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REQUIREMENTS FOR A TEACHER OF THE 21ST CENTURY IN THE CONTEXT OF ONGOING INNOVATION PROCESSES

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Abstract: This article examines innovative methods of teaching students in the 21st century. The purpose of this article is to summarize modern changes in the didactics of using innovative teaching methods and to study the understanding of these changes by teachers. The article examines four areas: the expansion of the subject of pedagogy, an ecological approach to learning, the digital generation and the ongoing changes, as well as innovations in teaching.The theory of education, figuratively speaking, has two levels.

At the macro level, decentralization and diversification, internationalization of education and the introduction of digital technologies are taking place in the relationship between education and society. At the micro level, in the relationship "teacher-student", there is an active combination of traditional and innovative methods, a combination of an activity-based approach with the approach of the energy-informational environment, cognition with constructivism and connectivism.

Аннотация:В данной статье рассматриваются инновационные методы обучения студентов в 21 веке. Цель данной статьи - обобщить современные изменения в дидактике использования инновационных методов обучения и изучить понимание этих изменений учителями. В статье рассмотрены четыре направления: расширение предмета педагогики, экологический подход к обучению, цифровое поколение и происходящие изменения, а также инновации в обучении.Теория образования, образно говоря, имеет два уровня.

На макроуровне во взаимоотношениях образования и общества происходят децентрализация и диверсификация, интернационализация образования и внедрение цифровых технологий. На микроуровне, во взаимоотношениях «у читель-ученик», происходит активное сочетание традиционных и инновационных методов, сочетание деятельностного подхода с подходом энергоинформационной среды, познания с конструктивизмом и коннективизмом.

The pedagogy of the twentieth century differs from the pedagogy of the 21st century. Since the beginning of the 21st century, there have been many changes in the development of national and global education. The most noticeable phenomenon currently is the internetization of society and the penetration of digital technologies into education. The current generation of schoolchildren is known as digital, socio-digital, and the Z generation [1]. Cognition is the transition from acquiring knowledge through reading, from a teacher's monologue to visual perception or classroom discussion [2]. Digital technologies are changing the way we live, the way we communicate, the way we think, feel, influence others, social skills, and social behavior. According to Mamesheva, "the high—tech environment - computers, smartphones, video games, Internet search engines — are changing the human brain" [3]. Innovations, or innovations, are characteristic of any professional activity of a person and therefore, naturally, become the subject

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of study, analysis and implementation. Innovations do not arise by themselves, they are the result of scientific research, advanced pedagogical experience of individual teachers and entire teams.This process cannot be spontaneous, it needs to be managed.

Pedagogical innovations are innovations in pedagogical activity, changes in the content and technology of teaching and upbringing aimed at increasing their effectiveness [2]. Thus, the innovation process consists of the formation and development of the content and organization of the new. In general, the innovation process is a complex activity of creating, developing, using and distributing innovations. In the scientific literature, the concepts of "innovation" and "innovation" are distinguished.

Innovative processes are being introduced into the developing educational system of Kazakhstan in the following directions: formation of new educational content, development and implementation of new pedagogical technologies, creation of new types of educational institutions. In addition, the teaching staff of a number of Kazakhstani educational institutions introduces innovations that have already entered the history of pedagogical thought.

The purpose of the study is to summarize the current changes in didactics for the use of innovative teaching methods and to study the understanding of changes by teachers. We will look at four areas: (1) the expansion of the subject of pedagogy, (2) an ecological approach to learning, (3) the digital generation and the ongoing changes, and (4) innovation in learning. These changes lead to an update in teaching methods.

