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Pupils' Perception of Cooperation in the Project-Based Teaching of Social, Environmental and Scientific Education

Extended summary

The paper presents the results obtained within a wider experimental research on the effects of the project-based model of teaching of Social, Environmental and Scientific Education. Modern theoretical and empirical research clearly emphasizes the need, possibilities and importance of a more frequent application of the cooperative approach in different teaching subjects, especially in the lower grades of elementary school. In this regard, differentiated project assignments and group research that form the essence of the project-based model of teaching appear as typical group activities which have the power of integration, group co-operation and communication. This model starts from a socioconstructivist idea of an interactive relationship between an individual and the environment during learning, and it is directed on building knowledge and developing students research skills by working on group projects. It is also expected that the model should enable the development of the associated skills. The results of various empirical studies examining the impact of this teaching model on the development of student collaboration were in most cases positive.

Since theoretical considerations of the work on group projects assume the development of cooperative behavior among students, the aim of this research was to examine the students' perceptions of cooperation in the project-based model of teaching the Social, Environmental and Scientific Education by the self-evaluation of the presence of subjective indicators of the quality of relationships between group members and the quality of group members' relationships relative to the group as a whole.

The research had an experimental character and included 142 fourth-grade students from two elementary schools in Jagodina, three classes in the experimental (72 students) group

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and three classes in the control group (70 students). In experimental classes, group projects were applied in teaching the Social, Environmental and Scientific Education, while a “normal” group work was applied in the control classes. In each experimental and control class students were divided into five working groups, formed according to their interest in certain topics. Research scales were used for scaling, and a partially modified assessment scale was used to determine the balance of the group work developed by Ruth Cohn and associates (Cohn, 1975). Students in the experimental and control classes were required to express, after the realization of the planned teaching units through project or regular group activities, on the scale from one to five (1 - I completely disagree, 2 - I mostly disagree, 3 - I partially agree, 4 - I mostly agree and 5 - I completely agree), their agreement with certain claims. The claims concerned the subjective indicators which, according to the triangle that shows interactions in a group focused on a particular topic, were divided into three parts: a) satisfaction with group and group activities - the “I perspective”; b) the experience of belonging to the group - “we perspective”; v) engagement in the group to accomplish the task - “perspective of the task.”

The results obtained from the analyses of the self-evaluation of students’ associative behavior in two different models of science teaching showed the following: students in the experimental group expressed a greater satisfaction with their own position in the group and group activities, a more significant experience of belonging to the group, and a greater engagement in the group in order to accomplish the task. Although students who worked on traditional group assignments claimed to have felt well in the group, most of them did not confirm that they had been respected and accepted, and the experience of security that the group provides to an individual is most likely to occur if a member of a group is respected and accepted by others. The differences in the students’ self-evaluation about whether they had learned more or less in the various forms of group work lead us to the conclusion that the nature of activities and tasks in the project-based model of teaching the Social, Environmental and Scientific Education has encouraged an interactive learning through the circulation and exchange of the knowledge, ideas and experiences among the students themselves.

Keywords: project-based teaching, teaching Social, Environmental and Scientific Education, cooperation, group work, self-evaluation.

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