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SMART LEARNING WITH SMART BOARD

Abstract: Information technology has a double role in the teaching process. On one hand, it plays an important role in the pupils' cognitive development, but it also has impact on the development of practical applicative abilities. Pupils should have special techniques for acquiring knowledge and information transfer, but they should have gained moral habits and responsibilities to work and learning.

What happens in the course of a lesson during which ICT tools are used?

What does the teacher teach?

How does the teacher teach the particular teaching unit?

The answer to this question will be given by means of analyzing one lesson of the teaching subject „My environment“ for the third grade of the nine-year primary school education; it will comprise an elaboration of the teaching unit „Parts of a plant“ using a Smart Board. The paper will present the benefits of using a smart board because pupils, besides learning contents of natural sciences (biology), also study computer skills. Teachers who use ICT tools in everyday teaching teach their pupils how to select and evaluate relevant information.

***Key words**: ICT tools, teaching, primary school, benefits, my environment, parts of plant.*

INTRODUCTION

In the first decade of the new millennium we too often hear about reforms, reforms, reforms,... and we all wish that, but we are often not aware what they carry with them. Theorists agree that all education reforms made till now related to external changes include reforms of the curricula, a change in the length of the duration of schooling, changes in the organization of schools, in educational goals and objectives, etc. No reform in education till now has had deeper interest in reform of teaching and so it is our duty to put it first. Changing the curricula is the foundation from which further new bases will develop in the teaching process, changing the role of the teacher and student, and removing all the modes in which the student is passive.

Requirements set by the strategies for reform of the teaching process, forms and methods and position of students in Macedonia are united in the proposals for modernizing the teaching of which most frequent are: application of active forms and methods of work, placing the student in a situation of constantly monitoring, analyzing, arranging, performing, synthesizing concluding, generalizing and exploring, using different sources of knowledge, problem solving, self-description etc. (Strategy for development of educational systems in terms of transition, 142nd).

Teachers in pedagogic and didactic theory encounter general instructions for the innovation of teaching, such as: teaching not to be conceptualized on memorizing facts, concepts, and definitions, the individual differences among students to be respected, the student to be brought into a situation where he/she can alone earn their knowledge, develop skills, etc. But all these requirements are not responsive unless they are seen and converted in precise and specific methodological guidelines geared to the actual programming content. Application of modern educational technology does not mean only the modernization of schools with new and modern educational tools, but it insists on clear guidelines for the implementation of active forms and methods of teaching in the context of current educational content. The teacher must know how to combine modern methods, forms and media for learning, i. e. the advantages and disadvantages of such models, and in what frameworks those can be applied in our educational practice.

In an attempt to avoid general deduction, the basic idea of this paper is to demonstrate how in teaching the introduction of the environment can shape innovative models of learning organization dimensions and what the teacher should take into consideration to meet the contemporary education environmental knowledge.

Schools and education in EU countries offer suggestions for modernization of teaching process in our schools, but only as examples and ideas which need to be built and adapted to the conditions of our teaching practice in Macedonia. The model of learning and teaching for the teaching subject „Introducing of the environment" which will be detailed in the paper based on the achievements of teaching practice which is compatible with teaching subjects in the countries of the European Union entitled „Science" and „Primary science", but adapted to the requirements of the learning program for the subject Introducing of the environment and applied to the conditions in our schools.

Our schools still carry the remains of some earlier period that was divided, in real life and also to essential pieces of our students. This reform, which started in 2000 on the Balkans, aims to revive humanly in schools, to connect with the real life, to prepare students for life that is full of problems and for which we should have courage, independence and capability of coping. Present ideas for improving education are grouped around several major areas of action including the most important segment of modernization strategy for teaching and learning and development strategies for acceptance and application of new ideas in teaching practice.

Theoretical investigations are still on the edge over the practice. The ability of our students to apply the acquired knowledge in practice, as well as the ability of our teachers to encourage applying knowledge is very low. Let this personal conclusion be a call for all those interested in the innovation process of learning in our schools and wanting to do something more concrete for its modernization.

TEACHER'S ROLE IN MODERN SOCIETY

A teacher guides young people in situations when they can in reality face the experience of limitation and, with persistence, „overcome" this limitation, „fight" courageously and „swim downstream" with minimum risk.

A teacher is the one who continuously motivates young people to search for a constructive meaning of life.

