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Knowledge test with using test technologies as an element of improving the quality of training in e-learning systems

1. Article

Virtualization of educational institutions such as the University, enables a new approach to the problem of self-control and knowledge control that were obtained during the training. Since we are dealing with the programming environment, it is needed maximally to use its features and benefits.

First of all, this is a relatively low-cost automation capability of routine elements of the educational process, such as the delivery of training courses on student request, in-line self-monitoring and the final control learner achievement, the construction of various ratings and reports.

The teacher, ideally, should focus its efforts on the creative elements of the educational process, such as setting goals, writing and improving the course and the learning tasks to it, the definition of criteria for the its successful passage and making the tasks of final control.

Applying for informatization of the educational process e-Learning technology, special attention should be paid to methodological factors such as the precise wording of the goals and objectives of training activities. It is important to be able to understand and define the criteria for achieving the set goals, identify indicators of their quantitative evaluation. It is necessary to increase the measurability of results, to develop a system of performance indicators and the quality of the used technology.

Due to the advantages of e-Learning, it is possible to significantly increase the performance of teachers work. New e-learning technologies allow: to train as in the full-time and part-time form, each student individually, or several groups of students at the same time; individualize, adapt educational programs and materials; replace where it is appropriate, unproductive human labor of teachers materialized forms of work, in the form of computer programs and manuals.

Now, with the use of e-Learning technologies, the student moves to the center of the educational process. The main role of the teacher is setting the teaching goals, organization of pedagogical conditions necessary for the successful achievement of educational goals and the organization and management of self-employed of students. Consequently, the student is learning, and the teacher

creates the conditions for learning. Classical authoritarian educational scheme of coercion is transformed into student-oriented pedagogy development.

As for the test learning technology, then to it imposed three basic requirements: they are adaptability, quality and efficiency.

Adaptive technology suggests intellectual priority of the individual of students and the need to create technologies that are able to react to individual differences in the subjects and the current level of their knowledge. It creates new teaching texts of increasing levels of difficulty and a measure of difficulty of the task is selected, depending on the success of the answers to the previous tasks.

Quality of the technology primarily due to the sustainable and rapid operation technical and program means of training and to the quality of the individual tasks in the test form, with reliability and validity of test results.

The effectiveness of technologies suggests a decrease costs while improving the quality and quantity operation of the system.

In general, knowledge tests can be divided into two fundamentally different types of activities: threading knowledge testing and final control. They have different goals and objectives, and therefore should be based on different methodological principles.

The main task of the current knowledge test – is not so much control as the identification of knowledge gaps and inaccuracies of understanding. The student should use every part of the curriculum with advantage for achieving the learning objectives. And therefore in-line testing should be its important part. So each question and the task should have learning potential, indicating, if necessary, on the correct answer, giving the correct solution of the problem (preferably with comments) and the recommendation to re-learn the necessary parts of the course.

As Edgar Dale shown in his works, the active nature of participation of the student in the learning process is a more effective method of learning in comparison with the passive perception of the information being taught, especially in the long term perspective. That's why it's bad to confine exclusively to the process of passive learning when the student only listens to lectures, reading a textbook or viewing video. It is important to consolidate the acquired knowledge by active learning. In a classroom conditions, in addition to practical tasks and laboratory works, to such methods can be attributed the answering on questions, solving problems and in-line testing.

Tasks in the test form performed a training role, if they are in the form of questions are all key elements of the theory and the main practical skills and practices that are necessary to understand the student on departure this course. And students need to perform all of these tasks, as long as he does not reach the target level of skill in meeting its challenges. The need to re-execute the tasks leads to the idea of necessity of their variability, in other words, the use in different attempts of several variants of the same job. Automated training system can easily and correctly use such opportunities in the in-line testing.

In some cases, the to provide effective memorizing of all main points set out materials or large amounts of homogeneous data, for example, a list of chemical formulas, a set of medical terms or foreign words, can be used total survey. The principle of adaptability, in this case, will be implemented as a setting of this process. Value of piece of data and the number of correct repetitions can be parameterized. In addition, can be identified most difficult-to-remember questions that may require special attention when repeated at the end of the course.

