without movement, just as movement cannot be thought without matter. Movement of matter is absolute, while calm is relative; it is a moment of movement. Movement is comprehensive and appears in different concrete forms. Movement of matter is a process of interaction of opposites. Various forms of movement are in dialectical unity and influence each other. Any particular form of movement has its peculiarities; therefore we must distinguish the highest forms of movement of matter from lower forms of movement and should not be reduced to them. "The movement of matter is not purely mechanical movement, it is not just movement; it is heat and light, electric and magnetic tension, chemical synthesis and analysis, life and finally conscience" (Engels, 1981).

Movement is change in general, which is realized in specific forms of movement, characteristic of which is that each of them tends towards equilibrium. Equilibrium is currently characterizing the various forms of movement where they stop, freeze. This moment is also known by the term tranquility. As it is observed, tranquility derives from a certain movement, while movement as a whole disrupts this balance. Philosophy is trying to connect these in an organic unity, to treat as two dialectical opposite, in that sense, the movement is changing in general, but that is done in concrete forms, characteristic of which is that they tend to break. Tranquility serves to show that state that comes as a result of special forms, that condition where the body maintains its qualitative definition.

Time and space are the main form of existence of matter in motion; they are the basic properties that characterize the matter as expansion and flow. Philosophy is concerned above all with whether time and space are real, or simply abstractions that exist in human consciousness. Philosophical views on space and time ranging from antiquity to the present day and have been numerous, varied and anecdotal arguments on this issue have been quite interesting.

Thus, for atomists Leucippus and Democritus, space is a vacuum; for Aristotle it is the place taken up by objects, a limit determined on the basis of several contours, certain forms; for Descartes it is bodily substance; to Newton, space is the presence of God in nature, which perceives the universe through two senses, space and time; for Leibniz, is a sequence space, a rule, the report not only between things that exist, but also among the things possible, if they exist, for Kant space and time are a priori forms of sensory contemplation, are intuition, for Hegel are absolute Idea category, for Foerbarh, space and time, there are simple forms of phenomena, but the basic conditions of human, objective realities operating in our senses , for Mah, space and time are regulated systems sensing arrays.

Dialectical Materialism accepts the objective character of space and time, it considers them as inherent properties of matter. According to this doctrine, space, expresses the order of placement of material objects that have a certain expansion, shape, location, volume of fixed distance from each other, while time expresses continuity of existence, how the above come one after another , i.e. any material process takes place in one direction, from the past to the present to the future.

According to dialectical materialism, time and space are relative in nature, which means that their characteristics depend on the characteristics of matter in motion. Matter, motion, time and space cannot be separated, they are dialectical unity. Engels while defining this moment stated: "Of course both these forms of existence of matter are nothing without matter, are empty ideas, abstractions that do not exist except for in our heads" (Engels, 1981), while Lenin states: "There is nothing in this world other than matter that moves, and matter cannot move other than in space and time " (Lenin, 1977) .

According to today's physics, the concept of space should be understood as Einstein (Michio Kaku, 2004), which gave a clear concept on space, based on the distance between any two neighboring points measured simultaneously. Based on the law of "Unity and struggle of opposites", the question arises: What will be the opposite of space and time? In fact, according to the physics, space and time should be seen as a continuum of four dimensions. In an effort to build a unified field theory, many physicists enter into this continuum even a fifth dimension, maybe even more. We believe that these efforts of physicists concerning this matter should be considered by the philosophy, in order to properly address the above concepts.

### **Conclusions and recommendations**

The questions that physics and cosmology specifically, raise today are the same ones that have consumed physicists for centuries. Does the Universe have a beginning? Is it infinite or finite, and will it have an end? Trying to give a cosmic theory similar to Newton's, Einstein posed these questions for providing them with solutions. The above questions concern the scientific determination of space and time.

Another question that addresses a fundamental concept of physics, but also of philosophy is: What is matter and antimatter? 80+ years ago (1931), based on theoretical arguments, Dirac proposed the bold hypothesis of the existence of the positron, which in fact represents an antiparticle. Positron was experimentally captured and soon began the observation of so many other antiparticles. This confirmed the hypothesis of Dirac.

Knowledge of the structure of elementary particles is of great value to the development of philosophical category of the structure of matter, because it testifies to the



dynamic character of the structure of micro-objects. According to common ideas, the part is smaller than the whole, which it composes. This statement may not be very useful for the analysis of objective processes in micro-cosmos, because there we are dealing with dynamic structure.

The other form of the existence of matter is the field. These two forms (matter and field), of the existence of matter transform into each other under certain conditions. So far physics has shown that in addition to these, there is anti-matter. The question arises: Is there even the anti-field? Astrophysicists are accepting more and more the presence of "dark energy", which is responsible for the expansion the universe, (Michio Kaku 2004). Could we be dealing with the anti- gravitational field?

After submission of these facts, which actually prove the authenticity of the law of "Unity and struggle of opposites", the question automatically arises: What is the role of philosophy as a foundation science of pure scientific thought, in giving an explanation to these findings in the physical nature of the world around us and the further development of physical theories about micro-and macro-cosmos?

Undoubtedly, philosophy (dialectical materialism), should properly formulate the concept of antimatter, should review the concept on space and time in accordance with data of the science of physics.

We believe that these changes should be reflected not only in the case of philosophy, but also in physics should be noted that the law "Unity and struggle of opposites" is based on the development of various processes associated with the movement of matter.

At present we are not able to fully answer many questions that lie in the field of elementary particle physics and Astrophysics. The unknowns get revealed, secrets "abolished" from "the power of darkness" and come to light, in the service to society, development and progress.

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## THE EFFECTS OF "INFORMATION REVOLUTION" UPON THE CRITICAL THINKING AND VALUES IN EDUCATION

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### Abstract

"Information revolution" brings dramatic changes in the way people live, work, and think. If we agree with Berkeley that *esse est percipi*, then we must think about the existence of the info sphere as a synonymous of the biosphere i.e. we need to make a re-conceptualization of our ontology in informational terms. From there, in the contemporary education vital issues are raising which cannot bypass the so-called third wave civilization. Computer influence on the critical thinking and values in education manifest itself in various forms. This paper will be focused on the theoretical analysis of the role that information revolution plays in the education. The aim is to expand the range of educational perspectives regarding understanding of its nature and implications in reshaping human reality.

**Key words:** education, information revolution, critical thinking, values

### Introduction

The rapid development of information technology or popular so-called civilization of the "third wave", has strong impact on the core human values: life, health, freedom and knowledge. The cheap access to global information network has generated a real expansion of the cyber-communication. In that context were created and strategies for global or on-line education. On the other hand, the ethical education is found in the situation of oscillation between the system of traditional values and challenges of the new, modern lifestyle.

There are numerous issues that today are put before theorists, educators and teachers in terms of ethical education of the young: what need to accept from the old system of values, which values can adapt to new conditions of life, which is a novelty in the field of axiology and so on. To give an adequate response to them, it is a broader historical and philosophical analysis of the specific material and spiritual agents that enable the emergence of new global civilization.

At the same time, the implications of information revolution are not always fully understood in educational systems. For example, it is really difficult to measure how the new technologies and the access to information make impact on critical thinking in education. Children learn from their environment and culture. Changing of the furniture of the environment, changing the tools and habits that are part of the culture, also changes the way they learn, and think. In the framework of this massive change information overload no longer is a problem, because the very structure of educational contexts, methods and aims are transformed by expansion of the infosphere (Pasquanelli 2012: 125-150).

### The information revolution and the role of critical thinking in teaching and learning

It is well known that the world is leaving the industrial age and entering a new age called "third wave". One of the most important changes within the functioning of the humankind is dramatic growth of new capabilities to manipulate information using modern information technologies.

The scholars are divided in their opinions regarding the impact of information revolution upon the critical thinking in education. Some of them argue that technology has revolutionized the field of education and that brings deeper understanding of the critical thinking (Kassam 2003: 86-100) Because of that the importance of technology in schools

cannot be rejected. In fact, with the onset of information revolution in education, it has become easier for teachers to impart knowledge and for students to acquire it. The use of technology has made the process of teaching and learning all the more enjoyable. The others think that the impact of technology on critical thinking is ambivalent. They conclude that human power based on the symbolic interpretation of reality – critical thinking fled into a dystopian nightmare (Achterhuis 2001: 65-95).

We are what we think. Whatever we are doing, whatever we feel, whatever we want – all are determined by the quality of our thinking. The most important goal in the teaching is to cultivate the intellect. The students learn the skills, abilities, and traits necessary for functioning successfully, and ethically, in the complex world in which we now live. For example they can be "trained" to believe that education means doing what the teacher says and never questioning the view of the teacher. Also, they can be "trained" to think of textbooks as inherently authoritative. These common practices violate a reasonable conception of education (Paul & Elder 2014). According to Dewey "no one thing, probably, works so fatally against focusing the attention of teachers upon training of mind as domination of their minds by the idea that the chief thing is to get pupils to recite their lessons correctly (Dewey 1997).

The advances in technology and changes in the educational environment put an increased emphasis on critical thinking as intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and evaluating information. In its exemplary form, critical thinking is based on universal intellectual values: clarity, accuracy, precision, consistency, relevance, sound evidence, good reasons, depth, breadth, and fairness. If we understand critical thinking substantively, we not only explain the idea explicitly to our students, but we use it to give order and meaning to virtually everything we do as teachers and learners. The advances in technology enables us to understand and explain the thinking that defines the content we teach. Also, this process allows easy access to information, greater interest in learning, increased retention of information, robust information storage, better presentation of information, interactive teaching, easy knowledge sharing, teamwork within the classrooms and so on. Students need to be able to think creatively, solve problems, and make decisions as a team. Therefore, the development and enhancement of critical-thinking skills through collaborative e-learning is one of the primary acquisitions of technology education. Somme programs are designed to encourage problem - solving skills. Using technology such as hypermedia and telecommunications also affects thinking skills. For example, one of the most highly rated incentives for using telecommunications with students includes increasing students' inquiry and analytical skills. At the same time, technology and information revolution offers students diversity and opportunities for individual growth and self-expression.

The opponents of online technology often point to the negative effects of the information age. They claim that easy access to information has a negative effects on users' critical – thinking skills. Some negative effects of technology in today's classroom are that it can take away valuable learning time, it can be overused, and it can also turn educational experiences into games for students. The proponents of this argument also argue that online readers, for example, understand and retain less than print readers. The negative effects might include shortened attention span, loss of effective learning, or decreased opportunities for social interaction. A simple analogy, according to Floridi (2010) may help to make sense of the current situation. The information society is like a tree that has been growing its far-reaching branches much more widely, hastily and chaotically than its conceptual, ethical and cultural roots.

### **The information revolution and the role of values in education**

In the mid 40s of last century American scientist Wiener (1988) developed the so-

called cybernetic conception of the human nature. According to him, human nature is a metaphysical universe designed as a combination of matter, energy and information. Using the language of Wiener, human beings may define as "information objects" of countless energy processing (reasoning, estimating, calculating, deciding ...), certainly within his physical nature.

In his work "The Human Use of Human Beings: Cybernetics and Society", Wiener (1988) tries to assimilate the new paradigms of eligible cases by changing the existing code of laws, rules and practices. According to him, cybernetics considers that the structure of the machine or structure of the organism is a kind of index of achievement that can be expected from them. With this attitude, he actually proves that the human individual is capable of learning and study and its physical structure that allows it. Although we humans are only small puddles in the river that is constantly flowing, yet at the same time, according to Wiener, we are immortalized models. Therefore, the purpose of a human life must be seen through the prism of "cosmic justice" that is, necessarily ethical implications of the cybernetics understanding of the universe.

In the modern system of education that is strongly influenced by cyber civilization, daily new situations occur in which, among other things arise and various ethical dilemmas. If ethically acceptable precedents, traditions and policies are not sufficient to solve the problem, it is turning to the metaphysical foundations of ethics and the solution should be sought in the purpose of human life and universal principles of justice. Traditional educational methodology of the moral teaching, today is facing some serious problems. The search for "new" identity of the values for the youth presents rethinking of the life's complexity.

Analogously, the ethical education is developing in the spirit of freedom, equality and goodwill among people. According to some researchers, the ethical principles of traditional values should not be considered unusable in the new paradigm of life of youth. Namely, each person is independent and free to develop their capabilities to their full realization.

Back in 1976 Maner (1980) noted that the emergence of computers generated entirely new ethical problems that would not exist if the computers would not have been invented. In contrast, Johnson thought that computers not only transform old ethical problems, but also creates entirely new ethical situations that have never been seen. For these reasons, according to him, we are forced to apply traditional ethical norms in the new, unfamiliar area. In the same year when the book appeared, Johnson Moore (1985) published his article "What is computer ethics?" in the journal *Metaphylosophy*. According to him, "computers are reasonably adaptable and can be programmed for any activity." That means you cannot avoid the ethical responsibility of those who programmed them. Moreover, Moore argues that the logical adjustment of computers enable people to make a number of things that they previously were not able to do. And because nobody could do before, could not even know about some negative consequences of their activity. In this sense, is never the question whether such things should ever be made. Also, previously there was no need to establish any laws or standards of good practice, i.e. specific ethical rules that govern them. This conceptual and ethical entanglement, produced by the new information technology, Moore called "legal vacuum". In this "legal vacuum" exists today's ethical education.

Back in 1995 Gornijak-Kocikovska (1996: 177-190) claimed that global ethics or ethics of the future will actually be computer ethics. She believes that all traditional ethical theories come from "local" cultures and customs of civilization in which the third wave can be successfully incorporated. The computer ethics, however, has the potential to be applicable in any culture. Gornijak spoke about the speculation with global relevant concepts and principles that will be developed by computer ethics, but assumes that such a theory will occur over time due to the global nature of the Internet and multicultural character of the

modern world. Within these perceptions, the ethical education cannot look beyond the concept of computerization of schools. Also, cultural pluralism in education has emerged as a new value system upon which are build the new educational concepts. In the world today there are many ethical codes developed by national organizations computer in different countries. Their content among themselves still differ in the specifics of local cultural traditions, but in relation to the global layer, all are based on the following:

- Do not use computers to hurt other people.
- Not to use documents that are not intended for free use.
- Not to infringe the intellectual property.
- To respect the right of personal freedom and privacy in the cyberspace.
- Not to disseminate false information through the network resources.
- To think in advance about the social implications of computer programs before to be put into use.

Most likely, these features of the Code of Conduct will constitute a nucleus for the development of the global ethics. Educational institutions are not immune to the effects of the info sphere and its teaching curricula are conceived in line with recent changes in society. According to Floridi, (2005: 1-28) contemporary ethics has not analyze only the humans, their actions, intentions and characters, but much more it focuses on analysis of the "entities" described as a set of data. The nature of each entity includes appropriate data structures, a set of operations, functions or procedures that are activated by different interactions and reactions defined as behavior of the entity. For ethical science, which will include new policies on global functioning of life, Floridi suggested a new name - makroethics. From the above, we conclude that ethical education in modern society is radically transformed under the influence of civilization on the third wave. The threat of "entropy" or deliberate and unintentional damage, i.e., changing the characteristic data structures, seriously questioned the existence of free will in man as a key feature of his ethical development. Although there is a tendency in the info sphere information each entity that has at least a minimum value, ethical to be respected, however, the preservation and enhancement of the properties of information entities, perhaps in the future will need to engage "artificial agents" or softbots and cyborgs that will be programmed for an ethical activity.

Finally, here arises the question: Where is in all this the human being, or more accurately, what ethical education can offer to modern educational system for young people? According to our opinion the computer technology still depends on its creator. Although it presents his powerful weapon for carrying a variety of purposes, in that sense and realization of educational goals, however its impact on creating a new approach to educational values among the young people, provokes serious ethical debates. The teacher's main professional goal should be caring for student as whole persons. The higher level of students' moral development are characterized by an increasing concern for justice and for social transformation.

In this way the modern educational systems should promote a new direction for teaching that cares about student's identity formation and social relationships built through learning in the infosphere as a new humans' environment.

### **Conclusion**

This is an unprecedented era in the evolution of humanity. The global use of the new technologies and their effects on society are beneficial in enhancing human communication and understanding. Some of these effects are less benign as they encourage increasingly sedentary lifestyles and technological dependence.

The minds of children are like blank pages. As we know that the generation of this era has a high level of dexterity. Their elevated cleverness allows them to fill those pages very fast with the provided information. Such information can be extracted not only from books

and other educational materials but also from games, TV shows and other sources of knowledge.

The rapid revolution in technology affected the education drastically and led us to believe that our educational systems have changed for the better. However, there is a critical concern whether technology is affecting the children minds for the good or worse?

Finally, computer influence on the ethical education manifests itself in various forms. If we agree with Berkeley that *esse est percipi*, then we must think about the existence of the infosphere as a synonymous of the biosphere i.e. we need to make a reconceptualization of our ontology in informational terms. According to Floridi (2010), ethics is not only a question of dealing moral by well with a given world. It is also a question of constructing the world, improving its nature and shaping its development in the right way.

In this context, the human interaction in ethics education and in the building of the educational values is a powerful tool still.

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## **RAISING PARENTS' AWARENESS TO DEVELOP A MORE CRITICAL ATTITUDE TOWARDS THE APPLICATIONS CONCERNING INTERNET COMMUNICATION. A CASE STUDY**

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### **Abstract**

The purpose of the present work is to sensitize the students' parents (through emotional challenge) to the dangers of internet use. In particular, it seeks to challenge their emotions to act as an incentive to realize the dangers that their children face when navigating the internet uncontrollably and thus recognize the need for training them to use of internet more safely.

It is therefore expected from the students' parents to develop a more critical attitude towards the internet and particularly applications that facilitate the direct communication between users. As an appropriate indicator case, the conversation in chat rooms is selected and, more specifically, one of the most popular discussion pages, which is the Greek chat room from a company called ICQ at <http://www.icq.com>.

By means of group work in conjunction with a case study in which the instructor makes a role playing game, the emotions of learners are stimulated, thus serving as an incentive to further their education and to develop a more critical attitude towards the applications concerning Internet communication.

The educational technique originally developed includes the recognition and acceptance of reality taking at the same time under consideration the participants' experiences-through a more critical look and a mood of controversy, thus resulting in the redefinition of reality and past experience.

As a method of observation, given the physical presence and participation of the instructor, the systematic covert observation of both verbal and non-verbal behaviors and reactions of subjects in the observation is selected, considering that if the students' parents were informed that they were subject in the observation, this would alter the results of the observation. The attribute of the observer is not evident in the cases where he has undertaken a role in the group, so the other participants do not know his real attribute, that of the observer.

**Keywords:** internet, parents, awareness, critical thinking

### **Introduction**

According to Coureau (2000) the active participation of the trainees is one of the fundamental principles of learning. Also, another significant factor for the increase of participation is the teaching techniques through which learning is accomplished (Kokkos, 2005). These teaching techniques, which promote active participation, are the very same that activate learning incentives so that the trainees develop independent learning skills (Boekaerts 2002). An incentive is whatever motivates, urges or causes a person to take action! (Kostaridou, 1999)

This team study that is being presented was carried out within the HRON project called “Adult training in Acquiring Basic New Technological Skills” of the Institute of Long Term Adult Education called “Introduction to the Internet”. This training session lasted

sixteen hours and the class consisted of eighteen parents, twelve women and six men whose age ranged from thirty to fifty-five. However, it goes without saying that the group work and the integrated technique that is developed is applicable to any class of adult trainee parents.

The aim of this study that is being described is to sensitize the trainee parents through causing various emotional reactions related to the hidden perils of using the Web. Specifically, we intend to provoke these feelings to function as incentives so that the trainee parents realize the dangers their children could come up against whenever they use the Web unsupervised and consequently realize that their own training in using the Internet is absolutely indispensable. It is therefore expected that the trainee parents will develop a more critical attitude towards the Web and more specifically towards the applications that render the direct contact among the users so simple. As the most indicative case for this we have chosen conversations in chat rooms and more precisely in one of the most popular domains which is the Greek chat room of the ICQ chatting platform at the address <http://www.icq.com>

### **Outline of the group work**

In the development of this methodology, one of the fundamentals is that the teaching technique is fully exploited when it urges all trainees to acquire contemplative, critical examination, re-examination and analysis of the factors, the various aspects and parameters of an issue (Mavrogiorgos, 2003). So initially, we define the tasks we pursue to present the necessary significance and trigger the interest of the group elements that are of great importance for the way that a topic is presented (Noye & Piveteau, 1999). At first the trainee parents are informed that for the next hour they will deal with a study case the goal of which is for them to recognize themselves the dangers their children may have to confront whenever they enter any chat room on the Web, to confirm these dangers in practice, to question whether these dangers can affect their own children and finally be familiarized with the ways that will help them tackle the problem in question. Needless to say the goals are set in knowledge, skills and attitude level (Kokkos, 2005).

The trainee parents are asked to be divided into groups (three groups of five and one group of three) following the proposition which says that “one of the basic norms is the heterogeneous blending of the trainees with which the best possible chemical interaction and attainment of the targets is achieved” (Jacques, 2004: 237) and that they will watch the trainer enter the above mentioned chat room. Also, the trainee parents are told that the trainer will assume the part of a young girl aged sixteen. This scenario serves a dual purpose. On the one hand is for the parents to realize that what applies on the Web is “you are what you state you are” with all the risks this involves and on the other hand to ascertain how easy it is to for their children to be lured or fall prey to harassment from people they don’t know. It has often been proven in practice that a conversation with more than one person will consequently make the above mentioned scenario come true.

As the conversation takes place, the groups will be watching it via a data projector as they should discuss every aspect of it in order to fill in the worksheet they will have been given (Worksheet 1).

#### **Worksheet 1: Trainee Parents Worksheet**

Worksheet

Case Study: Dangers through conversation in chat rooms

Please fill in the following:

1. What were your feelings while watching this live chat?

.....

2. Do you believe that your child could be involved in such a conversation?

.....

3. If so give three reasons why this is



- A).....  
B).....  
C).....  
4. If not give three reasons why it is not
- A).....  
B).....  
C).....  
5. What do you believe would follow if this chat continued?  
.....  
6. Why do you think this could happen? Is it dangerous?  
.....  
7. Would you like to be able to control this kind of communication of your children?  
.....

It's vital, at this point, to make clear to the trainees the usefulness of completing the worksheet. Through team work the parents are given the chance to work out this problem collectively, to juxtapose their views and express themselves more openly rather than in front of a wider audience in the presence of the trainer (Coureau, 2000). It goes without saying that the conversation will carry on up to a permissible point allowing the parents to assume what will obviously follow.

The trainee parents are informed that the duration of this conversation will last fifteen minutes and then they will have five more minutes at their disposal so the leader spokesman of each group can present the outcome of to all the rest of the group members. The presentation of each team will last fifteen minutes. With the completion of all the above stages not only the trainee parents are reassured as they know exactly what they will have to do at every stage of this procedure but also they are given themselves the chance to actively follow the presentation of the issue as it evolves (Noye & Piveteau, 1999). The duration of the description of all the above stages of the procedure along with any queries that might arise is estimated to be no more than five minutes.

What follows next is the procedure of entering the chat room, conversing, the study case and the group project.

On completing the above stages the representatives of the groups are asked to present the other trainee parents their work in addition to their doubts, impressions, the problems they might have had to confront and the deductions they have arrived at. In this way we make the most out of the wide and various range of experiences the trainees have and they are also given the chance for active participation, qualities that make up all the characteristics of all adult trainees (Kokkos, 2005).

In the remaining five minutes to the end of the teaching session the trainer carries on with a general commentary and composition of the deductions so that the focal experience not be enclosed within the limits of each group separately (Polemi– Todoulou, 2005). Given the anxiety and doubts of the team, the trainee parents are informed that during the next teaching sessions they will have the chance to learn ways in which to face these dangers and protect their children from dangers that lurk in the chat rooms and generally on the Web.

Summing up, one could say that from the analysis of the teaching technique it is obvious that it is a complex teaching technique which involves a part from the study case, both characteristics of group work and also features of role play on behalf of the trainer who, according to Rogers (1999: 221) “functions in two ways in connection to the group of trainees, as manager of the teaching procedure and as an instructor”.

#### **Ascertainments of this observation**

From the methodological point of view, given the physical attendance and

participation of the trainer, what should be stressed is the thorough undercover observation of both verbal and non verbal behaviors and reactions of the subjects of our observation, having in mind that if the trainee parents were aware that they were under observation, the results would be different. To be an observer is not obvious in cases where the same observer has taken a role in the group (in our case he is a trainer) as the trainees are unaware of his real role (Kelpandis, 1999). Non verbal communication includes both reflexive reactions as well as the unintentional non verbal contacts (Kourti, 2007). Moreover, the active participation of the observer - trainer enables the use of a structural grating of information unfeasible. Therefore the non - structured frame is selected, which follows a structured frame of topics but tends to record all the scope of the interactive behavior (Moschochoriti, 2008). Nonetheless it must be noted that “there is no fully non – structured observation but only classifications which are dictated by the scope of the research (Papadopoulou, 1999: 39).

Within the first two minutes of entering the chat room more than eight requests for conversation appeared all of which had male user names. The majority of these unknown male users followed the same method in asking their questions. After the normal greetings the first questions that were asked were “what do you do”, “how old are you”, “where are you from”, “what do you look like” and “what are you wearing now”. The answers that were given were according to the scenario that had initially been decided on. Most of these men (interlocutors) asked whether there was a possibility of contacting through msn so as their conversation would become live. As the chat continued the questions of these unknown interlocutors became more and more personal and indiscreet. At this point it should be emphasized that during these conversations there was a continuous flow of new requests that were actually ignored so as to carry on with our chat in greater depth and wider range with the people we had chosen at first.

From the topic analysis of the aspects of our concern, based on the targets we had set, we have deduced the following:

- \* During the chat and after the first request for communication with an unknown person, the trainee parents express their concern through discussions among them. Their worries mostly focus on the simultaneous entry to the chat room and requests for chat from strangers

- \* As the invitations for chats from strangers increase so much greater is the astonishment of the trainee parents which is expressed in different ways. Their astonishment is mostly focused on the number of invitations for chat from the time of entering the chat room. Furthermore, they were surprised by the fact that the unknown interlocutors are all of them much older than the “sixteen year old” teenager, a role played by the trainer himself.

- \* While the questions of these people became more intimate the parents’ initial surprise turns into speculation and concern. The trainee parents wonder whether it is possible for such kind of questions be asked by these unknown people so openly and ruthlessly.

- \* When the conversation reaches its pre-set bearable limit, the parents’ behavior within their teams becomes desperate. When sexual hints transform into direct sexual harassment then the trainee parents face a very nasty reality that most of them could not even believe it actually existed.

- \* The views of the representatives of the teams in their general assembly indicate the strong need of the trainees to be updated of the ways to face this problem since the vast majority believes that incident in question could very well concern their children. Though a number of the trainee parents may consider the way the conversations went along as exaggerating or that their own children would never give in so easily to the suggestions of the unknown interlocutors, nevertheless the indisputable danger of sexual harassment of their children inside these chat rooms is considered as real and very likely.

## Conclusion

By giving motives during the teaching procedure is considered as a very effective means to provoke the active involvement of the participants. What is aimed through this technique is the questioning of the trainee parents about the dangers that surfing the Web may cause and especially when their children may be affected by these dangers.

Evaluating the outcome of this team project and the results of their observations it is firmly believed that the tasks set for this project are met as the trainee parents not only are shocked but they also express their strong will be informed of the ways to face this issue since they believe this can be a problem for their own children.

The teaching method which was developed initially included the recognition and acceptance of reality, the outlook of the participants' experience through a more critical disposition, resulting in the redefinition of reality and previous experience (Dolioti, 2009).

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## DESIGN AND DEVELOPMENT ‘SCIENTIFIC’ KITS BY PRIMARY STUDENTS FOR PARTICIPATING IN SCIENCE FESTIVAL: THE CASE OF A TRAIN KIT

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### Abstract

The aim of this poster is to display the educational material which was developed in two school years, 2012-2014, by eight students of Kelly’s primary school in the broader area of Florina. The students worked in an open inquiry environment with two student teachers of the Department of Primary Education of UOWM. The main goal of the project was the design and development of a ‘scientific’ train kit which will be presented in a local Science Festival.

In the poster firstly we are going to describe the inquiry learning environment during the two school years. Specifically, students in groups were engaged in a number of critical thinking skills such as collecting data about trains, studying train’s wheel operation, designing a model of train, etc. Secondly we will present the materials of the ‘scientific’ train kit, which includes: i) a 3D train model made by recyclable materials, in which they embodied an electrical circuit, ii) a 3D magnetic railway map of the area, iii) a model of train’s wheels, iv) a Stop Motion Animation video, e) a video storytelling which refers to the students’ first train voyage. In general, during the first school year we attempted to familiarize pupils with the railway system as well as to make models and gradually during the second year, the activities became more complex by adding different aspects of train such as the social and environmental effects of train.

The characteristics and educational materials of our project will be presented as a multimedia poster. In addition we will discuss the results of the study concerning the development of pupils’ skills, such as collecting information, making questions and deciding among multiple choices.

**Keywords:** Science Festival, open inquiry learning environment, Science-Technology-Environment-Society approach

### Introduction

The teaching approach presented here is part of a project work, which aimed to give primary students the opportunity to cooperate with student teachers in order to design and develop ‘scientific kits’ for their schools. Moreover, primary students had the opportunity to present their ‘scientific kits’ in a local Science Festival in Florina. This poster refers to the design and development of a ‘scientific train kit’, during two school years (2012-2014) in elementary school of Kelly at fifth and then sixth grade. Our effort was to help primary students understand the importance of a local social problem related with the environment of the broader area, namely the interruption of the local train line

### Theoretical background

The design and development of our approach is based on the aspects of the open inquiry learning environment as well as those of the Science-Technology-Environment-Society (STSE) approach.