A teacher enables pupil for critical thinking that will help them to achieve success in the global world based on knowledge.

TO BE A TEACHER MEANS TO BE COURAGEOUS!

Teachers should have courage to open their eyes and the eyes of those they guide; they should raise the hopes and an incessant wish for change.

If the teacher knows and is able to instigate and nurture the culture of good and positive, it will mean that he/she has fulfilled the obligation not only towards himself/herself, but also towards those he/she is guiding, as well as towards society. Obviously, it is courageous to be a teacher.

ICT TOOLS IN EDUCATION

Beginning from the middle 90s, the usage of ICT tools in schools is increasing rapidly, supported by a specially prepared curriculum for this aim, access to the Internet, and professional development and in-service training of teachers in this scientific field; new approaches should be oriented to any learning situation which aspires to provide pupils with the ability to cope effectively with the reality of the world that surrounds them, and to do this by means of problem-based tasks giving us possibilities for interaction, collaboration, and communication.

Contents related to the everyday reality and experience of the pupils should be taught so that they could most easily but permanently understand the contents taught.

Paulo Fuere explains this saying:

„Man cannot actively participate in history, society, in changing his reality, if he is not aware of the reality and his ability to change it."

In these previous years formal traditional education has gradually been changing and the educational process itself changes its objectivistic approach based on bihevioristic learning theories into theories that include more cognitivism and constructionism.

The UN organization for education, culture and science uses the term ICT (information-communication technology) to describe:

„Tools and process of access, organization, storage, manipulation, production, electronic or other kind of information exchange; here we can include: hardware, software, telecommunications in forms of personal computers, scanners, digital cameras, telephones, faxes, modems, CD or DVD players and recorders, video, radio and television programs and multimedia programs."

This research focuses on information society and is concerned with the following three questions:

(1) Why we think ICT tools are necessary tools in education, and that they need permanent development;
(2) Which ICT tools are used in the existing system of education;
(3) What are the anticipated results in near future?

Any type of technology can be understood as a tool or a technique for expanding human capacity. In this sense, ICT expands our human capacities of perception, understanding and communication.

In the area of formal education, ICT tools are used as tools for enhancing pupils' capacities of perception, understanding and communication; an increase in usage of online learning has been noticed, as well as using computers as a tool for acquiring knowledge. For better usage of these technologies in education we need new pedagogy and methods of learning and teaching.

ICT AS TOOLS THAT CAN BE USED IN EVERYDAY TEACHING

In innovative applications, including ICT tools, we can notice an inclination towards technology and media in the educational process. Thus, without leaving the classroom, millions of students can experience various scientific research and achievements, including experiments performed in these areas.

With the help of these tools in teaching, pupils can watch some unforgettable research, followed by sensations of everyday life without putting them in any kind of unwanted danger if they take part in real events. Using these integrated teaching connected with the contents taught can be realized.

TECHNOLOGY THAT SHOULD BE USED IN THE CLASSROOM

- **Computer in the Classroom:** Having a computer in the classroom is an asset to any teacher. With a computer in the classroom, teachers are able to demonstrate a new lesson, present new material, illustrate how to use new programs, and show new websites.
- **Class Website:** What better way to display your student's work, than to create a web page designed just for your class? Once a web page is designed, teachers can post homework assignments, student work, famous quotes, trivia games, and so much more. In current day society, children know how to use the computer and navigate their way through a website, so why not give them one where they can be a published author.
- **Wireless Classroom Microphones:** Noisy classrooms are a daily occurrence, and with the help of microphones, students are able to hear their teachers clearer. Children learn better when they hear the teacher clearly. The benefit for teachers is that they no longer lose their voices at the end of the day.

INTERACTIVE SMART BOARD IS FLEXIBLE IN ALL LEARNING STYLES

- Pupils can easily see colorful pictures, or diagrams on the board even from the back of the classroom;
- Learning can be kinesthetic because pupils can cooperate in teaching by moving letters, numbers, words, and pictures with their fingers;
- Learning can also be auditory with the help of USB speakers and SMART Audio.

All the products of SMART technology are created to work together because as pupils grow, so do their needs in the teaching process. With this tool various innovations in teaching can be applied, such as problem based learning, inquiry-based learning, team work, programmed teaching, etc. and are active learning educational technologies used to facilitate learning. which includes physical and process applied science can be incorporated into project, problem, inquiry-based learning as they all have a similar educational philosophy. All three are student centered, ideally involving real-world scenarios in which students are actively engaged in critical thinking activities. The process that students are encouraged to employ (as long as it is based on empirical research) is considered to be a technology. Classic examples of technologies used by teachers and Educational Technologists include Bloom's Taxonomy and Instructional Design.

