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Formation of students' skills in solving educational problems through adaptive tests

5.8.7. Methodology and technology of vocational education

(Pedagogical sciences)

THESIS

For the PhD degree in pedagogical sciences

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Introduction:

The importance of the study is determined by the fact that one of the main reasons for the formation of pedagogical problems of modern students is the incompatibility of some curricula and tests with the inclinations, abilities and characteristics of individual students. In order to solve this contradiction, the so-called adaptive e-learning was formed. Now it represents a recent educational trend that has emerged with the aim of creating an effective e-learning environment that meets the individual needs of each student.

It should be noted that adaptive e-learning allows students to actively interact with textual content and adapt to the study of educational materials. One of the most important assessment methods in adaptive e-learning is adaptive e-tests. It is tailored to each individual student by providing questions proportional to their level of mastery and ability, allowing for a more accurate assessment of learning outcomes based on the fewest number of questions.

However, despite the resources of adaptive e-learning and the increasing trend observed over the past two years towards the active use of its methods, at present insufficient attention is paid to the possibilities of adaptive e-testing to develop students' skills to solve their educational problems.

The subject of study is the adaptive electronic environment of a higher education institution.

The title of study is the formation of students' skills in solving educational problems through adaptive tests.

The purpose of study: to prove the effectiveness of the model (model of forming students' skills in solving educational problems through adaptive tests) theoretically and experimentally to test the formation of students' skills in solving learning problems through adaptive tests.

Research hypotheses: The formation of students' problem-solving skills through adaptive tests will be effective if:

- the essence of the process of forming students' skills for solving educational problems through adaptive tests was understood not only traditionally as the acquisition of methods for solving difficulties in mastering educational material with the teacher, but also as a process in the form of independent work of students with adaptive tests;

- the developed adaptive test could be used not only as a variant presentation of various test questions to fix the quality of education, but also as an opportunity to more accurately assess the formation of students' skills in solving educational problems, based on individual differences of students, as well as an opportunity to carry out purposeful support activities with the teacher;

- Establishment and reform in the model of forming students' skills to solve their educational problems through electronic adaptive tests, a series of pedagogical procedures that will describe not only direct work with the test, but also such stages as pedagogical analysis and design, actual development of adaptive testing, final evaluation and approval of the product / The result.

Research tasks:

1. Determining the essence of the process of forming students' skills to solve educational problems through adaptive tests.

2. Determining the possibilities of using the adaptive test to build students' skills in solving educational problems.

3. Develop a model for the formation of students' problem-solving skills through adaptive tests and test its effectiveness empirically.

Results:

• The essence of the formation of students' skills in solving educational problems through adaptive tests is the organization by the teacher and the subsequent pedagogical support for the independent consistent work of the student with adaptive tests, which consists in the identification and understanding of the educational problem; Defined and formulated as a question; Gather facts and concepts about the educational problem. formulating, testing, accepting or rejecting the optimal hypothesis to solve or suggesting alternative hypotheses; Solve an educational problem using a valid hypothesis as a basis for solving other educational problems.

• The developed adaptive test can be used to measure and evaluate not only the formation of a certain amount of knowledge among "average" students, but also taking into account individual differences between them, which will increase the accuracy of the results of the adaptive test compared to traditional tests. The possibilities of using adaptive tests to form students’ skills in solving educational problems include: the possibility of asking questions in different forms in proportion to each

student’s abilities, taking into account individual differences between them, the accuracy of measuring students’ skills in solving their educational problems and the subsequent educational support for the student in the process of forming these skills.

• The essence of the model of forming students' skills in solving learning problems through adaptive tests is to identify theoretical and practical ideas about the essence of pedagogical activity, with the aim of designing a series of supporting activities for the teacher and the independent work of the student with an adaptive test. It is a construction consisting of methodological blocks, operational activity and evaluation of results, and provides a staged activity for students aimed at designing and implementing an adaptive test to form students' skills in solving pedagogical problems, as well as teacher activities aimed at pedagogical support for students. The model for developing students' learning problem-solving skills through adaptive tests includes several stages: analysis, design, development, evaluation, use, follow-up, as well as diagnosis and results obtained.

Thesis structure: The thesis consists of an introduction, three chapters, a conclusion, a bibliographic list and appendices. The reference list consists of 212 references, the thesis contains 4 appendices, and the text contains 7 tables and 15 illustrations.