INNOVATIVE TECHNOLOGIES AND TEACHING METHODS
AT THE DEPARTMENT OF NORMAL PHYSIOLOGY

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Abstract. Innovation methods are an effective educational technology due to its inherent qualities of interactivity, flexibility and integration of various types of educational information, as well as with the ability to take into consideration the individual characteristics of students and enhance their motivation.

The article discusses innovative teaching methods that are used in the system of the modern educational process. The characteristic features of the means, forms and methods of innovative teaching are determined, the specifics of their use in an interactive educational environment to improve the quality of student education at medical universities are revealed.

Introduction. The modern socio-economic development of society requires the use of new innovative methods and technologies for teaching students in higher educational institutions, allowing future specialists to be more competitive in the labor market.

The changes taking place in public relations in recent decades, the high level of informatization of public life, the rapid development of science and technology, information technologies pose new requirements for modern higher education. Along with these tendencies, the so-called fragmentary (clip) thinking, which, in the opinion of representatives of psychological and pedagogical sciences, is characteristic of the majority of modern youth, has become a significant challenge for Ukrainian higher education.

The specificity of the perception of information by modern students, the opening of borders and the elimination of barriers in access to a variety of information, in the implementation of educational and scientific activities are those objective factors that stimulate the renewal of the existing pedagogical tools among university teachers and the formation and use of innovative teaching methods in training students.

Main part. In modern conditions, the growing role of knowledge and education is recognized throughout the world - both for each person and for the whole society. A special task is assigned to higher education; it is an essential element in the development of human resources for any country and the world as a whole. World Bank research confirms that higher education builds personal capacity and develops
analytical skills, which in turn helps advance the national economy. Knowledge is currently one of the main factors of production, and the accumulation and application of knowledge is becoming increasingly important as the main competitive advantage of the country. Thus, it is recognized that in the foreseeable future, both for the state and for the individual, everything will be decided by the level of education, the volume and degree of use of the knowledge gained.

It is especially noted that new horizons for the development of higher education are associated with technologies that contribute to the creation of knowledge, its management, its dissemination, access to it and control over its assimilation. The solution of these problems requires a change in approaches to the training of specialists at a higher level of education, the use of new teaching models. At the same time, the approaches associated with the development of critical thinking and human creative abilities are currently of the greatest relevance.

According to Bistrov Y.V. the concept of "innovative teaching methods" is a multicomponent one, since they combine all those new and effective methods of the educational process (obtaining, transferring and generating knowledge), which, in fact, contribute to the intensification and modernization of education, develop a creative approach and personal potential for higher education. [1]

One of the ways to modernize the educational system of our country there is the introduction of innovative pedagogical technologies and methods into the educational process of higher educational institutions.

Teaching methods are orderly ways of interrelated, purposeful activity of the teacher and students, aimed at effectively solving educational problems. They are implemented through a system of methods and means of educational activities. At the same time, teaching methods are a component of a method, specific actions of a teacher and students, aimed at implementing the requirements of certain methods. Teaching aids are a variety of educational equipment used in the system of cognitive activity [5].

We consider pedagogical innovation as a special form of pedagogical activity and thinking, which are aimed at organizing innovations in the educational space, or as a process of collecting, introducing and disseminating new things in the process of enlightenment. The innovation process in our concept is a set of consistent, purposeful actions aimed at updating, modifying, adapting the educational process to new socio-historical conditions [3].

Innovative education as a whole is not some specific educational technology, but the principle of adequate use of the potential capabilities of known elements of the educational process system are being re-discovered. An innovative approach in education is determined not through the use of a specific model, but because of the ability to design and model the educational process necessary for universities using various educational technologies.

Innovations in educational activities are associated with the active process of creating and disseminating new methods and means for solving didactic problems of training specialists in a harmonious combination of classical traditional methods and the results of creative search, the use of progressive technologies, original didactic ideas and forms of ensuring the educational process. Therefore, educational innovations are characterized by a purposeful process of partial changes leading to the modification of the goal, content, methods, forms of education, methods and style of activity, adaptation of the educational process to the modern requirements of the time and social demands of the labor market [1, p. 28].

In general, innovative methods in education are pedagogical methods based on the modern achievements of science and information technology at the heart of their use and layout. All of them are aimed at stimulating the cognitive and scientific activity of students, developing their creative abilities and skills of independent work, the ability to independently work with large amounts of information and make decisions, and, ultimately, are aimed at improving the quality of training of specialists [4].

Today, innovations in the field of education are divided into:

- psychological and pedagogical - innovations in the educational, educational, management process;
- research and production - computer and multimedia technologies;
- socio-economic - legal and economic innovations.

In turn, innovative technologies in a higher educational institution are characterized as technologies based on innovations: organizational (associated with optimizing the conditions of educational activities), methodological (aimed at updating the content of education and improving its quality); which allow:

- for students: to effectively use educational and methodological literature and materials; acquire professional knowledge; develop problem-search thinking; to form professional thinking; to intensify research work; to expand the possibilities of self-control of the acquired knowledge [6];
- teachers: promptly update educational and methodological literature; introduce modular learning technologies; use simulation learning technologies; to expand the possibilities of monitoring students' knowledge;
- in general: improve the quality of existing technologies for training specialists. [2]

The trends and directions of development of higher education lead to the need to search and analyze various modern models of teaching in higher education.

A roughly generalized model of innovative learning assumes:

1) active participation of the student in the learning process;
2) the possibility of the applied use of knowledge in real conditions;
3) presenting concepts and knowledge in a wide variety of forms (not just text)
4) approach to learning as a collective rather than individual activity;
5) emphasis on the learning process, and not on memorizing information.