WHY SMART BOARD?

Using a smart board allows simple implementation of the principles of - effective learning: availability, activity, and obviousness.

What we hear, we forget.

What we see, we remember.

What we do, we learn.

SMART board is a powerful visual tool that includes interactivity and collaboration. Learning with this user friendly software allows us to introduce interactivity into our lessons by means of using various tools and teaching resources, in that way changing the classroom atmosphere.

Using this board we can create dynamic lessons and make pupils interested in teaching; we can use the gallery of „smart notebook" which is a collaborative - learning software where thousands relevant teaching and learning materials can be found.

Teaching subject: „My environment"

Grade: third grade

Thematic unit: Attribute of nature environment

Teaching unit: parts of the plants

Objectives:
Beside the anticipated objectives in the biology curriculum for the third grade, it is also anticipated to achieve objectives related to ICT usage in teaching.

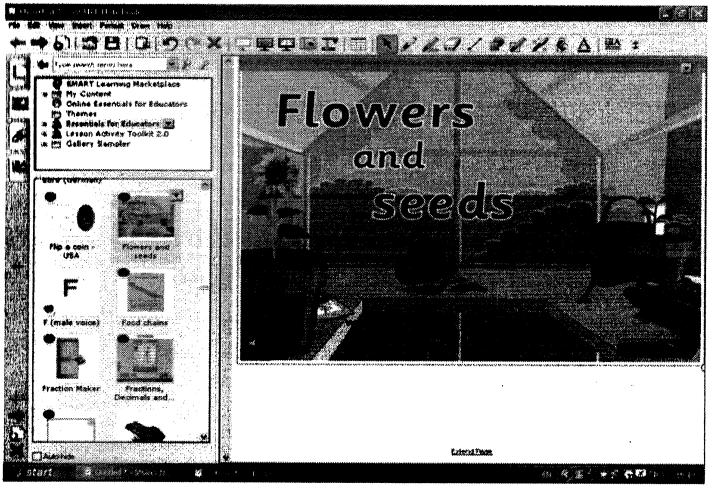
Pupils will:
Experience: electronic smart board, its tools, additions, and applications;
Explore the possibilities of learning with smart board;
Share acquired experience.
Teaching forms: head-on, group work, independent work
Teaching methods: discussion, working with text (illustrated story),
Teaching aids: smart board – pictures, illustrated story, prepared text

Introductory part of the lesson

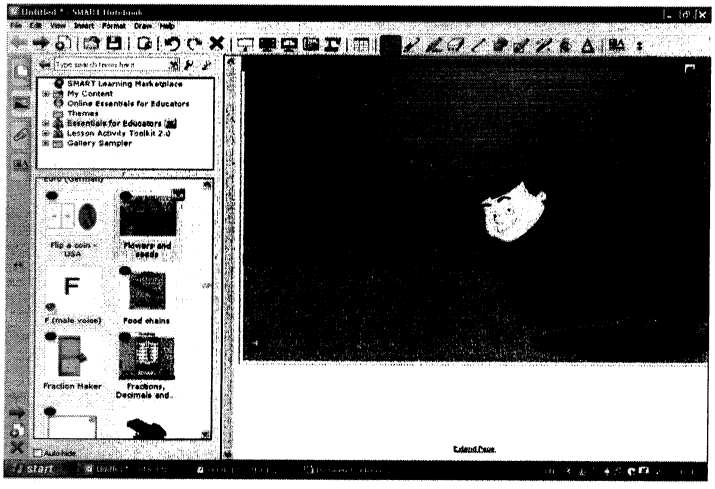
What are the parts of the plant?

Which plants have flower?

