CREATION OF TOOLS FOR MEASURING THE RESULTS OF ADVANCED TRAINING COURSES BY STUDENTS

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ABSTRACT

The article substantiates and formulates the requirements for the design of tools for measuring the results of training advanced training students, namely: the content, form, complexity, placement of tasks; to the design and processing of measurement results; logical-psychological and scientific-epistemological requirements.

Keywords: Tools, pedagogical measurements, test tasks, requirements.

INTRODUCTION, LITERATURE REVIEW AND DISCUSSION

The quality of education is associated with the solution of many problems, one of which is the problem of the quality of teacher training.

An analysis of the literature showed that the theory of designing tools for measuring professional competence of teachers was practically not considered.

Pedagogical measurements of the level of knowledge often have the goal of obtaining data on the status, effectiveness and quality of the education system. Pedagogical measurements are divided into three large groups. The first includes measurements with obvious quantitative features. The second group consists of measurements with latent quantitative characteristics. Their assessment is of a relative nature, because a quantitative expression is attributed to a qualitative attribute or characteristic. The third group includes qualitative measurements that cannot be measured with quantitative parameters; therefore, the assessment is carried out both subjectively and qualitatively.

At the first stage of the research, the essence of the concepts was clarified: “testing knowledge”, “teachers' skills” and “forms of control”. The main purpose of the test was taken into account - identifying the state of knowledge and skills of teachers (volume and quality) in accordance with the planned learning objectives, determining what is needed for the proper organization of activities of both the teacher and students of the courses.

We believe that the tools for measuring the results of teacher training during continuing education courses must meet a set of requirements: objectivity, efficiency and sufficient information about the level of knowledge, manufacturability, the ability to quantitatively

measure the level of knowledge, skills of each student, group, evaluate the systematicity and degree of completeness of knowledge.

Testing cannot be considered as an ideal method, therefore, we cannot exclude other methods of measuring the knowledge and skills of students of the courses on this basis. But testing best satisfies the basic methodological criteria for the quality of knowledge, providing acceptable objectivity to all three main stages of the assessment process - measurement, data processing and interpretation [1]. Well-organized testing and a developed test as a measurement tool make it possible to satisfy the validity criteria [2].

Knowledge is evaluated in terms of volume and completeness, consistency, generalization and mobility. Positive characteristic features: insignificant expenses of time for measurements in large groups of listeners; insignificant influence of subjective factors during measurements; long-term storage of measurement results and automation of their processing; high objectivity of the measurement process and interpretation of the results; high reliability. Negative signs: the use of not scientifically based tests on the read modules; non-compliance with standardized conditions during testing in the classroom; lack of processing of test results.

Testing is a procedure for measuring any characteristics of a person who previously went through the technology for determining validity and reliability [3].

Now in countries where there is a long tradition of testing, the attitude to tests is far from unambiguous. American researcher R. Weiss [5, p. 47] claims that standardized tests deserve more criticism, which limit respondents to the choice of categories, ignoring the complexity of individual answers to the questions posed. Tests play the role of a “national measurement line” in American society, but they do not take into account all the factors that arise during testing.

Foreign experts [6] believe that the introduction of state standards meters in a test form will reduce training for testing, especially when the test results serve as a criterion for students to receive a diploma of advanced training, certificate or other formal sign of education. In this case, too much time is spent preparing for testing, and teachers and students become dependent on the results of the often formal procedure. Of course, preparation for testing today cannot yet be considered an effective way of learning. However, if the tests became diverse (not only took into account the correct choice of the answer, but also stimulated its expression), preparation for such tests would be appropriate: they would make it possible not only to identify those who remember the correct answer to a particular question, but also demonstrate that they know about this, understand and know how.

During testing, they often use diagnostics for the speed of performing certain operations. Failure to complete tasks is assessed as lag. And listeners with a phlegmatic accentuation of temperament always fall into this trap. But the reality of their potential is different. It is these individuals who often have high creative potential, respectively, bring the matter to its logical conclusion with great quality. But they need only more time for all operations.

The study shows that in achievement tests, which usually serve as a measurement tool in educational technology, such incidents are also sufficient. “The testing technique should be reviewed and corrected in order to make the tests a mirror of the standards that are actually achieved by the individual,” says E. Whaba from Egypt [7, p. 53].

However, tests have a number of advantages due to which this tool has become popular. In particular, the test results can be quickly and easily processed, while obtaining quantitative indicators. It is also important that the test results are independent of the teacher and his attitude towards the respondents.

During the research within the framework of the scientific theme of the Department of Natural Mathematical Disciplines and the methodology of their teaching "Designing the mechanisms of integration of new educational technologies at the stage of modernization of the natural-mathematical educational space" The task was to test the effectiveness of combining testing with various forms of control and training methods, as well as using test items for both training and for monitoring the knowledge and skills of students. The task was to test the effectiveness of combining testing with various forms of control and training methods, as well as using test items for both training and for monitoring the knowledge and skills of students. We adhered to the fact that the test results depend on the content of the test, the testing procedure and the preparation of students for working with the tests. Therefore, during the study, it was decided to check how perfect the forms of test tasks developed by us were. The testing experiment covered more than 200 students of continuing education courses. These were teachers of chemistry, biology, physics, computer science, mathematics, and primary education.

The measurement was carried out at different stages of training: when studying new material to consolidate it (training test tasks, tasks for self-control), during knowledge testing (test tasks for phased control, thematic test tasks, final test tasks).

During the experiment, it was found that teachers are better perceived test tasks of a closed form, that is, alternative and for compliance. And they have difficulties during the execution of tasks with answers-destructors [8], which are constructed according to cumulative or combinational principles. For example:

1. In case of multi-level training of teachers, I give priority to ...
(A) efforts;
(B) effort, knowledge;
(B) efforts, knowledge, skills;
(D) efforts, knowledge, skills.
2. The educational paradigm at the present stage of training ...
(A) student - textbook - teacher;
(B) textbook - student - teacher;
(B) teacher - textbook - student;
(D) teacher - student - textbook;
(D) student - teacher - textbook.

In some groups, test results were discussed immediately. An attempt was made to combine testing with traditional teaching methods. Students gave answers to the test items with explanations, then other students or the teacher corrected the answers.

As a result, the requirements for the creation of measuring instruments were identified:

- to the placement of tasks (the system of tasks with the gradual complication of questions from simple at the beginning of the test to complex, rather than a random set of tasks);
- logical-psychological and scientific-epistemological (application of well-known patterns in relatively new conditions, that is, a logical connection with previously acquired concepts and ideas, as well as those that are subject to assimilation, the presence of cognitive difficulties;
- taking into account the unity and interconnection of knowledge and skills, theoretical content with practical; the use of various types of tasks (direct and reverse); the completeness

of the knowledge system - the totality of knowledge and skills that must be acquired as a result of studying a topic, section, module, etc.);

- to the design of the meter (indicating the option; development of an answer form; formulation of instructional material (instructions) for both the entire meter and for each form of the task separately with examples);

- to the processing of measurement results (ensuring the same interpretation and conversion of the measurement results obtained; the use of scientifically sound and already tested methods by which the quality indicators of tasks and the entire meter are determined).

Thus, the methodology of designing tools for measuring the achievements of students of continuing education courses is theoretically justified; the requirements for the creation of measurement tools in the following areas are defined: content, form, complexity, assignment of tasks, and logical, psychological and scientific-epistemological requirements.

Promising, in our opinion, will be the study of the theoretical and methodological foundations of monitoring in the educational process of institutions of additional pedagogical education.

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