

PEДАГОГІЧНІ АСПЕКТИ ПРОФЕСІЙНОЇ ПІДГОТОВКИ
МАЙБУТНЬОГО ФАХІВЦЯ
З ФІЗИЧНОГО ВИХОВАННЯ ТА СПОРТУ

УДК 378.03 (477)

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PEDAGOGICAL
TESTING IN THE UNIVERSITIES OF UKRAINE AND THE USA

Problem. The article analyzes the current state of pedagogical testing in university education in Ukraine and the USA. Increasing the effectiveness of the organization of test control and assessment of knowledge, skills, and abilities of higher education students is becoming urgent.

The **purpose** of this research is to substantiate the theoretical foundations of the effectiveness of pedagogical testing in universities in Ukraine and the United States.

Research methodology based on general principles of philosophy, basic modern provisions of pedagogical science, psychology and reflects the relationship of methodological approaches to the study of the process of pedagogical testing and its use in universities of Ukraine and the USA.

Object of research: educational process in universities of Ukraine and the USA.

Scientific novelty. It is substantiated that the effectiveness of pedagogical testing is influenced by the state of the university's informatization, as well as: provision of the educational process with electronic textbooks, manuals, methodical recommendations; competence of professors and teaching staff in the development and use of tests; willingness to study and implement advanced pedagogical experience; logical construction of the test control system in the pedagogical process of the university; readiness of applicants to work with tests.

Conclusions. Pedagogical testing is a modern process of assessment and control of knowledge, abilities and skills of higher education students. The application of pedagogical testing within the educational process of a separate university both in Ukraine and in the USA improves the process of effective assessment and control. Test control allows you to obtain unbiased knowledge about the level of initial achievements of higher education applicants, and therefore, to establish the quality of training and the quality of education of a future specialist. In the USA, the

effectiveness of pedagogical testing is influenced by the state of the university's informatization, in particular, multimedia and telecommunication resources. The theoretical justification of pedagogical testing is based on the principles of: systematicity of its conduct; the openness of its purpose; objectivity and comprehensibility of its results; effectiveness of consequences.

Keywords: *applicants of higher education, test, pedagogical testing, universities of Ukraine and the USA.*

Formulation of the problem. Relevance of work. Today, the state of university education obliges teachers to look for new approaches to the assessment of knowledge, abilities and skills of higher education students. Increasing the effectiveness of the organization of test control is becoming relevant. Studying the experience of implementing pedagogical testing in universities proves that the problem is not sufficiently researched. Both Ukraine and the USA have specifics in the implementation of pedagogical testing. At the same time, there are both common trends and differences in the implementation of pedagogical testing in the USA. Improvement and development of educational and methodological support in accordance with the requirements of the time is one of the urgent tasks of modern universities.

Problem. Fundamental changes in the quality of training of future specialists can be provided not only by significant improvement of teaching methods, but also by correct and effective quality control of the acquired knowledge. We should note that the introduction of pedagogical testing in modern universities of Ukraine and the United States has both common components and differences, which are the subject of our research.

The *purpose* of the article is to substantiate the theoretical foundations of the effectiveness of pedagogical testing in universities in Ukraine and the United States.

Analysis of the latest research and publications proves that the theoretical foundations of pedagogical testing were developed by both domestic and foreign scientists. Various aspects of test measurement of educational achievements of higher education students are highlighted by domestic scientists (Olga Zhornova, Olena Zhornova, I. Oksenyuk, S. Yutkalo, etc.) and foreign scientists (G. Masters, B. Wright та ін.) [3, p. 43].

The research was carried out using general scientific *methods* (study, analysis and generalization of reference information, review of scientific and educational printed and online sources), as well as systematization and generalization.

Isolation of previously unsolved parts of the general problem – the specifics of pedagogical testing in universities have not yet been sufficiently investigated in both domestic and foreign scientific research.

The *purpose* of the proposed investigation is to substantiate the theoretical foundations of the effectiveness of pedagogical testing in universities in Ukraine and the United States.

Research results. For our research, it is important to refer to both domestic and American experience of studying the process of functional assignment of pedagogical testing in universities.

The problem of pedagogical diagnosis of the results of educational activities of higher education students is becoming more and more relevant from the point of view of further improvement of the educational process in higher education. We must state that «control in various forms makes it possible to reveal the level of assimilation of the material according to the training program and mastery of relevant practical skills and abilities by the students, and to find out the shortcomings and difficulties of the training process». Testing as a form of control enables the teacher to effectively organize the process of monitoring the success of students of higher education, ensures the maximum objectivity of the evaluation, reduces the time of processing the results, enables statistical processing of the material and, thus, contributes to the improvement of the quality of control and assimilation of the educational material. With the help of pedagogical testing, it is possible to carry out all types of control: input, current, boundary, control of residual knowledge, final [8, pp. 117–129].

