Development of meta-subject competencies of the 7-9 grades basic school students through the implementation of interdisciplinary mathematical courses

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Abstract

© Authors. The article is aimed at describing one of the possible interdisciplinary courses for students of the 7-9 classes of the basic school connecting mathematics with natural sciences and the study of such courses role in the formation and development of meta-subject competencies of students. The leading method for this is the modeling of interdisciplinary courses, the main tools for the development of meta-subject competence in which are the interdisciplinary character of the content, including open and partially open type tasks in the course structure and the organization of project activities of schoolchildren in the field of studying mathematics and related disciplines. As a result of the research conducted by the authors they worked out several author's interdisciplinary courses, among them a special place is taken by the course "Mathematics in Natural sciences" for the classes of the natural-science profile. It is suggested in it to consider mathematical questions when applying them to the material of related disciplines both through the study of theoretical material and in the process of solving problems, including the open type, and involving schoolchildren in the project of interdisciplinary activity. Practical use of the interdisciplinary courses allows to see the achievements of meta-subject results by schoolchildren and the successes of students both in mathematical preparation, expressed by high marks on the subject, and related disciplines, which indicates the improvement of mathematical education quality of students who received training using the proposed methodology.

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Keywords

Creative development, Intersubject relations, Mathematical education, Meta-subject approach, Project activity

References