Referring to the STSE approach, “each issue is dealt with social and environmental concern. The will to examine the situation and solve the problem gives young students a framework in which scientific concepts make sense and students’ skills are developed.” (Skordoulis & Sotirakou 2005:29)

Learning is attached to students’ everyday life, so they understand the world around them through science. As a result, students reverse their negative attitude towards science and

this has an effect on their career choice. Moreover, students develop their interest for science popularization, in order to make it comprehensible for the public

Concerning the inquiry learning environment, it is documented that it includes at least three basic stages: (i) planning, (ii) collecting and presenting data and (iii) come to evidence based conclusions (Chalkia: 2010). Inquiry as a process can be described by the phrase “students do something” instead of “someone does something for students” and there are three forms of inquiry structured, guided or open. Open inquiry involves the activities students do by themselves. They are free to choose the topic and the method, and teacher is responsible to support them with knowledge and materials in order to complete their plans (Carin et al. 2005). As a result students become active, as they are responsible for the evolution of the process and they are not passive receivers of information anymore.

### **The teaching-learning environment of our approach**

The issue was predefined and given to the students which were free to wonder, discuss and work on it in groups. The approach is divided in two parts.

In the first part, we were contended to make our students familiar with working in groups, design and redesign models and express their agreement or disagreement in the classroom. Our ultimate goal was to get them prepared for the main phase of our study.

In the second part, students were engaged in a number of critical thinking skills such as collecting data about trains, studying the train’s wheel operation, analyzing the collected information, etc. Within the open inquiry learning environment we gradually lead our students to become active subjects of learning, able to construct and reconstruct their plans and ideas according to the problems they may face.

Under the perspective of STSE approach students learned the science and technological terms about trains such as car, engine, track, locomotive, etc. All the activities were gradually designed in accordance to students’ knowledge, needs and progress.

**Part 1:** The first part of the intervention included eight primary students of the fifth grade. There were five “meetings” with our students in order to construct the ‘scientific train kit’. The final activity was to present their construction in the first Science Festival. It was divided in two subsections, explained in table 1.

*Table 2: First part of the teaching intervention*

Subsection	Activities	Materials of the kit
Theoretical part	Processing photos and videos of different train types	3D train model
Design and development of the train kit	Designing and selection of materials	
	Rethinking on the decisions taken	
	Building an electrical circuit	

**Part 2:** The second part of the teaching intervention included the same primary students, which were sixth graders at that time. There were fifteen meetings in order to expand the number of contents in the kit. At this part, we took the records on our study concerning the development of pupils’ skills, such as collecting information, making questions and deciding among multiple choices. Children have already made progress in the project, so the activities became more complex by adding different aspects of train such as the social and environmental effects of train. Once again, the final activity was the presentation of their constructions in the second Science Festival. Part 2 is explained in table 2.

*Table 3: Second part of the teaching intervention*

Subsection	Activities	Materials of the kit
Theoretical part	Processing photos and different types of maps of the area	3D magnetic railway map of the area

	Using Google Earth	
	Working on magnets	
Making the 3D magnetic railway map of the area	Using of elevation map	
	Designing, cutting and attaching the parts of the map	
	Constructing station-models with magnetic properties	
	Coloring the construction	
Making the train’s wheels model	Studying videos describing the operation of the train’s wheels	Train’s wheels model
	Using materials	
Making Films (includes Field trip)	Taking sequential photos of the 3D train model	Stop Motion film
	Gathering photos on the field trip	Digital storytelling
	Processing the collected data	
	Writing story of the trip	
	Using Windows Movie Maker	

**Educational kit**

The activities that took place during the two parts of the teaching intervention, lead to the contents of the ‘scientific train kit’ described in tables 1 and 2. The materials of the ‘scientific’ train kit are: i) a 3D train model made by recyclable materials, in which they embodied an electrical circuit, (photo 1) ii) a 3D magnetic railway map of the area (photo 2), iii) a model of train’s wheels (photo 3), iv) a Stop Motion Animation video e) a video storytelling which refers to the students’ first train voyage.



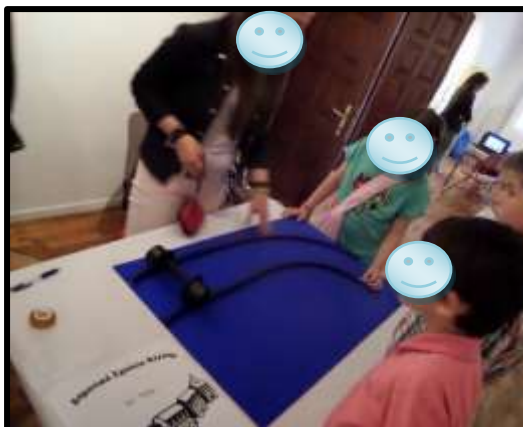
**Photo 1:** a 3D train model



**Photo 2:** a 3D magnetic railway map

**The Science Festival**

The most radical part of our project was the students’ participation in the Science Festivals that were held in Florina at the end of each school year (photo 4). It must be noted that Science Festivals in Greece are limited and especially the concrete Science Festival was a new educational event in the broader area of Western Macedonia. The number of visitors was multiplied the second year, which means that the local community accepted the idea of establishing this educational innovation. During the Festival students had to present themselves in public, display their constructions and answer to every question referring to them.



**Photo 3:** Model of the train’s wheels



**Photo 4:** Presentation of the ‘scientific train kit’ in the 2<sup>nd</sup> science festival

### Research Methodology

In total, we used three questionnaires as well as a student’s tab in order to examine their interest on Science and Science Festivals as well as their evaluation for their scientific skills. Specifically, the student’s tab was a table including a list of skills which the two student teachers filled in order to evaluate primary students’ improvement on critical scientific skills. In particular, we used a Likert Scale, which included five order response levels, that is: (i) not at all, (ii) a little, (iii) moderate, (iv) much and (v) very much

### Results and Discussion

In this poster we present the results of three questions from students’ tab (table 3) concerning the ability to collect data (table 3), their skill to make effective questions (table 4), and deciding among multiple choices (table 5). The results shown on the tables refer to five out of sixteen meetings (the last one refers to the Science Festival).

In table 3 we see that students gradually got used to ways of collecting data and eventually were able to cope with it effectively. The fact that they constantly had to deal with much information helped them to develop their ability to filter and discard the unnecessary ones.

*Table 4: Teacher’s evaluation on the development of students’ (S) ability to collect data*

	S1	S2	S3	S4	S5	S6	S7	S8
Meeting 2	1	2	3	2	3	2	1	2
Meeting 5	2	2	2	3	4	4	3	3
Meeting 8	2	4	3	2	4	3	3	3
Meeting 14	3	5	4	3	5	4	4	5
Meeting 16	3	4	4	4	5	3	3	5

In addition to this, they developed their skill to make effective questions and adjust them in a particular framework (table 4), which was quite difficult to them at first, probably due to the teaching style they faced (teacher-centered learning).

*Table 5: Teacher’s evaluation on students’(S) ability to make effective questions*

	S1	S2	S3	S4	S5	S6	S7	S8
Meeting 2	1	1	2	1	2	2	1	1
Meeting 5	2	3	2	2	4	4	1	3
Meeting 8	2	3	3	2	3	2	2	3
Meeting 14	2	3	3	3	3	2	2	3
Meeting 16	-	-	-	-	-	-	-	-

Finally, students noted great progress in deciding among multiple choices (Table 5). In the beginning of our teaching intervention, students were reluctant to decide and preferred to accept other people’s choices. Eventually, all of our students were able to discuss on topics, recommend and choose the most effective solution. This could be explained if we have in mind that they worked on an open inquiry environment, in which they had no help from the teachers and they were encouraged to make decisions, no matter if they were correct or not.

*Table 6: Teacher’s evaluation on students’ (S) ability to decide among multiple choices*

	S1	S2	S3	S4	S5	S6	S7	S 8
Meeting 2	-	-	-	-	-	-	-	-
Meeting 5	2	1	3	3	3	3	1	2
Meeting 8	3	2	3	2	4	4	3	4
Meeting 14	5	4	5	4	5	5	5	5
Meeting 16	5	5	5	5	5	5	5	5

In general, we could say that this intervention lead to positive results for every student in some way. The teaching method itself helped the children work with enthusiasm and encouraged them to be confident and express their thoughts.

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## MUSIC IN THE INCLUSIVE EDUCATION PROCESS

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### Abstract

This work provides the specific views on the concept of modern educational process about the music subject in pre-school and in elementary school grades, but with a special emphasis and an important place for inclusive education as a process within the educational system. Course science has an important role for all disabled children, regardless of their developmental abilities and needs to focus on their further development. Especially, an important role in such a process could contribute to music with all its peculiarities. Music for the development of mankind has an exclusively important role, as it is known from the outset in human existence. The energy with which music acts in all respects, clearly demonstrated the positive expectations for children with special needs. Creative teachers will certainly contribute to a complete solution. In such conditions, a significant range of questions and answers were involved for the upbringing and education, especially of children with special needs. The issue of disability remains open, as they often are told that in fact each man is with a particular need.

**Key words:** education, school, teacher, inclusion, teaching.

Aiming to get into the core of the pedagogical, educational or teaching-learning process, we are always inspired, to start more topics. However, how much we approach to the various issues of pedagogical practice, we are often forced to determine the narrow issue in order for easier and better way to come to some suggestions for resolving some dilemmas, or at least partial answers to questions. Therefore, the purpose of this reflection is not to prove and demonstrate various differences in the school system, but to highlight opportunities in some way to be perceived, but also as such and accepted. As such they could contribute to improving the quality of the educational process, in which music and powerful nonverbal force would affect the quality.

If you like to observe musical education in the context of the overall educational process educated, we should take notice of important milestones such training, and education. From various previous elections, practice questions for the upbringing and education, it is known that there upbringing and education of the mankind. "... The very existence of mankind and their relationships ... there ... and education as needed constant feature" like product "of their lives, and therefore their history. Tuition in its original, historical form, is an integral feature in the existing way of life and as such was limited. "(Pedagogical inciklopedija 2, 1989: 137). After the initial division that occurs in labor, it also occurs quickly and class division, where conditioned and education, and often speak of class and upbringing. Teaching becomes historical variable category, where the organization, content and its function depends solely on social changes and events. Its very difficult to determine the meaning of teaching, but could be said that bringing up the training process in the human race conscious, and thought creative activities and capabilities, and the development of individual and social characteristic.

The connection of bringing education course is that such term is not possible to act independently. However education could be said to present a set of procedures used in the gaining of knowledge, skills and habits, that "pedagogical process in order to enrich human

knowledge." (Pedagogical Encyclopedia 2, 1989: 126). Also to define the notion of music is very difficult, but it is not comprehensive and defining music phenomenon, though many scientists, artists, but their thoughts only partially penetrate into the core. Music education and education with music is an integral part of esthetic upbringing and education that make up one component of the comprehensive development of personality. The aesthetic upbringing and education helps encourage and stimulate the development of the intellectual, moral, physical, labor components in the overall educational process. What does matter is the continued compatibility, infiltration of music and art as a science, as opposed to education, education, training and learning.

About the school

One might conclude that the whole XX century, and particularly over the last decades, is dedicated to finding quality ways, shapes and creative models for the implementation of educational process. All trends tend to improve the conditions of work, study, education of children and youth as a result of a synthesis of many previous famous philosophical, psychological, pedagogical, and other ideas or directions for the shaping and better training for usefulness society.

Although it gives special importance of affective parameters in the development of young children's personality, more or less significant, preference is given to the development of their cognitive aspects. From here onwards derive other research aimed at providing significant place of emotional, psychological, educational and other similar parameters in the development of young children's personality. "Analysis of the literature shows the modernization of teaching must move in the direction of change in the organization of teaching, the individualization of instruction, introducing various forms of instruction (microteaching, teamwork and problem classes ...". (Mandic, 1984: 72). Reorganization classes with many of the principles has the ability to provide dynamic shape and a variety of means and methods of work, which in this case would focus on problem solving and learning through discovery and research in the same basis of different sources of information, encouraging maximum independence in work, learning and creativity that is very significant quality and free relationship between the student and the teacher. However, in today's modern age, it is much easier to support the quality use of new techniques and technologies, which would certainly allow functional education process that involves progressive curricula, especially teaching programs. The entire progressive movement would not have a specific goal, such and similar changes are not accompanied in parallel and did not have adequate progress and change in the education of the teachers, specifically those directly participating in the implementation of the teaching process, comes to disproportional. Important and necessary link in the educational chain, is certainly good quality education (educated teacher), who tries to be creative instruction dominant.

### **The importance of teachers in school**

The need for quality and dedicated teacher, educated person and character, choosing his profession as a challenge to the needs and obligations to young children inexperienced person gives wonderful pleasure in work, looking like a young child's personality develop and "grow" with the normal upgrade as in training, but also in education.

In today's so called modern world (in the middle of the second, that of XXI century), the man is forgotten, his existence and his personality. How do you nurture a young child's personality as it will form the basis barren environments in which young children's personality finds a positive energy to grow and be shaped in a totally healthy person? The school represents the main link which helps in the overall complexity. Of course, the teacher has a very important role, filled with youthful spirit, rich with love and respect for the young child personality, and knowledge unselfishly given and transmitted, and the other student betrays and uses the right manner. The role of the teacher is solely responsible, because he

who teaches, especially children (students), the younger age of the living culture and its cultural environment has an important task, that young person to learn about for yourself, then what surrounds around .

The title teacher, was and will be one of the most responsible and certainly the most human profession, but while often inadequately rewarded by society, the community, and sometimes from students. Andreoli Italian psychiatrist, among others talking about the importance of the school as an environment for teaching about the life and needs: "... teaching within the various items adjusted in the direction of teaching: every object has the same purpose and the overall sum of all items is All that should help covering the many different needs of the student and his years of development in the society, where he and student grade component." (Andreoli, 2006: 19-20).

The question today as a teacher can be and should be, we will mention a few features that are not much different from the functions of traditional teacher, but certainly today have and should have an additional significance with today problems with the recent past. "Education is more valuable if the relevant person and the time in which he lived and the time comes." (Mandic, 1984: 65).

### **Inclusion - concept, importance, implementation**

Inclusion is a term commonly applied to children, people with disabilities, in terms of deficit intellectual field, while neglecting other development areas, i.e. inclusion represents a set of procedures, strategies, methods, ideas, processes.

In social inclusion it means children with disabilities in all spheres of life in harmony with individual opportunities. However, the social inclusion implies uniqueness in cultural, ethnic and other domain re talking about wide definition of inclusion.

"Inclusion is the process which emphasizes that diversity is strength ..." "... requires the development of sensitivity and creating conditions for articulation and completing different individual needs, not just the person with certain disorders. However, no individual differences, we all want to be loved, to feel they belong, wanting to work and be respected. Satisfaction with their own lives and accepting of people who are surrounded, constitute important elements in the quality of life ..." ([http // www.rivrtic.hr](http://www.rivrtic.hr), 23.03.2009).

If we accept that the first association of the term inclusion includes children with special needs or difficulties in their development in the regular educational system, then this conclusion will have to be completed with thinking that inclusion is a broader concept which is not only related to the educational system, but also includes a child social life at all levels. Full inclusion and successful acceptance and commitment goes without children with special needs in the family from birth, adequate care for the whole family, then brought up and education of children with special needs on the quality of growth and independence as a person in their own way can contribute to the development of society.

### **Music - Inclusive Education**

Although, first you need to know about the importance of music in general for the development of every young person, its importance in the daily lives of each individual and thus to give the right position for better and mitigating action within the inclusive process.

First, we consider something known as constellations of music for children with special needs certainly is music therapy. From what has been said previously it is clear that inclusion as a concept, an idea, a movement covers more areas in real life. Implementation of inclusion in educational institutions understood apart from the regular presence of teachers and professional teams that have experts in certain fields who know certain kinds of needs in which the child is included in the inclusive process. These are special pedagogue, psychologist, speech therapist, social worker, but depending on the needs you have and oligofrenolog, surdoaudiolog, tiflolog etc..

According to the long-term research, analyzes and conclusions from different profiles (music historians, archaeologists, anthropologists, philosophers, sociologists, psychologists ...) human music is present from the very beginning. Famous are the opinions of the ancient philosophers about the meaning of art, especially music in the upbringing of children. Not analyzing in detail the views of Plato's views on the issue of music, Notes will only music that has certain features in training, because rhythm and harmony act exclusively tough for the soul, which on balance is simply the most important. Also other artists throughout history more or less determined the importance component of music, acting in the upbringing and development of quality, socially useful person.

Application of didactic - methodical conceptualized musical activities within the educational process (singing, listening music, children playing rhythmic and melodic musical instruments, musical games, etc.), The earliest age, starting from the nursery, primary and secondary education, music as an integral part of that process, will significantly contribute to the overall development of children's ability to record, the conclusions, i.e. closer to the knowledge of the world around him. It is very simple, quality learning time, which also gives pleasure without the burden of learning outcomes. This applies especially to children with special needs, which means you'll be able to operate without load or with a small load in teaching activities in the am before revealing other in a new light, eventually overtaking the language barrier, and while certainly raising self-confidence. In no segregation unit inclusive, all must be given the opportunity to show what they can best, but without highlighting the most capable.

Music, as a special form of communication, often determined as nonverbal, significantly contributes to the socio-emotional development of the individual, which is of particular importance for children with special needs, such as .: poem often repeated text and melody for child with mental deficiency - reduced their abilities to participate in a quality performance, the child will be free to enjoy showing what can be done with the child singing song or playing a musical instrument children rhythmically. Sure the counting will help especially in children with reduced motor skills developed, or to engage in the same physical performance by clapping his hands, fingers, pounding their feet, etc. ..

Again underline the importance of the teacher: take a substantial level of education - a person who will recognize the needs of everyone in the department or group, applying appropriate methods, procedures and various other techniques. Realization of musical activities with appropriate and adequate opportunities allows children (students) to experience, feel, recognizes overall beauty, while forgetting and overcoming potential barriers.

### **Conclusion**

The power of music, its impact on human beings, with different sensibility known from the very beginning of the human race. With the development of human society has increased the importance of education as an essential part of art, especially music. Scientific discoveries throughout history have contributed to the use of music in educational purposes in different forms and with socially desirable content. In addition to educational needs, though music is used as an important tool in religion, ideology, politics, economy, etc. ...

Modern pedagogical tendencies, the tendency to create creative educational environment in which all children will find interesting ways of acquiring knowledge, especially the adoption of individual creative path for quality of life based on knowledge, the request is directed creative schools for all children.

Music is one of the most important resources that helps us to understand the world around them and themselves. Therefore, you should practice selected, high quality music in educational content. It can be said, music should serve as a tool in the educational process, particularly in the inclusive education process. With It fosters creative and quality

development of the young person, and children with special needs would open avenues for simpler optimal development.

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## **SOCIAL SCIENCES**

## SCIENCE-TECHNOLOGY-SOCIETY-ENVIRONMENT APPROACH: PROMOTING CRITICAL THINKING TO PRIMARY STUDENT TEACHERS BY DEVELOPING OUT-OF-SCHOOL ACTIVITIES

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### Abstract

This paper presents a Science-Technology-Society-Environment (STSE) approach for promoting critical thinking to primary student teachers concerning the educational value of out-of-school activities such as a site visit to a University camp by primary students.

Firstly we are going to describe the rationale of the program namely the theoretical aspects of STSE approach as well as the specific STSE issues that were adapted. Secondly we will present the structure, the content and the characteristics of the program concerning the open inquiry learning environment. Specifically, the program lasted 2 months during which students, as critical thinkers focused on a task of designing, organizing and implementing out-of-school activities for 6<sup>th</sup> grade primary school students. The content of the program refers to the production of electrical energy in Western Macedonia which it is considered as the “heart area of electrical energy” in Greece. In order to carry out the given task, student teachers had to activate basic critical thinking skills as interpreting and analyzing data and information from multiple sources, designing out-of-school activities for primary students, justifying their ideas, etc. Primary student teachers were randomly assigned into eight working groups under the supervision of two science researchers and three third-year student teachers that volunteered to participate in the whole enterprise.

Last but not least, we are going to describe the research methodology of our study. Particularly the sample was 121 first-year primary student teachers of UOWM. We gave a pre questionnaire and a post report in order to evaluate the program’s effectiveness on primary student teachers conceptions about teaching science. The results revealed that engaging student teaches in a critical thinking process has positive significance on their conceptions as future teachers.

**Keywords:** Non-formal education, education of primary student teachers, Scientific-Technological Literacy

### Introduction

Our research focuses on an educational program that took place at the University of Western Macedonia, in response to the 20<sup>th</sup> establishing anniversary of the institution. The core idea of the program was to familiarize Primary Student Teachers (PST) of limited teaching experience, with Scientific and Technological Literacy. For this purpose PST, as critical thinkers, focused on a task of designing, organizing and implementing interdisciplinary out-of-school activities for 6<sup>th</sup> grade primary school students. The content of those activities refers to the production of electrical energy in Western Macedonia which is considered as the “heart area of electrical energy” in Greece and to the respective social problems and science & technology concepts.

### Theoretical Background

For many researchers and educators, it is easier to recognize Critical Thinking (CT) than to define it. There is no universally accepted singular definition of CT. Literature provides a range of definitions for this term which depends on individual understanding and research needs. Kompf & Bond (2001) defines that CT involves problem solving, decision

making, metacognition, rationality, reasoning, knowledge, intelligence and reflective thinking. According to another definition, CT is a cognitive process that involves skills such as interpretation, analysis, evaluation, inferences, explanation and self-regulation (Facione 1990). Mitrevski & Zajkov (2011), in their research, describe CT as purposeful, reasoned, and goal-directed thinking. It is a kind of thinking involved in solving problems, formulating inferences, calculating likelihoods, and making decisions. Many Universities around the world, like Calgary, accept inquiry and critical thinking as being the ideals and central aim of their educational programs. Inquiry is identified by aspects that are conjoined with reflective thought, some of those are questioning, debate, and confirming understanding collaboratively (Garrison 2003).

Apart from the above theoretical discussion, mainstream critical thinking research seems to be focused on developing students' critical thinking skills and failed to investigate the efficiency of teacher education programs based on critical thinking and its application to teachers' success (Birjandi & Bagherkazemi 2010). However, there is a general consensus in literacy that every aspect of teaching is influenced by teachers' attitudes and beliefs. Teacher education programs play an important role in the development of beliefs regarding teaching and learning (Ucar 2012). It is obvious that in order to prepare students' for ways of thinking, or more specific to probe student critical thinking, teachers themselves need to be able to think in those terms. Researches prove that teachers with more critical capabilities are pedagogically successful (Birjandi & Bagherkazemi, 2010)

In this study we approach the development of PSTs critical thinking in the context of Science, Technology, Society, and Environment (STSE) education. STSE first appeared in science education research and practice, almost 4 decades ago. According to Pedretti and Nazir (2011) STSE programs and themes have been designed and developed in an effort to interpret science and technology as complex socially embedded enterprises and to promote the development of a critical scientifically and technologically literate citizenry empowered to make informed and responsible decisions and able to act upon those decisions. STSE education situates science in rich and complex tapestry—drawing from politics, history, ethics and philosophy. It presents an opportunity to learn, view, and analyze science in a broader context, while recognizing the diversity of needs.

According to Pedretti & Nazir (2011), we could recognize 6 basic currents of STSE (table 1): (a) application/design, (b) historical, (c) logical reasoning, (d) value centered, (e) sociocultural and (f) socio-ecojustice current. Those 6 currents have occurred after literature review of the last 45 years. In the next section we are going to describe the specific characteristics of each current that we adopted in our program.

### **The STSE program for PSTs**

In our try to familiarize 121 first-year PST with Scientific and Technological Literacy, we asked them to design, organize and carry out interdisciplinary out-of-school activities for 6<sup>th</sup> class primary school students. The program has lasted 2 months (table 3). At every group of PSTs there was given a general subject-title of their activity. The coordination was under three science researchers and three third-year student researchers.

**Table 1:** Currents of STSE, Pedretti & Nazir, 2011, pp.:607-608

(We mention that the original table includes five columns. In our paper we have copied two of them)

Currents	Focus
Application/Design	Solving problems through designing new technology or modifying existing technology with an emphasis on inquiry and skills
Historical	Understanding the historical and sociocultural embeddedness of scientific ideas and scientists' work



Logical Reasoning	Understanding issues, Decision making about socioscientific issues through consideration of empirical evidence
Value centered	Understanding issues, Decision making about socioscientific issues through consideration of ethics and moral reasoning
Sociocultural	Understanding science and technology as existing within a broader sociocultural context
Socio-ecojustice	Critiquing/solving social and ecological problems through human agency or action

In table 2, we present the activities of each group, underlining their STSE characteristics. In addition we can see the number of PSTs of each group.

More specific, constructions of the first three groups were used for the needs of an interactive activity named “maps”. Down on the yard of University campus, PSTs painted a map of Western Macedonia (WM) on which students had to place models of chimneys, funnels, pillars. The aim of this activity was primary students to think about (i) the pivotal role of WM for the production of electricity in Greece and (ii) the environmental problems in the area of WM related with the production of electricity.

The fourth group, entitled “Thinking Alternative” gathered information for alternative solutions that relate with saving energy. The group was separated into two sub-groups. The first one decided to help primary students making a poster with title: “Draw for a better Environment in Western Macedonia”. The second sub-group had undertaken to help students write down a letter concerning the problem of saving energy in WM.

The fifth group gathered information about the procedure of electricity production in a factory as well as the local district heating. The electricity production included 7 cards corresponded to 7 procedures, that are: (1) Lignite mining, (2) Transferring by conveyor belts, (3) burning, (4) steam production, (5) turbines operation (6) generating electricity and (7) transferring of electricity by the pillars. Each card included a picture and a related description about each procedure. The role play strategy was adapted for this out-of-school activity. Namely, initially every primary student selected at random one of the seven cards and read carefully the description of the card. Afterwards they discussed altogether in order to represent the electricity production; primary students had to stand in an order according to their own card and describe their role at the procedure of electricity production.

**Table 2:** The out-of-school activities of the STSE program

PST groups	Subject titles of activities	STSE issues	PSTs number
Group 1	Construction of chimneys models	Science, Technology, Society & Environment	4
Group 2	Construction of funnels models		4
Group 3	Construction of pillars models		10
Group 4	A. Thinking Alternative: citizens’ actions	Society & Environment	10
	B. Thinking Alternative: writing a letter to local authorities		11
Group 5	The Electricity production in a factory & District heating	Science & Technology	20
Group 6	Glossary		10

Group 7	ICT use: Presenting a video about the journey of electrical energy & design an online quiz	Science, Technology & Society	5
Group 8	Organizing and steering committee (observers, photographers, material advisors etc.)	Science, Technology, Society & Environment	47

Sixth group had the title: “Glossary”. They had to choose 20 terms related with the subject of energy and then to transform didactical the orientations of those terms.

The seventh team of PSTs presented an animation film entitled “The journey of electrical energy”<sup>10</sup>. They also designed an online game quiz related to lignite and filters. Primary students firstly watched the animation and then played the game quiz.

The eighth group was informed about all the above activities. Its role was to organize and steer the implementation of activities. That is, they had to welcome primary-students to the University campus and guide them to their activities, take photos, solve unpredictable problems during the implementation of out-of-school activities, etc.

Taking into account the 6 STSE currents in table 1, we could recognize that our program applies Application/Design, Logical Reasoning, Value centered and Socio-ecojustice currents. All of the activities we described above can be classified in Application/Design and Logical reasoning because they emphasizes on problem solving and inquiry by transmitting disciplinary knowledge and technical skills as well as by making decisions with civic responsibility about socioscientific issues through consideration of empirical evidence. The fourth group emphasized in Value centered and Socio-ecojustice currents because its activities characterized by critiquing/solving social and ecological problems through human agency or action and making decisions about socioscientific issues through consideration of ethics and moral reasoning.

## **Methodology**

### *Research Question*

The present study was carried out to address the following research question: *To what extent did this specific (STSE) approach, promote critical thinking to primary student teachers?*

### *Sample*

As we have already mentioned, in our study, the sample was 121 first-year student teachers of Primary Education University of UOWM, who followed the lesson “Science concepts and their representations”. In particular, PST were randomly assigned into eight working groups under the supervision of two science researchers and three third-year student teachers that volunteered to participate in the whole enterprise. It is noteworthy that although PST had little experience as learners on participating in out-of-school activities, in a high percentage they wanted, as teachers this time, to involve in an open inquire learning environment.

### *Research tools*

In order to evaluate the program’s effectiveness on PSTs’ conceptions about teaching science we asked them to complete a pre questionnaire and a post report in the 3<sup>rd</sup> and 9<sup>th</sup> week of the program (table 3). At pre-questionnaire PSTs described their expectations from

<sup>10</sup><https://www.youtube.com/watch?v=coWQ1R2r5MY>

participating in the program. The given question was: “What benefits do you expect from your participation in this program?”

**Table 3:** The timetable of program’s implementation

Timeline	The Implementation of Educational Program
1st week	PST inform about the program: creation of groups and discussion about their assignment
2nd week	Specific explanations and directions for every group of PST
3rd. week	PRE-Questionnaires
4rth week	PSTs designed and developed the activities
5th week	PSTs designed and developed the activities
6th week	Every PST group presented its activities to the other groups and to science researchers
7th week	PST groups made a pilot run of their out-of-school activities
8th week	The implementation of out-of-school activities by PSTs for 6th grade primary school students
9th week	POST-Reports

Regarding to the post-report PSTs were asked to evaluate their experience and to make their self-assessment.

#### **Data analysis**

For the quantification of open answers given in Pre-Questionnaires and Post-Reports, we applied the method of content analysis. In regard to Pre-Questionnaire the process of analysis were divided into two steps. Firstly we separate answers into categories by grouping and regrouping phrases with independent meaning. Secondly we categorized those categories into 4 general ones that appears in Table 4 (column 1). We followed the same process for the analysis of the assessments given in Post-Reports where we reached into 9 categories this time as they appear in table 5 (column 1).

Additionally, in both of Pre-questionnaires and Post-reports we separated the above categories into two major groups: Teacher-centered and Student-centered answers according to Kembers’ (1997) research on Teacher’s Conceptions (COTs). More specific Kember in his review of literature puts conceptions into two categories with two sub-categories in each of one:

- Teacher-centered/content-oriented: (i) Imparting information, (ii) Transmitting structured knowledge
- Student-centered/learning-oriented: (i) Facilitating understanding, (ii) Conceptual change/intellectual development.

