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TESTING AS AN EFFECTIVE METHOD OF DIAGNOSING STUDENTS' EDUCATIONAL ACTIVITIES

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Annotation. *The article traces the issues of advantages and disadvantages associated with the choice of testing as form control and knowledge diagnostics for students of higher medical education institutions studying medical chemistry.*

Keywords: *testing, control, assessment, efficiency, education quality, medical chemistry.*

Introduction.

Improving the quality of education has always been and will continue to be an essential issue for all countries, including Ukraine. This problem is also noted in the National Doctrine of the Education Development: "The quality of education is a national priority and a precondition for the national security of the state, and compliance with international standards and the requirements of Ukrainian legislation in the realization of the right of citizens to education. While ensuring the quality of education, material, financial, human and scientific resources of society and the state are generated. The high quality of education provides for the relationship between education and science, pedagogical theory and practice" [1]. One of the main elements of assessing the education quality is knowledge control. It should be taken into account that if knowledge is not sufficiently controlled, the level of education as a whole may decrease.

The transition of the education quality to a higher quality level encourages the search for and introduction of new forms and methods to organize the educational process, the use of advanced teaching technologies to train more competitive specialists. Accordingly, the educational process should consider the trends in the social and psychological young people's development, and the forms and methods of an educational process implementation – the principles of democracy, academic freedoms, competition, control and self-control, discipline, cooperation between students and lecturers [2].

Main part.

The transition of Ukraine to the Bologna credit and modular education system was one of the essential directions of reforming the national educational system in terms of the development and implementation of new approaches to knowledge control and students' education assessment.

The European education system is characterized by a significant increase in hours for independent student work; however, the teacher's task is not to conduct lectures and practical classes but also to organize and control the activity and provide



methodological support for the educational process. In general, the main task of the teacher is to motivate students to study independently and provide them with the necessary advice [3].

Undoubtedly, any learning process requires constant monitoring. A lot of traditional methods, such as tests, test papers, abstracts, exams, and others, are time-consuming and contain an element of the teacher's subjective attitude.

The ways in which learners retrieve information is as critical, if not more so, than how they were initially exposed to it. Testing is an invaluable opportunity for learning, in addition to its more commonly considered roles in evaluating student learning (ie, as summative assessments) and providing feedback to guide future learning (ie, as formative assessments). Thus, we argue that educators should elevate the role of testing in their course curricula, planning testing opportunities with an eye towards the potential of tests to spur learning. While we use the term “testing” in the present manuscript for simplicity and cohesion with existing research, a more accurate description of what we are referring to might be “retrieval practice.” Testing for learning is not necessarily evaluative, and using alternate descriptions (eg, practice, quiz) might assuage some of the negative affect towards the term “testing” itself. And while the principles of retrieval practice can be powerfully implemented within the classroom, they can also be operationalized as study strategies eg, flash cards or practice examinations [4].

The constant search for more efficient knowledge testing methods has shown a positive result in the testing implementation, especially in combination with computer technologies. Such a tandem provides prompt feedback and automates the test tasks as much as possible, which simplifies knowledge testing and, as a result, improves their quality. That is why computer-based testing is so relevant in the training of specialists.

While studying medical chemistry in practical classes, students are offered to take computer testing to check the level of theoretical material assimilation or the degree of readiness for another type of activity.

Given the many problems associated with the choice of the control method, it is the computer test, with its precise algorithm of actions, high level of manufacturability, the possibility of a single approach to monitoring and evaluating its results, that can provide adequate information on the quality of training [5].

When conducting a practical lesson in medical chemistry, students pass computer testing based on distance learning MOODLE. Such kind of student's knowledge control can be carried out at any stage of the lesson: warming-up, main and final. This makes it possible to assess the knowledge level gained and the degree of practical skills mastered by students. Particular attention should be paid to the development of tasks for the final modular control. Given that the professional activity of the future medical specialist is based not only on knowledge of theory but also requires skills in solving important practical tasks, it is proposed to use combined assignment in module control works, including tests and situational tasks. Practical tasks can also be submitted in the test version.

Carrying out control of theoretical knowledge and practical skills of students through testing significantly optimizes the educational process, since the teacher does



not need to spend time checking written works – the system will evaluate students and give them the score they deserve. Thus, the subjective side of a student's work evaluation disappears. As a result, there is an opportunity to solve additional situational problems, which in turn increases the readiness of students to pass the module.

Computer-aided checking the acquired knowledge has been found to have a number of advantages such as:

- high technological effectiveness (the test knowledge control operation is a set of simple actions according to the "question-answer-analysis of the answer" the scheme, allowing to develop simple and universal software controls);
- reducing time-consuming costs, the ability to quickly test the knowledge of a large number of students and work with a significant amount of educational material; the availability of results immediately after the end of the test;
- compliance with the requirements of maximum control objectivity, since all students are tested in equal conditions;
- the possibility to apply in all types of control, including for self-control of students and assessment of the functioning effectiveness of the educational space as a whole;
- possibility to apply cheat sheets is excluded due to reduction of testing time and different order of tests for users [6].

An additional advantage of testing is possible using interactive computer technologies. The implementation of academic activity tests without computers is next to impossible. Firstly, the goal of the test fulfillment is not the obtainment by the student of a single answer, but finding a rather long way where the subsequent step depends on the previous one and the analysis of every selected answer should be presented to the student so that he did not know the analysis of the other answers. Secondly, for a full analysis it is necessary to have a complete record of the test task fulfillment for each student. Third, due to the considerable volume of the fixed information about the test fulfillment it is necessary to have the set of tools information processing implemented in the form of computer software [7].

The principal characteristic of an academic activity test is that there are always different ways of solution approaches to one and the same problem. These ways of solution may be of different length depending on the choice of the theory that the student will use for the problem solution, on the level of his knowledge and skills etc. so the academic activity tests could be regarded as one of the paradigms of the adaptive training systems; however, the adaptation is not effected by the level of difficulty, but estimates whether the mental action is correct [7].

By analyzing the results of computer testing, students have the opportunity to adequately assess their own knowledge, get explanations from the teacher about the reasons for the mistakes made and, as a result, adjust their preparation for the next task.

The use of tests as a control in combination with a module rating system of education contributes to improving the quality of students' knowledge, improving the objectivity of assessment and motivation for self-education. But, despite all the positive aspects, computer testing has significant disadvantages: it is not possible to



cover all the variability of tests and take into account the individual psychological characteristics of students, and it also limits the development of clinical thinking in medical students.

Conclusions.

Testing as an effective method of controlling the knowledge acquisition quality and the forming skills and abilities is multifunctional since it allows the teacher to choose the right direction of work with students and adjust the studying course. And as experience has shown, the use of computer tests in practical classes in medical chemistry makes it possible to assess the quality of knowledge as much as possible. At the same time, computer testing should not completely replace traditional methods of teaching and control of knowledge but should smartly complement them. Only in this way can the process of education be comprehensively evaluated and a competitive specialist trained.

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