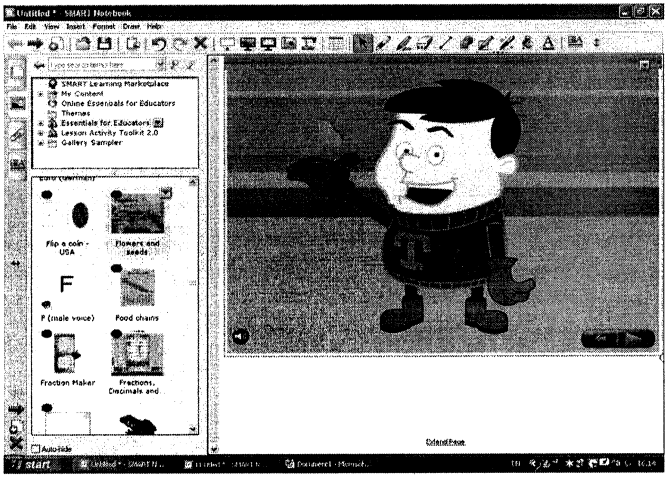
Which plants produce seeds?



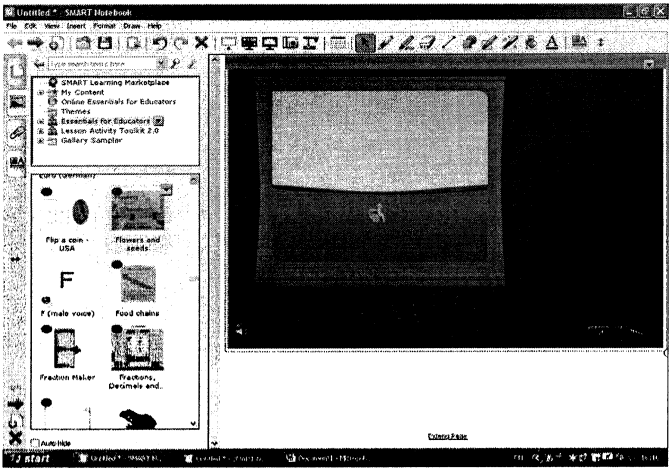
Picture 1. Flowers and seeds



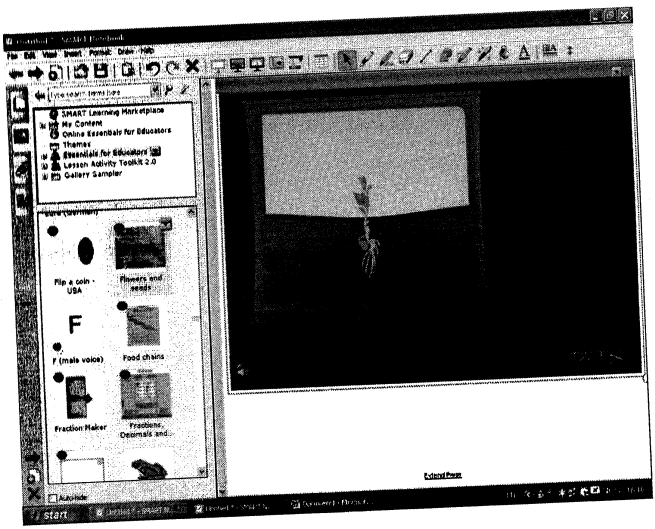
Picture 2. Fruits and vegetable



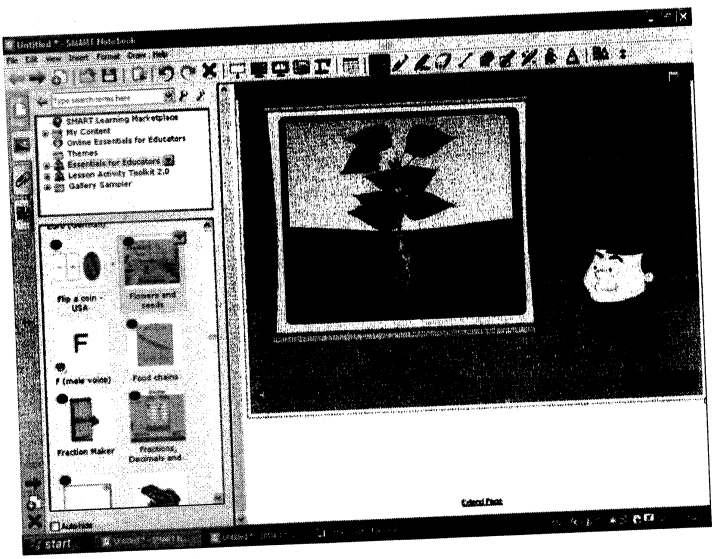
Picture 3. Seed of beans



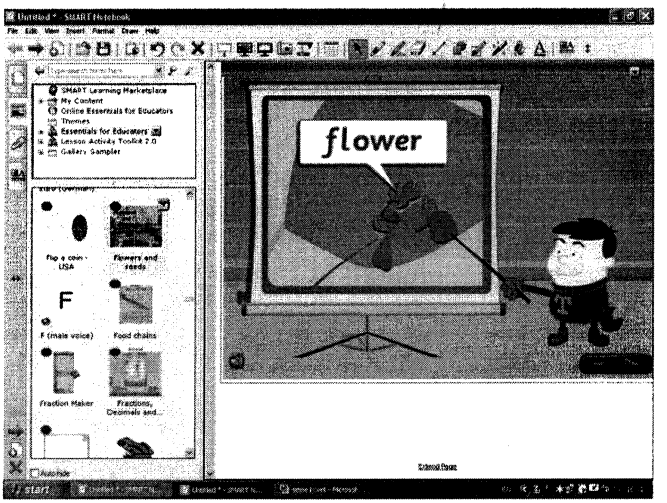