Research methods

The sources of the research are the works of Kazakhstani, Russian and foreign scientists, textbooks on pedagogy of the 21st century, UNESCO recommendations on the development of learning strategies. On the one hand, the section presents reviews, and on the other, the results of practical research on the use of innovative teaching methods by teachers and understanding their strengths and weaknesses. Changes in didactics in the 21st century have been studied in the following areas, which lead to the active use of innovative teaching methods: the features of expanding the subject of pedagogy are analyzed; The approaches in modern foreign didactics to teaching the digital generation of students are analyzed and summarized, taking into account their specifics; attention is focused on pedagogical innovations as a direction of didactic development. The article applies analytical and systematic approaches and summarizes theoretical changes in modern pedagogy.

The main part

Modern pedagogy has transformed from the "science of upbringing and education" into the "science of upbringing and education." The category of "education" was transformed and expanded in the twentieth century. Since the time of Jan Amos Comenius, didactics has been understood as a theory of learning. In Soviet didactics, education was understood as "the result of learning" [4], "the process and result of mastering a system of scientific knowledge and cognitive skills" [5]. That is, getting an education was expressed in obtaining a certificate of education or a diploma of higher education. In modern textbooks on pedagogy, for example, Bordovskaya and Rean, education is understood more broadly [6]: (1) as a process and result of learning, (2) as a social value, since society has spent more than 8 millennia creating a

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cumbersome education system; (3) the value of personality, since a modern person is more than 15 years old He spends many years on education and profession; (4) a social institution with its own powerful infrastructure, economy, educational programs, governing bodies, didactic systems, etc.

Educational theories consider the interaction not only of the student and the teacher (the micro-level of interaction), but also the interaction of the state and the education system, social groups of students and teachers. This is the level of the macro-impact of education on society and society on education. That is why pedagogical theories and problems are considered not only from the point of view of the internal relationship between the student and the teacher, but also as a didactic and at the same time a social environment open to innovation and intervention, dynamic changes. Therefore, when forming subject competencies, we simultaneously design the formation of social, communicative and life competencies.

An ecological approach to learning. Since the 21st century, an ecological approach to learning has been actively used. According to Manuilov [7], we define the functional environment as something in which the subject finds himself, as a result of which his lifestyle is formed, which mediates his development and averages personality. In the 1990s, Italian scientist Risolati discovered mirror neurons. Mirror neurons are neurons in the brain that are activated both when performing a certain action and when watching another person perform that action. Such neurons have been reliably detected in primates, and their presence has also been confirmed in humans and some birds. These neurons play a key role in the processes of imitation, empathy, imitative behavior, and language learning [8]. According to Albert Bandura's theory of social learning, human behavior is not so consistent. Before the appearance of A. Bandura's theory, according to the theories of J. Piaget and others believed that abilities and attitudes are formed as they grow [9]. Therefore, as we used to think, actions have a certain sequence. Bandura believes that human behavior is not so consistent. Rather, it depends on the circumstances. Human behavior is more determined by the existing situation and its interpretation by a person than by the stage of his development, character traits or personality types. Based on A. Bandura's theory of social learning, it can be concluded that learning is playful, discrete, and can eventually be carried out situationally.

Innovations in teaching, according to Volov, "in the Middle Ages, the ratio of university students to knowledge holders in educational institutions was about ten (I ≈ 10); with the introduction of the Ya.A. Komensky pedagogical system, the ratio of students to teachers reaches hundreds (I ≈ 100); modern innovative technologies increase the utilization rate of educational technologies by tens thousands of times (I ≈100,000), especially in online courses [9]. The scientific discipline "Pedagogical innovations" serves the development of innovations in education. Helps in the development, implementation and dissemination of innovations in teaching practice. Here are a few of its provisions.

Innovation is a phenomenon that carries the essence, methods, techniques, technologies and content of something new. Innovation (from Latin in-in, new-new) is the introduction of new things, the introduction of novelty. According to Taubaev and Laktionov: "The innovation process is a complex activity for the formation and development of the content of education and the organization of the new" [10].

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Innovative teaching methods are teaching methods that involve new ways of interaction between a teacher and a student, certain innovations in practical activities in the process of studying educational material. There are two types of "new": "purely new" - the first created, which is at the level of adequate discovery, the establishment of a new truth.; "New", in which there is a mixture of the old, more precisely, consisting of a layer of the old, etc. [11]. We offer another typology of innovations in teaching (technologies, methods and techniques).:

- absolute innovation (brand new technology);
- Advanced innovation (significantly improved technology);
- Modified innovation (slightly improved technology);
- innovations, technologies introduced in a new territory (for example, trainings for the Republic of Kazakhstan, credit training technologies for Kazakhstan);
- innovative technology of a new application [12].

Features of innovative learning: work on expectation and development; openness to the future; constant inconsistency, in other words, the imbalance of the system, in particular the person himself; orientation towards personality, its development; the obligatory presence of elements of creativity; as well as partnerships: cooperation, joint creativity, mutual assistance, etc. According to I. Derizhan, all innovations in pedagogy are united by the belief that a person's potential is unlimited; the pedagogical approach is aimed at systematically mastering reality; stimulating nonlinear thinking.; They are based on the hedonistic principle, which is based on the pleasure of learning, the joy of achievement and the pedagogy of success; a mobile role-playing game between a student and a teacher, teaching and learning from the student [13]. The methodology of innovative learning itself is based on a personality-oriented approach. In Western literature, this is called personality-oriented learning. It synthesizes synergetic, systemic, competence-based, dialogical and activity-based, cultural, information technology, environmental and other approaches. It reveals the patterns and principles of the innovation process in education and the foundations of the innovative culture of the teacher. The textbook describes the methodology of innovative learning. According to Podlaski, "teaching methods set the pace of development of the didactic system - learning develops as fast as the methods used allow it to move forward" [14]. In practice, there is a transition from reproductive teaching methods to innovative ones.

Kazakhstan's experience in applying innovative methods and technologies in the field of higher education.

Over the past decade, Kazakhstan's higher education system has undergone significant structural transformations: universities have gained a greater degree of autonomy in managing their activities, greater freedom in determining educational policy, and the focus of specialization and competitiveness of universities has changed. However, the growing demands of society on the quality of higher education, the worsening imbalance between the supply of educational services and the needs of the labor market, as well as the inefficient use of society's resources allocated to the higher education system are due to the lack of harmonization mechanisms. The goals and results of the activities of higher education institutions, taking into account the needs of the state and society, are the fundamental renewal of educational technologies, changes in organizational

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and economic mechanisms for managing the image of individual educational institutions, increased competition in the educational services market and the need to find new strategic approaches in the field of education. the field of higher education management.

Innovative educational technologies of a modern university are technologies based on innovations: organizational (related to the optimization of learning conditions), methodological (aimed at updating the content of education and improving its quality) and managerial [15]. So, innovative teaching methods include interactive and computer technologies. Interactive technologies include lectures (scientific, social, professional, integrative, etc.) and seminars (debates, educational discussions, brainstorming, etc.). Computer-based learning technologies include the collection, processing, storage, and transmission of information from student to student and vice versa.

Today, a new brand has appeared in the education system of Kazakhstan - "Nazarbayev University" as a domestic embodiment of the model of an innovative research educational institution. It is unique not only in its form, but also in its content, which embodies the world experience of leading universities. The fact that the university is named after the Leader of the Nation, the President of the Republic of Kazakhstan, speaks to the importance of education for a young independent state, especially in the context of high information technologies generated by the processes of globalization [16].

The opening of this unique educational institution is an important step in modernizing the Russian education system. This is a new model in which we adapt the best global educational models, but taking into account our specifics. Almost 75% of the respondents support further modernization of the Russian education system in accordance with Western standards. In general, the name of its founder, the leader of the nation, speaks in favor of the Nazarbayev University project [17]. The University strives to become the national brand of Kazakhstan, harmoniously combining the advantages of the national education system and the best international scientific and educational practices.

Currently, a set of measures has been developed to disseminate the experience of Nazarbayev University JSC in the higher education system and transform Kazakhstan into a world-class knowledge center. Research and innovation universities are being created. A Nazarbayev University-type management system (board of Trustees) is being implemented at national and state universities, which will allow for the implementation of the principle of social responsibility and transparency in the activities of public universities.

Today, targeted and comprehensive specialist training is required, which includes a wide range of not only information knowledge and skills, but also information competencies related to the search, extraction and critical analysis of information, the ability to independently acquire and produce new knowledge. In other words, we are talking about the formation of the information culture of the future specialist.

Along with the use of various innovative technologies, in the educational process of the university it is necessary to actively use teaching methods that stimulate the cognitive activity of students, based mainly on dialogue, involving a free exchange of opinions on ways to solve a specific problem, characterized by a high level of student activity. Teaching methods that meet

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the above requirements include heuristic learning, brainstorming, problem-based learning, debate, cross-discussion, project method, role-playing and "business" games, etc.

It is also important to note that the advantage of the innovative project lies in the combination of material, technical, information and human resources of the Al-Farabi Kazakh National University and the Gilym Ordasy Research Institute, which provide highly qualified specialists - masters and doctors of sciences with in-depth professional training. Nevertheless, in our opinion, there are serious problems in the field of postgraduate education, first of all:

- Imperfection of the system of selection of candidates for admission to master's and doctoral studies, PhD, training in government programs;
- Lack of textbooks in the official language;
- Weak material and technical base (lack of equipped research laboratories, modern equipment, computer networks, information technologies, etc.);
- curricula and teaching methods do not fully provide the knowledge and skills necessary for the actual practical work of a future specialist;
- education does not meet the requirements of the labor market;
- The aging faculty;
- Diplomas of Kazakhstani universities are not quoted abroad;
- The status of higher and postgraduate education is not at the proper level. (Low salaries for researchers, and science is about innovation and modernization);

Due to these problems, additional reforms, modernization and innovations in this vital area are needed in the system of higher and postgraduate education. It should be noted that currently in Kazakhstan there is no need for such a huge number of specialists with higher education, there is quite fierce competition in the labor market. In order for a young specialist to be in demand, he must have a high-quality education. Improving the quality of education in the context of the global crisis is being addressed in difficult conditions. By reforming the entire education system, optimizing universities, and applying innovative teaching methods.

Realizing the contradiction between the public demand for education and traditional teaching methods, educators - scientists and practitioners - began to look for innovative teaching methods based on other principles, and, above all, on personality-oriented or developmental approaches to learning.

The use of the latest innovative technologies helps to solve pedagogical and methodological problems that are difficult or impossible to solve using traditional methods. At the same time, the methodology of teaching historical subjects should take into account that the destruction and loss of the positive results of the traditional education system should not be allowed. Innovative and traditional teaching methods should harmoniously complement each other as part of a single student's educational environment.

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Conclusion:

The changes in the didactics and pedagogy of Kazakhstan and the post-Soviet countries have two main directions. The first is related to the change of ideology and the independence of the countries. The second one is related to global trends in the development of education: the introduction of a competence-based approach, informatization, internationalization, globalization and diversification of education. On the one hand, the teacher subjectively decides on the development of the content, methods, strategies and technologies of teaching, but the implementation of educational reforms depends on him. On the other hand, the state and society transmit pedagogical culture and the value aspects of teachers' thinking through professional training and teacher retraining system. Subjectivity of consciousness and professional activity is one of the principles of modern pedagogical science. That is, the use or non-use of innovative methods depends on the personality of the teacher, his methodological competence and pedagogical skills. The task of the teacher training system is to actualize such a need, to form methodological competence. The task of universities is to encourage and stimulate the development of the creative potential of teachers and students. An important task of the teacher is to constantly rethink and develop his pedagogical potential; then the student will be an active and competent person under the influence of the teacher's example.

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