A fifth category/conception that links or bridges the two major orientations can be labeled “student-teacher interaction” (Kember, 1997).

Broadly speaking, a teacher/content-centered conception of teaching is one where teacher’s job is conceived of as knowing her subject and then accurately and clearly imparting that knowledge to her students. Watkins (1998) argues that a student/learning-centered COT is one where high quality learning is viewed as “requiring active construction of meaning and the possibility of conceptual change on the part of the learners” (p. 20). From

this student/learner-centered conception, it is the teacher’s role to facilitate and encourage such construction and development (Watkins, 1998).

### Results

In general view, from the Pre-questionnaire results rises that the PSTs had their own initial conceptions about science teaching and learning (table 4).

**Table 4:** Answers analysis of Pre-Q and the relationship with Categories of Teacher’s Conceptions.

Categories of Pre-Q Analysis	COT’s	PST
1. They expect to develop their Pedagogical Content Knowledge.	Teacher-centered /content-oriented	93,4%
2. They expect to develop their knowledge on out-of-school activities.	Teacher-centered /content-oriented	30,6%
3. They expect to develop their knowledge at the subject matter of Science and Technology.	Teacher-centered /content-oriented	20,7%
4. They expect to familiarize with team-working.	Teacher-centered /content-oriented	6,6%

Specifically, PSTs oscillated around the above 4 types of answers that belongs to the category named “The teacher-centered/content-oriented”. On the contrary analyzing Post-Reports we can conclude that PSTs expectations changed and in the list appeared 5 new types of answers, 4 of which belongs to the second category named “Student-centered/learning-oriented” and 1 to the third category “student-teacher interaction” (table 5).

**Table 5:** Analysis of Post-Reports and the relationship with Categories of Teacher’s Conceptions

Categories of Post-R Analysis	COT’s	PST
1. They submit that developed their Pedagogical Content Knowledge.	Teacher-centered/ content-oriented	83,1%
2. They submit that developed knowledge on out-of-school activities.		68,7%
3. They submit that developed knowledge at the subject matter of Science and Technology.		37,4%
4. They submit that familiarized with team-working.		15,7%
5. They focused on students approach of the program	Student-centered/ learning-oriented	80,7%
6. They focused on intellectual development of students on Science and Technology		59%
7. They focused on assessing students behavior according to their gender		22,9%
8. They focused on assessing students raising of environmental awareness		13,3%
9. They expressed their concerns about the society and university role in society’s development		8,4%

### Conclusions

In this paper we described a STSE students’ teacher program for developing their skills about implementing out-of-school activities in their future professional practice. We

adapted an open inquiry learning environment and we gave emphasis on the contextualization of the content in the local area of Western Macedonia, namely the production of electrical energy from the lignite mines and electrical plants.

Participants' impressions of science teaching changed from teacher-centered views to student-centered ones. These results strengthened the view that involving PSTs in a STSE approach structured by out-of-school activities designed and developed from them, promotes their critical thinking about science education. Furthermore, based on these positive results we have already designed a new program incorporating the main characteristics of the first one, e.g. PSTs are asked to design their own out-of school activity. However, in the new program we encourage them to take into account emotional factors of primary students such as their interesting and enjoyment for science tasks. The implementation as well as the evaluation of the new program is in progress.

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## GREEK-ALBANIAN COOPERATION FOR THE ESTABLISHMENT OF A NEW APPROACH IN HISTORY TEACHING

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### **Abstract**

There is abundant empirical evidence corroborating the fact that Western educational systems face a problem of insufficient results in history teaching in Primary and Secondary Education. Teachers claim that this is due to the lack of interest on the part of the students concerning the subject of History which makes history teaching an unsatisfactory process and its results rather poor.

One of the main reasons for this situation may be related to the methodology of textbook writing and to obsolete teaching techniques. History textbooks usually contain narratives about the past as it is seen from the point of view of power elites. Systems, structures and functions are described and presented to the pupil along with details about specific functionaries (decision makers) located in the middle of complex organizations and managing them. In this way the pupil cannot see in the narrative the ordinary man of the past in his everyday reality.

Setting everyday historical reality in the middle of the narrative may be an alternative way to enhance the pupils' motivation for history learning and thus process in productive way from simple facts to complex structures and abstract functions. For such an approach one needs details from the historical reality of ordinary men.

Greece and Albania have a considerable common history since they have been both parts of the same political, military and economic structures (from ancient to modern times). In order to be more specific, during the Second World War the occupation by national socialist Germany, ordinary Albanians and ordinary Greeks had similar experiences facing the German armed forces. Therefore it is possible to work towards a common history project based on a new didactical approach in order to create interest for history teaching and learning in both countries in the wider frame of enhancing European identity in Southeastern Europe.

**Keywords:** cooperation, textbooks, history teaching, didactical approach

### ***Critical thinking and History teaching***

The term *critical thinking* originally refers to the notion of control of the information which is presented as logically valid and scientifically adequate. This kind of thinking could as well be called *controlled thinking*, in the sense of a process of control beyond any descriptive or analytical statement made by the speaker about past or present reality. If the statements of the speaker are relatively simple, we are talking about simple critical thinking, if they are composite, we are talking about complex critical thinking.

Due to the fact that any producer of a narrative about the past or the present faces multiple challenges and obstacles tending to influence his or her descriptions, explanations and evaluations, one might define *critical historical thinking* as a specific quality of thinking which enables the narrator at first to become conscious of these obstacles and secondly to try to overcome them in order to build a model of the historical reality he or she describes as realistic as possible.

To the hard core of critical thinking belong certain assumptions and one could consider the following ones as the most central:

1-What is being considered as self-evident up to now may become an object of scientific investigation, in other words self-evident truths about the past can be questioned without the person doing the investigation to have to run the danger of disputing something culturally, politically and socially “sacred”. In this sense any political or legal prohibition aiming at eliminating investigation on historical realities is per definition against critical historical thinking and, at least in my view, counterproductive and epistemologically wrong.

2-What seems or has been established to be simple and reasonable, may prove not simple and not reasonable, therefore accepted truths about the past may prove much more complex than they are thought and they therefore may need revision. We are all aware of the fact that societies establish at times certain versions about the past which they call *collective memories* and that not all members of a society are ready to accept scientifically better versions of the same reality. But the “war of memories”, as some historians put it, cannot and should not refrain scholars from questioning not valid versions of the past, that is, from critical thinking (Fleischer, H. 2008).

3-Critical historical thinking questions the scientific adequacy of descriptions and explanations of past realities, but not only this. It also questions attempts to present normative statements as part of the descriptive or explanatory social discourse, that is it questions the attempt to legitimize through science social or political values.

Critical thinking is a genuine part of education in a school environment where there is some freedom on the part of the teacher to use his or her scientific identity into the teaching process. This is the case when the central educational authority does not exert total or extreme control on the contents, the means and the methods of teaching. Thus critical thinking as part of the teaching process is related to a relative autonomy of the teacher or the school unit to manage some of the parameters of the teaching and learning processes. This does not mean that the teacher can ignore the frame of the learning objectives given by the central educational authority, or the contents of the school books. It means rather that the teacher has the right to hold and teach to his or her students a different perspective, without rejecting the one contained in the school book and favored by the central authority. In this sense we can talk about critical thinking involved in the teaching process if the teacher is encouraged, or at least not hindered, to use his or her scientific toolkit to manage the teaching process. Otherwise he or she is considered to be a subversive element in the school and runs the danger to be held responsible for “deviations” from the official frame of the curriculum. Therefore critical thinking can grow when the central state is ready to show some understanding and tolerance towards teachers, if they support different versions of past reality which they can found on scientific arguments. This includes the teacher’s initiative to fill in gaps in the official narratives or to change the emphasis given to some events in opposition to others.

### **Critical historical thinking and oral history**

Oral history or narratives about the reality of historical everyday life refer to information gained by the investigator from persons who have experienced the historical time under investigation. They have lived their lives within this time spectrum and therefore have personal and authentic memories about what they have lived. These experiential and subjective narratives about the past delivered by persons who are not the central agents of the systems involved in historical reality (political, economic and military) are almost always fragmentary and shed light to some details of the subjective life of the individual which may be considered as irrelevant seen from the point of view of the narrator of the “large image”, or the ordinary historian.

My position is that these seemingly irrelevant events for the “general picture” can be extremely useful for the teaching process and for the promotion of the student’s critical thinking. The main argument in favor of or this position is that social systems and their

subsystems – generally speaking, any system – operate necessarily through the overt action of concrete human subjects and that the subjective actions, or the subject’s part in the system’s operation, leave back in the consciousness of individuals some psychical events which we usually call *memories*. Especially at times of social conflict initiated by internal strife or external occupation and aggression individuals may act as agents of the conflicting systems and may interact as representatives of the systems they belong to<sup>11</sup>. For young people, that is for our students, who want to know about the structure and the function of the systems involved in the conflict, it could prove productive to begin with some authentic narrative gained by individuals who have experienced the conflict or have been themselves involved in it. Instead of describing the political scopes, the structure and the function of aggressive regimes such as fascism or national socialism in an abstract manner, proper for a formal discussion among historians in an international meeting, the teacher could find it very useful to bring into the teaching process *fragments of memories* from individuals who were caught in the structures and functions of these systems and have experienced its reasoning on their bodies and souls. Let me give some examples of the implementation of oral history for contemporary history teachers in Albania and Greece.

### ***Second World War, occupation and resistance in Greece and Albania***

From the summer of 1943 and up to October 1944 the district of Korca belongs militarily to the general command of the German troops in Ioannina. A considerable part of Albania and an even greater part of Greece have been the theater of military operations organized and implemented by the same German authority, the 22<sup>nd</sup> Mountain Army Corps under General Hubert Lanz (Meyer, H. F., 2007). There are two distinct phases of the occupation. The first one has to do with subduing and uprooting the resistance movements in both countries through the so-called mopping up operations leading to heavy casualties among the partisan groups and to massacres of civilians in several villages and towns of the combating areas. The second phase relates to the retreatment of the German forces and the several operations which prepared it. Some of these operations took part in the area near Korca, since the city is situated on the main road leading to the North. The main operation against partisan forces near Korca took place in June 1944 under the code name “*Gemsbok*”. A similar operation which was conducted in the beginning of July on the Greek part of the border at North Pindos had the code name “*Steinadler*”.

During the operation *Gemsbok* many hundreds of Albanian fighters were killed in action, and many civilians were massacred in collective executions. Some individuals were kept hostages, were brought to Ioannina, where they were imprisoned and later brought to Thessaloniki and from there by train to Germany in order to work as war prisoners.

It is impossible to talk to the dead, the individuals who were killed or executed by German soldiers in the area of Korca. But they may have relatives who are alive and who have experienced either the whole event or some aspects of it. In any case they have experienced the loss of beloved persons due to the structures and functions of the totalitarian regime.

Young people who were kept hostages and brought to Germany may be still alive. The names of some of them can be found in the German military archives in Koblenz or Freiburg. They could be located and questioned about their experience of being hostages. These narratives could prove useful in the classroom, since they give an authentic picture of

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<sup>11</sup> This is also one of the main questions in historical thinking: how is it possible for ordinary individuals to become criminals as members of an organization within a specific regime which issues orders and is relying upon willing executioners of these orders. See Browning, R. (1992). *Ordinary Men : Reserve Police Battalion 101 and the Final Solution in Poland*, New York : HarperCollins, Welzer, H. (2005). *Täter. Wie aus ganz normalen Menschen Massenmörder werden*. Frankfurt am Main, S. Fischer Verlag. See also Goldhagen, D. (1996). *Hitler's Willing Executioners*. New York, Alfred Knopf.



the methods the regime implemented through its agents (soldiers, secret police, deportation authorities etc.) but also a picture of another Germany which the hostages faced when they were brought to work in German villages under the supervision of a German farmer (Gotovos, A., 2013).

Even if people who were involved in such interaction are not alive because of the time passed, they may have left some written narratives about their experiences which are also useful for the teacher.

And a last point which shows possibilities of a Greek-Albanian cooperation in this field. Since individuals from Greece and Albania were involved in such action, narratives from both types of individuals may become part of history teaching as fragments of oral history in Greek and Albanian schools, opening a possibility for cooperation between Greek and Albanian educational authorities, but also between Greek and Albanian scholars and, last but not least, between Greek and Albanian teachers. In this way oral history as part of the curriculum may prove not only productive as a didactic tool, but also useful for a future cooperation between the two countries.

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## **SOME ATTITUDES AND OPINIONS OF STUDENTS OF FACULTY OF PEDAGOGY IN SKOPJE OF THE WORK OF CLASS TEACHERS ON THE SUBJECT OF PHYSICAL EDUCATION GAINED DURING THEIR PRACTICE IN SCHOOLS**

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### **Abstract**

*Physical education along with other subjects is an integral part in the implementation of the educational process in the early grades of elementary school. Comparing with other subjects, it is taught in a different environment like gym or school yard. The function of movements presents biological standard that meets the requirements to stimulate growth and development of the body. Children, by body movements and games try to present their personal capabilities securing honor and respect among peers. The global planning of the program in physical education primarily contains applicative movements: walking, running, throwing, caching, lifting, carrying, crossing, crawling, climbing, hanging, pulling, and pushing. Teachers rarely apply the other forms of exercises specified by the ministry in the global planning (complimentary activities, sport games, extra classes for the talented or weaker pupils). Teachers’ physical condition and preparation plays a crucial role in successfully realizing the educational goals in practice. At the Faculty of Pedagogy in Skopje, on the class of Physical Education Methodology, students do their practice by following classes of physical education in primary schools taking notes about the realization and then during the theoretical classes, at the faculty, they discuss the conclusions from the practices. The collected information on my classes shows that most of the teachers fail in their practical work with pupils on the class of physical education. Most of the basic remarks are the following:*

- Most of teachers don’t have proper outfits
- They are not able to demonstrate the complex exercises
- They do not have a working concept
- The exercises don’t have the right amplitude and repetition

**Keywords:** Physical education, curriculum, teachers, exercises, capabilities

### **Introduction**

Physical education along with other subjects is an integral part in the implementation of the educational process in the early grades of elementary school. Comparing with other subjects, it is taught in a different environment like gym or school yard.

At early childhood movements and games present a conditional need for normal psychophysical development, which means improving anthropometric, biomotor and functional skills. The function of movements presents biological standard that meets the requirements to stimulate growth and development of the body. Pupils in body movements and games try to present their personal capabilities securing honor and respect among peers. Trough body movements and games pupils try to present their personal skills which provides them honor and respect among peers. Pupils with weaker motor abilities show restraint, fear and insecurity and in lack of courage they abstain from the game that can result in isolation and solitude.

The global planning of the program in physical education provides 3 hour physical education per week and primarily contains applicative movements: walking, running,

throwing, caching, lifting, carrying, crossing, crawling, climbing, hanging, pulling, and pushing. Teachers rarely apply the other forms of exercises specified by the ministry in the global planning (complimentary activities, sport games, extra classes for the talented or weaker pupils).

Class teachers, must be able to recognize the anatomo-physiological and psychological characteristics of pupils (6-11 years old), as an important condition for selecting programs, goals and educational tasks.

Also, teachers professional skills play an important role in determining the concrete pedagogical and educational objectives and tasks, for a certain time, with the volume and content as required in the curriculum. Teachers physical condition and preparation plays a crucial role in succeeding in realizing the educational goals in practice. With the demonstration of the exercise, arises the visual perception in pupils witch with systematic exercises of the movements creates the motor skills and habits.

The question is, how well prepared class teachers are to meet the needs of the contemporary education concerning the class of physical education. A part of the answer to this is in the following text.

### **Method of work**

At the pedagogical faculty “St. Kliment Ohridski” in Skopje, within the subject of Methodic of Physical Education, students realize practical classes in elementary schools in Skopje. They visit classes of physical education conducted by class teacher while students attend classes noting the tasks and the didactic principles and afterwards during the theoretic class at the faculty they discuss the conclusions from the practices. The gained information on my classes shows that most of the teachers fail in their practical work with pupils on the class of physical education.

Below we will present some important observations and attitudes of students for the work of class teachers on the subject of physical education:

Remark: Most teachers beside that they do not have adequate clothing for practical classes, they attend classes on high hills.

Comment: One of the most important conditions for the realization of practical classes of physical education is wearing proper clothes (sportswear and sports shoes). Only in that way class teachers can execute the exercises properly and at the same time be an example for pupils to attend the class with sports gear. Wearing can be combined with pants and shirts, but as far as trainers, they are invaluable for work in the gym or outdoors. Where possible teachers outfits must meet the hygienic and esthetic criteria which will make extraordinary impression among students.

Remark: Teachers are not capable of demonstrating complex exercises, but they choose pupils with good abilities for that.

Comment: By demonstrating the exercises new visual perceptions of physical exercises arise. After demonstrating the exercise, it should be explained so that the pupils recognize the movement technique which contains the most important elements on which their attention should be directed. Demonstration of exercise and its verbal description, it's done in order to create a clear visual image of the movement and verbally explanation of the execution rules. When it comes to the acquisition of easy exercises, then their survey and demonstration are made entirely from beginning to end. More complex movements are easier to learn by dividing them in parts(analytical method). With the synthetic method, parts of the exercise are put together with the demonstration of the movement in whole. Normally it is not excluded that pupils are able to participate in the demonstration of the exercise but only if it is as a gift or creditable from the teacher to stimulate pupils but the leading role in the demonstration must have the teacher. For this reason he must constantly maintain the balance with his motor skills which are used in demonstration purposes.

Remark: Physical exercises do not have sufficient amplitude and repetition, lack of their implementation system. In some classes totally excluded from the executive concept of the teacher.

Comment: In the structure of the class of physical education, the second part is provided for bodily exercises, with or without requisites. Through these exercises, the teacher aims to improve the motor status of pupils and makes the muscle, ligaments and joints preparation for realization of the following learning unit on the third or main part of the class. The application of exercise should be adjusted to the age and psychophysical abilities of pupils. Types of exercise are based on the pedagogical tasks of learning, on the theme and learning objectives. During execution, the effect of exercise depends on the features: direction, amplitude, speed and strength.

During the execution of the exercises these parameters should be taken into account:

- If executed in different positions increases the value of the exercise(standing, sitting, lying, leaning, bending, tec)
- Exercise should be applied in optimal continuity with repetition of 6-10 times
- According to the objectives exercises can be executed I various ways(fast, slow, freely, tighten)
- The execution should be carried with maximum amplitude from the limb, that increases the affectivity of the exercise.
- The teacher, who performs and explains the exercises, should be positioned in a place from which he can control and correct all pupils. That means that he also should best be seen by all pupils. From time to time, the teacher may change his place and in motion to correct the errors in execution but without interrupting the counting. Voice, explanation and counting should be clear to all pupils. In alignment exercises, he should pass from one to another exercise fluently.
- In the order of bodily exercises, several methods are used among which the most preferred method is the proximal-distal(exercises start with the head than shoulders, arms, trunk and end with legs)

Remark: Many teacher do not have daily preparation(synopsis)

Comment: The class of physical education is the basic form for realizing the educational curricula, that's why teachers should compile their lessons or teaching units in a synopsis. With this activity the teacher is formally obliged, and daily preparation(synopsis) is a guarantee for successful realization of the goals and tasks foreseen. The entire content of learning, considering the general or specific didactical objectives and tasks of each part of the lesson, should be reflected in the daily preparation(synopsis). Every exercise that will take, every learning performance that will follow, should be compiled in daily preparation(synopsis). It should be rational and short, to include the most important elements of the class. The daily preparation is understandable and clear if its structure contains sketches and drawings, especially for bodily exercises and the central thematic exercise.

Remark: Failure density of the practical part of the lass

Comment: In cases when pupils perform in large groups, and long time wait to come in line for the execution of the exercise, we say that density class is weak. But if pupils work divided into small groups, with more resources or tools, they use well every minute of class time. In other words we say that the class density is good(optimal). In the absence of resources and tools, pupils are forced to wait in long lines to come in line to exercise, in that case, the teacher can improve the density of the class if he provides additional exercises for the ones in the back line.

Remark: Pupils with limited physical abilities abstain from classes physical education

Comment: From the class of physical education can be absent only pupils with a medical certificate. The other pupils with limited physical abilities can be included in the

educational process with special exercises planned and created by the teacher. In these extra or special exercises, the teacher may occasionally also involve any other ordinary pupil with the aim to promote the will to exercise within handicapped pupils. Engaging pupils in this way improves their bio-motor skills and what's more important, they quickly socialize and come out for loneliness. It is understood that the teacher is responsible for the planning and execution of exercises taking into account the nature of the disability.

In addition to these essential observations above, students have conducted conversations with pupils. In the conclusions of the conversations they have found a very important remark:

-Pupils were very happy to see the students at school being aware that this day they will have a class of physical education, subject that they like the most but rarely attend.

Comment: In the educational process, school, as a micro social community of pupils, represents environment where are being imposed working conditions with various reports. Teachers in lower classes, appear as carriers in controlling and evaluation of all subjects equally. We believe that in the implementation of the physical education curriculum, which compared to the other classes has specific working environment, the teacher wins and losses authority, depending on the commitments it makes in the subject that no doubt is the most loved by pupils. Movements and games appear as conditional need for normal psychophysical development of pupils, which means improving anthropometric, biomotor and functional skills. The function of movements represents biological standard that meets the requirements for the stimulation of growth and physical development. Therefore we think that teachers who ignore or neglects the subject of physical education, so that this subject is often being replaced with subjects of "bigger importance" make serious crime and damage against children, themselves and society in general. In the absence of relevant inspections elimination of this relevant weakness, the main responsibility falls primarily on the director and pedagogue of the school, but in an organized way, pupils parents can also make interventions.

### **Conclusions**

I express my pleasure that students of the Pedagogical Faculty “St. Kliment Ohridski” in Skopje, showed knowledge, special wisdom, maturity and critical thinking during realization of numerous practices on the subject of Methodic of physical education. I am guided by a firm belief, that they have well understood and studied all the relevant elements of the subject, which is furthermore complex, but also necessary for the development of new generations, in new and tempting contemporary conditions. The remarks raised at the discussion table, are guarantees that the following generations of teachers, will be an important pillar of the educational process, and will eliminate the errors mentioned above in the text.

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## THE ROLE OF CRITICAL THINKING STRATEGIES IN SCHOOL PRINCIPAL'S JOB STRAINS MANAGEMENT

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### **Abstract**

The aim of this paper is to give a theoretical analyzes of the role of critical thinking process in principal's job tasks and its relations to workplace stress management. School life constantly displays the demand for change and adaptation.

These requirements may be perceived as positive or negative challenges depending on their options for dealing with them. Requirements imbalances can lead in procrastination which increase work related with stress and concern in managing it. So stress is a consequence of the interaction of employees with conditions that surround them, but, on the other hand employee themselves can affect their own level of stress that they are experiencing in workplace. Many dilemmas arose as the principals attempted to balance these dual roles for educational leadership by blending the managerial responsibilities and the educational role behavior's. Educational leadership includes two integrated roles, one being the managerial role and the other the educational role.

The principal is expected to embrace educational leadership practices focused on teaching and learning by sharing power, acting democratically, and encouraging collaboration and participation; while at the same time, providing clear leadership and guaranteeing the efficiency of school management processes. Recommendations of what kind of critical thinking strategies should be used are given based on deduction from the analyzed theoretical models.

**Keywords:** critical thinking strategies, school principal, job strains, management, educational leadership

### **The hierarchical concept of educational leadership**

The hierarchical concept of educational leadership began early in the development of public schooling, separating administrative functions from pedagogical functions of educators (Elmore, 2000). The hierarchy in education developed as a result of masculine hegemony, with administrative abilities being associated with males, and teaching associated with females (Blackmore, 1993; Blount, 1999; Elmore, 2000). An elaborate system of administrative positions that has expanded with the growth of districts and schools for the sake of so-called efficiency was developed in order to adequately supervise the predominantly female and, therefore, relatively weak, profession of teaching (Elmore, 2000). The widespread acceptance of the bureaucratic-managerial model of leadership has been detrimental to education, placing too much emphasis on the decision-making ability of a few people and stunting the growth of leadership among front-line personnel. The prevailing framework of individual agency, focused on positional leaders such as principals, is inadequate because leadership is not just a function of what these leaders know and do (Spillane, Halverson & Diamond, 2001, p. 23). Some administrators use the power of their positions ethically and exhibit leadership, while other positional leaders attempt to maintain power and/or manage people rather than lead.

Note that even while attempting to redefine leadership, Spillane, et al. refer to administrators as leaders. Similarly, the lack of an administrative position does not prohibit the exercise of leadership. In fact, Heifetz (1994) believes that the opposite is true, that those

in positions of formal authority are constrained by their positions, while others can raise the questions that need to be raised. In schools, though, most teachers continue to expect administrators to solve the problems. In other words, teachers are accustomed to looking to the principal as the decision-maker and educational leader.

Unfortunately, most administrators are well socialized to the norms, values and rituals of schools, because they have come up through the system, making them ineffective as change agents, according to Elmore (2000) and Fullan, (1993). Those in administrative positions typically reproduce the existing power structures. They spend a relatively small amount of their time on issues directly involved with instruction, because they are generally preoccupied with policies and politics that are tangential to instruction (Elmore, 2000). Teachers, who are left to manage the technical core in individual and isolated classrooms (Elmore, 2000), are ill prepared for the leadership, mentoring and collaboration necessary to guide educational improvements within an entire school or district (Fullan, 1993). In other words, educational leadership and educational improvement are caught in a stalemate between those who have the power using it in ways that reproduce the existing system, while those who have the content knowledge, expertise and creativity feel powerless to make changes to improve learning. The gulf between administration and instruction has widened as educational administrators are increasingly charged with the protection of the technical core of schooling from outside interference (Elmore, 2000). Administrators are inundated with powerful special interests that challenge innovative ideas (Fullan, 2001), so that their time is consumed by managing the structures and processes that surround instruction (Elmore, 2000).

Educational administration has become an end in itself rather than an extension of teaching as many administrators primarily concern themselves with being good managers. Leadership, not management, is needed to solve complex problems that do not have simple answers (Fullan 2001; Heifetz, 1994). Superintendents, principals and others in administrative positions in the education hierarchy are expected to produce answers to complex problems that require changes in attitudes and behaviours of parents, teachers and students. Heifetz (1994) refers to these as adaptive changes and notes that habitual deference to those in positions of authority constrains leadership as leaders are expected to solve problems that they cannot solve alone. While an individual administrator can attempt to initiate change in a school, the reform will not take hold without the support of the teaching staff (Datnow, 2000).

### **Administrative leadership styles**

Administrative leadership styles are vital in determining the organizational climate of work environments, and this is especially true in schools because schools are challenged to provide learning environments more conducive to learning (Lezotte, 1997). Where power was once the key element of leadership, it is now believed that vision, commitment, communication and shared decision-making are the cornerstones of effective leadership. This change is going from an industrial model of management to a more collaborative model (Rost, 1993). In addition, new paradigms are focusing on requirements, relationships, resources, and results (Smith, 1993). Site-based management is participatory governance, which focuses on the school's improvement involving all faculty and staff of that particular school community (Golarz & Golarz, 1995). Participatory governance is the transferring of authority and responsibility from those with power to those who are not as empowered (Golarz & Golarz, 1995).

Considering the influences of site-based management in more of the nation's schools, the complexities of issues in educational reform, and the impact of this ever changing modern society, leaders' influence on their organization as a whole cannot be ignored (Conley & Muncey, 1999; Razik & Swanson, 2001). To further complicate the matter of leadership, Jung and Avolio (1999) concluded perceptions of leadership styles and their effects on

motivation and performance for followers differ depending on the culture. Hence, the leadership style used must be tailored not only to the environment, but also to the culture and perceptions of the people being led.

Yukl (1989) studied organizational culture and its relationship to change. Yukl listed five mechanisms of a good leader that reinforced aspects of organizational culture: (a) attention-leaders communicate priorities and values; (b) reaction to crisis – leaders see emotional crisis as potential for sharing learning; (c) role modelling-leaders show values such as loyalty, (d) self-sacrifice and service; (e) allocation of rewards-leaders establish criterion that communicates what is valued in the organization; and (f) criterion for selection and dismissal-leaders influence culture by recruiting people who have specific values, skills, or traits.

Sergiovanni (1990) found that leadership by bonding was the cornerstone of effective long-term leadership strategy for schools because it had the power to help schools transcend competence to excellence by inspiring extraordinary commitment and performance, as perceived by the leaders’ followers.

Even in the most democratic, empowering, and collegial forms of principal leadership, Blasé, et al. (1995) contended there was no evidence teachers received substantial opportunities to engage in open dialogue or to participate in decision-making at their schools. However, in one study cited by Blasé et al., a visionary principal used modelling to communicate his preferences to teachers. The principal placed articles in mailboxes, did classroom walk-observations, and made informal suggestions. Blasé et al. interpreted the principal’s behaviour as empowering teachers rather than manipulating them. Harter and Bass (1988) contended that leaders and followers enter into an initial exchange that immediately establishes the conditions of the relationship.

### **Conclusion**

The very nature of the public school principal’s role has changed, and educational leadership has emerged from the accountability movement as a policy focal point in the dilemma of how best to lead schools to educational success (Doud & Keller, 1998; Grogan & Andrews, 2002; McGuire, 2002; Portin et al., 2003). Public elementary school principals have adjusted their leadership role and behaviours to meet the demands of the accountability movement by prioritizing their job responsibilities and allocating their time accordingly (Chan & Pool, 2002). Principals have been encouraged to build a school climate with a mission, vision, and culture focused on teaching and learning: (1) to raise student achievement, (2) to demonstrate an expertise in knowledge of state standards and benchmarks, and (3) ultimately to close the achievement gap (Fink & Resnick, 2001; Grogan & Andrews; McGuire; Meyer & Feistritz, 2003; Whitaker, 1996). The accountability mandates have taken the form of educational leadership role responsibilities; however, they have also come with additional managerial role responsibilities. The effect of this controversial and influential accountability movement on educational leadership has been largely uninvestigated.

