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**COOPERATIVE LEARNING IN HETEROGENEOUS GROUPS
– A MODEL FOR ESTABLISHING CLASS COHESION
AND SCHOOL SUCCESS IMPROVEMENT**

Theoretical – empirical context of the problem

Teachers can organise and accomplish their educational work on the principles of competitiveness, individuality and cooperativeness. The teacher's pedagogical autonomy related to the choice of the methodological approach necessarily determines interaction among students, their knowledge and attitudes.

Plenty of research has shown that the educational process based on the principles of competitiveness in students develops their competitive spirit, and they measure the value of their personal success compared to other students' failure.

In classrooms where individual approach is practiced students are directed towards achieving individually set goals, completely independent compared to other students' goals (Johnson and Johnson, 1989).

Unlike the previous educational approaches, cooperative learning offers opportunities for learning in groups directed towards achieving joint goals. In such structured classrooms students discuss the set problems together; they help and encourage each other.

Two theoretical perspectives significantly support cooperative learning – the motivation theory and the cognitive theory. While motivation theory emphasises the student's motivation for learning, cognitive theories emphasise the effect of joint work.

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Viewed from the motivation perspective, establishing and achieving group goals is a situation where achieving personal goals is closely connected to group success (Slavin, 1990: 14). In fact, motivation theory is directed towards awards, punishment and goals. One of the basic principles of cooperative learning is a positive mutual dependence which means students' understanding and feeling that their success or failure is determined by their work inside the group. According to this, in order to achieve their personal goals students are additionally motivated to help their peers in the completion of the joint result.

In the framework of the cognitive theory, Damon (1984) promotes the concept according to which interaction among students aimed to solve respective tasks develops their critical concept. Or, when students discuss and present their personal perspectives and views about the given tasks, there follows a higher level of understanding of the material being learnt, and the struggle to solve the potential conflict during cooperation results in a higher level of understanding (Slavin, 1990).

The elaboration theory (cognitive) explains that one of the greatest meanings of learning is the development of skills and abilities for passing on knowledge. Johnson, Johnson and Holubec (1993) showed that cooperative learning greatly contributes to the development of elaborative thinking in students. They more often give and accept explanations which in turn leads to deeper understanding, higher levels of thinking and lasting knowledge.

Several research studies confirm the educational value of cooperative learning. Humphreys, Johnson, and Johnson (1982) found out that students who studied in a cooperative atmosphere learned and memorised significantly more information from the field of natural sciences compared to those who studied in a competitive atmosphere or individually. By experimentally introducing cooperative learning for students with a low level of academic achievements, Allen, W. H. and Van Sickle (1984) showed that the experimental group achieved significantly higher results on tests in world geography.

Studying the relationship between the student's cooperativeness and competitiveness and the attitudes towards education, Johnson and Ahlgren (1976) found out that the student's cooperativeness positively correlates with learning motivation.

Intensive research efforts in the last decade of the XX century exposed the power and the reach of cooperative learning in relation to different aspects of students' achievements:

- Achievement: higher individual achievement; increased retention and persistence; greater achievement motivation and intrinsic motivation to learn; more positive attitudes towards the faculty, advisors and staff;

- more positive attitude towards discipline specific learning and education in general;
- Critical thinking skills: more frequent higher-level reasoning, deeper-level understanding, and critical thinking; greater long-term maintenance of skills learned; increased flexibility in solving problems jointly; active learning promotes greater conceptual understanding.
 - Improved cross-cultural relationships: greater ability to view situations from other's perspectives; more positive, accepting, and supportive relationships with peers regardless of ethnic, sex, ability, social class or handicap differences; facilitates creation of a learning community; greater development of trust, cohesiveness and esprit de corps.
 - Personal benefits: greater social support; greater psychological health, adjustment, and well-being; more positive self-esteem based on self-acceptance; greater social competencies.

Methodological approach in R. Macedonia

For the last fifteen years our schools have been encouraged to accept the principles of pedagogical practice promoting active involvement of students in the process of learning. Even though the benefits of cooperative learning (educational, social, etc.) are increasingly positively emphasised, teachers still understand it just as a form of teaching, instead of viewing it as a strategy.