Picture 4. Seed germination in the soil



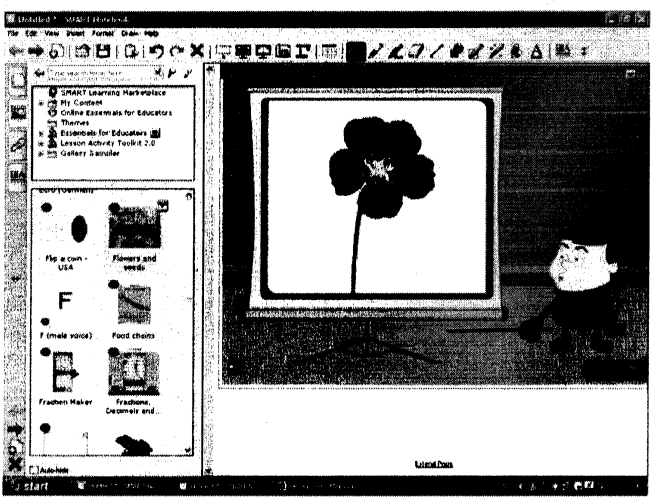
Picture 5. Growing plant



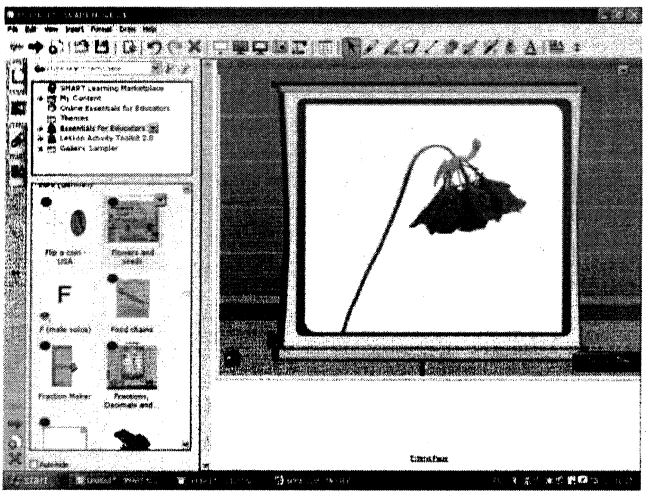
Picture 6. From seed to leaves and flowers



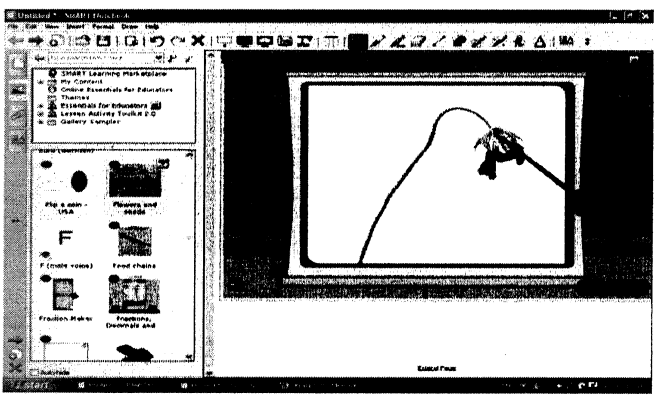
Picture 7. Flower appears in spring, and from it appears fruit in which the seeds are produced