Policymakers at the state and national level modify policy initiatives and consider the short and long term influences on the leadership role of principals, which in turn would directly affect the performance of the schools and teachers, and the achievement of students. Blank (1987) recommended that government organizations should conduct further research to understand the consequences of the various goals and stresses of the accountability movement. Smith, Maehr, and Midgley (1992) found important patterns in leadership behaviours suggesting that further work be done to better understand the influence of external social and political goals, standards, and accountability on the middle management role of the school principal.



In conclusion, there were multiple factors influencing the leadership role and behaviours of the school principal that have generated implications and recommendations. Principals reported spending significant time on managerial leadership behaviours, a shift from past findings on the behaviours of principals. The resulting recommendation suggested alternative staff support might be needed to prioritize educational leadership in the face of managerial demands. The difference in the public and private groups related to school size led to the recommendation that schools should work toward reducing their populations through alternative strategies. Third, differences in the work environment were reported in the contextual criteria of the school community leading to the suggestion for enhancement of the strength of community interest and support for the school. Last, Blank (1987) and Smith, Maehr, and Midgley (1992) recommended further work be done to better understand the influence of external social and political goals, standards, and accountability on the middle management role of the school principal.

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## CRITICAL THINKING AND THE USE OF VISUAL TOOLS IN THE DISCIPLINE OF GEOGRAPHY TEACHING

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### Abstract

Critical thinking is a long continuous process. The use of a rich methodology by a teacher directly affects the formation of a student who thinks critically. A very important role during this process is played by the use of miscellaneous tools which attract the attention of the student, awaken their interest in different issues and topics and therefore persuade them to think and dig deeper while going through analysis and evaluation process. The development of science and technology has made it easier and also has enriched the use of methods and tools in classes during the teaching process. Placing the student at the center of the teaching process has increased the role of the teacher, making him/her more of a leader who encourages students towards an objective way of thinking.

The center of this study will be to well define concretization tools and their use during the teaching process on the subject of Geography.

The object of this piece of work is to identify concretizations methods and to show the importance of putting them in use in the Geography discipline as well as the effect they have in critical and creative thinking.

It is a piece of work which will come to help to teachers in order to increase the use of visual tools during Geography classes.

**Keywords:** critical thinking, concretization tools, visual tools, visual memory.

### Introduction (Critical Thinking)

Our brain has different abilities, which are related with many processes and activities that we do in our everyday life. The human intelligence is displayed in various forms: the language intelligence, logical- mathematical, musical, body – kinetic and visual- spatial, occurrences and issues, as well as conducting activities. Visual/ spatial intelligence is directly related with visual tools, which have a wide use in the discipline of Geography.

There are many definitions about critical thinking, but all the methods and techniques that deal with it, place the learner in the center. Critical thinking is a cognitive, and interactive process, which happen simultaneously in many levels of thinking (AEDP 1998: 16).

The use of the right methodologies and the practical activities play the main role in building up the critical thinking in learners. *“It is a point of thinking, with the help of which, every human being thinks in a critical way, as a natural way of interaction with the ideas and information.”* (Jeannie L. Steele et al, 1998: 37) “. The process of critical thinking is too complex and coordinated, because it is the process which leads towards thinking about something real. Critical thinking aims the verification of the learned materials and incentive for the creation of the new and not accepting everything as real.

The learners’ abilities in a young age, take for granted everything they hear. They think that “the teacher is always right”; but are we infallible? Are we able to give a definite solution to every case, and are we able to give answer to every question? We have to educate children in a way that they have to reach their own conclusions and to make assessment through critical thinking.

Critical thinking includes some certain attitudes as; *”the desire for learning, the will for challenging and the passion for the truth”* (AEDP 1998: 88). If we stimulate critical thinking in learners, we have to strengthen behavior with a strong argument from their part. Besides this, we have to create in learners the desire for challenge. *“A learner thinks in a critical way, when he is able to organize ideas, to analyze a problem, to create, experiment, evaluate and think in a logical way.”* (QTKA 2005: 69)

The climate of the class should be such as to encourage students to pass the levels of knowledge and understanding at the level of analysis, synthesis and evaluation.

Questions are very important in inciting the critical and creative thinking. In each phase of the lesson is very important the compilation and the direction of the questions. The way of directing a question, pause and waiting play a crucial role. All the teaching methods are closely related with the questions. *“One of the best ways to attract the learners’ attention is to arouse curiosity”*. (Musai 2003: 86) Different visual tools affect the arousing of the curiosity of the learners and they develop their imagination as well.

In the discipline of Geography, there are many alternatives in the use of drawings, maps, which attract the learners’ attention. *“Graphs or other visual tools are mainly “windows” that open the mind of the learners, who are more oriented toward visual presentation rather than verbals”* (Musai 2003: 87) *A successful teacher is one who besides scientific preparation “uses variety of teaching methods and visual aids to help promotion of learners’ ideas, involved in the learning process.* (Musai 2003: 29)

Use of visual aids in the discipline of Geography has direct connection with visual-spatial intelligence. *“To achieve the full understanding before we should see. In this sense, seeing comes before speaking”* (Orhani 2004: 216) *“Children can read and understand pictures faster than they can read and understand the words”* (Orhani 2004: 217) *“Children need visual thinking , because a great amount of information that has to be elaborated, is visual and it can be expressed through the written word, through numbers, pictures, models, signs and different symbols.* (Orhani 2004: 217).

### **Concretization tools at the discipline of geography.**

Geography is the science directly related with the environment, space and the activity of human society. It offers great opportunity to use visual tools during teaching classes. Geography teaching aims the understanding and the use of “graphic language”. *“These special social and verbal languages define developed and excellent parts of space-visual qualities of the intelligence of space communication”*. (Geographical Studies 7 2003: 59). The use of a wide range of tools helps the awakening of thoughts and ideas about geographical occurrences, the environment and location. In concretization tools we include different tools, and their careful selection and use plays a very important role for a productive teaching-learning process. Concretization tools in geography have different functions, starting with the awakening and the increase of interest as well as the rise of certain problematic. They help creative critical thinking in their way of pursuing the student to reach at conclusions and acquire new knowledge. Students learn a lot through observation, inspection and reading to a level of 50%, 20% of which comes from listening. The traditional method which made the teacher the center of teaching process, being just a mere “explainer” to the greatest extends of the class length resulted as non-productive one. That was a method which produced simply repetitive students, students with no critical or creative skills. The language of geography is the map. A wide range of maps give extended information about space, geographical occurrences and the correlation among them. Map reading helps the creation of theoretical and practical skills for the students. If a student learns to read and understand a map, then he is able to explain and judge about characteristic of many human and natural occurrences. A map includes miscellaneous elements and is followed by diagrams and graphs which help students to extend the acquired knowledge. Geographical thinking is

developed through the map. Space, geographical occurrences and laws are an inseparable part of it. If students get quality knowledge about map reading, then they can come up with factual data, analyze and compare, as well as reach at their own conclusions about different geographical occurrences.

The map can be used in the three phases of teaching process: during evocation phase, eliciting answers for some simple questions, giving ideas, bringing up already known facts. At the phase of realization of meaning, it is used to understand, explain and analyze different geographical events and occurrences. Lastly, in the part of reflection phase, it helps students to organize the new information. Because of the development of technology, the use of digital maps is increasing daily, which has brought the possibility of getting up-to-date information in real time. The use of visual tools during the phase of evocation in the teaching process has to do with inspection and the increase of students' curiosity to know/learn more.

*“The first simple observations can lead to several questions that stir the logic, proofs, and suppositions.”* (AEDP 1998: 99). After exposing these visual tools, the teacher may address questions of descriptive character at first, then he/she passes onto questions of explanation, comparison, argumentative, reason and lastly, questions of evaluation type. The more senses involved in the teaching process, the more productive and efficient that is in terms of developing positive creative and critical thinking.

#### **Concretization tools and their usage during class**

The concretization tools in Geography include literary- linguistic tools, maps, photographs, graphs, diagrams, natural materials etc.

*Literary and linguistic* tools are easily accessible and attract the attention of students. They positively affect learning and assessment in relation to certain issues. These tools are provided by literary works, periodicals or non-periodicals, magazines, newspapers, etc. which have geographically diverse content. Different authors in their writings have descriptions of places they have visited in terms of natural and geographical journeys they had, a description of the environment where the event took place, the features of the population, infrastructure, economic level, etc... Or other features that are related directly or indirectly with geography. Teachers should be very careful when selecting these materials. These materials should be comprehensible to the students' age and should be used functionally for the topic, based on the curriculum. Generally, these are materials which can serve as an introduction during a class, in its first phase. They stimulate the curiosity of students for further learning of geography phenomena and areas. In order to be easily assimilated by students' specific, short length materials need to be selected. (by providing assistance through the map or questionnaires asking to specify the geographical material)

*Iconic tools*, include: pictures, cards, films, videotapes, etc. Even in this case, it is important to select them carefully. In the case of the explanation of the various topics that may deal with issues related to the position and natural conditions of continents, different examples can be used to promote students' critical thinking; they must be accompanied by clear, short questions; different pictures that emphasize geographic characteristics of an area, depending on the subject of study; presentation of short films may be used in description of a particular geographic area based on which students discuss, compare and contrast, and come to conclusions. These films should be short and when necessary to be accompanied by the teacher's comments.

In Geography maps play a significant role in the group of visual aids tools. Map is an indispensable tool in promoting quality and plenty of critical thinking. Map not only can prompt the beginning of a pleasant and successful hour, but also serves as a tool for development of brainstorming: while showing the map and asking questions like: "What you see on the map? What are the most obvious geographical objects on the map? What is the color that dominates and in which side of the horizon? In this way, students' responses will be

more diverse. And in this case the students are motivated to work to promote critical thinking.

In many cases the use of sketches and schemes drawn by the teacher may serve as a critical incentive of thinking. Students give many different answers trying to make a connection with the information they know and the expectations that have to learn new things. Using visual aids in the implementation phase of meaning can be done in several methods like: presentation of a graph, chart, histogram etc., which promotes student's curiosity to ask questions about them and get a variety of answers.

In the phase of reflection can be used various visual tools that make a summary of the new topic or new information. They may be views of what was learned for the topic in order to make comparisons between them. Usage of various visual or concretized tools, play a very important role in presenting more clearly the reality, phenomena, space etc. One of the points of success in teaching, besides others, is the inclusion and acceptance of all the questions and answers. Teachers ask questions that encourage students' interest or stimulate their curiosity to promote critical thinking, but they should welcome all the students' answers and questions as well. An important role plays the blackboard on which are written key issues, drawn sketches, graphs, diagrams, etc. which not only affect the growth of curiosity for students, but prompts them to work by using these illustrations for their learning.

With the development of technology a very important role plays the use of computer during school hours. Where in different forms are presented objects and various geographical phenomenon. Besides this, use of GIS system is a great innovation in study of Geography.

### **Conclusions**

The use of visual aids in the classroom in discipline of Geography has a great importance in all stages of learning. By selecting and using them carefully, by adapting them to topic they have great productivity in the field of learning and critical thinking of students. Concretization tools enhance students' curiosity, add interest to know about them, and provide estimates for various events and phenomena. The diversity of them and their adaptation to the class and careful selection of them have a positive impact on the students' critical thinking. Visual memory is an important part of memory and plays a big role for analysis of many processes and geographical phenomena. Especially the subject of Geography has a great need and it is a discipline that can use a variety of tools and they are quite productive during the class. It is very important the selection of the visual tool during the class, it must be relevant to the topic and be understandable depending on the age of the children. Important is what emotions convey this material or visual object. The teacher should definitely check before using these tools, how observable are these by the students.

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## SUSTAINABILITY OF LOCAL COMMUNITIES: DESIGN AND DEVELOPMENT A 'SCIENTIFIC' KIT FOR PRIMARY STUDENTS

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### Abstract

In this paper we focus on the design and development of a 'scientific' kit concerning the topic of Sustainable Communities. Six 5<sup>th</sup> grade students of the Ammochori Primary School in the broader area of Florina, worked for six months in an inquiry learning environment in order to answer the question: how can you transform your village into a more sustainable one? In the end of the school year of 2013-2014 students were asked to prepare themselves for presenting their own 'scientific kit' at a Science Festival.

Firstly in the poster we will discuss briefly the theoretical framework concerning (i) the ecological problem as well as suggested solution of sustainability, and (ii) the educational benefits of non-formal education. Secondly, we will present the materials of the 'scientific kit', namely a three-dimensional model of Ammochori, which is also an interactive board game through which the Ammochori becomes more viable. Furthermore we are going to analyze the inquiry tasks in which primary students were engaged for promoting their critical thinking, e.g. they were asked to choose a structure through which they could show the current status of their village and also how to improve it. In addition, specific characteristics of students' experience into the Science Festival will be delineated.

Last but not least, we are going to present the results of drawings and questionnaires, which were used in order to assess students' ideas about sustainability as well as their feelings about their experience during this Science Festival.

**Key words:** Sustainable communities, Critical thinking, Inquiry learning environment, Science Festival,

### Introduction

Human activities over the past centuries, aimed at developing the human populations socially and economically, have grave consequences on the environment, which are now highlighted increasingly, are perceived not only by scientists, but also by the general public. These effects include (Skordoulis & Sotirakou, 2009): climate change, air pollution, water pollution and land degradation, deforestation, threat to biodiversity, industrial disasters and the nuclear threat. Based on the above it is understood that the Sustainable Development is a key concept in the 21<sup>st</sup> century.

There is a general recognition of three main pillars that form sustainable development that is economy, environment and society. The three pillars are interdependent and therefore, for the implementation of sustainable development social progress, which calculates the needs of all citizens, should be combined with effective environmental management maintaining high rates of economic growth (McKeown, 2002).

### Theoretical Background

#### *Sustainable Communities*

The Institute for Sustainable Communities (ISC 2006) states that a sustainable community is economically, environmentally and socially durable and healthy. The sustainable community seeks: (i) a better quality of life for the whole community, without

compromising the welfare of other communities, (ii) healthy ecosystems, (iii) effective governance is supported by substantial and broad citizen participation, (iv) financial security.

#### *Sustainable development and education*

For the implementation of sustainable development the contribution of education is essential. The purpose of education for sustainability is to redefine the values and attitudes of life of individuals and social groups in order to develop a sustainable and just society for all (UNESCO 2005).

#### *Inquiry Based Learning*

Inquiry Based Learning was developed during the Discovery Movement of the 1960's. According to Marlene Scardamalia (2002 in the Canadian Ministry of Education 2012) Inquiry Based Learning is “a teaching approach that puts the questions, ideas and comments of the students in the center of the learning experience. On the basis of this approach is the idea that both teachers and students share responsibility for learning”.

#### ***Developmental phase***

This teaching approach took place in Ammochori primary school within the Science Festival. The sample consisted of six students in the fifth grade, who participated for the first time at the Festival. Eighteen (18) lessons were held including four stages. In the table 1, we present the first stage of this teaching approach.

#### *Step 1*

The objective of this phase was to activate the interest and concern of the students. The first phase began with a free discussion for their village, Ammochori, so an initial assessment of their pre-existing ideas, opinions, knowledge and interests of students was conducted.

#### *Step 2*

The aim of the first two hours of teaching was the expression of students, with the use of drawings about how they see their village and how they would like it to be. After the completion of the drawings each student presented them to his/her classmates and explained what exactly it reflected. The next two hours were devoted to a discussion. More specifically, through the discussion a thematic categorization was held in correlation with drawings of the four pillars of sustainability, economic, social, environmental and political.

**Table 1:** 1<sup>st</sup> Stage

Steps	Aims
Step 1 Debate-Observation -Reflection- Need	Improve Observation Skills Inclusion in the social environment development
Step 2 Expression of the perceptions of students	Development: Creativity, Incentive Reflection, Need for action
Step 3 Design research and study	Developing skills: Observation, Comparison Classification, Formulating questions Scientific investigation Design and implementation of research

#### *Step 3*

The students watched a video about "the journey of electricity." On the occasion of this video and the fact that lignite ends, students were anxious about what will happen when the fuels run out and what we can do to avoid it.

In this way they were introduced in renewable energy and also became concerned about the actions they could take. So students suggested the making of a board game through which they could improve their village to become more "viable".

In Table 2, we present the second stage of this teaching approach.

*Step 1*

When designing layouts that will be a model of Ammochori, students discussed and then decided what they would like to include in the model.

**Table 2:** 2<sup>nd</sup> Stage

Steps	Aims
<b>Step 1</b> Designing layouts	Through the observation of boundary objects and buildings acquire a sense of space.
<b>Step 2</b> Constructing	Developing skills: <ul style="list-style-type: none"> <li>• Sense of space</li> <li>• Materials Handling</li> </ul>
<b>Step 3</b> Creating and Testing Rules of the Game	Developing skills: <ul style="list-style-type: none"> <li>• Critical Reading Writing, Composition</li> <li>• Planning</li> <li>• Modification and adaptation</li> <li>• Communication and cooperation</li> </ul>
<b>Step 4</b> Indexing words	Developing skills: <ul style="list-style-type: none"> <li>• Classification, Annotation, Presentation</li> </ul>



**Picture 1:** Designing the blueprint for the construction

*Step 2*

The creation of the structure began with the base. This was followed by the construction of buildings. Subsequently the students constructed in groups, the village streets, the river, the square, the train and the bus stop. Finally, the students created the pieces that will be used in the table as it is played. (Recycling bins, wind turbines, solar panels etc.)

*Step 3*

In this meeting, the students were involved with the creation of rules. They made three different types of boxes on the dashboard. The boxes were: “simple boxes” (yellow) on which the player follows the instructions printed on the box, the boxes “act now” (red), on which a player draws one action card and performs the action described on it (eg. Arrange solar homes) and the boxes "you decide" (blue), on which a player draws one card "you decide" and must choose one of two options.



The final step was the creation of the rules of the game for which students used the rules of the known game "Monopoly" of Hasbro and the game "Evroaxiopoli" (Euro-Value-City) built by graduates of the University of Rhodes (Chionidou-Moskofoglou M. et. al. 2012).



**Picture 2:** Constructing

Students played the game following the rules. Within the game emerged factors that were omitted. So students should discuss and find workable solutions to resolve those problems that arose thereby enhancing their critical thinking skills.

#### *Step 4*

The students decided to create an "index words", which will explain some basic concepts relating to sustainable village. Students using their previous knowledge, experience and the Internet have created the index words.

The third stage was held to prepare the students for the day of the festival and to familiarize them with the process of presentation. Preparing students had the form of simulation, where the children had to present their knowledge and workmanship, just as they were going to make the day of the Festival.

#### **Educational Kit**

The educational game built consists of a three-dimensional game board. Students placed buildings constructed by solid paper, soccer cardboard playground, trees, roads and cardboard. Moreover, the construction includes recycling bins (glass, paper, aluminum, batteries, electrical appliances, composting), wind turbines and solar panels that were used during the game. The game consisted of two pieces, two dice and the game rules.

#### **Participation in science and technology festival**

The day of the festival was held on World Environment Day, at the open space of the river Sakouleva in Florina. Students played the role of teacher and presenter, to transfer their acquired knowledge and demonstrate their constructions to those who were visiting. The students were explaining the concept of sustainability and then presented their construction, a model of their village, which is also a table and interactive game through which the village becomes sustainable. Finally, they explained the rules of the game and the game began



(Picture 3)

**Picture 3:** Presentation at the Festival

## Research methodology

### Research Questions

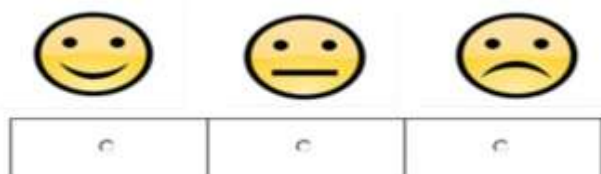
To evaluate the success of the teaching approach and Science Festival, two research questions were created, as shown below.

1) How did the students’ ideas on the sustainable communities evolve through the teaching approach?

2) What feelings did the students experience in the Science Festival?

The first research question was checked using by students’ initial and final drawings; the second one was approached by a questionnaire. The drawings were made at the Stage 1 and the Stage 4 of the intervention.

The questionnaire was created in order to record the feelings of the students in the Science Festival. For example the first question was: What feelings were created by your experience at the Science Festival? Choose one of the two faces.



### Results and discussion

There is a shift in the students’ attitudes about sustainable communities, after the implementation of teaching approach. More specifically, students’ drawings had qualitatively different categories in relation to their initial ones, which are related to aspects of sustainable communities, e.g. photovoltaic, wind turbines, recycling bins, bike paths, sidewalks. In pictures 4 and 5, we can an initial and a final drawing respectively.

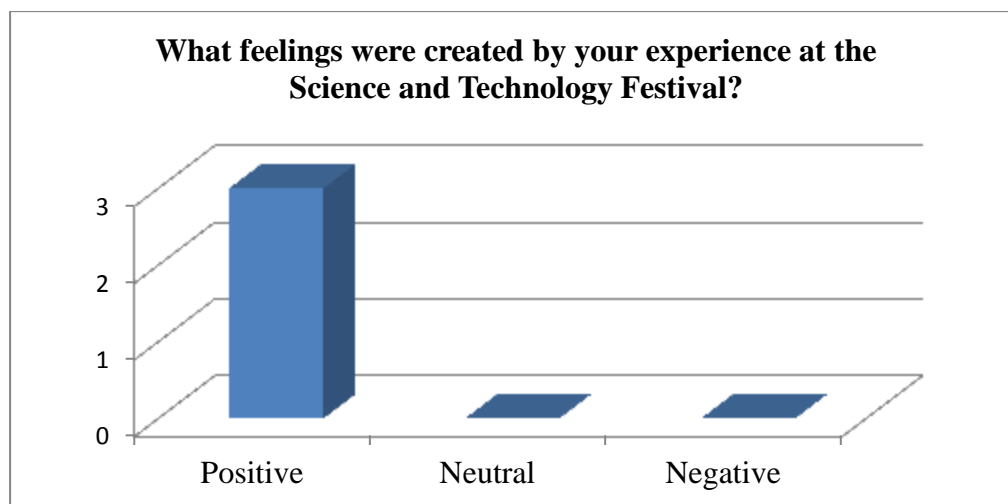


Picture 4: Initial Drawing



Picture 5: Final Drawing

In addition, the results of the questionnaire concluded that all pupils gained positive emotions through the process of the Festival, as seen in Chart 1. Furthermore, all students wanted to participate in the next Science Festival.



**Chart 1:** Questionnaire Results

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## THE NEED FOR DIDACTICS OF PHILOSOPHY

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### **Abstract**

The aim of this study is to focus on a specific problem; that of the didactics of Philosophy. Nowadays it is increasingly noticed that there are hidden obstacles encountered by university teachers in academic teaching, difficulties which negatively affect qualitative progress of the students. These difficulties are encountered especially in teaching sciences and Philosophic knowledge. By attempting to diagnose these difficulties, we have treated some aspects of Didactics implementation (application) in Philosophy to prepare the track for further analyses. The nature of Philosophic knowledge makes the perception of Philosophic didactics much more interesting. The distinctive features of the ratio between the didactics of science and that of Philosophy are essential in understanding the difficulties and problems raised for discussion in this conference.

**Keywords:** Didactics of science, didactics of Philosophy, knowledge presentation (transmission), specified (defined) knowledge, philosophic knowledge

### **Introduction: the didactics of science and the didactics of philosophy**

Attempting the didactic approach to issues in philosophy we will have to rely clearly on the underlying notion of didactics and especially the didactics of science. Hence, it will open an analytical path to clarify the possibility of a didactics in philosophy.

The didactics is primarily connected to the existence of clearly defined knowledge. Let's start with a general and basic question: What is didactics?

Initially, to find an answer to this question we will refer to the traditional definition of didactics aiming to be a theory and methodology of teaching. But today's theorists and researchers of the field converge with this definition perceiving “the didactic project” as undertaking attempting to facilitate the localized transmission of defined knowledge. Others (Laurence Korny and Alain Vernu, *La didactique en question*, CDNP, 1992) make a distinction between didactics and pedagogy arguing that the former deals with the art or the way of teaching notions connected to each discipline. Thus, to them the didactic attempt is a scientific attempt towards correct and faithful teaching of knowledge.

In addition to that, let us come to the agreement that *didactics is the art or the way of transmitting some knowledge according to the order or the logic of its nature and deriving from its features*.

Nowadays the theoreticians of didactics debate on both the didactics of science and the didactics of philosophy. We are presenting here some conceptual definitions regarding certain theoretical rationale.

**The didactics of science** is a fast-growing research domain which extends itself the line of works aimed at specification of the objectives of scientific knowledge, methodologies favoring the renewal of learning conditions for students. Parallel to expanding on the research plan it appears as a component that strongly influences the formation and continuous basis to teachers by bringing innovation in this field.

The didactics of science today is defined as a new concentration on the content of scientific study. For this reason it should not be interpreted as an issue that ignores prevailing

knowledge or to the detriment of basic methodological aspects. To put it right, the most important thing is the awareness that there are adjustment difficulties, internal to knowledge, difficulties which need to be diagnosed with precision and great care to lead students to success.

Knowledge on didactics of science highlights many obstacles that remain invisible in the daily analysis of teachers and educators. It also helps on a better understanding of reality during the processes of science learning because there is often the tendency to be blamed students for lack of skills, motives or personal qualities.

In addition to that, through the didactics of science we have the opportunity to look at the problems "hidden inside knowledge itself" as a difficulty to involuntarily enter the customs and traditions of education and that affect the performance of pedagogical methods.

Didactics as a research program marks inevitably "the time of change". That is due to the fact that it is about the production of new knowledge on the science learning system, on the modalities and conditions of their operation showing time and tools. The didactics of science in the West (especially in France) has been directed to the construction of these concepts launched either from borrowing neighboring areas or from the specific internal processing. A number of concepts of this nature today have become classics. We can mention her alternative concepts (Giordan & de Vecchi, 1987), displacement didactics (Chevellard, 1985), conceptual tram (Astolfi, & al. 1985), objective-obstacle (Martinanad, 1986) and many other similar concepts.

### **The didactics of philosophy**

If didactics is the art of transmitting defined knowledge, it will mean that there is no didactics unless there is specified knowledge to be transmitted. So the need of a didactics of philosophy would mean the existence of defined philosophical knowledge. This pushes us into an analysis of the concept of philosophy in order to decide the circumstances under which it can be clearly defined as a knowledge. In this context, we will need to deal with the idea of the educators of philosophy in order to verify their conformity with the ideas of general didactics. Thus, in the end, we will have to assign positively the possible conditions of a didactics of philosophy.

#### **Is it necessary a didactics of philosophy?**

#### **Features of philosophical knowledge**

The word Philosophy, as it is known, etymologically means love for knowledge. Only the meaning of its origin is enough to draw the attention on the paradox of a didactics of philosophy. If the feature of any knowledge is that it can be *transmitted* through the teaching process, then is it possible to imagine a method which would help us transmit love, wish, desire or research?

Doubtless, the origin of word does not tell much about the nature of Philosophy. To clarify this idea, Plato emphasized that *knowledge must be sought while the opinion should be dispelled*. (Zh. Hersh: Habia filozofike f. 24) Hence, the act of birth clearly shows its essence:

It was born from the rejection of different opinions where the unimportant is the object or the fundamental interest, instability or unsteadiness is luck; *Philosophy is the object of some consistent knowledge, based on reason and consequently universal*. (Zh. Hersh: Habia filozofike f. 25). In this respect it is considered to be a science, episteme and not a doxa, so virtually it is a discipline that rises to the level of all sciences.

But is it a science among other sciences?

Other sciences are distinguished from each other by their *object* and *method*. When we mention method we mean: for a number of sciences, hypothetical and deductive method and for others, we mean experimental method. Philosophy is not included in any of these categories. This does not mean that Philosophy is not a method but as physicists prefer to use

experimental method and historians use criticism of documents, we cannot say that critical or dialectical methods used by philosophers are methods of Philosophy.

Sciences are defined by their object. They are “regional”, that is to say, they share a region of the real within which they will restrict their investigation by studying the number and the figure, but not the structure, the movement of the matter and the historic and economic facts. This imprecise definition of their object is exactly the one which historically has allowed different knowledge that derive from Philosophy to be formed (developed) as a science in its modern sense of the term.

But, what is the object of Philosophy then?

Nothing of what is human, nothing of what is thinkable is strange to philosophy. Knowledge of the reflective character, which struggles to principally attach to all things, characterizes philosophy. Thus, philosophy is neither a science, nor an opinion.

Contrary to opinion it is knowledge, but, in contrast with scientific knowledge – scholarly processed in disciplines, it is not a determined kind of knowledge, lacking either a determined method or object of study.

### **What is philosophy and what is out of its scope?**

We can't always satisfy ourselves with the idea of some determined knowledge. To be to all beings – means to be determined, while the opposite, to be this or that as well as simultaneously neither this nor that – means to be nothing at all.

Knowledge which is totally undetermined would certainly belong to the futility of any didactic project which aims at “facilitating the localized transmission of the determined knowledge”, but, which can't make valid at all any claim to be knowledge that can be learned. Philosophical knowledge is not determined in the same way as positive sciences, though; this does not mean it is not determined in all its proportions.

In this sense, it is necessary to grasp those traits (or features) which allow the philosophical knowledge as well as the difficulty of acquiring it and recognizing what belongs only to it to be determined.

*Philosophy is a thought*, but the opposite – that every thought be philosophical – does not result to be true: to think means to be represented, it means to make it present to oneself what is outside oneself, though; what we do by imagining, meditating or dreaming as well as by reasoning, by giving an opinion or a judgment.

*Philosophy is a reflective thought*, but the reflection is not merely a characteristic of philosophy: one should reflect to make geography, biology, or simply to decide whether one will be spending the evening by going out for a walk and then to a bar or going to the theater.