Another measure of adaptation can be difficulty of jobs or tasks that are put before the student during studying the discipline. In the successful resolution of tasks the level of their complexity can be gradually increased. Thus does not curriculum, and namely the student with his success and manifestation abilities will largely determine the extent of his achievements in the study of the course and develop the skills to apply the knowledge. In the future, it is important that final testing was just as adaptive, to identify and evaluate the real level of knowledge of the student.

Thus, each student will receive adapted to him training course, in which the emphasis placed on those materials that were the most difficult for him. This is a positive impact on the quality of education, promoting the fullest extent possible of learning. The student has at its disposal a personal trainer, which helps to achieve the goals of training the most effective way for a particular person.

Focus attention on the fact that the results of passing these tests should not be used as estimates that affect on the rating of the student. In this case, gets lost almost the entire learning effect, because all the attention is shifted from student's learning mode in the receive mode by any means the best possible results.

It is important to understand that mistakes can provoke not only inattention reading or other study material studying weaknesses by the student. In this case it is a question about the application of this form of testing as an automatic feedback system with the teacher. The abnormally high number of wrong answers to a specific question of the students who have the highest scores for related topics may indicate, for example, the possible inaccuracies in the coverage of this issue in the course materials. Moreover, this kind of logic errors can not be completely obvious to any teacher during the writing of the course, or for students during study.

The main task of final testing is to control and evaluation of the knowledge and skills of students obtained in the study of the course. The defining feature of the test control is reliable and adequate quantitative assessment of students' knowledge with the use of statistical methods. In the global teaching practice the problem of creating and application of tests is scientifically based and widely studied. The development of the issue studied by such scholars as Vadim Avanesov, Anne Anastasi, Gene Glass, Karlheinz Ingenkamp, Julian Stanley and others.

In general, not each set of questions can be considered as educational test. So Vadim Avanesov determines the pedagogical test as the system of variant tasks uniformly increasing difficulty, allowing a qualitative assessment of the

structure and effectively measure the level of preparedness of the test for one or more academic disciplines. The meaning of the phrase „the system of variant tasks" means that each task has its parallel test options.

It is identified number of general requirements for the tests, the main of which are validity, simplicity, reliability, certainty and ambiguity.

Validity of the test – is it adequate security purposes. Distinguish the substantive validity – compliance of test content of controlled study material and the level of abstraction at which this material was taught, and the validity of the functional – compliance of test questions to learning objectives and level of learning that is specified by educational standards.

The requirement of simplicity means that the test should have one task of one levelthat is should not be complex and consist of multiple tasks at different levels, and that the wording of of tasks and the answers should be short and precise.

The reliability of the test is to ensure the sustainability of the results with repeated testing in similar conditions the same subject or subjects of the same level. Here paramount feature of variability tests.

The requirement of certainty (public) test is necessary not only for the understanding of each student what he should do, but also to eliminate the correct answers that differ from the standard.

The uniqueness is defined as the similarity of quality evaluation of the test execution by different experts. To fulfill this requirement, the test should have standard.

In general, if the learning process is designed so that the final test phase precedes inline tests, tasks for the formation of the final test can be formed on the basis of authenticated on satisfaction all the requirements of questions inline tests. And the test itself can be done in advance, without haste and on extensive statistical data, which significantly improves the accuracy of the results of the final test.

In general, the use of tasks in the test form, combined with educational e-Learning technologies to ensure a high level of Learning, consistency and strength of its study, radical improvement in the learning process through increased training, supervising, organizing, diagnosing, educational and motivational functions of such tasks.

Literature

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Abstract

The article considers the possibility of a significant improvement in the quality of education on the basis of the connection of e-Learning technology and the widespread use of tests and tasks in the test form.

Key words: e-Learning, knowledge testing, testing, final testing.