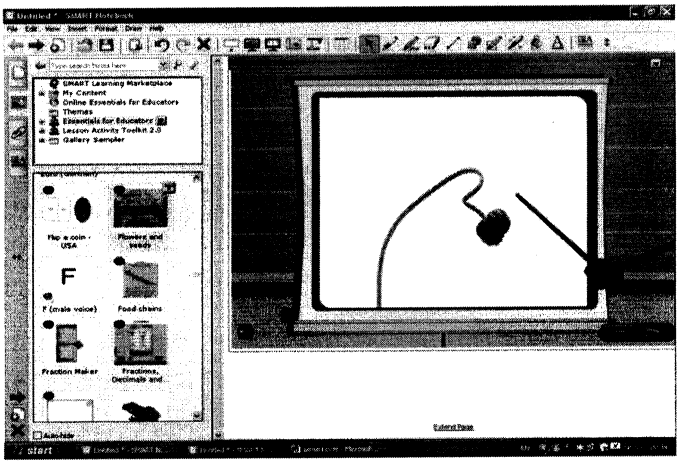
Picture 8. Flower



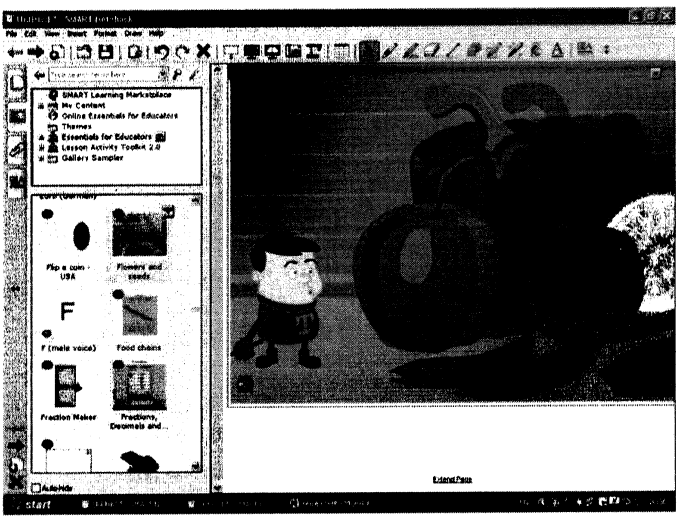
Picture 9. Transition from flower to seed



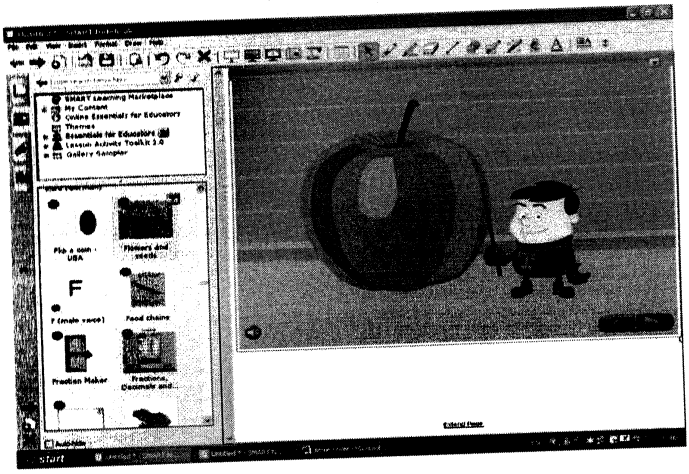
Picture 10. How are the seeds formed?



