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Open type tasks in mathematics as a tool for students' meta-subject results assessment.

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Summary: The relevance of the present study is due to the tasks of assessing the quality of secondary education, which determine students' subject knowledge along with their personal achievements, and where meta-subject skills define not only the level of educational results achieved, but also the prospects for the future high-quality training for a school graduate at any age. Thus, the purpose of the study conducted is to create approaches for making the system of tasks together with the criteria of their assessment to determine the level of students' meta-subject results. The leading methods applied are modeling systems of open type tasks, with mathematical content and systematic analysis of large samples of experimental data, based on the evaluation of the two-point scale four parameters: the optimality of students' proposed ideas, efficiency of reasoning, originality of their answer and development degree of their solutions. A pilot study conducted since 2008 has applied open tasks with mathematical content and the criteria for their assessment formed the approach to determine the level of high school students' meta-subject results, expressed quantitatively in the form of an integrated assessment of the relative character – meta-subject intelligence quotient. Practical use of the intelligence quotient enables the making of accurate calculations for each age group in order to show the level of students' meta-subject results. This in turn may determine the future direction of students' individual development, and to ensure their transition to a higher level of meta-subject skills and, consequently, higher quality of education.

Classification: D60 D30

Keywords: education quality assessment; research; educational diagnosis; achievement; prognoses; problem posing; meta-subject approach; meta-subject results assessment; open-type tasks; criteria of open-type tasks assessment; meta-subject intelligence quotient

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