



Analysis and evaluation of student performance using test items

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ABSTRACT

In this article, we will tell you about the organization of taking test tasks from students and its importance, as well as the process of working with test tasks

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Introduction: The modern system of higher education undergoes significant changes due to which there is a need to implement in the educational process of new methods of quality control of the current progress of students. So, computer testing, which has proven itself in teaching with the use of distance learning technologies, is currently gaining popularity along with others forms of knowledge control among full-time students of universities. Testing provides teacher a number of undeniable advantages, following are some of them.

First, the objectivity of the results obtained during the assessment. The achievement of this factor is explained by the standardization of the testing procedure itself, i.e. all students are in the same conditions at all stages test.

Secondly, saving the teacher's time by automating the verification process is excellent. The most resource-intensive stage is the development of test material, as it requires a lot of amount of time and effort, but wears a one-time character. While the stage of direct use (operation) is automated and the teacher's role is to oversee process and data analysis

Materials And Discussion: Assessment of the current progress of students for all the material covered. Testing allows you to make a slice of knowledge all students in general and each student in in particular, and subsequently to carry out timely correction of the process of mastering knowledge. Selection and development of tests for implementation current control of students' knowledge is carried out in within the framework of the creation of the fund of appraisal funds (FOS) disciplines and are aimed at the formation of certain competencies in students.

Compliance with the content of test materials state educational standard was the fundamental principle that guided the development of this material. Test tasks are compiled in accordance with the program of the discipline and reflect the content of the topic "Indefinite integral" as much as possible. To successfully pass

the test, students are given three attempts, and the system chooses the best result (highest score). After sending the completed test to the student for verification given the opportunity to see the results is appeared. The test questions are displayed randomly, and the individual setting of the order of the answers is also included.

The entire test material is divided into nine elements (the so-called subtopics) and consists of 32 questions. The total time allotted for testing is one hour, the estimated time for completing one task is from 1.5 to 2 minutes. In order to reduce fatigue and keep students' attention, tasks tests are presented in various forms. Five types of test items are included: True/False, Matching, Multiple Choice, Choice of One Correct Answer, Matching sequencing action."

The main means of formal quality control of education is testing. In pedagogy and psychology, testing (from the English. test) is an experimental method based on standardized tasks that allow you to measure the psychophysiological and personal characteristics, as well as the knowledge, skills and abilities of the subject [8.39]. In a broad interpretation, the term testing includes the test method, the test result, and the interpretation of the test results.

The test method of quality control of education has a number of undoubted advantages over other pedagogical methods of control: high scientific validity of the test; manufacturability; accuracy of measurements; the presence of the same rules for conducting tests and the rules for interpreting their results for all subjects; good compatibility of the method with modern educational technologies.

Tests began to be used in 1864 by J. Fisher in the UK to test students' knowledge. The theoretical foundations of testing were developed by the English psychologist F. Galton in 1883. The term "test" was first introduced by the American psychologist J. Cattell in 1890. The first standardized pedagogical test was compiled by the American psychologist E. Thorndike. [4.17] The American psychologist K. Spearman developed the main methods of correlation analysis for standardizing tests and objective measurement of test studies. Spearman's statistical methods, based on the use of factor analysis methods, played a large role in the further development of testing. It should be noted that the development of testing has become one of the main reasons for the penetration of mathematical methods into psychology and pedagogy.

In Russia, the compilation and application of tests dates back to the 20s of the last century. The first series of tests for schools was published in 1926 [7.81].

The following stages in the evolution of knowledge control can be distinguished [5.96].

- 1) Traditional control. To assess the knowledge of students, such forms of control as control work, colloquium, term paper, etc. are used. The teacher prepares the appropriate options for tasks, checks and evaluates the results of the students' work.
- 2) Control using non-computer tools. In this case, pre-prepared forms containing control tasks (tests) are used for control. Students complete the forms by solving tasks and answering questions. The teacher checks the work using special stencils and answer tables.
- 3) 3) Control using technical devices. In this control option, the student, having received an individual set of test tasks from the teacher, completes it and enters the number of his option and the result of solving each task into the technical device, and the device checks the entered answers, calculates and displays the grade for the work.
- 4) Computer control. Here, knowledge control is provided by special computer programs in which, generally speaking, an individual set of test control tasks is formed for each student, the tasks are displayed on the monitor screen, the student's answers are analyzed, the resulting grade is set, and control results are stored and data about the student's work.
- 5) 5) Remote control. The emergence of this approach to knowledge control is primarily due to the widespread use of the Internet in the educational process. Distinctive features of remote control of knowledge are the freedom of students to choose the pace of testing, its time and place.

Testing is one of the types of pedagogical measurements, which also include rating and monitoring. At its core, monitoring relates to the field of education management and, in relation to pedagogical measurements, is only a supplier of indicators of the quality of education. The work is devoted to the problem of assessing the quality of tests, which can be considered a part of the task analysis problem [3.95]. Task analysis can be rational (evaluative) and empirical (statistical). Rational task analysis involves an informal analysis of each of the test items and is implemented outside of the automatic learning system

(ALS). Empirical item analysis means the analysis of such characteristics of a test as its reliability, validity, difficulty, discrimination, etc. [10.108]. The paper considers criteria that correspond to the specified aspects of test quality.

We note the following circumstance. Along with discussing the quality of tests, we can talk about the quality of the test results obtained with their help. At present, there is a clear trend, according to which it is considered more correct to discuss the issue of not the quality of tests, but the quality of test results with their help. [9.72] However, in this paper we will remain on the classical positions and will not discuss the quality of the test results. The current level of development of information and communication technologies opens up the possibility of creating automated knowledge testing systems, which usually represent the corresponding ALS subsystems.

Conclusion: The methodological basis of such systems is the methods of mathematical statistics, decision theory and artificial intelligence (in particular, fuzzy logic and the theory of expert assessments), as well as the latest achievements of modern pedagogical science. In the English-language literature, automated knowledge testing systems are called CAT-systems (Computer Adaptive Testing Systems).

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