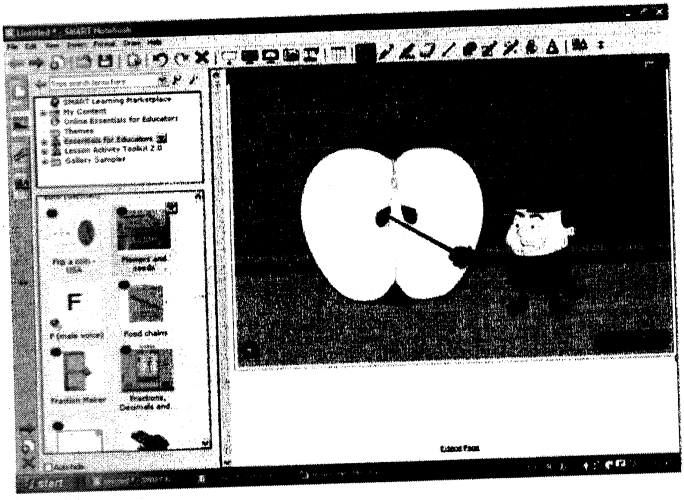
Picture 11. Formation of seeds



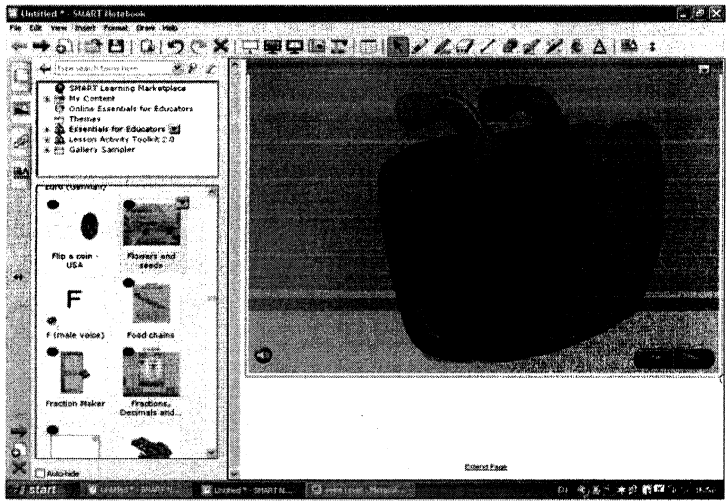
Picture 12. Seeds are in the fruits of mature fruit and vegetables



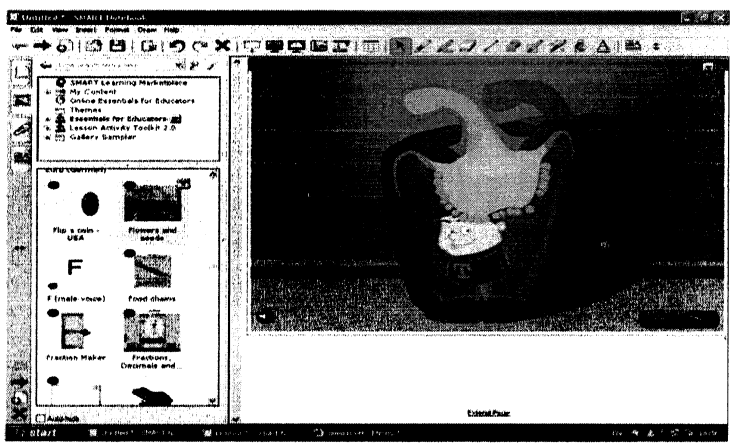
Picture 13. Apple



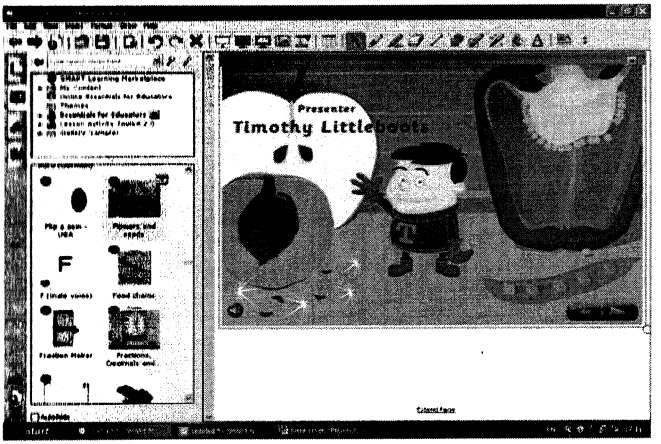
Picture 14. Seeds in an apple



Picture 15. Pepper



Picture 16. Seeds inside the papper



Picture 17. From the seeds is growing new plant again

End of the lesson!

The question is asked: WHERE DOES OUR FOOD COME FROM?

In our society, we often don't think about our food at any stage before the supermarket. Yet, the food we eat was once alive and growing. This section is intended to stimulate thought into the nature and origin of our food.

Concepts: Our food comes from plants. (Even animals that have been killed for meat have eaten plants, or have eaten animals that have eaten plants). Our food comes from lots of different plant parts. These parts were essential to the plants when they were alive.