In our research, we will rely on the definition of the concept of «test» (English test – inspection, test, control work), proposed by O. Lyashenko in the «Encyclopedia of Education» – it is «a set of tasks from a certain field of knowledge or educational subject that allows quantitative to evaluate the knowledge, skills, academic achievements, competence of the students of education» [2, p. 902].

Pedagogical testing is one of the most important contributions of behaviorism to the development of society in the United States of America. It provided a significant improvement in the educational process of university education compared to previous practices in higher education. It provided a tool for more equitable access to education. Scholars note that not all tests are well designed, not all testing approaches are rational and useful, and the available evidence supports that the appropriate use of well-designed and valid pedagogical tests provides a better basis for making certain important decisions about individual higher education applicants and programs than others. methods of pedagogical diagnostics. Educational testing in the USA has always been the subject of scrutiny, criticism, and debate both outside and within the professional testing community. The criticism is that tests play too big a role in the lives of higher education students and teachers. Being biased, they create unnecessary obstacles. The goal of our research is to create a basis for evaluating the quality of test practices in terms of impact on various participants in the educational process [7, p. 16].

Test control of educational achievements of students of higher education is the subject and object of pedagogical research, since the practice of modernization of specialist training in universities of both Ukraine and the USA requires justified requirements for tasks, functions, principles of implementation of this form of control, as well as its content, criteria determination of its quality and objectivity.

Currently, in the USA, the development of tests is a field of research in the scientific field of Education Measurement, which is designed to provide a qualitative measurement of the preparedness of students of higher education in various specialties.

Characterizing the existing systems of computer testing, the domestic researcher I. Oksenyuk notes that «for creating computer tests, you can use software that is independent of the Internet connection, that is, installed on a personal computer, which nowadays is more effective because it is easy to integrate them into the educational process by placing them on their own resources (website, blog). Access to such resources is possible from computers, smartphones and tablets». The scientist believes that it is one of such software testing tools that are installed locally on a computer *MyTest* [5, p. 32].

Pedagogical testing has not been left out of the attention of the scientific-pedagogical public, however, the theory and methodology of teaching the construction and use of pedagogical tests in the natural course of the educational process in domestic universities have not been sufficiently developed. Therefore, it is appropriate, at least, to clarify the functional purpose of pedagogical tests in higher education and, therefore, to highlight the factors of the productive implementation of test control of the knowledge of students of higher education [4, pp. 34–47].

Pedagogical testing tasks are used to implement both functions of tests – control and educational, intended primarily to check the formation of algorithmic thinking and algorithmic knowledge and skills, cognitive skills [5, pp. 31–35; 6].

Rules for designing test tasks: 1. The condition must contain a clearly formulated task. The task should focus on one problem. 2. Each test task must assess the achievement of an important and essential educational goal. 3. You should avoid testing trivial or overly specialized knowledge. 4. Each test task should test the appropriate level of knowledge acquisition, including higher cognitive levels. 5. The answer options must be homogeneous. 6. All distractors must be plausible. 7. The information contained in one test task should not provide an answer to another test task. 8. It is not recommended to use the phrases «all of the above», «none of the above» as the correct answer or distractor. 9. It is not recommended to use the phrases «none answer option is wrong», «there is no correct answer», «all answers are correct», «sometimes», «probably» as a correct answer or distractor [5, pp. 31–35; 6]. 10. The content of the task must meet the program requirements and reflect the content of the study [5, pp. 31–35; 6].

We have to emphasize the importance for testing the implementation of ECTS in Ukrainian universities, which have been operating in the USA for many years [1].

The main contradiction, which is overcome by working out the theoretical and methodological principles of test control, is the urgent need for wide implementation of the practice of testing in the natural course of training of specialists of various specialties in universities of both Ukraine and the USA and the lack of powerful experience of such work among teachers.

The main purpose of pedagogical testing in universities is: • measuring the preparedness of the future specialist for professional activity and shifts in the formation of readiness for its implementation; • tracking the dynamics of educational achievements of the students; • establishment of the success rating of higher education applicants; • monitoring the effectiveness of the educational process; • introspection.