The philosophical thought is a critical thought, but beyond the critical character, this thought has been extracted either from historical or art studies, moreover, it has become quite common to know that art exercises a critical function in society, in a different sense.

*The philosophical thought is a coherent and rigorous one*, but the rigorousness and coherence might legitimately be required by the mathematic thought.

The philosophical thought is in search of the sense (meaning), or, furthermore, of the absolute, but this is what prevents us from recognizing it from religion. Thus, we are stuck in a vicious circle: There is nothing which belongs to the scope of philosophy.

### **What does philosophy own?**

Although all the above features of Philosophy are not its own, nevertheless, only in philosophy these features are to be found all together and organically connected.

Mathematical thinking consists of a rigorous combination which offers a coherent model and aims to achieve the absolute – it does not go towards the non-hypothetical principle, as Plato says.

As poetry is concerned, it is a thinking which is afraid of the truth, thus the coherent and rigorous features could not be sought.

For this reason, philosophical thinking might be defined as *a critical and reflective thought* which tends to be realized in the true and universal discourse, absolutely coherent and preoccupied to form all these features in order to reach to the systematic unity of knowledge.

In themselves, these features are to be found not only collected but also connected organically. The rejection of dogmas and prejudices is positively recognized as a critical demand; as a necessity of thinking in itself and as a consequence it would not accept anything as true and it is not able to be formed on the basis of the reason. The critical demand is considered as fundamental, the logical priority of which allows the precise formation of the discourse justifying all the affirmations.

Knowledge of principles establishes from its own part, its synoptic vision, allows the capture of diversity as a unit and so we come to the uniqueness of things in the light of universal ensuring within the absolute understanding, the systematic unit of knowledge.

If this is the idea of philosophy then we need to see in what sense it is knowledge. It is not a positive knowledge but it definitely is knowledge in three meanings of a school concept: in the highest degree, as a source and on another way.

In the highest degree so far, not satisfied with the partial or regional explanation it is absolute significance. It is the ultimate foundation of knowledge that it requires, as a resource in the sense that it historically has given life to all other knowledge that are formed to sustain the demand for significance. While modern science is more concerned with efficiency rather than the truth and tries to leave this knowledge to the benefit of what is the only operator in a different way from its perspective, where its formal object is not one of the phenomena causality.

The highest knowledge, philosophy is not a formed knowledge, but rather a knowledge that creates life or the dynamism of knowledge in itself.

So we need to know where the highest formative knowledge is so as to teach others.

In one aspect, the above analyzed requirements and characteristics that constitute knowledge are truly found in books and works of philosophical tradition.

Each of them contains a philosophy. But philosophy cannot be learned only according to its history. This does not mean that in any case philosophy can be learned with precision. Michel Tozija (*Apprendre a Philosopher dans les lycees d'aujourd'hui*, CRDP de Montpellier, 1992), a French didactician and incendiary of the philosophical didactic project, thinks it is possible didactics of philosophy relying on Immanuel Kant's argument that "we cannot learn any philosophy" but "what we can learn is only doing philosophy". This well-known argument explains the fact that philosophical knowledge is systematic unity, is the idea for a possible science that is not concrete because it does not exist yet. So, we can, instead, learn to do philosophy, that is to say "to exercise of the talent of reasoning in the application of its basic principles in some attempts that they appear". These attempts are nothing but subjective philosophy, incomplete copy of the model, "its building tends to be often so different and varying" i.e. different systems that have come one after another in the history of philosophy.

Doing philosophy means to exercise the talent of reasoning by thinking critically and considering the philosophies in which the idea of philosophy developed historically. This is exactly what can be adopted and it is this that should be taught to others.

### **Some didactic consequences**

From all is analyzed above we can stop at two consequences associated with didactics of philosophy: the time of philosophy and the corner of philosophy.

### **Time of Philosophy**

For the fact that philosophy is mainly reflective it naturally finds place in the course of general learning where each reflection means already formed objects of thought. Undoubtedly their formation has never finished but it is always started. But drawing the

attention of the child for the logic rules, associated with knowledge pertaining to him, depend from the common learning and this cannot be called at all philosophy.

For reasons that cannot be taught without really understanding, common learning should inspire reflection. In this sense we say that any kind of learning is philosophical when it has in its foundation the reflection. It is also true that philosophy, so the higher knowledge is the paradigm of all knowledge.

Regarding the teaching of philosophy which should be distinguished from the philosophical character of every learning presupposes the capacity of the exercise of judgment and reflection on the major texts of the philosophical tradition, so on the texts whose reading is for the most difficult ones among them requires both constructed knowledge and a mastery of language that cannot be assimilated by very young children. Of course this does not mean that stands the opinion of Plato that the learning of philosophy should be reserved for 15 year olds.

In fact, it is not an issue of age, but the issue of the gained knowledge. The time of philosophy, is more logical than chronological. In the last grades of secondary school learners there are 15 year olds and 18 year olds, the formers may be more capable than the latter to philosophizing. This is because 16 year olds may be more reflective and more determined to exercise their reasoning talent on the texts and works of philosophy.

### **The place of philosophy**

Texts and philosophical works are considered as the place of philosophy. This aspect should be taken into consideration by the didactics of philosophy.

It is therefore wrong to attribute to the texts an instrumental character as the authors of learning philosophizing do. They think that learning the philosophy should "avoid any debate on those issues that are not illuminated by their actual meaning and their relationship to the experience". So in this line of reasoning, what it would seem essential to the teacher will have to do more with the discussion of the theses and school debates, whereas doctrines will appear as possible different views on the issue being studied. They will assist in the classification of ideas drawn from things themselves. As we see, the issue of organizing and directing the debate in opposition to a school detached from reality and simultaneously to the expose of separate doctrines of the issues that give meaning to them. Thus supporters of the learning philosophizing view, think that by separating doctrines from the reality thought will be distorted, reflection will deviate by formulating a range of contradictory opinions. Also this teaching which relies mainly on the study of original texts overloads the brain, without clarifying thought.

So finally you cannot learn philosophy only by opposing doctrines, but by discussing original texts which can inspire learners' vital thought because they themselves are the manifestation of an alive reflection.

We lay the question whether we can give the texts a clear instrumental "character" ?

We should understand and accept at the same time that a philosophical text is not a sacred text. So it does not have a dogmatic value. It is a text that serves us to awaken and stimulate our reflection.

But when it comes to turn philosophical texts into such tools that would be indifferent and foreign to the student, especially when they become tools for learning competencies or mental acts, the didactics of philosophizing become a formal technique that challenges the soul of Philosophy itself.

### **Conclusions**

1. Considering the classic definition of didactics as a "workmanship to transmit set knowledge" as well as the learning needs of philosophical knowledge characterized as being in the course of the construction, so undefined, constitutes a problem that requires more solid exploration and argumentation. This will enlighten better the connection between philosophy



and didactics and vice versa in order that the advantages of didactics can be used more in the learners' philosophical formation. Thus, the argumentation of this problem makes the didactics of philosophy possible and necessary.

2. Philosophy cannot be taught only according to its history. This does not mean that Philosophy can be learned precisely in any case. Michel Tozi has stated that the didactics of philosophy is possible, based on Emanuel Kant's argument, "we cannot teach any philosophy" but "we can teach only to philosophize". This already known argument can be explained by the fact that philosophical knowledge is a systematic unity; it is the idea of a possible science that is not concrete because it does not exist yet. Thus, we can teach and learn to philosophize. Philosophizing means exercising your talent in reasoning through thinking critically considering the philosophies in which the idea of philosophy is historically developed. It is this that should be learnt and taught to others.

3. The age of philosophizing has constituted a problem in the history of the philosophy. Some philosophers defend the idea that it is possible and desirable for children to reflect as soon as possible while some others think that philosophizing is exiting from childhood, exiting from the settings of opinion, prejudice and error. Regarding the learning of philosophy, which should be distinguished from the philosophical character of every kind of learning, it presupposes the capacity of exercising judgment and reflection on major texts of philosophical tradition; so the reading texts require simultaneously constructed knowledge and a mastery of language what cannot be assimilated by very young children.

4. Philosophical texts play a major role in learning to philosophize. The problem rises in the report that these texts have in relation to the philosophical doctrines. Supporters of the view of learning to philosophize think that detaching the doctrines from the reality helps the distortion of thought and diversion of reflection formulating a range of contradictory opinions. Furthermore, this kind of learning which mainly relies on the study of original texts overloads the brain, not clarifying the thought. But we must understand and accept at the same time that a philosophical text is not a sacred text. So it does not have any dogmatic value. It is a text that serves to awaken and stimulate our reflection.

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## TEACHING AND LEARNING UNDER THE PRISM OF THE SYSTEMIC APPROACH: QUESTIONS FOR THE DEVELOPMENT OF CRITICAL THINKIN

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### **Abstract**

What is learning and how do people learn? Why do they learn this and not something else? How the learning procedure happens? These questions and also many others preoccupy teachers and all the other people that used to be involved in some kind of educational activity during many centuries. Answers given to these questions are numerous and various. With the present paper we are going to depose a series of thoughts and propositions concerning the above mentioned questions and we are going to determine a context but also the terms for designing educational activities under the prism of Systemic approach for the development of critical thinking

**Keywords:** systemic approach, critical thinking, design educational activities

### **Introduction**

With the systems theory of Bertalanffy (1968), the cybernetics of Wiener (1948) and Bateson (1951, 1973) and the information theory of Shannon (1975) a new scientific corpus was created, which consists the new scientific paradigm

Opposite to the classical sciences based on reductionism, who believes that the knowledge generated by linear deterministic relationships cause - effect and as a key concern are disconnecting and isolating the object from its context, is the effort of setting up a new epistemology that understands the knowledge as a result of cyclic interactive relationships and believes that individual cognitive domains are linked through interactive relationships (Le Moigne, 1990).

The circular causal model, production of cybernetics was a first epistemological revolution. The basic idea was that each item is both cause and effect. There is no causality linked to the data. Causality located within the same circle. In this context, special emphasis is given to the interaction of the elements, no element itself contains information about the whole interaction.

All these studies were originally launched by mathematicians and physicists who took care over the mechanisms of energy conservation and the effects of regulation systems

The system (as any organized "all», von Bertalanffy; 1973) is considered as a set of interacting elements and governed by principles such as interaction, wholeness etc.. and is trying to apply them to specific phenomena

In the 80s, Heinz von Forster (1982), proposes to replace the description epistemology with the construction epistemology. Von Forster considers that there is no distinction between observed and observed systems. The observer is no external to the object of observation, but a part of it. Thus, the properties which are supposed to be inherent in things, it seems that finally linked to the observer. In other words, what is said was always said by someone.

Later investigations of Ilya Prigogine (1972; 1997) and his team, on systems' far from equilibrium showed that the evolution of a system is not linked to a general law, but with its special characteristics, such as the nature of the interactions between the elements. These interactions may result in an unstable condition and to a special branch by separating sharply different behavior. A new state at a given time is predictable, but it is the chance that

determines the fluctuations which are amplified. The choice of one or the other mode of behavior depends on the history of the system. Finally, the irreversible process reintroduces the concept of time.

Maturana and Varela (1980), working on the concept of reception, invited us to consider both the organization as a system endowed with its own internal logic and a unit with numerous interactions. At the same time Maturana develops a theory of self-organization or autopoiesis. Man as a system and beyond micro-societal systems, such as the family and the school is subject to a process of autopoiesis exchanging energy and information with the environment. This process is necessary for their development and took place so as not to threaten their identity (the human is regarded as both open and closed system).

On how we perceive the outside world, Maturana and Varela (1994) point out that the criteria for a valid scientific experience need not to have the objectivity to function. What is necessary is not a world of objects, but a community of observers, the statements of which respect the conditions outlined. The fact that a scientific explanation can discover common elements with the perception of the world that we have does not allow us to conclude the objectivity of a universe separate from the observer. Thus, Maturana puts objectivity in parentheses opening a huge issue that the classical scientific approach considered solved.

The above considerations, which had as their starting point the sciences and they found application in the humanities and education through a systemic approach.

Some of the basic principles of cybernetics which play an important role in teaching and learning provide an answer to the questions initially formulated

-We are all observers.

-As observers we are always embedded in a system and we can't say that we can see it from the outside.

-We observe through the lens of the story of our lives and our observations can't be otherwise because we only have this body / mind and only that story of life from which we observe.

-As observers we discern differences, we make distinctions between system / environment. Different observers make different distinctions; distinguishing different differences highlighting different worlds from the background noise, which are made information about us.

-The information is not located inside the observer, the system or the environment, but arises during the process of living between the observer and the system / environment.

-In constant communication and feedback we change the world we have arisen and that world changes us, with or without the intention to change it or to change us.

-This change is called learning

-Learning emerges from the need to survive - in social, economic, cultural, etc. levels - and enables us to continue to live.

-Learning is triggered by the environment; match with the story of our life, predicted and is different for everyone.

-We are all observers observing in a system.

From the foregoing discussion results that the field of reflection starting from the assumption that because we can't directly cause change or to introduce our knowledge to our students, the only thing we can do to reinforce changes is to create environments where desired changes have an opportunity to appear and students to find ways to blend. So the next question is what we need to consider for the design of educational environments in the light of the above cybernetic - systemic perspective.

For the design of an educational activity we can include in our visual field at least three levels of systems: the system, the subsystems constituting it and the direct supersystem- and to pay special attention to the following factors

### **Meaning to functional belonging and connecting**

The student system approached as an organized whole, consisting of interrelated sub processes (biological, psychosocial, economic, cultural). In the design of educational activities to enhance the human being as open and evolving system and as a member of an open educational system we must constantly ensure the emphasis of the functional relationship part and whole: with designed for this purpose procedures and with teachers and other members sensibilised to the thinking "I'm part of a team, which is part of a class, which is part of a school community and that is part of a wider community...".

Connections can be undertaken at the level of content and process. The teacher - facilitator constantly emphasizes a) interpersonal connection (that connects the view or the work of a child with those of the others and with the collective public work), b) the temporal connection (how that which happens now is a continuation of a previous experience children had in the classroom and how prepares for the next), c) the interrelation of different disciplines (such as the contents of the current activity associated with the content of a next or previous planned, that children worked with another teacher in another space) and all this requires the constant cooperation between the teachers.

### **Importance to the dynamic evolution**

A prerequisite for the development of a system is the integration of change. A system remains operational as long as it has a theory of change and therefore develops mechanisms of adaptation, assimilation and emergence of new properties. Generally we distinguish two types of changes: the cumulative change (addition-aggregation of new elements which pasted in the old structure without the emergence of a new property) and interactive synthetic change (this case requires two-way and round interaction with others, which will make team members to climb up every time by creating a position-opposition-composition, dragging all the elements in a reorganization). In the frames of the second emerges a new identity.

Essential components of the theory of change are:

- The culture of containers for change (a) time and space for the treatment on the new concerning to matter and to process, (b) importance to the production of the dialogues at all levels within the school community (c) importance in a way that treated the deviation and the difference, (d) use by the system of its history and roots, (e) vision for the future, (g) importance to the principle of autopoiesis (living systems produce themselves ), (h) Connection to the specifics of the framework, (i) a new understanding of the error, (j) time for reflection as a component of the learning process on a personal and team level (functional close of an experience and not stay in the air is a prerequisite and provides a good basis to start a next circle of learning process. This enhances the sense of we, collaborative and full of work that has produced).
- The integration of the multivariable approach to all phenomena
- The understanding of the circular causality embedded in all learning objects.
- Change in the design concept, which must remain an open system, constantly redefined as new data emerge. The process of filtering and selection, and the art of search of links and of composition need to be core elements of learning skills.

"The right knowledge must address the complexity that exists when the different elements that make up a whole are inseparable (economic, political, sociological, psychological, emotional, cultural) and there is an interdependent, interacting and inter-feeding grid between the object of knowledge and its framework, between the parts and the whole, the whole and its parts and between the parts "(Morin, 2000) ..

### **Coevolution**

The different levels of systems involving the educational process develop isomorphic

processes and co-evolve. This means that the way a system evolves affects how another, homologue or different (system or super-system).

Children cooperation and development of a dialogue should be placed in the respective challenge of teachers, managers, parents. That is very important (key to the success or failure of innovative interventions) to be given time and the context for teachers to nourish themselves in their new role, in a new spirit of creative process and expression.

The goal and the process through which we attempt to achieve the goal are isomorphic processes.

In the design of new educational process we have to make clear which people we want to create. In this light, if our aim is to make a man connected with other people, the educational process need to incorporate ways to connect the student with other students, the student with the teacher, the group of students with the group of teachers, teachers between them and the student with the entire school community. In short we can't teach the connection. We need to strengthen in a functional way two-way interactions internally in each level / group and between levels. If our aim is to make people inspired by a vision, the process on everyday basis should cultivate connections with personal meaning of each other. Whatever is done should be reduced to "what did I find important in it for me at this stage." So important is the connection not only with others but also with us. If we want to make a useful man for society a daily process should connects what everyone has to work with the collective work we try together. If we want to make responsible, autonomous people, student should take a particular own responsibility per minute, action or course in this specific project. If we want to reinforce the man - thinker with critical and synthetic power, we need to integrate during the process pauses, personal time for internal dialogue. If we want to strengthen the human researcher we should give him freedom of movement to search information in various areas and to formulate a climate open to new ideas and actions.

### **The importance of the team**

In the development of the systemic thinking and operating, the triangle-person small group - plenary of small groups is a trunk. The switch to these three levels, during the daily educational practice ensures the framework for the development of important skills. Student practices to be member of a team, by developing skills and attitudes of cooperation, empathy, expression of personal opinion, dispute management, conflict management, etc. He/she learns to derive from his own personal contribution, but also from the others, so that it reflects the members potential. Simultaneously, practices to distinguish the new property or knowledge that emerges when the team synthesizes the works of its members (enlargement of the ego within a creative we).

For a team to be constructed and operate, need to take in a particular project at a particular time and context, to be presented to a broader system of this (class, wider school community). This is an important requirement for establishing functional group process. The project team allows for greater flexibility in the rate and level of learning, especially in heterogeneous classes. One consequence is that students gain better social attitudes towards the different and skills for action planning, communicating, negotiating, managing of time, managing of ambiguity, to address conflict and complexity, and to verbal expression. The project team also creates the condition for interdisciplinary research, encouraging children to derive data from multiple sources (within and outside the school).

The groups differ in the extent to which sum or make contributions of its members. Factors for the generation of synthetic team are the clear and constantly reconfigurable objective and the clear understanding of the personal responsibility of each member.

### **In short**

In the new educational system children move in and out of school and are active most of the time in groups. The content of their actions is unique per group and phase. Children

and teachers feel authors in a joint project by selecting what they personally undertaken, thereby ensuring their release.

What remains common among groups are skills grown up to work (the definition of the project and its objectives, the clarifying questions, the collecting and organizing information, the design data, the drawing conclusions, the composition of the whole work, the transfer in writing, the presentation outwards) and in the process (the partnerships management in the homologous group, the collaboration with different adults and the problem solving)

For the teacher, is required to give time to meet his new role, leaving behind the traditional methodology with which he is familiar. He has to manage a group of kids who move and talk freely, producing another sound, to face the unexpected, to welcome the new emerging, to dare new things and ways to assess them. Above all, he needs to cultivate in collaboration with other members of the educational team (teachers, counselors, administration) a new perception of the learning environment and what role he can and wants to play in it

The cybernetics' view of the world suggests that the only environments that exists in every moment is the inner mind / body learning environment of the living system that has been shaped by the history of his interactions and the immediate external environment with all that it provides. The only possible learning that can be occurred is the dependent learning from these two environments as the living system harmonizes with the outer frame and through communication with the inside and others reorganizes itself internally up to redo again comfortable with the world.

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## WHO'S AFRAID OF CRITICAL THINKING IN HISTORY?: THE CASE OF GREEK PRIMARY EDUCATION

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### **Abstract**

The development of critical thinking in the context of teaching and learning history is increasingly recognized as important for improving history understanding, for enabling students to appreciate the impact of the past in their lives and to perceive history as a continuous and evolving “construction” in the present. Critical thinking skills in the history classroom are improved via inquiry teaching methods that include the use of multiple texts for examining different points of view and perspectives and the analysis of historical sources in relation with certain historical topics. The aim of this paper is to discuss how critical thinking is perceived and materialized in Greek Primary Education, exploring the aims and prescriptions of the history Curriculum, the guidelines incorporated in the teacher handbooks in comparison with the content and the methodology adopted in Primary history textbooks. The analysis of the data suggests that critical thinking as a standard for history teaching is limited in the history curriculum, a selection that is also reflected in the rhetoric of the teacher handbooks. Additionally, the teaching approach indicated by the primary history textbooks diverges highly from the approach of some of the corresponding teacher handbooks concerning the development of critical thinking skills. As a result the traditional lecture method (for teachers) and the uncritical memorization of facts (for students) is not challenged leaving little or no space for a more critical reflection in the process of understanding the past.

**Keywords:** critical thinking, history education, history textbooks, Greek Curriculum

### **Introduction**

Quite often, when during their exams, my college students are asked to rationalize the need for historical inquiry in the primary history classroom they happily point out how evidence analysis increases the opportunity and potential for young learners to think critically about the past. Of course this is a very encouraging and optimistic perspective from prospective teachers who have been raised on a diet of pedagogical theory which, alas, they will be compelled to abandon during their professional careers in the Greek educational system.

The movement for the further development of critical thinking in education has been growing worldwide since the 80's. Through curriculum design, teaching methods and exams educational policy makers began to place an increasing emphasis on the importance of developing critical thinking skills and the ability of learners to think well (Pithers & Soden 2000). Mathew Lipman points out that many different or overlapping characterizations of the essence of critical thinking have been proposed by philosophers, cognitive psychologists and educators. Among the variety of definitions he prescribes critical thinking as being: “thinking that helps us to solve problems and make decisions; thinking that enables critical skills to be transferred to educational subjects; thinking that comes in or may come in when we suspect something to be amiss; the application of theoretical thinking to practical, problematic situations” (Lipman 2003: 58-61).



Critical thinking has direct relevance to creative thinking. Paul & Elder (2006) point out that both creativity and critical thinking are aspects of “good” purposeful thinking which on the one hand requires individuals that are able to create intellectual output and on the other hand thinkers capable of criticizing and reflecting on the quality of these products. They also stress that “critical thinking without creativity reduces to mere skepticism and negativity, and creativity without critical thought reduces to mere novelty” (Paul & Elder 2006: 35). Nonetheless the cultivation of a healthy skepticism that enables the accepting or rejecting of claims is considered as the armour of critical thinking (Lipman 2006: 47). Finally critical thinkers are able to recognize and express alternative hypotheses, definitions and sources while responding critically to the opinion of others and can carefully present both their own and others’ points of view (Theodosiadou 2010: 60).

### **Critical thinking in history teaching**

History, geography and civic education are the most suitable school subjects for improving students’ critical thinking, under the condition that they have been structured in such a way that favour learners who respond critically to aspects concerning the individual teaching subjects and thus maximize those subjects’ potential. Despite optimistic views, a critical mindset is still missing in history education, a situation which is related to, among other things, the dominance of the traditional lecture-based approach in history teaching (Savich 2009: 1).

According to research literature, critical thinking skills within the realm of teaching and learning history are most commonly deployed when learners study and examine historical themes with inherent critical elements for discussion; examine multiple texts that provide the potential for exploring contrasting viewpoints and perspectives concerning historical issues; produce research papers, either working independently or in groups; glean information from factual evidence and primary sources; are exposed to inquiry teaching strategies combined with specific content (Savich 2009: 2-4). These include the analysis of documents and multiple texts, role playing, simulations, re-enactments, the studying of oral and visual presentations, analyzing bias, and examining and comparing different viewpoints and perspectives (Savich 2009: 2, 3).

In particular students improve their critical thinking in history when they identify alternative versions of the past through evidence inquiry and juxtapose the acquired information with the official or general historical narratives which are scrutinized in the history classroom. For that reason in many educational systems great emphasis is placed on the practice of using primary sources as a device through which students’ abilities to contrast and evaluate different standpoints on controversial historical issues may be nurtured, and thus a more thorough concept of the complexity and ambiguity of the historical record is gained (Edmonds et al 2005). Educational research demonstrates that students succeed in thinking critically and independently about historical issues when, instead of memorizing and regurgitating facts, they are engaged in inquiry-based teaching approaches which reinforce historical understanding (Savich 2009: 9). In the case of Greece some limited research has been carried out with regards to the impact of the aforementioned teaching approaches for developing students’ critical thinking, all of which deal with secondary level history education (Theodosiadou 2010).

The aim of this paper is to discuss how critical thinking is perceived and manifested in Greek Primary Education, exploring the aims and prescriptions of the history Curriculum, and how the guidelines incorporated in the teacher handbooks compare with the content and the teaching practices adopted by the Primary history textbooks and the related workbooks.

### **Critical Thinking in Greek history education**

#### ***Curriculum***

The new curriculum for Greek compulsory education (6 years of Primary education

and 3 years of lower Secondary education - Gymnasium) was imposed in the late 90's during a period of educational reform (1997-2003) that aimed to upgrade the content and pedagogic approach in the curricula, introducing a more flexible syllabus design that considered learning not as an exercise in knowledge accumulation but rather a conduit for a more creative, participatory and experiential outcome. In its final form the new curriculum for compulsory education (“Cross-thematic curriculum framework” - Ministry of Education 2003) attempted to address the unification of school knowledge - by horizontally linking and correlating school subjects – in order to foster the promotion of a holistic approach and effective learning (Alahiotis & Karatzia-Stavlioti 2006). Despite the intentions for innovative changes in Greek education, in practice contradictions and antinomies appeared between the curriculum framework and the realization of many of the initiatives and prescriptions, among which critical thinking is a striking example.

In the official pedagogic discourse, as it is articulated in the new Curriculum framework, an emphasis is placed upon the critical processing of information, values and assumptions (Ministry of Education 2003: 6). Critical thinking is recognized as one of the main educational benefits of the innovations introduced by this curriculum, along with increased utilization of cross-curricular activities and the development of projects (Ministry of Education 2003: 7). Furthermore one of the six criteria proposed for the selection of content for the syllabuses of the individual subjects was “to give emphasis on developing critical thinking, collective effort and the acquisition of general education” (Ministry of Education 2003: 9). Finally, the first of the suggested methodological principles for Primary education is the students' involvement in inquiry and discovery which activates learning and enables the development of critical thinking (Ministry of Education 2003: 10).

Contrary to the above general curriculum guidelines and prescriptions, fostering critical thinking is not outlined as a main objective in the history curriculum. In fact it is not described as a principle at all in the general aims of history teaching, nor in the 16 specific objectives of the history course for Primary education. However, critical thinking is included in the outline of the suggested teaching practices. It is considered that in Primary education addressing critical thinking skills is associated with the learner's familiarity with historical inquiry through the study, treatment and analysis of historical sources (Ministry of Education 2003: 211) while in Lower Secondary education (Gymnasium) through the comparison of sources highlighting different perspectives on the same topic (Ministry of Education 2003: 228). Finally in the evaluation guidelines for Primary teachers it is stated that since the development of critical thinking is a "basic objective" for the history courses, the assessment process should identify students' stimulation of judgment, ingenuity and imagination, avoiding questions of memorization (Ministry of Education 2003: 211).

### ***Teacher handbook***

This rather controversial stance towards critical thinking in the history curriculum seriously affects approaches and methods in the teaching resources (textbooks, teacher handbooks, workbooks) for the 3rd (Prehistory, Mythology), 4th (Ancient History), 5th (Roman and Byzantine History) and 6th Grades (Modern History) of Greek Primary education. For example critical thinking as a teaching principle appears in only two of the four teacher handbooks (3rd and 6<sup>th</sup> grade).

In the 3rd Grade's teacher handbook critical thinking is correlated with the investigation of historical sources, the cross-thematic approach of knowledge (echoing the spirit of the curriculum) and the development of historical thinking skills that will contribute to avoid memorizing (Maistrellis et al. 2006b: 4). In particular, according to the methodology section of the handbook *critical thinking* skills in history teaching can be applied through the analysis of evidence, visiting archaeological sites and museums, and the use of new technologies (Maistrellis et al. 2006b: 9, 15, 19). Finally, the authors repeatedly link and

rationalize certain activities and exercises in numerous teaching units with the students' ability to think critically (eg. Maistrellis et al. 2006b: 32, 37, 91, 97, 105).

In the teacher handbook for the 6th Grade the development of critical thinking is described as an essential pedagogical principle that contrasts with sterile memorization (Koliopoulos et al. 2012b: 14) and is related to the students' fulfillment of written assignments for presenting “historical sources and maps, visual materials, tables and diagrams or their conclusions from visiting museum and monuments” (Koliopoulos et al. 2012b: 15). Although written and visual evidence are underappreciated in the handbook guidelines as “additional material that supports the narrative” (Koliopoulos et al. 2012b: 17) the authors imply that through the research of primary and secondary historical sources critical and creative thinking will occur naturally as a result of students' examining the validity and reliability of documents in interpreting the facts (Koliopoulos et al. 2012b: 17). This contradiction finds its practical form in the actual activities and exercises included in the students' workbook for the same grade (6th) which rarely lead to any form of critical thinking.

### ***History textbooks and workbooks***

In general, textbooks constitute the most widely used teaching resource for teaching and learning in Greek education. For this reason the content, design and methodology of the four history textbooks and related workbooks for Primary education are a good gauge as to how critical thinking is intended to be manifested within the context of history teaching.

didactical view and teaching practices reflected by the organizational context and content of the four history textbooks indicate little or no potential for the support of critical thinking in history lessons. All the history textbooks variably include short, medium and often relatively long texts - depending on the Grade - which seek to narrate an objective account of the historical facts. The accompanying supplementary material and the historical evidence most often seek to support and reaffirm the historical versions of the main texts instead of broadening the student's view on the examined topics and enriching or challenging the given interpretations of the past. In fact, contrary to what is generally established as being effective for improving critical thinking skills in history, no contradictory stories and/or conflicting primary and secondary documents concerning these specific historical themes are incorporated, almost without exception (Andreou & Kasvikis 2008, Andreou & Kasvikis in press).