In this context, our research is shaped as an action research with experimental elements introducing cooperative learning into the classroom in a planned and systematic manner in the second grade of »Tosho Arsov« elementary school in Shtip, R. Macedonia (2006/2007 school year). The initiative came from a teacher – our students' mentor who was looking for a way to deal with some problems with students (absence from school, reading, writing, speaking, passive attitude, poor academic results, non-acceptance of the students' collective) coming from families with a low socio-economic status and those belonging to the Roma ethnic community discovered during educational work with this class during the previous school year. Having in mind the research results about the educational benefits of cooperative learning we suggested a systematic application of 22 cooperative techniques in 45 teaching lessons of Macedonian language and 30 teaching lessons of Nature and society studies. The basic aim was to improve the educational practice and to suspend the problems noticed. All 22 techniques, depending on the aim and tasks to be realised during teaching lessons of Macedonian language and Nature and society studies, were practiced in the course of the teaching lesson articulation (evocation, understanding meaning and reflection) proposed by

the project – *By reading and writing to critical thinking*. Thus, the chosen techniques were given the function of motivating students at an emotional and intellectual level, the function of learning new teaching material and the function of checking and evaluating of achievements.

The subject of our research is the influence of the application of cooperative learning techniques upon the development of class cohesion in the sense of the acceptance of students at risk (students coming from families with a low socio-economic status) (4 students) and students belonging to the Roma ethnic community (2 students) and their academic achievements. In accordance with the aim and subject of the research, we have anticipated the realisation of one task: planned and systematic introduction of the chosen cooperative techniques in teaching Macedonian language and Nature and society studies.

As a result of the accomplishment of this research task concerning students at risk, we expected the following:

- Acquiring minimum knowledge, skills and abilities anticipated by the state curriculum for elementary schools for the subjects Macedonian language and Nature and society studies (the first and second grade);
- Increase in achievement motivation and self-affirmation;
- Building positive attitudes towards learning;
- Increase in class cohesion concerning the acceptance of students at risk on part of other students in the class.

Bearing in mind the nature of the research, we used unobtrusive procedures and instruments for collecting data – systematic observation, participative observation, interviewing and studying the students' papers, and we did a qualitative processing of the obtained data.

The people who carried out the systematic observation were: project authors, 5 students of the third academic year at the Pedagogical faculty in Shtip, and the class teacher.

During the systematic observation structured records were being taken concerning the precisely determined educational, social and emotional occurrences, situations and conditions: the level of execution of an individual task (especially for students at risk) in the frames of the group; the level of sharing materials and ideas within a group; students' at risk initiatives for presenting the finished material (individually and as a group); level of readiness of students not at risk to assist in achieving the joint (group) goals; and the development of friendliness during the breaks.

The study of students' work was realised continuously in order to discover the progress of students at risk in learning the planned teaching contents and their motivation for doing the school tasks at home.

Once a month, the class teacher was interviewed by means of a protocol which recorded her evaluations about our anticipated results and the suggestions for redesigning some of the techniques.

Results and discussion

Results

Having in mind the limitations of space and our intention to devote more attention to the description of the process of introducing cooperative learning, the results of this research are shown synthetically.

The analysis of the records taken down during the systematic observation related to the degree of execution of individual tasks (for students at risk) within the group; the degree of sharing materials and ideas within the group; initiatives taken by students at risk to present what was done (individually and as a group); the level of readiness of students not at risk to assist in achieving of the joint (group) goals; and the development of friendliness during the breaks show that one month after the introduction of cooperative learning all six students whom we put into the students-at-risk group were successful in performing the given tasks, they showed notable pride and a desire to present their own and group results, they found it easier to take part in the games during breaks. All the other students showed significantly greater readiness to accept their classmates (spending time together outside school, invitations to participate in school-related activities) and they helped them regularly after finishing the tasks. Their motivation to succeed was greater in situations where group work was publicly evaluated.

The study of students' work (students at risk) and the analysis of the structured interviews with the teacher confirmed the power of cooperative learning concerning motivation for learning and work, as well as concerning the level of academic achievements in Macedonian language and nature and society studies. During the 2006/2007 school year students at risk learned the technique of reading aloud and silent reading but they also started reading logically, they were enabled to describe objects and phenomena from their immediate surrounding, to retell experienced events in pictures and series of pictures, storytelling and transcribing (simple and complex). As a result of their increased interest and attention to the teaching contents, these students showed significantly greater progress in relation to the knowledge and abilities they acquired in the area of Nature and society studies. They achieved the minimum amount of knowledge anticipated by the curriculum (concepts, phenomena in natural and social environment) which in turn created conditions for greater achievements in the next school year.