Therefore, the leading functions of pedagogical testing are diagnostic, control, as well as educational, organizational and educational.

Domestic scientists note that the testing policy is developed in order to: «guarantee the achievement of personal and corporate goals; to guarantee the avoidance of potential misuse; demonstrate commitment to good practice; to guarantee the use of the test in accordance with its purpose; to ensure that the test is not used for unfair discrimination; to guarantee evaluation based on complete and appropriate information; to guarantee the use of tests only by qualified personnel» [7].

Establishing the essence of the discussed components of pedagogical testing, it is expedient to suggest introducing into circulation, at least within the scope of this study, the definition of the main concepts: Pedagogical testing in higher education as a form of control is the performance of special tasks by students, which make it possible to identify the content, structure, level of their knowledge, abilities and skills [3, p. 46].

Pedagogical test as a method of control is a standardized way of establishing compliance of general and professional competences acquired by students of higher education with the requirements of the State Educational Standard. Pedagogical test as a means of control is a complex of tasks with special content characteristics and structure, which, by their very nature, are didactically and technologically verified (units of control material). A test task is a structural unit of a pedagogical test that contains part of the educational material and is separated from the entire array of educational content on the basis of a certain content and logical independence [3, p. 47].

The concept of a test task and a task in a test form should not be confused. The test task is a component of the pedagogical test and therefore, separated from it, it cannot serve as a sufficient basis for conclusions about the educational achievements of students and the quality of education, while the task in the test form can be both independent and a sufficient presentation of control tasks for the current detection of results teaching [12]. Therefore, their functions are different: • in the test task – to present either a separate part of the content of education, the quality of which is subject to verification, or a component of the content of education, which is subject to verification of its formation in students of higher education; • in the task in the form of a test – to enable in a standardized form the current control of the acquired competences of the students of higher education.

During the introduction of testing into the natural course of the educational process, the concept of test questions or pre-test questions, which essentially make up the content of the test task, became widely used. Therefore, a test question is understood as a separate question, the answer to which serves as the basis for determining the level of mastery of the higher education student's knowledge of the program material in the academic discipline.

The method of test control of the initial achievements of higher education applicants is based on important aspects [3, p. 47]: • the results of pedagogical testing (current and final evaluations) are considered as an empirically recorded indicator of the quality and scope of professional and general competences of higher education students, which allows establishing the compliance of the quality of the obtained education with the requirements of the State Standard (by branch); • the results of pedagogical testing certify the quality of education as a joint, interconnected activity that includes the activity of the teacher (teaching) and the student of higher education (learning); • objective establishment of the level of educational achievements of students of higher education is the starting point for organizing, conducting and analyzing the quality of pedagogical testing.

A distinction should be made between the concepts of pedagogical testing effectiveness and test/test task effectiveness. In both cases, we are talking about the consequences, but in the first case, the process of measurement, while in the second – the way of its implementation [14, pp. 26–31]. When we consider the procedural aspect, according to the scientific intelligence of American scientists, the course of this procedure will be subject to analysis, for example, the organization and conditions of testing, the readiness for it of the subjects of the pedagogical process; when we consider the method – we analyze the test's own ability to adequately and objectively reveal the characteristics to be studied, for example, the assimilation of certain knowledge or the ability to operate a conceptual apparatus by those who acquire higher education. Therefore, it is appropriate to talk about the effectiveness of the test and the performance of the test [13].

As the domestic scientist S. Yutkalo notes, «justifying the theoretical principles of using test control during German classes, we note that depending on the method of answering, test tasks are divided into: closed-form tasks with suggested answers, one of which is correct; open-ended tasks with freely constructed answers» [8, p. 124].

According to American researchers, the effectiveness of pedagogical testing is influenced by the state of university informatization, in particular, multimedia and telecommunication resources, as well as: provision of the educational process with electronic textbooks, manuals, methodical recommendations, and other materials included in the educational and methodological complex of the discipline; competence of the teaching staff in the development and use of tests, readiness to study and implement advanced pedagogical experience in these matters; logical construction of the test control system in the pedagogical process of the university; readiness of applicants to work with tests [3, p. 48].

According to American scientists, the performance of the tests is ensured by their: didactic relevance; objectivity; validity; diagnosticity; prognosticity; usefulness [10].

So, the scientific and theoretical justification of pedagogical testing is based on the principles of: systematicity of its implementation; the openness of its purpose; objectivity and comprehensibility of its results; effectiveness of consequences.

