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Full packaged learning solutions for studying mathematics at school

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Abstract

© 2018 by the authors. The speed of modern changes in the system of teaching reflects an unprecedented accelerated renewal of means, forms and methods of teaching. Today, it is very important to test new learning solutions that reduce teachers' time on organization of students' educational activities. The idea of solving this problem is to combine the theory and practice of taking managerial actions and pedagogy in order to identify the type of learning solutions that reduce teachers' time, in particular teachers of mathematics, to prepare for classes. Thus, the purpose of the article is to justify full packaged learning solutions as an effective means of reducing the time spent on organizing the educational activities of schoolchildren. The authors of the article have determined the full packaged product as a package of program-methodical and subject-developing support that can be used by consumers of educational services (children, parents, teachers, administrators, employers) for independent use (a turn-key project). The leading methods of research are monitoring the organizational activities of teachers during math lessons, talking to teachers, analyzing methodical work and teachers' profiles, modeling and statistical processing of research results. As a result of the 2016-2017 experiment, where 21 teachers of mathematics took part, the authors of the article have defined types of learning solutions for mathematics teachers (adjustable, integrated and packaged); have described the stages of development and phases of creating a full packaged learning solution. Evaluation of the effectiveness of using full packaged product allowed to make a conclusion about an average decrease of time costs by 22% while preparing for classes. The theoretical significance of the article is due to the contribution to the development of scientific ideas about the means of methodical support for teachers of mathematics. The practical use of the proposed methods allows to organize a step-by-step transition from the development of adjustable solutions to full packaged learning solutions for studying school mathematics that contribute to reducing teachers' time spent on the organization of educational activities of students. The value of the full packaged product is justified with the help of a "project triangle", which connects key parameters for assessing the effectiveness of providing methodical support to mathematics teachers: the amount of work, time and costs. Changing the value of one parameter leads to changes of the values of others. Full packaged product allows to balance these parameters and achieve the planned educational result.

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Keywords

Full packaged learning solutions, Math teaching tools, Phases of creating full packaged learning solutions, Stages of development of full packaged learning solutions, Types of learning solutions

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