Another parameter for exploring the potential for facilitating critical thinking in Greek Primary Education is related to the exercises and activities provided by the four accompanying history workbooks, each of which corresponds to the content of a Primary history textbook. The analysis of the types of exercises and activities proposed by the textbooks' authors reveals many divergences between the different workbooks, when one takes as a norm the current theoretical approaches for the range of teaching practices that can contribute to critical thinking. These practices, as discussed above, deviate from memorizing or merely reproducing the important historical facts and include inquiry-based approaches that involve investigation of primary and secondary historical resources; empathy; dramatization of historical events; and working in teams in order to produce research papers.

### **Table 1 about the exercises and activities in the Primary Education history workbooks**

As depicted in **Table 1** assignments that require learners to recall historical knowledge are dominant in the history workbooks for the 6th Grade (61%) – and to a lesser degree for the 4th Grade (41%) and 5th Grade (32.2%) - giving emphasis to the students' ability to remember the important historical facts presented by the textbooks' historical narrative. As a result, particularly in the 6th grade teaching material, a deviation can be traced between the rhetoric of the teacher handbook and the methodology introduced by the

corresponding workbook and the textbook itself, in practice preventing teaching activities that favour critical thinking.

On the other hand an approach which, in certain conditions, could contribute to the development of critical thinking skills is predominantly favoured by the 3rd Grade's workbook with a range of activities that involve historical inquiry based on evidence (23.2%), creativity (11.9%), expression of personal views on the past (5.5%), dramatization and role playing (9.9%), empathy (6.4%) and identification of past - present relationships (11%), which in total cover 70% of the exercises. In this sense a consistency between the teacher handbook and the student workbook can be identified.

Some possibilities for deploying critical thinking can be found in the 4th Grade workbook which include a variety of appropriate assignments (historical inquiry, creativity, expression of personal views on the past, dramatization and role playing, empathy and identification of past - present relationships) amounting to 48.5% of the whole. However, this potential itself is diminished by the 41% of exercises that demand the recalling of the historical events and the fact that all activities of the category “Local history enquiry / visit museums and historical sites” are entirely restricted to the final teaching unit of the textbook.

In the 5th grade workbook the type of activities that can, under certain conditions, support a critical thinking perspective (e.g. analyzing sources, local history enquiry, empathy, identifying of past - present relationships, expression of personal views on historical issues) comes to 53.9% of the total amount of the exercises, with the downside being that the testing of the memorization of facts through the students' exercises (32.2%) retains quite a strong presence. The main disadvantage in the case of both workbooks (4th Grade and 5th grade) is the lack of any reference to the development of critical thinking in the corresponding teacher handbook.

### **Discussion**

According to the analysis, while critical thinking is highlighted as a principle in the prescriptions and requirements of the Curriculum framework it is not systematically promoted as a standard in the history curriculum of Primary education, an issue that is also mirrored in the rhetoric of the teacher handbooks. Additionally the teaching strategies for applying critical thinking skills as designated by the primary history textbooks and workbooks have high degrees of variation when compared to the pedagogic rationale of the history curriculum and some of the corresponding teacher handbooks. These contradictions between the prescriptions of the curriculum, the history syllabus and their manifestations in the teaching material leave little or no space for a more critical reflection on the process of learning and thinking about the past and do not challenge either the traditional lecture method adopted by many teachers nor their tendency towards promoting students' uncritical memorization of facts. Besides, the history curriculum for compulsory education, twice presents (at Primary and Gymnasium level) in its content a chronologically linear “grand narrative” of Greek history from prehistory to modern times which defines the content of the corresponding history textbooks. Thus by its very rationale it is ideologically driven and at odds with critical thinking.

So, who's afraid of critical thinking in history learning in the Greek educational context? The educators, the curriculum designers, the writers of the history textbooks, the politicians, the historians, the teachers, the various interest groups? When critical thinking is involved in history courses students are encouraged to identify underlying assumptions, to make judgments and to use ideological critique for understanding people and their actions in the past. In that way critical thinking may be considered to be dangerous, primarily when standard and consolidated national representations of the past are challenged and students learn to approach history not as a fixed and immutable reality but rather as a continuous and evolving “construction” in the present.

It is true that the past in Greece was - and still is - a subject of ideological use and political manipulation and in this context history education, as happens in many countries of the world, is considered to be an instrument for building national identity and instilling the ethical and cultural standards of the nation. Under these conditions history education is vulnerable to strong ideological influences, and even interventions, by the government's educational policy, institutions, interest groups, political parties, the church and extreme conservatives, many of which counteract against initiatives concerning history teaching and learning (Mavroskoufis 1997). In the last 40 years a number of public debates on controversial historical events and incidents of the withdrawing of history textbooks when their content and interpretations deviated from the “norm” of school history teaching in Greece (Kokkinos & Gatsotis 2008, Mavroskoufis 1997: 75-112), testify to the broad public perception of the national mission and objectives of history and history education.

Needless to say, the potential of teachers to inhibit or enhance students' abilities to think critically is significant, however this perspective requires specific research and remained outside the purposes and remit of this paper which has focused on the “official” pedagogic rationale and the strategies for introducing critical thinking skills as they are reflected in the history curriculum and the teaching material of Primary education. Assuming from our results the teachers' attitudes towards involving critical thinking in their history lessons might be similarly ambiguous and balanced in favour or against. It is possible that many teachers, while adopting the current discourse on the values of critical thinking, might feel confined by the official education policy that sets limitations and does not promote a more systematic application of critical thinking in teaching and learning history.

So, returning to our question, critical thinking as a pedagogic tool and as a teaching strategy in the context of Greek history education is neglected by both those who officially control, and those unofficially intervene in history teaching, seeking to limit any attempt that contributes to students' emancipation from ideological constraints, political manipulations and conservative claims in the context of understanding and interpreting the past

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**TABLE 1: Exercises and activities in the Primary Education history workbooks**

Exercises and activities	History workbooks							
	3rd Grade (Maistrellis et al 2006a)		4th grade (Katsoulakos et al 2006)		5th Grade (Glentis et al 2006)		6th Grade (koliopoulos et al 2012a)	
	n	%	n	%	n	%	n	%
Understanding content knowledge (propositional knowledge)	54	22,80%	73	41,00%	85	32,20%	52	61,00%
Historical enquiry (procedural knowledge)	55	23,20%	15	8,50%	52	19,50%	6	7,00%
Using textbook's educational material (information texts, maps, representations)	2	0,85%	1	0,50%	17	6,50%	0	0%
Understanding of historical concepts (conceptual knowledge)	2	0,85%	7	4,00%	6	2,50%	2	2,50%
Creativity (painting, constructions)	28	11,90%	12	7%	4	1,40%	0	0%
Local history enquiry / visit museums and historical sites	7	2,85%	18	10,50%	12	4,50%	0	0%
Interpretation / expression of personal views / discussion	13	5,50%	10	5,50%	35	13,20%	4	4,70%
Dramatization/ role play/ games	22	9,90%	1	0,50%	2	0,70%	0	0%
Empathy / rational understanding	15	6,40%	10	5,50%	7	2,60%	0	0%
Identifying of past - present relationships	26	11,00%	20	11,00%	31	12,00%	4	4,70%

Production of oral or written academic specific language (historical)	7	3,00%	2	1,00%	3	1,00%	0	0%
Production of oral or written academic language	4	1,50%	7	4,00%	1	0,40%	0	0%
Gathering of historical information from out-of-school resources	0	0,00%	0	0,00%	6	2,50%	16	19,00%
Other	2	0,85%	2	1,00%	3	1,00%	1	1,10%
Total	237	100%	178	100%	264	100%	85	100%

## **BASIC PARAMETERS FOR THE DEVELOPMENT OF MOBILITY IN RUNNING DISCIPLINES IN THE PHYSICAL EDUCATION CLASSES**

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### **Abstract**

It is generally known that the longer the active joint stabilizers are, the greater the joint mobility is. If the forces that provide stretching of the antagonist muscle are greater, then we can expect higher amplitudes of the joint motions. Each joint possesses a possibility of movement with larger or smaller amplitudes.

The development of runners’ mobility represents a very important part of the training process. When the mobility increases from optimal in current joints, it enables a longer muscle effect, thus a greater movement speed that is a better sport result. Therefore, we’ve come to a conclusion:

The issue of the development of the mobility with the athletes has always been present related to finding out of new training methods and means that will have an influence on the efficiency of motion performance, and the improvement of sport results, as well.

**Keywords:** Firmness and mobility of the joints, mobility development methods, mobility exercises.

### **Introduction**

Mobility is the ability to perform a specific form of motions enabled by joint. Mobility is specific for each joint or group of joints in that sense that some of the joints are very movable, other are partially movable while the third are immovable ones. Taking into account the fact that human, made of relatively many joints, isn’t maximally possible movable using joints, because of this we cannot consider him as a movable person or talk about general mobility, we can only talk about local movement of joints.

It is generally known that the longer are active joint stabilizers, the greater is joint mobility. If the forces, that provide stretching of the antagonist muscle, are greater, then we can expect higher amplitudes of the joint motions. Each joint possesses a possibility of movement with larger or smaller amplitudes.

It can be assumed that when the mobility of certain joints is increased from optimal, then it presents one of the factors of motion speed, since it enables longer muscle effect and thereby greater speed of mobility.

Thus the speed can be considerably increased not only with the sprint training, but also together with the mobility training and strength training. Combined like this, these trainings can serve to increase the pace length in such a way that the speed of leg mobility isn’t decreased per unit of time.

The issue of development of mobility with the athletes has always been present related to finding out of new training methods and means that will have an influence on the efficiency of motion performance, and the improvement of sport results, as well.

### **Characteristics of joints**

In order to maintain normal functions of the mobility apparatus in everyday life, joints should possess certain firmness and mobility.

### **The firmness**

The type of joints, that provide greater strength, can be divided into: passive (joint capsules,



ligaments on the both sides of joint capsules) and active joints (the muscles).

The shorter are the passive stabilizers in joint the greater is the firmness of the joints. Active stabilization doesn't require shorter muscles. The muscles can be normally long, even longer, but not necessarily strong.

The increased length of stabilizers will provide performance of large amplitude joint motions. Body exercises, training methods, are necessary for reinforcing active stabilizers so that they can anchor the joint in any position it appears and protect from external forces effect that can cause the joint injuries.

### **Mobility**

Mobility is the ability to perform a joint movement with amplitude. Mobility is specific for each joint or group of joints in that sense that some of the joints are very movable, while others are partially movable. In general, it can be said that there isn't general, but local joint mobility-locomotion.

Terms such as active and passive agility occur in scientific literature.

Active agility is the ability to achieve large movement amplitude in a joint by the muscle activities that go over that joint. Passive agility is defined by the largest amplitude that is achieved by external force activity. It is generally known that the longer are the active stabilizers, the greater is the joint mobility.

Functional mobility is the mobility with smaller movement amplitudes that it is displayed in everyday life. Back-up mobility is the addition to functional mobility and it can allow movements of much larger amplitudes rather than the movements in everyday life. There is also maximal mobility that presents the ability of flexion or extension of every joint.

The terms, such as static and dynamic mobility can be regularly found in scientific literature. In practice, it is confirmed that the exercises for muscle stretching, performed during static activities have certain advantage than those exercises that are performed during dynamic activities.

The possibility of exceeding the limit of elasticity is decreased, and the energy consumption is smaller, so the muscle stretching exercises during dynamic activities can rather make pain while the other exercises ease that pain.

### **The methodology of mobility development**

In order to achieve appropriate, maximally possible mobility in a particular joint, by the means of exercises it is necessary to develop the elasticity of the antagonist muscle and the strength of the agonist muscle that perform a certain joint movement. It is a mistake to develop one component for account of another, since both of them are directly adopted. Increased work on strength can have a negative effect on the development of joint mobility, such as the increased work on the development of the muscle elasticity can affect the decreasing of its strength.

Most of the researchers have determined that load training doesn't prevent the development of mobility if it is performed right. One should bare in mind the fact that the heavy-load exercises, in some cases, can limit the movement amplitudes. That is why it is necessary to properly make the working program that is to add the appropriate exercises with easy load that encompass full amplitude of movement.

A series of stretching exercises, applied in combination with the effect of external forces, can affect the increase of the movement amplitude. In order to achieve maximally possible back-up mobility of any joint, it is necessary to have special preparatory stretching exercises within at least one and half or two-month period. Thereto, the mobility of shoulder joints and ankle joint is developed most, while the mobility of the spinal column joints and hip joint is developed a bit slower.

The stretching exercises have the biggest effect if they are performed on a daily basis. If a person exercises two times a day then the number of exercises is decreased but the total

number of repeating should remain the same as if the person exercises once a day. In order to maintain the developmental level of mobility, it is sufficient that the number of repeating is decreased by the half of exercises used in everyday training. On the contrary, the mobility will regain its initial value after three to four months. The stretching exercises performed during dynamic movements are usually performed in series with ten repeating of each. The pauses between those series should include the exercises for muscle loosening and relaxing. The amplitude of movement should be gradually increased. The exercises are done until light pain appears.

The stretching exercises that are being performed during static activities are usually performed by gradual increase of time interval from several to ten minutes.

Each runner works on its mobility development at the beginning of its training. This mobility development isn't recommended when the athletes are tired. However, it is possible to organize special training classes devoted only to mobility development.

Table 1. An example of increasing the number of exercises for mobility development.

Name of the joint	Category		
	Beginners younger than 15 years	Beginners older than 15 years	Sportsmen
Shoulder	45-50	50-60	50-60
Hip	45-50	60-70	60-70
Spine	50-60	80-90	90-100
Knee and ankle joint	15-20	20-25	20-25

General preparatory stretching exercises are applied for the athletes at the very beginning of the training class or within physical preparation programming. Mobility development exercises that relate to general preparatory stretching exercises are possible to apply independently within five to ten-minute work in combination with strength exercises.

Special stretching exercises are prepared on the basis of the competitive elements of the athletes' activities that demand the most joint mobility, as well as of the competitor's level of his mobility development. These are usually little modified exercises that provide possibilities of different stretching effect of the muscle-connective tissue groups.

### Summary

Development of runners' mobility represents a very important part of the training process. When the mobility increased from optimal in current joints enables, it enables longer muscle effect, thus a greater movement speed that is better sport result. Therefore, we've come to a conclusion:

It is necessary to reinforce active stabilizers by training means, so that they are able to fix joint firmly and stably in any position and don't allow the effect of the external forces to be the cause of the joint injuries.

In order to achieve maximally possible mobility of the certain joints, it is necessary to use exercises in order to develop elasticity of the antagonist muscle and the strength of the agonist that make a certain joint movement.

Load training doesn't obstruct the development of mobility, if it is done properly.

In order to achieve maximally possible back-up mobility in any joint, it is necessary to have special stretching exercises within month and a half to two-month period. The stretching exercises have the biggest effect if they are daily performed.

Mobility can be worked on within special trainings of a runner or within introductory part of the training class.

At some extent, the repeating of special preparatory mobility exercises can improve the technique of certain athletic discipline, as well.

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## THE EFFICIENCY OF LEARNING ENGLISH LANGUAGE THROUGH PAINTING

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### Abstract

The main motivation for writing this paper is based on the fact that in the today's world of rapid development and trends towards perfection, the effective communication is one of the most powerful means, even though EFL teachers constantly strive to find effective ways in teaching a foreign language. This paper aims to serve as a contribution to the methodology of teaching English as a foreign language by presenting an efficient case study based on the application of critical thinking in teaching and learning. The main focus of this paper is to present the benefits of incorporating art-painting during the EFL class through the critical thinking skills. Chapter two is an overview on the benefits of the implementation of critical thinking skills for productive teaching. Chapter three presents the case study based on including the painting on the EFL class and the outcome. Chapter four is a conclusion. For the case study descriptive and comparative methods are used, as well as systematic monitoring. The subject of the case study was to determine the influence of the implementation of any arts according to the preferences of the group of students upon the efficiency and quality of learning. The expected results of the case study correlate with the obtained results; the hypothesis that students are more motivated to learn in a relaxed environment combined with activities of interest for them, proved right.

**Key words:** methodology, EFL, critical thinking, arts, teaching

### Introduction

In the today's world of rapid development and a tendency for perfection, the effective communication is one of the most powerful means. The learning of a foreign language, in particular English language, and the fluency of speech are exceptionally important priorities for a guaranteed success for every professional. Therefore, the EFL teachers have always strived to finding effective ways in the teaching of a foreign language. As a result of the search for the best and the most effective teaching methods, a significant number of sub-methodologies in teaching a foreign language have arose.

The teachers are the key figures in the transmission and the upgrade of the human experience and knowledge. Considering the very high technical- technological development and the globalization, the teaching profession is becoming even more complicated. It is no longer linked only to the ability for teaching, but it is also viewed through the active participation in the educational development. The professional teaching engagement refers to planning, organizing, leading, mentoring, evaluating, analyzing, collecting and processing the data- all these working activities imply on establishing interaction within the core institution, but also with the outside similar subjects for an effective application, dissemination and processing of information, as well as analytical- research activities which are directly linked with the realization of the educational functions.

### Requirements for productive teaching

The modern teacher has long been referred to as “a teacher according to the needs of the student”. This means that all the efforts of the teacher should be directed towards finding out appropriate procedures for:

- communication with the student-subject at the educational process
- communication with the student-object in the research of the teaching process.

There are many EFL<sup>12</sup> teachers who focused their critical thoughts and analyses on their experience and knowledge of the work with children, in order to strengthen their teaching potentials through the lucrative combination of both sufficient work and fun. But the aesthetics of communication as a method for accomplishing the educational purpose in the teaching of English language, largely depend on the emotional intelligence of the teacher. In that sphere, the teacher should be aware that the students are people which are not governed by the logic, but by their emotions, therefore, the primary task of the teacher is to have the ability to listen what the students' talk, in order to be able to talk for his/her students to be able to listen and accept. In achieving this aesthetic communication in the relation teacher-student, the teacher should have certain specific competences, as:

- ability to motivate the students for aesthetic communication and reception of the English language;
- enabling the students for critical and creative praising of the art as well as their individualization and interaction;
- enabling the students for socialization and enculturation;
- ability for interactive EFL teaching.

In order to establish a balance in the teaching material which is encompassed within the lesson plan, the lesson plan itself should be well designed according to the age, objectives and motivation of the study group. In reference to the arts and painting in particular which are the core subject of this paper, herewith we refer to the truth that the link between the language and the art is very deep, yet the benefit of the integration of the art on the EFL class includes communication skills, i.e. speaking, reading and writing. The inclusion of art at the EFL class brings many positive implications like development of the socio-affective skills, improvement in the study process and development of creativity. Therefore, the implementation of the art within the curriculum is of particular importance for most competent and effective teaching strategies.

The English language teacher could use the authenticity of art in order to create a learning environment that resembles the real world. So, the painting could be used as a means for strengthening the critical thinking of their students and improving their interpreting and analytical skills. Instead of implying some traditional concepts, the students should be allowed to individually become part of the interpretation process and to understand the language through the reality which surrounds them because the use of the senses may help create a livelier atmosphere and different learning styles. On this way, the students will be given the opportunity to discover on their own how they can express themselves effectively both in written and oral language and consequently, to increase their motivation for study. Responding to a painting can be stimulating and can lead to a wide number of activities which are expressed to fulfil a variety of teaching roles in the areas of lexical competence, learner autonomy, blended learning and communicative integration of skills.

### **Introducing art in the EFL classroom**

Children start to learn English as a foreign language at the earliest age. Their syllabus consists of learning through music, games, acting, drawing and coloring; on this way, they learn the basic vocabulary and are able to recite short poems. With a little creativity, the simplicity of this teaching method can effectively be applied for the adult EFL learners, as well. Normally, the adult learners have a specific aim and purpose why they attend the EFL classes. Their study needs are usually oriented towards the productive side of the language – the communication improvement. However, their obligations usually turn them into more demanding students primarily interested in individual classes.

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<sup>12</sup> EFL- abbreviation for English as a foreign language

The experience of teaching EFL to adult students pointed to the following three aspects of behavior:

- when in a group, the adult students diligence during the lesson moves from poorly active to inactive at all;
- due to a number of social reasons, adult learners feel embarrassed to ask for any intangibilities they may have;
- eventually, they leave the EFL course with a little renewed knowledge and improvement.

Considering the above given issues, as an EFL teacher, I decided to make a combination of the advantageous and the pleasant in order to create a relaxing study atmosphere for my students as well as to encourage them to apply for group lessons. I came to the idea of creating a syllabus for an EFL course for adults where 70% of their classes will be held at classroom and the rest will be held outdoors. During the application for the course, the students were asked about their hobbies and interests as well as about their willingness to participate at a not so much standard EFL Course. Based on this information, the group was created which consisted of eight students, proven professionals in their field, who were at the age between 43 and 48 years old and whose common feature was their interest in arts. The students at this course aimed at surpassing the phase of a passive knowledge of English, strengthening the grammar, and enriching the vocabulary with more everyday terms in order to improve their fluency.

The course started with its usual dynamics; the first, introductory lesson was followed by three more indoor lessons enclosed by the regular study from textbooks and the appropriate authentic materials for class. But, the fifth lesson was different because it was the first outdoors one. As a home assignment, each of the students was asked to prepare for this lesson with the adequate clothes and painting set. The planned location for the outdoor lesson was 20 km out of the town at the slopes of the Plackovica Mountain<sup>13</sup> with a phenomenal view to the beautiful landscapes.

According to the syllabus, the entire outdoor lessons were devoted to improvement of the communication skills and learning new vocabulary. Immediately upon arrival, the students relied on their critical thinking in order to choose the perfect position for setting their painting sets. At the very start of the lesson, they enounced interest in learning vocabulary which would not otherwise occur to their minds, like the various types of trees, the conifers, the crocuses, and the meadows, simply, everything that was in the range of their perception. The distinguished functioning of the visual method during learning was inevitable. They were drawing the landscape in front of them, and they wanted to learn the exact terms of their surrounding in English language. Furthermore, they started to brainstorm other topics which they perceived would be useful to practice during the conversation hours. In the same time, they were practicing the basic grammar tenses while painting and speaking of their daily activities at work before the lesson, and their plans after the lesson. A very striking moment to note is that during the class, an unusual, spontaneous and relaxing atmosphere arouse among the students which impelled them and freed them to speak more without any prejudice of how they would sound. Even more, during the second half of the lesson, the students started mutual interactions as if they were talking on their native language. They focused their minds on what they wanted to say and tried to recall as much vocabulary as they could. They only needed me to nod them as a confirmation for their accuracy in speech. The harmonious and efficient lesson atmosphere was due to their delight of painting, the mountain breeze, the rustling of the spring and the song of the birds. When the lesson was over, the immediate feedback from them was their excitement for spending those three hours of the day very effectively, because, while attending the course they completed one of their daily

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<sup>13</sup> Plackovica Mountain- a mountain in the eastern part of FYROM

tasks and obligations and in the same time they relaxed themselves and devoted to their hobby.

### **Conclusion**

Trying to accomplish our ambitions and aspirations, we often forget the true values of life while losing ourselves in the labyrinth of demerits for our needs and our beloved ones. But, the hobby of painting proved its advantageous effects at EFL classes. This positive example showed that the visual method in learning can be applied both with children and with adults. Therefore, it is necessary to invoke and improve such examples of linkages between the practical and beneficial, so that we can be more productive, more successful, and in the same we can truly enjoy in life.

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## CRITICAL THINKING SKILLS IN VISUAL ART EDUCATION

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### Abstract

Contemporary educational theories more dominantly emphasize values of implementing knowledge in real life rather than focusing on gathering and collecting information. It is not only a theoretical argument but one which strongly relies on characteristics and necessities of everyday life worldwide. The main idea is that our general responsibility as educators is to prepare our students for future challenges, to give them not only knowledge, but skills and abilities to perceive, understand and to solve different tasks in their future. We have to help them to solve problems of tomorrow which we cannot see, predict or understand. It is really a tough mission, but, on the other hand, it is the most important mission. We have to search, find, nurture and develop a critical attitude and critical thinking skills.

In a dominantly visually designed world, visual literacy is basic tool for acculturation, socialization and understanding. Critical thinking skills are consequently obligatory characteristics of all well-educated people.

In this article we present the most influential theories about critical thinking skills in visual art education, based on necessary knowledge to reach visual literacy, technical skills to express visual messages and abilities for appreciation of visual creations. We focus our attention on practical studio work through implementation of visual art and aesthetics of world famous artist from preschool, through primary, secondary education, and the university students.

**Key words:** Visual art education, learning through visual means, studio work, art appreciation

### Introduction

Contemporary everyday analytical experiences are part of person's adequate acculturation. They are base for creating interpretations and understanding of currents activities, thoughts, opinions. Much more, they also lead person's reactions and shape one's behavior. Visual images are part of our lives, our projections. Usually they are complex and hard to elaborate. For their adequate understanding in order to decode their meaning, special skills and abilities are more than necessary.

Researches Sturken & Cartwright<sup>20</sup> (2001), Mirzoeff<sup>18</sup> (1999) confirmed impact of visual images on our understanding of a world we live in. Jackson<sup>16</sup> pointed that critical engagement in arts enables transformative characteristic of human thought.

The aim of critical analyze is to enlarge understanding and respect of human values which are materialized in art. Stoddard<sup>19</sup> (2002), indicates that art is “ a form of discourse which enables person to study the art piece”. In the process of visual art education, critical approach leads students in the area of perception, discussion and enjoyment in art works, stimulating them to create strategies for understanding and acceptance new ideas.

Critical approach to visual arts, in contemporary literature well known as “art criticism” is one of four basic disciplines in problem based art education. The other components are: art production (creation of visual art work), history of art and aesthetic. *Webster's Ninth New Collegiate Dictionary*<sup>21</sup> defines that criticism usually have negative connotation, but in real life, the term is used to express attitude based on adequate analyze..



Feldman<sup>13</sup>(1970) further defines criticism as “ written or spoken conversation about art, which main attention is – interpretation”. In his work, Feldman develops whole system based on description, analyze, interpretation and evaluation. He declares that literacy should be not only verbal, but visual as well. His advice is to start with reaching visual literacy in preschool age. He also described criticism in visual arts as informed and organized conversation about visual art work.

Costantino<sup>9</sup> (2007) claims that critical awareness enables people to perceive art works, to analyze forms, colors, shapes, textures and their organization, to develop critically for their environment, natural, social, conceptual....

Duncum<sup>10</sup>(2003) states that: despite the fact that images are all around us, there is serious gap between perception of images and their reflection in one’s mind. That is the reason why the education with and about art works should be urgently implemented in school curriculum – there is a serious need for education about images and their meanings, because that participate in construction of student’s world.

### **Critical thinking skills in Visual Art Education**

Teaching process is complex and challenging, it allows implementation of various models for stimulation of critical thinking in the classroom activities. Starting with the notion that visual art education should enable students to understand visual images, real and virtual and much more, to foster their creativity. Students need skills to analyse and understand in order to create. The process of creation is inseparably linked with deep dedication and commitment witch covers different aspects of student’s life. First task for teachers is their obligation to provide conditions for development student’s critical thought. Explanation of visual art technique and visual element and principles is only the base for understanding, but it can not fulfil contemporary student’s needs.

### **Critical approach to visual art works in educational systems in 21st century**

Contemporary art works are created both in conventional and new visual media - huge number of artistic methods, techniques, conceptual stiles and appearances are characteristic of art works in 21<sup>st</sup>. century. To understand that enormous proliferation of images transmitted trough paintings, sculpture, prints, ceramics, art installations, billboards, posters, commercials.... students should have ability and capacity.

In this point, interdisciplinary knowledge is necessary to understand values, principles of living, achievements, unsearched areas and in our world. Knowledge can be reached in various different ways, but understanding is achieved trough process of critical engagement based on gained knowledge.

### **Strategies for understanding visual art works**

Complex system like world of visual art expressions is sometimes hard to understand, even for adults. How can we expect that primary school children can understand it?

Visual art theoretic and educators of 20<sup>th</sup> century developed different approaches for understanding the .multy-segmental world of visual expression: .

**Broudy**<sup>7</sup>(1964), suggests theory for visual expression and advised model of critical awareness with five categories: aesthetic factor, analyze, evaluation, sequences and result.

**Feldman**<sup>13</sup> (1970), defines the process of visual criticism in primary school classroom as conversation based on rules and principals which includes: description, analyze, interpretation. In the primary school context, the author states that understanding with evidence, discovering the reasonable interpretations and respect of other opinion is crucial.

**Hamblen**<sup>14</sup> (1984) compeares Blum`s taxonomy with Feldman`s model of criticism, pointer out that components of process of critical thinking offeres questions and elaborations which can be divided in diferent categories of cognitive questionaries. He focused on quality and adequacy of instructional questions ( “the crucial ones”), that lead the process of understanding and reaching the more complex areas of creative thinking.

**Anderson**<sup>2,3</sup> (1990-1993) develops structural educational model where he defines aesthetic evolution as a process of understanding and evaluating individual works of art. Basic idea is that art works can be analyzed with methods of description, interpretation and evaluation.

**Strategies of visual thinking (Housend**<sup>15</sup>, 2001-02). Abigel Housend developed methods which stimulates perception of selected artistic works with series of open questions. They presents organized discussions about art works which includes: distribution of opinions, critical thinking based on active perception and verbalization, but without visual and theoretical knowledge as a background. The conversation is based on description of a motive in an art work, and a speculation of authors intention. The project is focused to distinguished the aesthetic level of students.

**Arnaudova et all.**<sup>4</sup> ( 1997-2000) in a project “Approaches to visual thinking” follows the basic concept of Housend” which was implemented during the period of three years of research in several primary school in Macedonia, with the same aim as Housend – to define student’s aesthetic level.

**Barrett**<sup>6</sup> (2003) claims that the differences between description and interpretation is often ignored, or is not clearly understood - so students are catch in the atmosphere of “truing, but not reaching” adequate meaning of the art works. Barrett offers different approaches for evaluation of realistic paintings for primary school students with various strategies, His aim is to lead students to focuses on meanings and ideas using 4 crucial activities: description, interpretation, evaluation and theoretical approach to art. Barrett point out that even if all strategies over lapsed for some time, interpretation is most important for adequate understanding..

Our research was lead by the analyse of previous concepts of development of critical thought in visual art education.

Starting with the basic definition of visual literacy (which is sine qua non for start of any criticism) as ability to understand and to produce visual messages in various art techniques and materials, our project is that students can not developed critical thinking skills in visual art education without personal experience in visual art creation, which leads us to conclusion that in each previously mentioned educational concept, practical knowledge and experience are missing.

We developed an educational programme which is focused on development of critical thought and visual literacy in primary school students. Organised series of questions are not the aim, but only base. Using the programme which included strategies for visual thinking and creation of visual piece, students are capable for expression of their thoughts with use of visual language.

#### **Aims of critical thinking in primary school classroom**

The essence of critical thinking skills in visual art education is ability to understand and to communicate with visual means. To be competent visual communicator, student have to learn to:

- understand visual elements and visual principles,
- to evaluate them, and
- to create visual piece.

The best way to achieve these goals is to participate in organized learning process, to be part of art education. Efland (2012)<sup>11</sup> confirmed that the best way to learn about art is to practice methods of critical inquiry and to implemented in own working process.

When we try to implemented these methods, we find out that in reality, there is a small number of students of whole population who decide to work in visual arts professionally. Not very long ago, most of the students were only observers of visual creations, and small number of them were real monuments of visual art works.

Nowadays, situation in the global world is drastically changed because of extremely fast spread of information, mainly through digital media. Needs for immediate sharing of photographs, tasks, advices, questions, possibilities, experiences leads to the visual image, because everyone in the global contemporary information net are aware that Oring was right when he point out that “ image is worth thousands of words”. His statement nowadays became our reality.

To become visually literate students need experiences and abilities. One of the most important is ability of active visual perception, which means to look not only to perceive, but to look with understanding.

Education have an intermediary role positioned between students and art work/visual messages. Problem Based Art Education (or Discipline Based Art Education - DBAE) is based on essence of visual expression – visual language. Its aim is to organize and integrate knowledge and information which are accumulated through centuries in areas like art production, art history, aesthetic and art critic. Final goal is to make that kind of knowledge applicative in teaching praxis. Characteristic of these idea is transition from concrete details to abstract concepts, from knowledge and understanding to analyze, evaluation and production. .

### **Process of development of critical thinking skills in primary school classroom**

When we try to understand the work of art, art piece, we usually use different ways to analyze what we see:

- analyze of formal visual elements,
- assumed meaning,
- relation between visual elements and principles on one side, and mining on another
- reach aesthetic qualities,
- relation with social context.
- relation with historical context....

Real presence in the art gallery is not always an option, regards of the age of students, distance or organisation. But good reproduction of original art work is never sufficient to implemented in teaching whenever we teach visual art – for kindergarten, through primary, secondary education, till high education. Teaching programmed should lead students to constructive critique of visual pieces and analyze how visual images can express cultural context (Barrett<sup>5</sup>, 1994).

Critical thinking skills are usually stimulated in the classroom activities through research tasks when teacher encourages students to generate own questions related to certain visual art piece, or concept.

Bloom's taxonomy of educational aims is well-known system which should be incorporated in teaching process. Bloom offers ways to distinguish critical thinking skills in certain lectures – 3 top levels are according to Bloom, analyse, synthesis and evaluation. Allen<sup>1</sup> (2004) pointed out that questions which are typically used are the same used in art criticism as: predict, imagine, suggest, create, relate.... Students should evaluate idea, solution or aesthetic work Wright<sup>22</sup> (2002).

Judson<sup>17</sup> (2004) thinks that changes in society are basically educational challenges: to be able to create subjective self-reference, experience in action, competence in self-expressive capacities.

Mastering the critical thinking skills in art educational process are the way to provide competency and adequate action in contemporary multicultural society. Cornett<sup>8</sup> (1999) states that practical segment of art creation is one of the basis for supporting use of intuition, analyze, synthesis and evaluation to reach decisions with moral support. This statement illustrates how integrating art in teaching programme promotes higher level of multiculturalism and critical thinking.

## Conclusion

In the teaching process, different teaching models can be implemented to help teachers to lead students through processes of description, analyze, interpretation and evaluation of visual images.

Making conditions for students to evaluate different or similar works of art, teachers can support students to develop their active perception which can be used in art production, or in many other areas of personal or professional life. In the society when development of cognitive abilities is particularly important, schools should prepare students for more than one preoccupation in life. In that way, teaching programme which provides tolerance in thinking, supports acceptance of risks and depends of evaluation of new and unexpected situations is of biggest importance.

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## SONGS AND TRADITIONS OF EMINENT

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### Abstract

The goal of this paper is to record and archive a video collection of musical folklore, as well as to acquire theoretical and practical experience in the preparation of a research paper. The region chosen to record the songs is a mountain village, located 15 kilometers southwest from Gostivar. Female singers are recorded with the use of an exploratory approach. The collection contains panoramic, spoken and musical materials. The paper presents a catalog of 39 female wedding songs. The environment of our research is really distant from the city, more specifically, a natural environment with a unique tradition. If research projects related to music sciences were based exclusively on audio in the past, today's research project would not do without digital video technology. The data are inserted in IRAM's catalogs for musical folklore and informants.

**Keywords:** practical experience, exploratory approach, tradition, research project

### Introduction

Digital recording, archiving and cataloging are one of the best ways to preserve and identify the cultural heritage of a region. Therefore, the subject of many works from various scientific fields written in the past decade is digitizing and cataloging the recorded material. The culture testifies about the past and present.

In the past few years, many works that deal with cultural music traditions of the Albanians in Macedonia were created. Several of these works belong to ethnomusicology: wedding customs in the region of Skopje and Debar ( Ejupi 2008 , 2011), polyphonic singing in Prespa ( Mehmeti , 2011), but the musical culture of the Albanians is explored in the framework of musicology ( Alimi 2011 ) and music education (Alimi 2009) etc. A special place among these works take Valon Krueziu's papers dealing with recorded music performers in the Albanian Macedonian Radio Television (Krueziu 2006, 2008). Significant data about the musical culture of Albanians appear in the paper for wedding customs in Macedonia in the 21st century (Dimitrijevski 2008). This paper determines the musical culture of the students from first grade in Skopje (Kolarovski 200) and the digital media and music culture of the teens in Skopje (Jordanoska 2010). Despite this effort is made to musical tradition in villages in the mountainous area Karadak ( Rexhepi 2010 ).

All listed papers incorporate digitization and cataloging footage. Accordingly, our work is related to making music video collection material. If research projects related to music sciences were based exclusively on audio in the past, today's research project cannot do without digital video technology. Most modern digital cameras have outstanding sound characteristics (frequency of 48 KHz and a resolution of 16 bit), economically accessible as never before, quickly and easy to use, and at the same time they are becoming smaller and lighter.

The basic criterion for selecting the region for our research was for it to be sufficiently away from the city, to be a specific natural environment with a unique tradition. The search for the original region that still practices old customs, followed by folk music brought us to the village of Simnica in Gostivar . The village of Simnica, according to our findings, in recent decades has been visited by researchers from the field of music culture. It is a hilly countryside, which is sufficiently separated from the town of Gostivar, as a basis for the assumption that there is still an old tradition that has not been completely erased.

Once the first contact with the inhabitants of this village was established, we found that we could record the material related to the vocal tradition, and specifically the female vocal tradition that is part of the wedding rituals in the village. The village residents own instruments, but lack instrumental music practice. Only the tambourine appears as an instrument of the female backup groups.

Given that today people hire professional wedding bands, our sample of vocal music was limited exclusively to the period before the wedding takes place, and songs that women sing during circumcision, the engagement night, singing about the bride and the groom, as well as songs that are sung before and after the wedding night . Here it should be said immediately that the research and recording of the collection is made with e-approach. In this way we came to the subject of our research: *making video collection of women's wedding Songs from the village of SIMNICA, Gostivar in 2010.*

Making Video Collection of the vocal music tradition in this village has a double meaning: on one hand it preserves the existing musical tradition in the village, and on the other hand results in experience in digitization of the cultural heritage in the development of theoretical work, analyzing the collected materials. The paper consists of four chapters: the first describes the village, the second is represented in the recording process of the collection and its archiving, the third chapter refers to the melografication of wedding songs, and the fourth chapter presents how the digital catalogs are made, and the distribution of important fields.

## DATA SIMNICA

### Data sources

In search of data related to the village of Simnica and its surroundings, we found very few sources. The only written sources, which are kept in the Municipality of Gostivar, refer to its geographical location and the population.

### Geographic and demographic data

Simnica (Simnica) is a village which belongs to the Municipality of Gostivar. Located 15 kilometers southwest of the town of Gostivar, near Mount Ahishte (Ahishtë), near the place where Palm has a source of water. The village is mountainous and hilly and the soil is fertile.

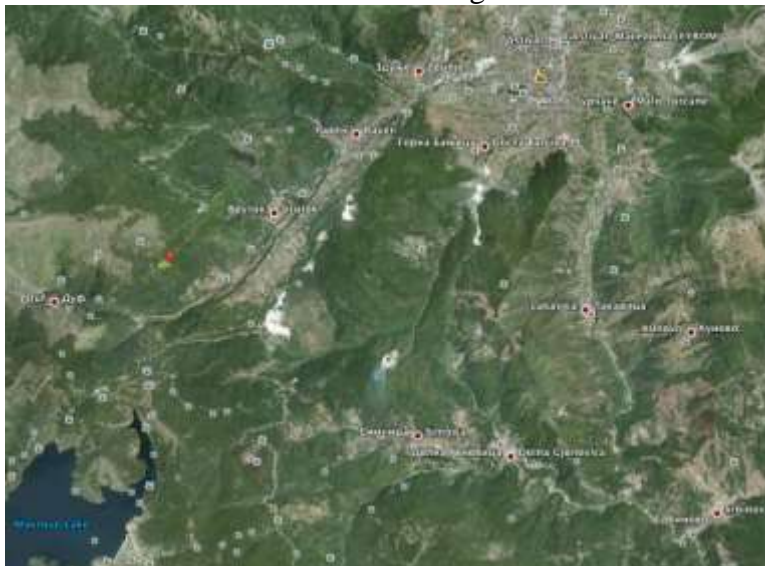


Fig. 1 Villages near Gostivar and Lake Mavrovo.

According to Samet Husseini, the village of Simnica has 6 parts 4 of which are called by the names of the families Qjikajve, Hasët, Ketasit, Doqet. According to him until 1945 the village had 90 houses and 900 inhabitants. The period 1950-1990 was characterized by migration of the population from the village to the town of Gostivar. Today the residents of

Simnica occupy around 450 houses in Gostivar. Today the village has about 82 houses, or families residing in the village. Today the village has about 600 inhabitants most of whom work in Italy" (Iljazi 2011).

The village can be divided into three parts (Fig. 1) connected with a street, which is cemented to the middle and it has stone remains. The village has electricity and water. A majority of the houses have satellite television, Internet, radio and telephone. All families have a computer, satellite TV, radio, audio systems, phones, mobile phones. In the village, at the time of the survey, there were the following buildings: a primary school, a clinic, two mosques, a shop, a tea house, a traditional restaurant and a Municipal Office / Local Community. The old mosque was built after the Second World War, while the new mosque was built in 2010. The school in Simnica is an affiliate of the primary school "Ismail Kemal" from Gostivar

### **Historical Data**

One of the central buildings in the village is in the school, which receives historical data from Zilfi Emri. He wrote: "This village has a sad history and a beautiful panorama ... " " Afterwards, in Bitola, the people from Simnica were as dumb and deaf ... Until the ... September 1, 1945 by decree of the Committee of Gostivar, headed by Sally Lisi (Sali Lisi), received a task Simnica, as in other Gostivar villages to open school in Albanian language, with the teacher Muharrem Shabani (Muharem Shabani) that with the advent of Simnica convened a gathering of villagers and began to criticize. At the meeting there was a man who was named Uncle Murat (mixha Murat), old, short and a quiet humanist who spoke little, but wisely. He took the stand and said: Official.



2 Photograph of the old school "Alchi Condi " made by Samet Husseini in 2000.

- Oh, peasants, there is no other way to do this but thank God that we are opening a school in our village, because we become literate, we will hand it down from one generation to another, all we need is a man who can read. So I will live in the barn and give my house to become a school.

This way, the first school was opened, in which there were two departments, and most of the students were girls and another teacher was brought, Nezir Neziri (Nezir Neziri) and the school started to work in two shifts. From noon to night the school worked with a group of adults after they had returned from the fields and mountains. The class was held only with a black box (15 x 20 cm), without pencils, notebooks and the teacher had only examples. There were no desks, no chairs, but the children were bringing chairs from home. My grandfather Hysni Emri (Hisni Emri) was a craftsman who made benches and chairs for the students. Name any school Alchi Condi (Alqi Kondi). To date the school has produced many teachers, professors, nurses, artists, journalists, doctors and other professions, including the mayor of Gostivar, MA Zenku Enver (Enver Zenku), the family of Uncle Murat produced over 20 scholars. "(Emri 2010b).



We gathered data about the first school in Simnica from Samet Husseini: "In this village there was no school. In 1945, on the initiative of the Ministry of Education a school opened and it is the first school Elmazi Murat (Murat Elmazi) who willingly allowed his house to become a school for the residents of Simnica. Since then, this school has produced 8 PhDs, more than 15 professors and 6 doctors" (Iljazi 2011).

### **Traditions**

We gathered data about the old customs in the village by doing interviews with Samet Husseini. According to him, the girls of Simnica celebrated Spring Day by going out to the meadows, singing and gathering ants, as the symbol of prosperity for the family. The St. George's girls took to the hills and rolled on the ground as a symbol of hair growth. I decorated butimot (U.S. processing milk) with flowers for fertility " (Iljazi 2011). Samte Husseini also described a part of our wedding custom Simnica: " Taking the bride (Marja e nuses)

It suited the wedding guests and drums. Upon entering the village, two boys were standing with a flag, singing the song of Hasan Aga of Simnica. We waited respectfully, smoking tobacco and drinking coffee. The bride came with her family. She was wearing a black veil and came on a horse. The relatives of the bride then handed her over to the groom's relatives who took the reins of the horse. The family of the bride said: "Our blood, our blood, our blood, your namuz". At that moment the bride was taken to the men's side. The arrival of the bride (Zbritja e nuses). When the bride arrived in the yard, the people took a boy and sat him in her lap. The girls around her sang provocative and lively songs. The bride was given two loaves of cornbread. After she got off the horse, she was taken to a room where she and the groom saw each other for the first time" (Iljazi 2011). Samet Husseini also described and named the collection Men's Room: "The visitors who come to Simnica are welcomed by hospitable villagers. At night in the late hours, men gathered in the house of the host where they spent all night singing songs and playing games with the cup. These types of gatherings of men are called Men's Room (odaja e burave) "(Iljazi 2011) .

### **Recording , storage and annotations collection**

Given that the researcher is connected to the selected village of Simnica, most of the information related to the region of research, its life and musical culture were known. In this phase of the research concerning the introduction of environment had absolved the transferred immediately to prepare for recording.

#### **Preparation for recording**

First contact was made with recording and Selim Lirka Saliji, they explain what is required of them, they agreed to collect people who will perform traditional songs and agreed on the date of recording.

Then, contact was made with the family Miftari by Mahir Miftari . Both families live in the village of Simnica and have houses in Gostivar where they live during the winter.

#### **Period of recording**

Data collection about the songs and performers took place along with the shooting. Filming took place on the 10 and 12 January 2010.

#### **Tech shooting**

All recordings were made with a professional digital camera Panasonic NV-MD 10000 DV format in Standard Definition (SD) with 16 bit resolution audio. Three tapes were recorded. The filming was carried out by the researcher. The Whistleblowers collection was recorded exclusively with static shots with an eye the whole body of each newsletter to be covered. Fourth recording by families

Filming was carried out in the homes of two families of Simnica.

The first recording was in the family Saliji and the second in the family Miftari.

5th Copy and storage collection

The collection of three tapes was transferred to hard drive format. Mov being its first copy.

6th of Annotation. Mov files

Footage of the three tapes while transferring the hard drive was split in 6. Mov files that were annotated in a way 01-1, the first segment is the number of the tape, and the second part is under the tape.

### Melographics

Materials from the music video collection I were melographed with the use of the software Sibelius.

### Cataloging music material

The original collection, as you can see in the table, the annotation material includes panoramic and spoken material. These materials only have informative meaning regarding our work, so they were not included in the cataloging. This part of the paper will show the cataloging of music materials (female wedding songs from the village of Simnica ) from the video collection, which will make distribution of important fields of digital catalog with female wedding songs and digital catalog with performers. Cataloging was carried out by making a copy of the collection on a hard drive, or refers to the duration. Mov files.

Establishment of digital catalogs

Catalogue of female wedding songs

*Original recording*

*Content and Author*

*Performing composition, age and structure*

*Function*

*Range mostly*

*Per unit and counting*

Catalogue of performers

The catalog contains 10 female singers, who at the time of recording of the collection were aged 15, 16, 17, 19, 19, 20, 20, 21, 21 and 42.

### **Final review**

The conclusion of this paper presents a summarized display of the previous four chapters through which the collected data were presented about the studied region, recording and storing video collection, melograficated musical materials and their cataloging. The purpose of the paper was to record and archive video collection of folk songs and to acquire theoretical and practical experience in the preparation of a research paper. The selected region is a mountainous village, located 15 kilometers southwest of Gostivar. The paper consists of four chapters, of which:

The first chapter presented the village of Simnica and its geographic, demographic and historical data and data about the village customs and music culture. When it is presented and the sources of data for this village.

The second chapter presents the procedure of recording, storage and annotation of the video collection. Ten female singers were recorded with an explorative approach to the interior or two houses in Simnica in the period 10 to 12 January 2010. A professional digital camera Panasonic NV-MD 10000 was used and 3 tapes were recorded in DV format in Standard Definition (SD) with 16 bit resolution audio. The collection was transferred to a hard drive, and it was turned into a DVD. The collection is stored in the researcher and IRAM. The annotation collection was at 6. The Mov files had panoramic shots, music and spoken material.

- The third chapter presents the process of melografication that was used, processed by the program Sibelius.

- The fourth chapter presents the process of cataloging the musical material from the collection and distribution of the most important fields of cataloging. When finished cataloging undertaken IRAM - Conn catalogs for music and folklore performers. The cataloging was created by using the software Microsoft Excel.

## THE LOCAL HISTORY OF KORCA AND THE CRITICAL-CREATIVE THINKING AS A TOOL OF EXPLANATION AND UNDERSTANDING OF ITS MULTICULTURAL SOCIETY TODAY

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### Abstract

The aim of our presentation is to expose the indissoluble relationship between the local history of the city of Korca and the development of its modern society, indicating at the same time the critical thinking as a theoretical explanatory tool of this relationship. Our motive was the multicultural and multinational character of the modern city of Korca, through its cultural monuments (civil and religious ones), the human and the built environment having its own reasoned reference to the recent history of the city.

In order to analyze and explain the above relationship we are going to use as the methodological tool the Comparative Argument which through the critical thinking will pinpoint the sophisticated equilibriums of a multicultural local society where the coexistence of diversity and tradition is present. We are going to present - in general terms - the specific social characteristics, the deep-rooted community attitudes, the advantages and all the aspects that need attention given the above coexistence. The main goal of our presentation is to encourage a more integral approach which will give rise - to a greater extent - the aspects of our historical research. The convergent critical thinking and its other characteristics are going to help us as an explanatory tool, through the strategies of analysis or/and technical and methods of teaching and in conjunction with the diverging creative thinking, to understand the complex and the multicultural social reality of the modern city of Korca. However, the reference to the geo-physical environment in relation to a cross-border context of the wider region but also with reference to the major historical events of the last two centuries (19<sup>th</sup> - 20<sup>th</sup>) that affected the live of the city and its citizens is inevitable.

**Keywords:** history, creative thinking, relationship, cross-border context

### Introduction on Critical and Creative way of Thinking (Part I)

The modern human being faces many problems as a result of a constantly changing world. In order to tackle the above problems we need the methodical processing and the use of the best available information. In other words, what we need are the activation and a combined function of abilities that constitute the **critical way of thinking**.

The modern psychological studies indicate that the creativeness constitutes a “unique and quite rare talent in a sophisticated field of personal objectives”.

#### **The four mental functions and their role**

**Reception:** The abilities to observe, attend, decode, recognize and comprehend the incoming mental material.

**Memory:** The storage and the recreation of information and expressions to the later dates.

**Converging - critical thinking:** The ability of person to analyze, compare and classify, to correlate and evaluate the incoming mental material in accordance with the rules of logical thinking in order to produce a unique solution. The converging thinking also is called critical way of thinking and its functions are based on the logical system.

**Diverging - creative thinking:** is the way of thinking that produces a huge number of possible solutions through exceptional procedures while the fantasy plays a key-role. It is consisting of the following individual creative abilities: intellectual discretion (quantity of ideas), intellectual flexibility (different kinds of ideas), originality (scarcity of ideas and novelty), visualization, intentional fantasy, insight, re-framing, and transformative processing of data, etc.

#### **Study conclusions on creative way of thinking**

**The characteristics of the creative person:** He/she is very curious and very sensitive to what happens around him/her, captures the “crucial” points of the structure and the course of the social incidents, lives intensively, has the power to “see” intellectually new structures and ways in order to resolve problems, express his/her solutions in various ways: painting, prose, dramatization, technical means, creating projects with innovation, expressiveness and power, by producing new ideas and solutions even for daily routine problems, inventing and constructing new mechanical tools, adapting easily to new environments, conflicting with status quo, disputing the establishment, conveying easily knowledge skills practicing in extremely different circumstances, enjoying the fine arts, detesting the routine (beautiful writing, copying) and having a good sense of humor!

- Obstacles to creative production: individual and social.
- The creative thinking is a continuous type of variable: the individual differences are more quantitative than categorical.
- The relevance between general kind of intelligence and creative thinking is not extremely high: the ‘logocratic’ and ‘creative’ types of persons.
- The relevance between quantity and quality is extremely high: the quantity contains the quality.

There are four cognitive types of persons:

Converging types with high degree of critical ability but medium degree of creativity

Creative types with high creativity but medium/poor critical ability

Converging and creative types having both high critical ability and creativity

“Mediocrities” (persons/students) having both poor critical ability and creativity.

#### **Some special techniques of creative formation of ideas**

##### ***The technique of brainstorming (Osborn)***

This technique represents a procedure where a group of people (4-15 persons) tries to cooperate in order to face problems of personal and/or professional lives promoting innovative solutions. There are five rules:

1. The criticism is strictly prohibited
2. We encourage the expression of illogical or excessive ideas instead of silence
3. We insist on the production as many ideas as possible
4. We support the extension and the improvement of the new ideas
5. The evaluation of the proposed ideas.

##### **SCAMBER questions**

Osborn (1963) in order to promote the creative formation of ideas, proposed the following list of questions. This set of questions has to do with:

- ✓ Other uses
- ✓ Adaptations
- ✓ Magnifications: acts of adding and multiplication
- ✓ Minimizations: acts of subtraction and dividing
- ✓ Modifications
- ✓ Substitutions
- ✓ Rearrangements
- ✓ Reversions

- ✓ Combinations (Paraskevopoulos I., 2004)

### ***The Comparative Argument***

The comparative argument is the expression of personal views and arguments in order to persuade people. It is used by teachers, political parties, and trade unions members. It represents *the public exposure of comparison*.

### ***The model of “Creative Solution of Problems” (CSP)***

The creative producing of innovative ideas is a result of a systematic and labored procedure. The CSP pattern is composed of the following discrete five stages:

1. The data collection of problem. At this stage we try to answer to the following questions: Who? When? What? Where? How?

2. The expression of problem.

3. The production of possible solutions-ideas. At this stage we use techniques as *SCAMBER* questions, brainstorming technique, “back-door” ways of thinking, “one size fits all” approach, etc.

**The evaluation of proposed ideas – solutions** represents a very crucial phase of this technique.

**The implementation of the finally approved ideas – solutions.** At the final stage, we examine the possible solutions in order to implement the approved ideas – solutions.

### **The relation between critical and creative way of thinking**

The process of thinking is “an internal function of mind according to which the human mind is processing logically and through organization, analysis, completion, extension, re-modeling and re-interpretation all the available information in order to form some logical explanations, conclusions and solutions”.

The critical thinking is an advanced way of thinking because the person has to choose between alternatives, assessments and ways of acting in order to solve problematic situations, using at the same time some value judgments to analyze and solve the problems, to make a decision and express final conclusions.

The reflecting – critical thinking is a much broader term than that of critical way of thinking.

It is believed that critical and creative thinking are quite complementary rather than identical ways of thinking. “The critical way of thinking represents the logical and systematic analysis of available data in order to evaluate means, testimonies, methods, criteria and solutions. On the other hand, creative way of thinking is characterized by imaginary and intuitive approach ... in order to produce new elements and solve non-algorithmic problems ...”.

According Guilford (1971), the converging thinking, namely the critical thinking, focuses on a logical and right answer to the problem (while) the diverging thinking, namely creative thinking, focuses on finding many different but valid solutions that based on the originality and not mutually acceptable.

### **The critical and the creative thinking in school**

The institution of school must promote the mutual enrichment of the above ways of thinking. The coexistence and the interaction of critical and creative faculties seem to manifest in the continuous generating of knowledge and thinking of high quality and effectiveness.

### **The development of the creative thinking and its integration into the teaching process in school**

The integration of creative thinking into the Analytical Program of Studies (at all levels of education)

Information on the basic principles of creative thinking and its implementation in the teaching process

The consolidation of a **creative school environment** and its implementation in the overall teaching process having the following characteristics:

- Praises the creative activities of students,
- Respects the special characteristics of a creative child being “a child with special educational needs”
- Emphasizes not only for the final outcome but also for the process of creative thinking and production relating to the final outcome,
- Emphasizes not only for the cognitive sector (what the student knows) but also for his/her sentimental sector (how he/she feels),
- Cultivates the higher cognitive functions through the meta-gnostic procession of academic content,
- Avoids the formality and the routine of school life,
- Makes the student to feel an internal and psychological safety.

### **Some important events in the history of Korca during 19<sup>th</sup> and 20<sup>th</sup> centuries (Part II)**

The city of Korca is a city in southeastern Albania and it has a population of around 60.000 people, surrounded by the Morava Mountains. For centuries has always been the apple of discord between its potential conquerors. Nowadays the city is an example of the peaceful coexistence between religions and traditions, ethnic minorities and cultures (i.a. Vlachs, Greeks, Slavs, Turks, and Rom).

The Ottoman occupation began in 1440 and after the destruction and abandoning of Moscopole (at a distance of 20 klm from Korca) the city started to flourish. A printing press was operating in the city of Moscopole which was the only Greek one (and the second one in the Ottoman Empire), an Academy (*Nea Acadimia*) and *Hellenikon Frontistirion*, library and hosted an orphanage. After its destruction in 1763 many of the commercial elite moved to Korca, becoming an important economic and commerce center which influence reached Venice, Trieste and Egypt.

In this context, the 19<sup>th</sup> century was a time of major efforts in constructing education system.

### **The educational system in Korca during the 19<sup>th</sup> century**

The first school in Korca was founded in 1723. The teachers were paid by the local communities or *isnafia* (professional associations). Also, the education system was financed by the Korca commerce and trade elite in Egypt in order to enforce new educational methods like mutual teaching (*allilodidaktiki methodos*).

We have to stress that education was in close relation to the church and the local community system. So, the term *Greek Language* was identical to Ecclesiastical Ancient Greek Grammar as opposed to the ordinary Greek language (*dimotiki glossa*).

After 1850 the orthodox community of Korca was better organized mainly because of the Archbishop Neophytos. New schools, orphanages, pharmacies and other community building were constructed. At that time, are operating in Korca the *Greek Frontistirion* or Greek School, a school of mutual teaching (*Allilodidaktikon*), a Girls’ School (*Parthenagogeion*) with about 400 boys and 150 girls. The “common” Greek school was founded in 1837 through some major community donors and benefactors.

The civil schools replaced the schools of mutual teaching. Their structure was based on the civil schools of Constantinople according the western patterns and rules.

In 1895 there were two civil schools, with 5 and 6 grades, respectively. The analytical school program of the above schools included, i.a. the teaching of Religious Education, Greek Language, Geography, History, Physical History, Mathematics, Agronomy, Chemistry, Hygiene, Handicrafts, Commerce, French and Turkish Languages.

The aim of these two civil schools was to offer useful knowledge, to create well-educated persons in order to participate in public affairs. There was a new teaching method (*syndidaktiki methodos*) instead of mutual teaching method (*allilodidaktiki methodos*).

Since 1880 the school of mutual teaching method (*allilodidaktikon*) was renamed (*Dimotikon*, elementary school). In this new context, we had the four levels of education system: Kindergarten (*Nipiagogeio*), Elementary School (*Dimotikon*), Girls' School (*Parthenagogeion*), and High School (*Gymnasion*).

In 1887 the first Albanian school was founded in Korca. The Albanian Diaspora (mainly in Bucharest and Constantinople) decided to build new schools and publish books in Albanian language and promote its spreading throughout the Ottoman Empire. An example was the efforts of Sami and Naim Frashëri in Bucharest. Meanwhile, in 1886 the first Albanian primer was published. In 1911, the newspapers named *Korca* and *Lidia* by Mihal Grameno and *Pellago* by Konstadin Skenderin were founded in Korca.

A turning point in the history of Albanian educational system was the approval of Latin/Roman alphabet (including some Greek letters) in the Congress of Monastir held by some Albanian intellectuals (November 1908). The first Albanian school was opened in Korca in the house of a prominent benefactor named Diamandi Terpo. This school was not a religious institution but was originally mixed accepting both boys and girls nevertheless their social status, nationality or their religious beliefs. The main goal of the education system was to promote the teaching of reading and writing of the Albanian language, to offer some basic knowledge to the general population being a pattern for all the schools in the country.