Test control makes it possible to obtain unbiased knowledge about the level of initial achievements of higher education applicants, and therefore to establish the quality of education and the quality of education of a future specialist (or at least to predict it). At the same time, it is precisely the quality of education that is most clearly revealed through the mastery of a certain scientific field by higher education graduates, which constitutes the content of the academic discipline, while the comprehensive state exam and the defense of a master's or bachelor's thesis reveal the general preparedness of higher education graduates for professional activity, and therefore certify productivity and effectiveness of the process of training a future specialist and the quality of the education received as a whole [13].

Orientation to the minimum and checking minimum only is a consequence of bureaucratic approach to the education management and the falseness of a total and minimalist educational policy. Optimization of the content has been a leading idea of traditional and adaptive testing: to optimize testing means to measure the knowledge of maximal number of students, rapidly, with high quality, at minimal expenses, with the minimum number of assignments and for the short space of time. This idea is close to the task of improving the effectiveness of pedagogic activity by the usage of mass knowledge control. It seems appropriate to make some generalization of ideological sense: testing culture, first of all, is interesting to the leaders aiming at increasing such effectiveness [9, pp. 105–108].

Pedagogical testing in universities of Ukraine and the USA, as well as traditional control methods, occupies an important place in the general system of diagnosing and monitoring the quality of the educational process. There are advantages to test control. Domestic and American scientists claim that «test control can be used as a means of all types of control: basic (initial), current (thematic), milestone (credit), final (examination) and self-control» [5, p. 32].

Conclusions. Therefore, pedagogical testing is a modern process of evaluating and controlling the knowledge, abilities and skills of higher education students. The application of pedagogical testing within the educational process of a separate university both in Ukraine and in the USA improves the process of effective assessment and control. Test control allows you to obtain unbiased knowledge about the level of initial achievements of higher education applicants, and therefore, to establish the quality of training and the quality of education of a future specialist. In the USA, the effectiveness of pedagogical testing is influenced by the state of

the university's informatization, in particular, multimedia and telecommunication resources. The theoretical justification of pedagogical testing is based on the principles of: systematicity of its conduct; the openness of its purpose; objectivity and comprehensibility of its results; effectiveness of consequences.

Further prospects of scientific research on the introduction of pedagogical testing in the universities of Ukraine and the United States are considered appropriate to be developed in the direction of generalizing the pedagogical experience of teachers of Ukrainian and American universities in relation to testing.

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ПЕДАГОГІЧНЕ ТЕСТУВАННЯ В УНІВЕРСИТЕТАХ УКРАЇНИ ТА США

Проблема. У статті проаналізовано сучасний стан педагогічного тестування в університетській освіті України та США. Актуальним стає підвищення ефективності організації тестового контролю та оцінювання знань, умінь, навичок здобувачів вищої освіти.

Мета даної наукової розвідки – обґрунтування теоретичних основ ефективності педагогічного тестування в університетах України та США.

Методологія дослідження базується на загальних принципах філософії, базових сучасних положеннях педагогічної науки, психології і відображає взаємозв'язок методологічних підходів до вивчення процесу педагогічного тестування та його використання в університетах України та США.

Об'єкт дослідження: освітній процес в університетах України та США.

Наукова новизна. Обґрунтовано, що на ефективність педагогічного тестування впливає стан інформатизації університету, а також: забезпечення освітнього процесу електронними підручниками, посібниками, методичними рекомендаціями; компетентність професорського та викладацького складу в розробці та використанні тестів; готовність до вивчення та впровадження передового педагогічного досвіду; логічне вибудовування системи тестового контролю у педагогічному процесі університету; підготовленість здобувачів до роботи з тестами.

Висновки. Педагогічне тестування сучасний процес оцінювання та контролю знань, умінь та навичок здобувачів вищої освіти. Застосування педагогічного тестування в межах освітнього процесу окремого університету як в Україні, так і в США удосконалює процес ефективного оцінювання та контролю. Тестовий контроль дозволяє отримати неупереджені знання про рівень початкових досягнень здобувачів вищої освіти, а відтак, встановити якість навчання та якість освіти майбутнього фахівця. У США на ефективність педагогічного тестування впливає стан інформатизації університету, зокрема, мультимедійних та телекомунікаційних ресурсів. Теоретичне обґрунтування педагогічного тестування базується на принципах: систематичності його проведення; відкритості його призначення; об'єктивності і зрозумілості його результатів; ефективності наслідків.

Ключові слова: здобувачі вищої освіти, тест, педагогічне тестування, університети України та США.

Стаття надійшла до редакції 30.03.2023

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