As our mentor would say – students who had problems with learning and integrating into the class started to fight for knowledge, self-affirmation and their place among the peers. At the beginning they asked the teacher to confirm their results, but later they first sought confirmation from the peers in the group, and in the course of the last two months of the school year they felt confident to defend and present the achievements of the entire group.

Discussion

Even in the course of planning the action research, and occasionally during the implementation itself, we experienced certain scepticism concerning the successful realisation of the research task as well as of the expected results.

Our initial thesis was that cooperativeness must not be treated merely as a manner of school practice but also as a manner of living. We hoped that gradual introduction of cooperativeness as a value in class practice would also result in further effects concerning the building of a student's personality in the direction of becoming a cooperative member of a democratic society. We were aware that this approach must not lead us to a complete suspension of the conditions needed for the development of students' competitiveness and individuality, but to creating a class atmosphere which would provide conditions for equal stimulation of cooperativeness, individuality and competition in students. In such a context, we promoted cooperativeness as a value by means of continuously encouraging students to understand mutual cooperation as a goal they should strive to reach, and to view their peers as potential associates and to choose cooperation as often as possible as an alternative and a way to express their own individuality and competitiveness.

Likewise, we shaped cooperative learning as a technique and content instead of as a form. So we tried to interweave cooperativeness into the learning environment, and we used continuous or interrupted cooperation among students during breaks and free time as an indicator of a successful implementation of cooperativeness as a value.

Because of our goal to increase class cohesion we had to anticipate ways of building class atmosphere where students would voluntarily choose cooperation. Even in the course of the first month of our systematic introduction of cooperative learning we noticed a tendency to create small closed groups and we began to rotate students.

For a long time our school practice have promoted principles which discourage the development of cooperativeness in students and motivate students' behaviour such as: Look into your own notebook, Don't talk to your classmate, Do your task and don't let other students take a peek into your

notebook, If you need help ask your teacher only, Struggle, compete for the teacher's attention, Struggle for awards etc.

In our classroom, trying to build in cooperativeness as a value, we established a completely new paradigm which systematically, continuously and unobtrusively actualises the teacher through his/her instructive attitude: Look what your classmates do and learn from them, Help them if they need help and share your ideas and materials, Talk to your classmate in order to exchange ideas, Debate, Explain, Suggest, Ask, Share your work with others because you can make it better with their help, If you need help, consult your classmates from the group and then the teacher, Allow any member of the group to present your joint group work, Cooperate because it will make you proud of yourself but also of joint results – you will get a double award.

Thus, the work in class was completely directed to interiorise cooperativeness as a value on the part of all students. This comprises the building of confidence and solidarity among all the students.

Our supposition that the success of introducing cooperative learning into the classroom and its anticipated results would depend on the level of accepting cooperativeness as a value on the part of students was justified. This process was neither very fast nor painless. But, problems mainly appeared in the course of the first month. Almost half of the students not at risk refused to work in groups with students at risk. However, the teacher's creativity, experience and persistence during the implementation of the created plan helped overcome this problem.

Gradually but persistently we insisted on the establishment of the principles that resulted from the shared values in the frames of a class, and we wrote these on panes and put them in the classroom: I listen while the other is talking; I encourage anyone who wants to take part in work; I help others without finishing his/her work; I ask for help when I need it; I know we are all together in this work; I come to school on time; Everyone has the right to a public presentation.

The problem of introducing cooperative learning as a value is closely connected with the problem of forming heterogeneous groups; in this case they are heterogeneous concerning students' achievements, their ethnic origin and socio-economic status.

Five groups of four students and one group of six students worked in our classroom. The even number was important so that they could work in pairs in respective teaching situations.

We corroborated the need to work in heterogeneous groups with the thesis that students should cooperate with different people because not always in life they would be in a position to make a choice. Precisely in cooperative groups

students have the opportunity to cooperate with their peers who are different from them by some characteristics, to work in heterogeneous groups made up by the teacher. Depending on the aims that should have been accomplished through concrete teaching contents, we occasionally regrouped the students having in mind their level of success, abilities, working habits, ethnic origin, extroversion, introversion, socio-economic status and gender.