The different parts of plants

With the group, try to name all the different, basic parts of plants. If the children understand a little about the growth of plants, discuss the functions:

Roots: These anchor the plant in the ground, so it doesn't fall over or is blown away. They also take up *water* and food (*nutrients*) from the soil.

Sap: This is the plant's *blood.* It passes through all the parts, supplying water and nutrients.

Stem: This conducts sap, which carries water and nutrients from the roots to the leaves. It also carries food (sugars) made in the leaves [by *photosynthesis*] to the roots.

Leaves: These „breathe in" *carbon dioxide* and „breathe out" *oxygen*, and use sunlight to make food (sugars).

Flowers: These *reproduce* with the flowers from other plants [e. g. wind blows pollen from one flower to another, or bees transfer pollen by visiting one and then another plant], to make new plants.

Fruit: This grows from a flower that has reproduced. It will nurture the new, forming seeds.

Seeds: These are the result of reproduction. They will grow into new plants that are mixtures of each parent.

The parts that our food comes from

Give the children a few minutes to think, on their own, about what they had eaten or drunk the previous evening or at lunchtime. What were five plant parts within the food or drink? If they ate a blend of different plants, what plants and what parts was it made from? For example, pasta sauce may have been made from tomatoes (fruit), carrots (root), celery (stem), etc.

It should be anticipated that the origins of many foods will be unknown by the children. However, the purpose of the exercise is not on asking questions that will be easily answered. Rather, it is useful in establishing curiosity and consideration of the living things that provided our food. It should always be emphasized that the parts we eat were essential to the plant when it lived; „food" is not simply unwanted surplus, awaiting human consumption. Furthermore, the growth of plants is only made possible by their interactions with other organisms [even plants grown by intensive agriculture have requirements, such as the carbon dioxide released by animals, which the farmer cannot supply]. Encourage the children to think about plant parts when they eat their next meal.

CONCLUSION

International research showed that modern teaching aids can improve teaching and learning processes. Implementation of information and communication technologies in the educational process can have considerable positive influence on the students' performance, attitude, as well as their communication with teachers and peers.

The strategy of ICT implementation in the Macedonian education states:„The essence of the modern system is flexible, multilateral application of information technology in teaching and learning. Integration of the latest technologies is inseparable from other essential changes integrating education at school into economy, public and social life as well as culture. In the school of the future, working methods

and style of the learning information society shall be applied. *Implementation of modern teaching aids is closely related to the new general educational aims, whereas the new educational aims are related to the application of information and communication technologies.* Learning about information technology shall be replaced by learning with information technology more rapidly. It shall facilitate more effective application and coordination of new educational methods, better compliance with students' needs, bridging the gap between arts and sciences, integration of knowledge and problems of various scientific and everyday life fields, formation of holistic perception of the world, effective coordination of technological knowledge with information capabilities as well as critical thinking."

To implement these aims and create conditions for young people at general education school to acquire well-rounded information and technology skills complying with the Students' General Computer Literacy Standard, schools shall be provided with necessary teaching computer aids.

The strategy of schools' provision with teaching computer aids specifies the main principles of the Macedonian educational institutions' provision with ICT, following which schools providing general education would acquire these aids, and ICT would be gradually integrated into various fields and subjects of education.

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УЧЕЊЕ УЗ КОРИШЋЕЊЕ ЕЛЕКТРОНСКЕ ТАБЛЕ

Резиме: Информационе технологије имају двоструку улогу у процесу подучавања. С једне стране,оне имају важну улогу у когнитивном развоју ученика, али такође и у развоју практично применљивих способности. Ученици треба да имају специјалне технике за стицање знања и пренос информација, али треба и да стекну моралне навике и одговорност за рад и учење.

Шта се догађа у току предавања током кога се користе алати информационих технологија?

Шта наставник подучава?

Како наставник подучава неку одређену наставну јединицу?

Одговори на ова питања биће дати у облику анализе једне лекције наставног предмета „Моја околина" за трећи разред деветогодишњег основног образовања; она ће обухватати разраду наставне јединице „Делови биљке" путем коришћења електронске табле (Smart Board). Рад ће представити предности коришћења електронске табле зато што ученици, поред учења природних наука (биологије), такође уче компјутерске вештине. Наставници који користе алате информационих технологија у свакодневном подучавању уче своје ученике како да одаберу и оцене релавантне информације.

Кључне речи: *алати информационих технологија, подучавање, основна школа, користи, моја околина, делови биљке.*