In 1891 the first school for girls was opened in Korca headed by Gerasimos Kyriazis and his family. During the next year (1892) the school already had 30-50 girls.

The above description is a concise history of the educational system in Korca during the 19<sup>th</sup> century.

### **Korca in 20<sup>th</sup> century**

The Ottoman rule lasted until 1912, the year of the Albanian liberation. In 1910 the Orthodox Alliance of Korca led by Mihail Grameno proclaimed the establishment of an Albanian church, although the Ottoman authorities refused to recognize it. Korca's proximity to Greece, which claimed the Orthodox populations as Greek, led to serious confrontations during the Balkan Wars in 1912-13. The incorporation of Korca into Albania in 1913 was disputed by Greek authorities, who claimed it as part of a region called “Northern Epirus”.

In 1914 the Greek forces took over the city. Between 1916 and 1920 the city was under the rule of French control. During this time some representatives of Korca signed a protocol that proclaimed the autonomous Albanian Republic of Korca under the military protection of French army and with Themistokli Gërmenji as president.

In 1939 Italy and then Germany occupied Korca along with the rest of the country. After the outbreak of Greco-Italian war, the Greek Army captured Korca (1940) until the German invasion in Greece (April 1941). The Germans occupied the town until October 24, 1944 when the city was liberated by the partisans. Meanwhile, the Communist Party was proclaimed in 1941. The immigration of many Albanians after World War II was the result of the persecutions of communist regime. Many Albanians immigrated to Boston, USA.

In 1990 the communist regime collapsed and the Democratic Party won the first municipal elections. Today the city remains a real “gem” for those who know to observe and explore its cultural richness ...

### **Conclusions**

In the present study we refer to the major historical events of Korca during the last two centuries (19<sup>th</sup> - 20<sup>th</sup>) using the critical - creative thinking as a theoretical tool in order to indicate its multicultural character. Through its public monuments, its civilization, the



multicultural and multi-religious composition of population, we revealed that the history of the city and its modern social reality are inextricably linked.

The *comparative argument* represents a special technique promoting the critical thinking and creative ideas in order to help the researcher to defend publicly his/her opinions and his historical conclusions.

In this context, the psychological and pedagogical research contributes to historical approach and its understanding through the course of history, highlighting the role of the critical and the creative thinking in the educational and learning processes. At the same time, we need to enrich the school curriculums in order to promote the critical way of thinking at all educational levels so that create responsible citizens and fully rounded personalities.

Using the techniques of converging critical and diverging creative thinking not only we can conceive the complex and multicultural social reality of the modern city of Korca but also to support our point of view that represent probably the most European part of Albania in the effort of the country to join the European Union.

The peaceful coexistence and the multicultural character of the broader area of Korca are guaranteeing the integration of Albania in the European family. It is the local history of the city that constitutes the glitter of a “gem” inviting and provoking every potential researcher to explore its beauty....

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## INTERCULTURALISM-MULTICULTURALISM: CRITICAL REVIEW OF THE EDUCATIONAL REALITY IN THE GREEK EXAMPLE

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### Abstract

The crisis of modern societies is not only reflected in issues related to globalization but also related to its decisive impact on moral issues; issues that allow and particularly prescribe attitudes, perceptions and behaviors. We see the emergence of new cultural patterns, the formation of new beliefs and values, the adoption of some radical practices, while at the same time, some foreigner alternatives for personal expressions and aesthetics tend to be imposed.

The institutional routes and mostly the implementations of interculturalism and multiculturalism in Greek education system revealed some different developmental trajectories whose empirical traces can be analyzed, examined and interpreted under the basis of the critical review.

The critical review represents a significant pedagogical theoretical ‘tool’ in order to approach the educational reality and circumstances despite the negation not only of the pedagogical role of school but also of the degree of teachers’ intervention that frequently appear.

**Keywords:** critical review, inter culturalism, multiculturalism, educational reality

### Introductory Notes

During the last 20-25 years the modern societies experience what we call quite comprehensively **globalization**; in other words a deep, permanent, structural and constantly recurrent social crisis. Since with the above term we mean the free movement of goods (commodities and services), capital, information and cultural patterns, views, ideas, moral values and social behaviors, this reality led gradually to a general crisis. This quite ubiquitous crisis is not only a crisis of the dominant productive model in every society but also takes a various degree of intensity, extent and seriousness depending on the structures, the organization, the fabrication, the institutional function and the political reasoning.

The Greek crisis, in its interdependency between European and International dimension, describes the difficulties, frequently in a tragic way through insurmountable social conditions given that the households face many problems in order to survive and earn a decent living<sup>14</sup>. The growth of unemployment, the severe cuts of wages and pensions, the over-taxation, the constant reduction of public expenditures and austerity measures, the shrinkage of welfare state, and the gradual retreat/ reduction of social services like education, health system and social welfare, create an unprecedented social reality that offend, dismantle and decay the social “body”.

Although the crisis is being experienced as something unavoidable and fatal procedure of degraded living standards and **realized as “a destruction of life”**, expose the intense social inequalities, the provoking injustices and the huge social divergences. The clarity of social impoverishment, the distress and the poverty, the loss of dignity, the submission and the enslavement make even more obvious the feelings of insecurity, the

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<sup>14</sup> Many in Greece refer to humanitarian crisis despite the various campaigns of social solidarity and support.

uncertainty, and the agony for the imminent future and, above all, the lack of social control, the institutional regulation and the respect of moral values and norms.

The neo-liberal globalization, based on the market predominance, namely the various mechanisms of financial capital, sweeps away the social structures, imposing the procedures of dislocation, the deregulation and the decay. The lack of of civil authorities system and the nonexistence of respect for civil organization and functions make the modern societies incapable of understanding the whole situation but above all (incapable) of forming codes of a moral system in order to preserve and enforce their social cohesion.

In the present report - being primarily a draft of reality and less an imaginary, desired or specially “formulated” version of it - we try to form a theoretical frame of critical pedagogy in order to read the modern Greek educational reality. (Robert Audi (ed.) 2011). In other words, we seek an explanatory, reflective and analytical approach to educational field that based on the dialectical relation between interculturality and multiculturalism, it helps to understand the educational reality recording the weakening and undermining of every pedagogical function.

### **Critical Pedagogy and educational reality**

The above conditions, namely the progressive liberal globalization in conjunction with the economic-social crisis, affect decisively the educational reality in Greece as a result of the austerity measures and the impact on the supply and quality of various social goods and services. The cuts of wages of teaching personnel, the reduction of public expenditures in the educational/welfare sector, the merger of adjacent school units, the retraction of some executive structures leading to the gradual abolition or the real suspension of their activities and the closure of technical and professional schools as a pretext for cutting expenditures and financial rationalization in general, the mobility mechanism of educational personnel (the institution of ‘availability’), the reduction of new hiring and the huge percentage of unemployed teachers, represent the symptoms of the crisis in the Greek educational reality.

Additionally, during the last five years, took place some institutional interventions in order to rationalize the educational functions especially through the re-organization of administrative educational structures and the enforcement of the assessment procedure, i.e. the self-assessment of school units and the evaluation of personnel in education field. Although these reforms were a kind of an “apology” to the society, the procedures are being side-stepped, postponed or delayed because of the reactions usually under the auspices of trade unions.

This heated educational reality<sup>15</sup> is caused by the Ministry of Education trying to balance between its commitments in “Memorandum” and its political targets in conjunction with the choices and personal strategies and manipulations of politicians.

As long as the educational scenery remains constantly changing, hazy, liquid and illegible, the critical approach based on critical theory and specialized in educational field (Kontou, A.,2012) as Critical Pedagogy (Gotovos, Ath., Mavrogiorgos, G., Papakonstantinou P. (1986), can constitute the theoretical frame in order to analyze aspects or structures and procedures of education being the functional sub-systems of Greek paradigm (παράδειγμα).

The theoretical choice of this frame of analysis is explained because “as the major founders, Th. Adorno and M. Horkheimer, propose a quite penetrating and originally multilevel philosophical – historical analysis of modern western civilization (...) tending to arouse the modern human being about the constant existence of some intrinsic agents of

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<sup>15</sup> We can read a comprehensive and an actual description of the educational reality today in the following extract: «We observe a procedure of an alteration of institution of school in conjunction with three tendencies: the de-institutionalization, the depreciation and the deregulation”. See Laval, Chr. (2003,2004). *L' école n' est pas une entreprise*. Paris: La Découverte. p. 14.

systemic social risks in Western societies as well as a valuable and utopian potential that is determined by the bourgeois values of freedom, justice and equality” (Kontos A.,2012).

The theorists of the critical pedagogy, focusing on the critical theory, they are moving toward the systematic revelation of the “hidden curriculum” of school, the linking of the learning procedure with multidimensional procedures of “strengthening” of those who are adversely affected and the general construction of “a ‘differentiated’ pedagogy that makes the ‘Other’ familiar without demonizing him (McLaren, 1995: 18)».

**Interculturality – Multiculturality: Tracing the Goals**

The historical evolution of modern capitalist countries was characterized by major demographic changes, especially after 1989-1990, as a result of unrelenting immigrants’ flows. The turmoil at international level explains the reasons and causes for the immigration flows in our country. Although Greece is argued that represents a “weak” or “easily accessible” gate of entrance in Europe, the problem caused by the mass influx of illegal immigrants remains extremely serious.

However, the change of the demographic data affected the educational system like many other dimensions of social and economic reality. During the early of 21<sup>st</sup> century, almost 9-10% of students were foreign having an extremely unequal distribution in districts, cities and school units (Gotovos Ath., Markou G., 2004).

The school during the during the period 1974-1989/90 (the Greek *Metapolitefsi*) was based on the principles of general access to education and the typical securing of equal opportunities, trying to manage the educational inequalities through structural changes, compensatory remediation policies, training programs, the mitigation of the institutional barriers and other measures that facilitated the access to welfare state. Until 1989/90 the only similar experience was that of the childs of expatriates and the management of their cultural capital.

Since the early 90s, when the number of students was rapidly increased, the cultural specificities (language, cultural frame, *habitus*) in conjunction with other socio-economic factors that promote social exclusion, L. 2413/1996 encodes the educational issues and provides the formation and development of the new intercultural education frame.

The intentions to construct new intercultural structures, mechanisms and focused programs take place in a *de facto* multicultural society characterized by cultural alterity. Since the beginning of the 21<sup>st</sup> century until now, the opponent parties in the education field are formed and organized accepting different values, concessions, experiences and viewpoints denouncing at the theoretical level the practices of assimilation. The opposition between interculturality and multiculturality represents a crucial matter at stake for the modern public school.

However, given that the educational procedure hangs in the balance and the relevant concerns overflow the reality of the modern school (programs, textbooks, school visits, events, etc.) in relation not only with the content and the orientation of the institution itself but also with the society as a whole, then the pedagogical management represents a provocative and problematic issue. Moreover, the definition of E. Durkheim that the Pedagogy is a “practical theory” and the action, as a transforming procedure, is defined by some converging and explicit parameters: the clarity of the target and its normative character remains undisputed.

Below we show the frame with the two conflicting perceptions in the Greek educational paradigm:

Interculturality	Multiculturality
Encouraging cooperation and cultural communication	Respect and recognition of the equal rights of the cultural capital
Encouraging the “plot”	Folkloristic/ ethnographic approach and

The assurance of political rights: commitment to the human rights and “civic education”	perception Politically correct approach
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### A Pedagogical Regression

The general crisis of Greek society and especially - at the educational level - the contradiction between interculturality and multiculturalism allows us to examine the “invisible” aspects of educational procedure. In other words, to focus on the educational practices, the relationship between teachers and students being the complementary, special, quasi “unseen”, authentic and unprecedented procedure of educational routine. Usually, we examine the institutional – social function of education because represents the obvious, formal and institutionalized dimension of education abandoning the personal, experiential and human way of cultural exchange.

To the extent that our educational reality stands amidst stormy waters of interculturality and multiculturalism, the educators are invited to organize in certain ways, with clear objectives, with knowledge of their subject and with the appropriate pedagogical support.

The above represents a real challenge/ invitation, a hard tests for every educator either he/she is aware of the problems or indifferent. The modern school while functions as a filter and magnifier that reveal its general and deep crisis, creating distortions and unpredictable situations at the same time experience **an educational regression**. This means that the educational practice has lost the power and the substance that previously existed during the educational routine.

This educational retreat is documented by:

- The lack of educational training in Greek school. Although the need for training is a constant demand of teachers still remains a challenge that undermines the educational work.
- The application and domination of educational approaches that are based on a technical/ bureaucratic tradition of school and summarized in the “governmental teaching” and the technical support for the educational routine (DEPPS, APS, textbooks, programs directives, etc).
- The new tendencies that affect and promote attitudes, values, practices and patterns via internet and mass media and are coming increasingly into conflict with the traditional role of school and the educational interventions of teachers. Moreover, quite effective is the penetration and acceptance of the politically correct approaches and viewpoints not only on social matters but also on the formation of values and beliefs of new generations, namely against the institutional content of educational system. Today the dominant politically correct approach represents a real competitor of the pedagogical role of modern school and teaching staff.

### Instead of an Epilogue

The pedagogical regression was not neither fatal nor inevitable but the result of the concurrence of some decisive parameters of historical and social evolution. **At first**, because of the globalization that swept away *the status quo* changing the social balances and the rules and **secondly**, because of the political and ethical crisis that undermining and dismantling the overall educational procedure

The “tsunamis” both of globalization and crisis having devastating impact on educational system, creates a gap or a marginal area that tends to be filled by the politically correct attitudes as a “battering ram” of multiculturalism.

Against these we can distinguish three ways of tackling the whole situation:

- To adopt a personal, subjective and hermetic way of handling the problems in the class, remaining confined to his/her isolated school microcosm.

- To accept the dominant values and viewpoints keeping pace with the times and his/her social environment.
- To act with determination, meeting the institutional provisions and delegitimizing the impact of politically correct state of minds.

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## CRITICAL THINKING IN EDUCATION: THE CONTRIBUTION OF THE TEACHING OF HISTORY

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### Abstract

The general concept of “critical thinking” is characterized by a multidimensional approach. As to the educational practice itself, it is expressed by a broad range of definitions and notions.

The absence of any uniform principle, the fact that critical thinking overlaps with or is reduced to the intellectual faculties, as also the superficiality of references to concepts such as the psychosocial atmosphere and the recognition/acceptance of the other, the socio-emotional function and the question of empathy – all such functioned as my personal motive for the presentation of this paper.

It was on the basis of such concerns that I focused on the more specialized issue of the accomplishment of the “socialized individual” and on the learner who has acquired the skills for action/decision-making. In its current stage, the research work has been undertaken on the basis of a quantitative analysis, while a qualitative analysis of the data was applied so as to deal with the various definitions and theoretical notions.

The findings of this research project are consistent with those of other researchers. The majority of our learners have acquired the skills of dialogue as technocratic beings but they actually fail to communicate.

In my view, the development of critical thinking must turn, on the one hand, to the analysis and examination of the psychological processes present throughout the course of one’s reasoning and final decision-making and, on the other hand, to the assistance of philosophy, so that we attain a philosophically and psychologically informed quality of the notion of human thought – and especially so when it comes to the teaching of history. Specifically as regards the subject of history, I am of the opinion that it bears a reciprocal function and relation vis-à-vis critical thinking: while it cultivates precisely such thinking through the didactic process, it also deems it an ipso facto essential precondition for its comprehension as such.

**Keywords:** Empathy, action/decision-making, history, teaching

In the beginning of 20<sup>th</sup> century John Dewey played a leading part in the space of education with new pedagogic, proposals and practices.

«..Much of current educational theory has its genesis in the early twentieth-century writings of John Dewey. Dewey (1910) proposed that learning, to be truly educative in value, must involve reflective thought.

Dewey’s work led him to define reflective thought as: “active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conditions to which it tends”. In this sense, knowledge gained through reflective thought is individually constructed and revolves around ones personal beliefs. Beliefs that may or may not be substantiated from a scientific perspective, but none the less are derived from some personal experience (Dewey, 1910). Dewey (1910) presented the elements of reflective thinking as: “a) a state of perplexity, hesitation, doubt, and b) an act of search or investigation directed toward bringing to light further facts which serve to corroborate or to nullify the suggested belief”.



The ultimate purpose of this process is to come to a reasonable conclusion or solution of the problem or dilemma presented. Clearly, an individual's past experience and prior knowledge play an important role in reflective thinking. This means that unless we have meaningful life experiences to draw upon to help us sort through and clarify perceived problems or dilemmas, “confusion remains mere confusion”. In Dewey's 1938 classic writing *Experiences in Education*, he posited that “all genuine education comes about through experience”. He later argued that learning through experience is akin to a building process, whereby new experiences when encountered are connected to past experiences that impact how we perceive approach and deal with future issues, problems, and dilemmas (Merriam, 1999).

“In the beginning of 21th century no one pedagogic program will not be acceptable, if it does not contribute in the teaching of critical thought”( John Nistet).

In the intervening century and especially during the last decade of the 20th century, the concept of "critical thinking", characterized by a multidimensional approach.

As for the educational practice, expressed in a wide range and a generality of definitions and concepts, which, say critical thinking meant the learning processes that start from the ground and completed the action of the student subject. Specifically, in the Greek educational reality, this generality is evident and the community of teachers expressed concern and reflection on the results of the application of critical thinking in primary and secondary education.

As per the basic meaning and the definitions , my personal opinion , which is also consistent with the opinion of other teachers or researches is that disappears a single beginning and for many people the critical thought is identified with the cognitive treatment of information and the relative skills or with the significance of intelligence (Kanavouras A., x) .

I indicatively mention only the following definition, where roughly emphasized the social – emotional dimension, a point which we will examine in more detail in this paper: «... it can be meant, however, and cognitive-emotional functioning that enables selective and combined cognitive skills, logical reasoning and metacognitive strategies, with the help of which the individual processes the data in a logical manner and distanced from his personal beliefs and prejudices that eventually reach a valid and logical conclusions, findings, judgments, beliefs and choices of action»( Matsaggouras H., 2002).

Moreover, as for the metacognitive strategies are required, including consciousness and control of cognition, emotions and motivations and on a wider scale the culture of skills , the configuration of attitudes and behaviors»( Matsaggouras H., 2002).

How however, with who way or who practices the reasonable correlations and the cognitive skills will lead to distance from personal beliefs and prejudices , in recognition/acceptance of other and options for action ? Who is finally the role of sentimental operation and how this is involved or does coexist with the cognitive process?

The sentiment, as it happens with the perception and the action, is checked by particularly neural circuits of brain and it has been proved that a lot of medicines that influence the intellect practice their action and in these circuits (Eric R, Kandel, James H. Schwartz, Thomas M. Jessell, 2003) . Since the sentiments are conscious experiences, there is a cognitive element in them, a factor which is related to the cerebral hemispheres. At the same time, sentiments accompanied by responses of the autonomic nervous, endocrine and locomotor system, which depend upon parts of the brain beneath the bark or in the inner part. These regional responses prepare the body for action and make known the sentimental situations of a person to other people.

According to the opinion of American philosopher William James and Danish psychologist Karl Lange, the sentiments are cognitive responses in the information that

comes from the whole region of all our body and we understand in the same way we perceive the thought.

In response to this theory, the Walter B. Cannon and Philip Bath in their own opinion supported that the processing of new information in response to the cerebral cortex holds the primary role to the region. Finally, the options of Antonio Damasio and Stanley Schachter in the decade 1960 the shell creates a cognitive response to peripheral information, which is consistent with the expectations of the individual and the social environment.

In a parallel all these posts that the emotional experience is a "story" which devises the brain to interpret the peripheral responses of the body and the smooth cooperation of all parts of the nervous system delivers the full and conscious perception of emotion from the subject itself (Eric R. Kandel, James H. Schwartz, Thomas M. Jessell, 2003).

This report in the psychological activities aims in the pointing out of coexistence and the simultaneous operation of thought and sentiment. The attitude of subject toward a new information that comes in his brain to treatment is determined by recognition, decoding, processing and response or *action*. This process is characterized by cognitive - intellectual dimension and sentimental at the same time. These two components coexist simultaneously operate together, but in no way identical.

Particularly, the choice of action, which belongs to the metacognitive activities and is the expected outcome of critical thinking, is directly related to the sentimental dimension in the field of psychology has been termed decision (Dimitropoulos G., 2003). The decision is one that characterizes a person as thinking critically, but also strongly determined by the expectations of the individual and the social environment, as support of Damasio and Schachter. Moreover, the decision in each interrogative situation reflects the sentimental temperament of the individual, the code of values which refer for assessment and evaluation of the problem and in general the whole personality (Fontana D, 1996).

I will not go to the question "what kind of personalities and people want to grow through education," which is suspended for decades over the place and have written a number of relevant pages. Let me refer to a psychological research in which I personally participated as a student in the Counseling Psychology and is aimed parallel to two central questions: Society emotion (actual communication group) and selection activity, that is to say decision-making<sup>16</sup>.

The individuals that participated were students 15 and 16 years old from schools with varied social and biotic-economic environment and teaching, with the same conditions. The research of team showed in most cases (85%-90%) that by the moment where is placed the "problem or dilemma", according to the expression of Dewey, is required time and effort on behalf of the coordinator of team in order to give birth to the motives of communication via the placed problem, and the issue raised on it, which is what in modern pedagogy called "suitable climate" or "psycho-social atmosphere". Afterwards, there is dialogue and exchange of views, but communication with body language and reactions of the body (eg different colors in the voice, changes in the rate of breathing and in the vibrations, different expressions, body movement forward, eye contact, etc.), and others according to the psychology testifies birth and maintenance of sentiment occurs in a small percentage (10% - 15%).

In the second phase of the research, where was asked the entire previous process to be evaluated by the same people who participated, it was found again at a similar rate that very

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<sup>16</sup> This research took place in Athenian College, part of the Synthetic Counseling for the academic year 2011-2012

few were able to have emotional recognition of the "other" and emotional awareness of themselves. To the question "How you felt" or "what precisely you felt," the one-word answer was and usual : good, bad, was a bit boring, it was interesting, my interlocutor was nice enough (or nice, respectively). To the question "why did you choose this answer" to this challenge or "why did you make this proposal and not another", the usual response was " because this is what I believe ."

The general findings of the conclusions shows that the variety of sentiments can recognize both themselves and the "other" who located towards them, some individually and stereotypes, such as joy, sadness, fear, and the greatest difficulty is in to name them and to express them with explicit description.

Additionally, the answer "because this is what I believe " refers in partitions of thought, in stereotypical, in repeated patterns, beliefs engendered in the individual assessment of external foci (eg family, school, wider social environment), represent for the person nonnegotiable elements.

As conclusion in the research that was reported I mention with few expressions the opinions of teachers that participated at the same time. The children but also the adolescents in big percentage today give very fast and easily answers that concern in problems of mathematics or more generally, positive- technocratic nature. They present readiness and clarity of answers in the dialogue, but not substantially deeper available. Reach in the stage of metacognition , but mainly in levels calculatngly or those of applied sciences.

The metacognition, however, as a product of the existing cultivated and critical thinking, including consciousness and control not only cognitive but also the sentiments and motivations. And as individual her elements are recognized of the following skills: introspection, empathy, self-observation, self-control, self-observation, self-learning, self-assessment, self-determination to the community(Papaleontiou – Louka E., X) . Particularly, two of the key features of critical thinking are the ability for self-correction and the sensitivity data of the surrounding frame (Lipman, M., 1995). It would also be remiss if not mentioning once again the targets of pyramidal classification Benjamin Bloom, who places the evaluation in higher grade and considers equivalent of critical thinking (Xatzigeorgiou G., (2004).

Indicative parallel and complementary, I think at this point may be mentioned investigations with similar results being announced from time to time, but for reasons of economy, the text are included in the bibliography. I refer briefly to the article of Anthony Kanavouras (Communication in Primary Education, University of Ioannina) from that I report also the following elements : "...The children are educated to speak as good processors, respectively, and the teachers that know how is written well a report, knows how to represent the average man on the microphone, however they are speechless each other, they do not know to speak or communicate "(Kanavouras A.,X).

In this point we came back in the reflection which was reported in the beginning and constitutes basic distress of teachers: why metacognitive skills, as product of critical thought, are limited in the resolution of cognitive problems? Why self-evaluation, self-regulation and empathy skills are extremely difficult to obtain them? Why the action of subject, that is to say the decision-making, don't belong to the same person but mainly by solidified convictions and stereotypes? Why is presented intensely the disability of designate and adaptation in the modern, fluid and continuously altered globalized environment?

Through different opinions and disagreements on the causes and effects, as a consensus I would like to quote a phrase of H.Siegel, which expresses me: "Critical thinking is a kind of reflection that is motivated by the suitable reasons" (Siegel H., 1990). And I agree with the clarification of A.Kanavoura that a deeper reading of Siegel shows the emphasis on the role of feelings and sentiments that must have been the subject who meditates, to direct a

rationally selected action. The subject itself is what moved by the new argument (or problem within another expression), motivated and energized and not his tough.

In my humble opinion after my extensive reference to the psychological process of emotion and expression context, I believe that the person is a mental, psychomotor, emotional and physical wholeness and as such must be considered in the field of education. Consequently, the redefinition of approach and the culture of critical thought, the output the psychological and philosophical dimension in the reasoning (or reflection) and the revision of more generally educational practice, are action imposed.

The philosophical dimension and quality of the reflection produced and promoted through the perceptions of the subject, at the community level. The subject who meditates following criteria and conditions required in a rational method in analyzing arguments and how to evaluate, but also it activates psychological processes so that it corresponds in each circumstance<sup>17</sup>. This response to each circumstance requires awareness on specific characteristics and context of each community. It is also recommended to emotion, the sentimental and passion that must have a thinker, according to H. Siegel, to avoid incorporation in formal logic methodology. The response to any circumstance which consists quite simply in informal logic, that is the daily life of the individual and in a sense identical with critical thinking (Leontsini G. E., X).

The subject thinker within the community aware and responsive to the experiences recruited from the members of this community. He engages and creates arguments and reasoning and guided self control and self-correcting his thought in self-regulation, adaptation to the new environment. As can be seen, the inclusion of the individual in the community and by matching the student is not an end in itself, but the means of creating a framework for the emergence of philosophical reflection and implementation of metacognitive skills that results.

From one point of view, the philosophical thinking of children is without principle and uneven, concerning the cognitive concepts. Apart from that, it is impulsive, as well as the expression of their feelings and their preference to discuss their personal ideas. The uniqueness of the juvenile thinking is what makes the members of the student community to “communicate” with some other children’s community from the present or the past about their common concerns: family, love, friendship, education, etc.

Within such a case, the students can recruit pictures and experiences from some other’s point of view, using their own experience, their fantasy and the spontaneity of their speech” (Karafillis G., (2002). They have the gift of being so closely related with people and fantastic stories and novels, to see the world through other people’s eyes and thus to achieve empathy naturally and unaffectedly (Leontsinis N. G., 1999).

This collection of pictures and experiences from other people’s views, the psychological and philosophical contemplation, the emotional relation, the unconstrained dialogue and the interchange of ideas in the absence of stereotypes, which have not yet consolidated at such an age, is what exactly forms a vast and suitable situation for the refinement and development of critical thought.

And exactly at this particular point of this suggestion, I would like to bring this question forward: what or which of all this assets, that have been set, is not an element of the history and its teaching.

The vast and suitable environment for the refinement and the development of critical thought, as has been referred, is also an environment for the development of historical thinking. The requested metacognitive product of the advanced critical thought, which lies on top of the pyramid, is the choice of action or the decision making, that we already analyzed.

The critically thinking person, which we dream to develop within the fields of education, is who we every day expect to solve problems, namely to choose *forms of action* concerning anxieties, dilemmas and problems that are faced nowadays (according to Dewey’s expression), in order to be a healthy, active and thinking part of the globalized – ecumenical current community.

Simultaneously, the historically thinking person participates today in a constant, actual and communicative dialogue with yesterday, in order to interpret the present in his daily routine and actively and normally be a part of it.

According to F. Braudel “History is not a narration of complete events, but an attempt of restoration and interpretation of the past, usually with a view to comprehend the present and to anticipate the future”. Also, according to R. Simon “The apprentice in history is a methodical intellectual and moral supply, not only because it helps integrate the person within the society, but also because it greatly contributes in communication with *others* and in confrontation of internal contradictions to ourselves”( Mpretanou K., X).

The thinking human being is, and have to be an intellectual, social, emotional and stochastic wholeness, according to the goals that have been set by cultivated critical thought, who has developed variable skills, attitudes and behaviors, in order to be an individually and socially active part of today’s society. The historically thinking human being is also an equally formed wholeness, which has additionally formed the capability to converse with yesterday, so as to meet with the maximum possible effectiveness to today. Therefore, the association between critical and historical thought is most obvious and what remains to be seen is its development.

The lesson of history is what primarily requires the critical thought and simultaneously what cultivates it at its full dimension and does not entrench it in the means of mental processes, as was referred to at the begging of this suggestion. The lesson of history is what lies on a two way and absolutely equal relation with the concept of critical thought, in a way that the development of critical thought keeps up with that of historical thought and vice versa.

Instead of an epilogue, I would like to remind you the expression of John Nistet as was referred to in the prologue: “At the beginnings of the 21<sup>st</sup> century, none educational program will be acceptable unless it contributes to the teaching of critical thought”.

At the same time, I would like to refer to the following excerpt: “...In modern democratic and multicultural school, the lesson of history must be confronted as an apprenticeship at the values of rationalism, critical vigilance, freedom, cultural tolerance, intercultural dialogue, creative thought and the pursuit of truth...”( Kokkinos G., (1998).

In conclusion, allow me to repeat my personal question: which element of the procedure and the process of setting goals of the critical thought is not directly related to the procedure and the process of setting goals of the lesson of history in modern school?

If the speculation of critical thought within the fields of the educational community really exists, my personal opinion is the redefining of the one procedure that targets of the development of critical thought, the redefining of the fields of development, the approaches and the methodology. Because the individual is a human multifunctional entity, and as such it should be educated.

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