Further, on the basis of a generalized innovative teaching model, we will present some of its variants that are most common in modern domestic higher education.

1. Contextual learning. It is based on the integration of various types of students' activities: educational, scientific, practical.
2. Simulation training. Its basis is imitation and game modeling in the conditions of learning the processes taking place in a real system.
3. Problematic learning. It is carried out on the basis of initiating the student's independent search for knowledge through problematization (by the teacher) of the educational material.
4. Modular training. It is a kind of programmed learning, the essence of which is that the content of the educational material is rigidly structured in order to assimilate it as completely as possible, accompanied by mandatory blocks of exercises and control over each fragment.
5. Complete assimilation of knowledge. Developed on the basis of the ideas of J. Carroll and B.S. Bloom - about the need to make learning outcomes fixed, while optimally changing the parameters of learning conditions, depending on the abilities of students.
6. Distance learning. A kind of (quite independent) distance learning based on the use of the latest information and communication technologies and tools. [7]

Each teaching model develops a certain element of the educational process, paying special attention to the practical part, methodological tools, the nature of the student's and teacher's activities, the way of organizing educational material, achieving maximum results or using specific teaching aids and technologies. In all cases, each of the considered innovative models changes the characteristics of the traditional university educational process, revealing unused potential.

An innovative approach in education is determined not through the use of any one model, but because of the ability to design and model the required university educational process using various educational technologies - based on knowledge of their potential capabilities and advantages - “strengths”. It is this ability that makes the learning process at the university technological, that is, predictable and as close as possible to the planned results.

It should be noted that within the framework of such a design, it is advisable to use mixed models [2, 3, 4]. So, in the distance education system, the effective principles of modular learning in combination with the model of complete assimilation of knowledge: the content of training is conveniently structured into training modules, and the learning conditions (the rate of assimilation, the number of repetitions, the conduct of test procedures, etc.) assimilation of knowledge.

According to the above classification of teaching methods and based on the experience of their use in the educational activities of the Department of Normal Physiology of Vinnytsia National Medical University, we can say that, along with the use of traditional didactic methods, achieving the main goal of ensuring high-quality training of specialists is currently most conducive to two groups of innovations: the widest possible use of information technologies and various equipment in the educational process (the use of multimedia and video materials, interactive information technologies, electronic educational materials placed in the VNMU repository, computer testing, etc. has been widely introduced in the educational process at the department), and also methods that stimulate and motivate the educational and scientific activities of students (situational tasks, business games, creative tasks, educational discussions, contests held as part of the educational process at the department have shown that These methods motivate the student to study the material more deeply and help in understanding it and acquiring the skills to use it).

At the same time, methods of enhancing educational and cognitive activity are not considered separately. They are effectively combined with other didactic methods, complement and diversify them. The same addition to traditional teaching methods should be the use of various technical means as teaching aids. Modern students are already actively using them, they are familiar to them, in addition, in combination with access to the Internet, they provide quick access to information, its accumulation and storage, the speed of exchange of new information materials and the possibility of creating an accessible database of such materials. Thus, the combination of traditional teaching methods with computer technology contributes to an increase in student performance, stimulates the intensity and efficiency of independent work.

Today, the most popular innovative teaching methods that allow the use of new teaching technologies are: contextual learning, simulation learning, problem learning, modular full assimilation of knowledge, distance learning. In our opinion, a more effective result can be obtained from the complex and systematic use of some methods; for example, modular training can be combined with problem learning.

So, given the modern active use of innovative teaching methods, an innovative way of developing and using innovative teaching technologies in domestic higher educational institutions is the key to their competitiveness among a large number of both domestic and foreign higher educational institutions.

Educational innovations are characterized by a purposeful process of partial changes leading to the modification of the goal, content, methods, forms of education, methods and style of activity, adaptation of the educational process to the modern requirements of the time and social demands of the labor market. At the same time, the introduction and approval of something new in educational practice is due to positive transformations, that is, they should become a means of solving urgent problems for a particular educational institution and withstand experimental testing for the final application of innovations. First of all, it should consist of: modern modeling, organization of non-
standard lectures, practical, seminars; individualization of teaching aids; the use of office, group and additional training; optional, at the choice of students, deepening knowledge; problem-oriented learning; scientific and experimental teaching in the study of new material; development of a new control system for assessing knowledge; the use of computer, multimedia technologies and educational and methodological products of a new generation.

Conclusions. The use of innovative teaching methods in the preparation of students of higher medical education is an objective requirement of the time and one of the important conditions for high-quality training of specialists at the present stage. Among such methods, the use of modern information technologies and technical means, as well as methods that stimulate and motivate the educational and scientific activities of students, justify themselves in the practice of the educational activities of the department. To ensure high-quality training of specialists, it is necessary to ensure further search and implementation of innovative methods in the educational process.

Thus, the essence and structure of the innovative educational process in higher education must correspond to the nature and speed of social changes in society, high European standards for the training of competitive specialists of an innovative type. The modern content of higher education should focus on the use of information technology, the dissemination of interactive, e-learning with access to digital resources and intelligence-learning for the future. In this regard, the following urgent issues require urgent solutions: 1) amendments to the Regulation on the organization of the educational process of the university; 2) foreseeing mechanisms for promoting education on the Internet (electronic, distance learning) 3) regulatory regulation of the use of electronic educational and methodological resources in the educational digital space of universities 4) development of new programs on the basics of Internet security; 5) the introduction of educational materials and products of a new generation in accordance with the requirements of the modern economy and the social demand of the labor market.

Literature: