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Innovative Pedagogical Technologies in Education System

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Abstract
The society in which we live is constantly evolving and changing. The modern world educational space is constantly being replenished with new content of knowledge, new qualifications. New spheres of relations are emerging, new specialties that form new disciplines. World higher education is undergoing reform. This led to the search for new forms and technologies of education. Harmonization of higher education in accordance with the requirements of the world space and standards, its development is carried out according to certain principles. This is, first of all, the priority introduction of innovative achievements in education and science. It is known that it is the innovative way of development of society that can ensure the formation of a generation of people who think and work in a new way. As a result, the main attention will be paid to the development of personality, cultural and communicative preparedness, the ability to independently acquire and develop knowledge, to form information and social skills. Considering this, the main purpose of the article is to study the main aspects of innovative pedagogical technologies in education system.

Keywords: Higher education, Innovative achievements, Pedagogical technologies, Pedagogy.

Introduction

The analytical report of UNESCO "The Post-2015 Sustainable Development Program" noted that in the new information era, it is higher education that should become the main element in the direction of progress, and innovations in various spheres of public activity should include high dynamism, rapid change in knowledge, information, technology. In such conditions, the social importance of the state is increasing in ensuring access to quality education, a high level of knowledge, the possibility of acquiring relevant skills and competencies through the provision of academic mobility and freedom to higher educational institutions.

In the context of the formation of an innovative society, the functional features of education are not only providing students with the amount of knowledge and skills accumulated in previous years, but also the ability to perceive and use in practice new scientific ideas, tools and methods.

The world in which a person lives becomes complex and contradictory. In order to develop a reasonable strategy for one's own life, it is necessary to have a sufficiently high intellectual and creative potential, high professionalism, therefore one of the most important tasks of a higher school is the personal and professional development of students. Pedagogical practice requires the creation of a relatively simple and at the same time the most universal toolkit for the implementation of the personal and professional development of students. This toolkit should reveal the structure of this development and its dynamics in innovative learning technologies, in modeling the educational environment itself. In this context, the main components of education should be reviewed: content, forms, methods, teaching technologies, methodological support (including textbooks), teacher's functions.

The concept of "pedagogical technologies" was transformed into new concepts: educational technologies, pedagogical technologies, teaching technologies. Educational technologies reflect the general strategy for the development of education, a unified educational space, their purpose of predicting the development of education, its specific design and planning, predicting results, as well as determining the corresponding educational goals of standards. Examples of educational technologies are the concepts of education, the education system. At the present stage, this is a humanistic concept of education; education system, etc.

If educational technologies reflect the strategy of education, then pedagogical technologies embody the tactics of its implementation in the educational process by introducing models of the latter and identical models of managing this process. For example, a model of personality-oriented developmental learning, modular developmental learning, problem-based learning, etc. So, pedagogical technology reflects the model of the educational and management processes of an educational institution and combines the content, forms and means of each of them.

Close, but not identical to the concept of pedagogical technology, the concept of teaching technology. It reflects the way of mastering a specific educational material (concept) within the corresponding academic subject, topic, issue. Needs a special organization of educational content, adequate forms and methods of teaching. But the following options are also possible: the content and methods of teaching are matched to the forms of teaching, or to the methods - the forms and the content of the teaching is structured (Mtawa, Masanche Nkhoma, 2020).

For example, it can be subject learning, game technology, problem learning technology (at the method level), information technology, technology for using support schemes, abstracts, classical lecture training, training using audiovisual technical means or books, consulting, individual, distance learning, computer training, etc.

Pedagogical technique reflects the level of the teacher's skill. The degree of development of the subjects of training and education depends on how and what methods of teaching and upbringing he owns. This means that the concept of "pedagogical technology" is undoubtedly associated with the concepts of "educational or educational technology", "pedagogical technology", "educational technology".

Pedagogical technology must meet some basic methodological requirements, criteria of manufacturability (Kolgatin, Kolgatina, 2019): conceptuality (reliance on a certain concept containing philosophical, psychological, didactic and socio-pedagogical justifications of educational goals); consistency (pedagogical development must have all the features of the system); consistency of the process, the interconnection of all its parts, integrity; manageability

(the possibility of goal planning, designing the learning process, step-by-step diagnostics, varying means and methods in order to correct the results); efficiency (cost optimality, guaranteed achievement of the planned result - a certain training standard); reproducibility (the possibility of using in other conditions of the same type, by other subjects) and the unity of the content and procedural parts, their interdependence.

Modern pedagogical technology is a synthesis of the achievements of pedagogical science and practice, a combination of traditional elements of past experience and that generated by social and technical progress and humanization, democratization of society and the technological revolution. The sources and components of new pedagogical technologies are: social transformations and pedagogical thinking; social, pedagogical, psychological sciences; modern advanced teaching experience; historical domestic and foreign experience (acquisition of previous generations); folk pedagogy (Iqbal, 2020).

In modern pedagogical theory and practice, there are many options for pedagogical technologies. Each pedagogical technology has its own procedural characteristics (motivational, managerial, category of students), also has software and methodological support (curriculum and programs, teaching aids, didactic materials, visual and technical teaching aids, diagnostic interpretations). Recently, educational interactive technologies have been actively involved in the practice of higher education. The essence of interactive technologies is that learning occurs with the interaction of students. The teacher and students are subjects of learning.

The special value of interactive learning is that students learn to work effectively in a team (unfortunately, students do not have teamwork skills). With the correct, planned and systematic use of interactive technologies, this problem can be solved. Interactive teaching methods are part of student-centered learning, since they contribute to the socialization of the individual, awareness of oneself as part of a team, of one's role and potential.

What does the term “innovative learning” mean? Innovative learning is a constant striving to reassess values, preserving those of them that are of undeniable importance and rejecting those that are already outdated. Innovations in educational activities are associated with the active process of creating and disseminating new methods and means of solving didactic problems of training specialists in a harmonious combination of classical traditional methods and the results of creative search, the use of non-standard, progressive technologies, original didactic ideas and forms of ensuring the educational process.

In the modern world, it is necessary to solve urgent problems of pedagogy effectively and consistently, and in a fairly short time, because the needs of restructuring education and the development of an appropriate educational and material base in our country are already obvious today. New pedagogical and information technologies can help in this. It is impossible to separate one from the other, since only the widespread introduction of new pedagogical technologies will make it possible to change the very paradigm of education, and only new information technologies will make it possible to most effectively realize the possibilities inherent in new pedagogical technologies. It is the new information technologies that make it possible to fully disclose the pedagogical and didactic functions of the methods, to realize the potential capabilities inherent in them (Awe, Church, 2020).

METHODOLOGY

The main purpose of the study is is to study the main aspects of innovative pedagogical technologies in education system. For this, a number of methods were applied, which form the research methodology. The study was carried out using the following theoretical methods: systems analysis and synthesis, induction and deduction, comparison, classification, generalization and systematization, idealization and abstraction.

RESULTS AND DISCUSSION

Innovative pedagogical technology is considered as a special organization of activity and thinking aimed at organizing innovations in the educational space, or as a process of assimilation, implementation and dissemination of new things in education.

Innovation of the pedagogical process means the introduction of something new into the target, content, forms and methods of teaching and upbringing, into the company of joint activities of the participants in the educational process.

Innovative technologies used in the higher education system are considered as the teacher's modeling of the content, forms and methods of the educational process in accordance with the set goal using novelty. In the practice of educational activities of a modern university, such teaching technologies are used as: differentiated, problem-based, contextual learning, game learning technologies, information technologies, credit-modular technology, student-centered learning, etc. Modern didactic searches for contextual learning technologies are characterized by an orientation towards a close connection between education and the immediate life needs, interests and experience of undergraduates. Each master's student is a bearer of individual personal experience, which should be taken into account and on which it is necessary to rely in the process of professional training.

This approach to organizing the process of vocational training helps to create an atmosphere of professional competent formation, which turns a master's student not only into a subject of knowledge, but also a subject of his own professional and personal development (Bingimlas, 2009).

One of the types of application of modern innovative teaching technologies in the process of professional training of a future teacher is information teaching aids, for the successful and purposeful use of which university teachers must know their didactic capabilities and principles of functioning.

The effectiveness of the use of modern information technologies in the development of the foundations of the pedagogical skills of the future teacher is provided by a variety of forms of information presented, a high degree of clarity; the possibility of organizing collective and individual research work.

The introduction of innovative technologies in the process of professional training of a future teacher helps them to master the educational material at an individual pace, independently, using convenient ways of perceiving information, which causes them positive emotions and forms a positive motivation for learning. In order to intensify the professional training of students in universities through the introduction of computer presentations, electronic dictionaries, textbooks and manuals; test programs, textbook programs, training programs, dictionaries, reference books, encyclopedias, video tutorials, libraries of electronic visual aids, thematic computer games, etc., a

professionally oriented educational information environment is created that contributes to the development of the foundations of the pedagogical skills of future teachers (Cooper, 1998).

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. In addition, the introduction and approval of something new in educational practice is due to positive transformations, therefore, it should become a means of solving urgent problems of a particular educational institution and withstand experimental testing for the final application of innovations. First of all, this should consist in modern modeling, the organization of non-standard lectures, practical, seminars; individualization of teaching aids; office, group and additional training; optional, at the choice of students, deepening of knowledge; problem-oriented learning; scientific and experimental in the study of new material; development of a new control system for assessing knowledge; the use of computer, multimedia technologies; educational and methodological products of a new generation

Currently, the following pedagogical technologies are most often used in educational practice (González-Zamar, et al, 2020):

- structural and logical technologies: the phased organization of the training system, providing a logical sequence for the formulation and solution of didactic problems based on the phased selection of content, forms, methods and means, taking into account the diagnosis of results;
- integration technologies: didactic systems that ensure the integration of interdisciplinary knowledge and skills, different types of activities at the level of integrated courses (including electronic);
- professional and business gaming technologies: didactic systems for using various "games", during which the skills of solving problems are formed on the basis of a compromise choice (business and role-playing games, simulation exercises, individual training, computer programs, etc.);
- training tools: a system of activities for the development of certain algorithms for solving typical practical problems using a computer (psychological trainings for intellectual development, communication, solving managerial problems, etc.);
- information and computer technologies implemented in didactic computer training systems based on the "man-machine" dialogue with the help of a variety of training programs (training, control, information, etc.);
- dialogue and communication technologies: a set of forms and methods of teaching based on dialogue thinking in interacting didactic systems of the subject-subject level.

In educational practice, the diversification of teaching technologies allows you to actively and effectively combine them through the modernization of traditional education and its reorientation to an effective, purposeful one. With this approach, there is an emphasis on the personal development of future specialists, the ability to master new experience of creative and critical thinking, role-based and simulation modeling of the search for solutions to educational problems.

In our case, in the educational environment of innovative communication technologies, the basis of training should be holistic models of the educational process, based on the dialectical unity of the methodology and methods of their implementation. Let us consider individual teaching methods from the standpoint of their novelty, efficiency, effectiveness, expediency of use in

modern conditions of informatization of higher education. In today's market for educational services, these are innovative active and interactive teaching methods. Since the creative component of education is growing significantly, the role of all participants in the educational process is becoming more active, the creative and search independence of students is strengthened, the concepts of problematic and interactive learning associated with the use of computer systems have acquired particular relevance. During such an educational process, the student can communicate with the teacher online, solve creative, problematic tasks, simulate situations, including analytical and critical thinking, knowledge, search abilities, etc.

The algorithm of the teacher's work during an interactive lesson (Kryshtanovych, Kryshtanovych, Stechkevych, Ivanytska, Huzii, 2020):

1) determining the appropriateness of using interactive techniques in this particular lesson;
2) careful selection and analysis of educational material, including additional (tests, examples, situations, tasks for groups, etc.);
3) lesson planning - stages, timing, approximate division into groups, roles of participants, questions and possible answers;
4) development of criteria for assessing the effectiveness of the work of groups, classes;
5) motivation of educational activity by creating a problem situation, bringing interesting facts, etc.
6) ensuring that students understand the content of their activities and the formation of expected results when announcing, presenting a topic;
7) providing students with the necessary information to complete practical tasks in the shortest possible time;
8) ensuring the assimilation of educational material by students through an interactive exercise (at the choice of the teacher);
9) reflection (summing up) in different forms - individual work, work in pairs, groups, discussion, in the form of drawings, diagrams, graphs, etc.

Despite the abundance of approaches in pedagogical and psychological science, models in the practice of higher educational institutions, there are four main options for pedagogical technologies (Table 1).

Table 1 The main options for pedagogical technologies.

№	Option for pedagogical technologies
1	Based on the advanced fixed intellectual development of the student; are implemented in the system of developmental education of D. B. Elkonin - V. V. Davydov (theory and methodology of meaningful generalization and deductive logic of assimilation), in L. V. Zankov's system, in problem learning technologies, in heuristic learning models, etc. Despite the wide distribution and positive results, some technologies raise objections (if the accelerated development of intelligence goes to the detriment of the figurative-emotional knowledge of the world).
2	Technologies for the priority development of the emotional-sensory sphere, imagination, creative possibilities and abilities through different types of play, psychological trainings associated with the names of L.N. Tolstoy, K. Ventzel, M. Montessori, S. Frene, R. Steiner. In modern versions, especially in "free development schools", encouraging, albeit not guaranteed, results have been obtained.Technologies for the priority development of practical thinking, labor skills and abilities; is consistently embodied in institutions of primary vocational education, where the general intelligence

	and various abilities of the individual strive to develop, attracting students to work, contribute to their professional self-determination.
3	Technologies for the priority development of the emotional-sensory sphere, imagination, creative possibilities and abilities through different types of play, psychological trainings associated with the names of L.N. Tolstoy, K. Ventzel, M. Montessori, S. Frene, R. Steiner. In modern versions, especially in "free development schools", encouraging, albeit not guaranteed, results have been obtained.
4	Technologies for the spiritual and moral formation of the personality, the ecological purity of the approach to the nature of the student, the upbringing of noble virtues in him on the basis of faith in his innate mission and various possibilities. This option is most consistently and fruitfully reflected in the pedagogical system of V. A. Sukhomlinsky: a young man is a phenomenon, a carrier of his mission and the energy of spirit. The priority is the development of his spiritual world, the upbringing of excellent thinking, good thinking, responsibility for his thoughts, aspirations, and not only for his actions. Another system of teaching principles and actions is being promoted. Pedagogy is considered the highest form of human thinking, part of human culture.

The content of information and development technologies, the purpose of which is to develop the foundations of the pedagogical skills of a future teacher who has the necessary system of knowledge and a large supply of information, includes lectures, seminars, practical classes, independent study of literature, etc. should take into account the individual, author's manner of the lecturer, the specifics of the academic discipline, the level of preparation of the student audience.
The use of information technologies in practical classes opens up broad prospects. An extremely effective teaching tool is the development of theoretical material using presentations and mind mapping technologies (creating logical diagrams). The technical advantages of information technology is the use of hypertext information, which provides easy access to reference data, glossary, animation applications.
The availability of software will allow students to carry out reflexive activities and be aware in real time of the level of their professional progress in the development of the foundations of pedagogical excellence. This helps to differentiate educational material by levels of complexity, to create a positive emotional background for the student's work with information teaching aids by means of the interface (Ambra, Ferraro, Girardi, Iavarone, 2020).
An important component of pedagogical skill is the information culture of the future teacher, that is, the ability to productively read books, find the necessary information, comprehend and transmit it to users.
The use of information technologies in this context will contribute to the development of not only a higher level of motivation of the future teacher, his critical thinking, but also the formation of a telecommunications community for the implementation of active forms of constructive communicative interaction (Crawford, 2020).
The development of information culture is facilitated by the independent and research work of students, which requires an individual approach and affects the formed individual style of their professional activity. The productive methods of such work are the implementation of individual educational and research tasks, such as a scientific report, which is a publicly pronounced message, a detailed presentation of a specific scientific problem.
One of the most important components of the educational process at the university is the research activities of students, including the preparation of scientific reports, articles, abstracts, writing

abstracts, term papers, diploma and other works. The emergence of network communications and the World Wide Web contributes to the introduction of problem-research computer teaching methods into the process of professional training of a future teacher. Among them, one can single out the project-based teaching technology, which helps students independently solve professional problems with the obligatory presentation and protection of the results of their scientific work.

Consequently, the research work of students is an integral part of the application of information technology and contributes to the development of information competence and the foundations of pedagogical skills of the future teacher. In the process of scientific activity, the future teacher acquires knowledge that constitutes the informative basis of heuristic activity, masters the methods and pedagogical actions that determine the operational basis of the search cognitive activity, gains experience in information activities in the field of software, as well as experience in the relationship "student-computer" (Beauchamp, 2004).

According to the scientific provisions, generally accepted teaching methods can be classified according to the following criteria: types of student work (oral, written; classroom, independent, extracurricular); general (collective, group, individual, etc.); a source of knowledge acquisition and the formation of skills and abilities (lecture, document analysis, work with the legislative framework, use of visual aids, Internet resources, etc.); the degree of independence and the nature of student participation in the educational process (active, interactive, passive); the level of sustainability and novelty (traditional, classical, innovative, new, innovative), authorship (original, copyright, general, didactic), etc. However, examining scientific didactic and pedagogical developments, we can say that in the modern teaching methodology in higher education, the most acceptable classification is based on an effective approach to teaching. According to her, there are the following methods (Burkšaitienė, 2018):

a) ensuring the mastery of the academic subject (verbal, visual, practical, reproductive, problem-search, inductive, deductive);

b) stimulating and motivating educational and scientific activities (educational discussions, problem situations, professionally oriented business games, creative tasks, search and research, experiments, contests, quizzes, etc.); c) methods of control and self-control in educational activities (survey, test, exam, control work, test tasks, questions of self-control, including through computer educational systems).

At present, and this is confirmed by the practice presented, in particular, in the works of scientists, in the educational environment of innovative communication technologies, holistic models of the educational process, based on the dialectical unity of the methodology and means of their implementation, are the basis of teaching. Let us consider individual teaching methods from the standpoint of their novelty, efficiency, effectiveness, expediency of implementation in modern conditions of informatization of higher education. In today's market for educational services, these are innovative active and interactive teaching methods. Since the creative component of education is growing significantly, the role of all participants in the educational process is becoming more active, the creative and search independence of students is strengthened, the concepts of problematic and interactive learning associated with the use of computer systems have acquired particular relevance. During such training, the student can communicate with the teacher online, solve creative, problematic tasks, simulate situations, including analytical and critical thinking, knowledge, search abilities. For example, the modern methodology of teaching legal sciences has

a certain arsenal of various methods, techniques and means, both general didactic (used in the teaching of any academic subjects) and branch-didactic (reflect the specifics of a particular discipline or a number of related disciplines).

As you can see, we are talking about an innovative teaching methodology. Therefore, it is necessary to understand the concept of "innovative teaching methods". In our opinion, it is multicomponent, since it unites all those new and effective ways of teaching (obtaining, transferring and producing knowledge), which, in fact, contribute to the intensification and modernization of the educational process, develop the creative approach and personal potential of applicants for higher education. Among the interactive methods, forms and techniques most often used in the educational work of higher education, we can name the following: analysis of errors, collisions, incidents; audiovisual teaching method; brainstorming ("brainstorming"); dialogue of Socrates (Socratic dialogue); "Decision tree"; discussion with the invitation of specialists; business (role-playing) game (students are in the capacity of a legislator, expert, legal adviser, notary, client, judge, prosecutor, lawyer, investigator); Take a position; commenting, evaluating (or self-evaluating) the actions of the participants; master classes; method of analysis and diagnosis of the situation; interview method (interview); method of projects; modeling; training "polygon"; PRES-formula (Position - Reason - Explanation or Example - Summary); problem (problem-search) method; public speaking; work in small groups; individual and group trainings (both individual and complex skills) and others. Of the innovative mechanisms for enhancing pedagogical and scientific processes, the need to revive the idea of competition in all areas of life is increasingly mentioned, in particular, we are talking about the "race for the leader" method. The authors of this methodology illuminate the retrospective, meaning, content of the concept of "competition", reveal the methodological aspects of the use of non-traditional (artificial) competition, provide sensible proposals for scoring the main types of educational activities, offer specific formulas for calculating the total number of points, focus on the development of names (Marek et al 2020).

With the introduction of distance learning, many universities are already using the technology of an online seminar called "webinar", which demonstrates comparative tables, presentations, videos, etc. With the help of Internet technologies, the webinar retained the main feature of the seminar - interactivity, which provides modeling of the functions of the speaker, listener, who will work interactively, communicating together according to the scenario of such a seminar. Practitioners have also developed and experimentally tested a model for organizing the independent work of correspondence law students, which provides for three stages: indicative (preparatory), activity (executive), control and correction (final).

This model should contribute, first of all, to ensure an increase in the level of individual psychological readiness of students for independent study, the acquisition of appropriate qualifications by future lawyers, the acquisition of skills and habits of legal work, the development of professionally significant personality traits. In the process of organizing the independent work of law students by correspondence courses, the content and significance of such didactic principles as independence, intensification and activation, individualization and differentiation, professional and practical orientation, continuity, involvement in the educational process of the life and practical experience of students, feedback , the developmental and educational nature of the educational process in order to form the skills of self-education and self-improvement of students and the use of andragogical approaches to learning (Škobo, Đerić-Dragičević, 2019).

In addition, revealing the active methods of teaching applicants for higher education, it is also necessary to pay attention to the issues of social psychological training, in which the main principle is the active position of each of its participants. The essence and classification of training, the main types of exercises and procedures, stages of training work, etc. are reduced to "feedback", which consists in the expression by each participant of their own opinion on individual issues of the training session. The inclusion of active forms of education in the educational process, including psychological trainings, has a significant impact on the development of the professional and personal qualities of a future specialist.

It is expedient to consider modern systems of interactive teaching in legal disciplines as complexes of a certain way ordered technologies (including distance learning technologies), having the appropriate specifics and logic. For example, an interactive system for teaching law may include such blocks as: a competence-based approach to the study and teaching of law (the method of Socratic dialogue); "Technology of productive activity of intelligence"; a course to improve creative competence; collection of articles and teaching materials "Using interactive methods in teaching legal sciences"; training courts, that is, possible questions for role and business feedback (general information, preparation and methodological recommendations for conducting a civil procedure, assessment form); interactive teaching methods as part of public education; small groups, rules for effective group work; how to organize effective work in small groups; training in professional skills (interactive teaching methods); feedback, practical advice; development and use of role-playing games; work in "legal clinics", etc (Charalambos, 2014).

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 training 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.

CONCLUSION

Innovative educational activity is a complex process that requires skillful, constructive management. The introduction of innovative pedagogical technologies significantly changes the educational process, which makes it possible to solve the problems of developing, student-centered learning, differentiation, humanization, and the formation of an individual educational perspective.

In the modern learning process, both traditional and innovative teaching methods should be used, which are no less effective, and in other cases they simply cannot be dispensed with. It is necessary that they are in constant relationship and complement each other. These two concepts must exist at the same level.

Summing up, it can be noted that with the introduction of innovative technologies into the pedagogical process of the educational system of higher educational institutions, there is an increase in pedagogical skills and professional competence of future teachers - participants in innovative processes, an improvement in the quality indicators of students' educational achievements. At the same time, the regional education system as a whole is being modernized, the development of universities is traced on the basis of the search, development, development and implementation of innovative pedagogical technologies; scientific and methodological

support of the development of the educational institution is provided. At the level of the personality of a specialist, the formation of a modern style of thinking with its characteristic features is monitored: creativity, consistency, flexibility, dynamism, perspective, objectivity, conceptuality, etc.

Consequently, when innovative pedagogical technologies take their place in the educational process, they will gradually, which is quite natural, replace traditional methods and forms of work. In this case, higher education institutions will be able to develop an optimal approach to organizing the educational process, taking into account the specifics of higher education in the world and the international cultural environment.culture.

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