Although one of the positive principles of democratic education is to allow students to study with whom they want, this research showed that there are many reasons which justify forming groups based upon the principle of heterogeneity:

- Through work in heterogeneous groups students had the opportunity to get to know classmates different from themselves – they met their families, conditions they lived in and possibilities offered to them – they did their group homework without resistance and they also spent their breaks together.
- Because of the mixture of various perspectives, the quality of students' work improved – students not at risk often acted as positive models whose behaviour other students began to imitate.
- At the very beginning of implementing cooperative learning we noticed a significant improvement in discipline. Because of the way the groups were formed, the informal friendly groups in class that often made noise were broken up and the students in heterogeneous groups formed by the teacher worked on the tasks set by the teacher in an orderly manner.
- After the first month in more successful students we noticed readiness to help directly in the accomplishment of individual tasks set for students at risk – they did their group homework without resistance.

Work in heterogeneous groups must not be understood merely as a form of social organising of teaching but also as an approach by means of which students will become aware of the benefits resulting from the variety and they will want to work in mixed groups. Achieving this aim was enabled by presenting video materials and processing texts which promoted differences as benefits: most of the countries in the world are heterogeneous by their population structure (ethnic origin, race, religion). When more successful students rebelled because of the time wasted on helping students at risk, the teacher gave them an opportunity to present the material previously presented to the group and the material they learned independently. This research confirms the thesis that students learn more successfully when they have the opportunity to pass on the knowledge they acquired – the person who teaches learns twice. Nevertheless, students with highly developed capacities

require more time for independent work – this was provided by occasional differentiation of teaching duties in the classroom, at home and in the frames of additional teaching.

»Positive interdependence is successful when group members perceive that they are linked with each other in a way that one cannot succeed unless everyone succeeds. Group goals and tasks, therefore, must be designed and communicated to students in ways that make them believe they sink or swim together. When positive interdependence is structured in a solid way, it highlights that (a) each group member's efforts are required and indispensable for group success and (b) each group member has a unique contribution to make to the joint effort because of his or her resources and/or role and task responsibilities. Doing so creates a commitment to the success of group members as well as one's own and is the heart of cooperative learning. If there is no positive interdependence, there is no cooperation.« (Johnson, R. T., Johnson, D. W., and Holubec, E. J., 1993)

As we have already shown it was not our intention to suspend the development of students' competitiveness and individuality by introducing cooperative learning; we tried to establish a balance.

Several examples from our practice are useful to show how we provide a balance between the positive mutual dependence and the individual responsibility in students:

- Giving group tasks that require participation of each member, e.g. asking students to achieve a consensus about a question, performing an individual task (five lines, prism, transcribing), reviewing a procedure for an already solved problem at the end of the lesson, etc.
- Distribution of various materials to each member of the group needed to complete the group task, e.g. parts of texts, words, letters, pictures, puzzles, etc.
- Awards for a successfully finished group task. For example, besides marks for individual results, anticipating points which the group collects during a week's work.
- Giving different roles to the students in a group, e.g. distributor of materials, reporter, designer, teacher, student etc.
- Serial work in a group. For example: students one by one, successively, take part in performing the group task – read, underline, transcribe, design, describe.

Conclusion

Let us go back to the beginning – teachers can organise and realise their educational work based upon the principles of competitiveness, individuality and cooperativeness. The teacher's pedagogical autonomy concerning the choice of his/her methodological approach necessarily determines the students' interaction, their knowledge and attitudes. This is undoubtedly supported by the arguments presented in this paper.

However, the power and the reach of cooperative learning are strongly determined by the manner of its introduction into school work. The incidental and unplanned application of cooperative learning techniques and only as a form of social organising of students has proved out to be ineffective in practice so far. That is why the introduction of this approach should be treated as a process through which, first and foremost, cooperativeness will be built into the class as a value. We organised this research in order to improve the educational practice and help in overcoming the noticed problems concerning students (absence from school, reading, writing, speaking, passive attitude, poor academic results, non-acceptance of the students' collective) coming from families with a low socio-economic status and those belonging to the Roma ethnic community.

The spirit of cooperativeness helped the class develop cohesion and it helped students at risk view their classroom as an enjoyable place for staying and learning. As a result of such an atmosphere students at risk coming from families with a low financial, social and spiritual status achieved higher academic results which were a significant precondition for successful attending of teaching in higher grades. They publicly promoted their pride because of the fact that they belong to a collective where they learn more and more easily.

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Објављивање ове књиге финансирани су

МИНИСТАРСТВО ЗА НАУКУ И ТЕХНОЛОШКИ РАЗВОЈ
РЕПУБЛИКЕ СРБИЈЕ
ИНСТИТУТ ЗА ПЕДАГОШКА ИСТРАЖИВАЊА