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Ensuring the Innovativeness of Vocational Education: Neuropedagogical Aspect

Larysa ANTONIUK[1],
Olena SOIA[2],
Olena KOSOVETS[3],
Alina KLIMISHYNA[4],
Mariana KOVTONIUK[5],
Olena TRYFONOVA[6]

[1] Candidate of Science in Pedagogy, Senior Lecturer of Mathematics and Computer Science Department, Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Ukraine, larissa.antoniuk2021@gmail.com
[2] Candidate of Science in Pedagogy, Senior Lecturer of Mathematics and Computer Science Department, Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Ukraine, soya.o.m@gmail.com
[3] Candidate of Science in Pedagogy, Senior Lecturer of Mathematics and Computer Science Department, Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Ukraine, helen.kosovets@gmail.com
[4] Candidate of Science in Pedagogy, Senior Lecturer of Mathematics and Computer Science Department, Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Ukraine, klimishyna.alina@gmail.com
[5] Doctor of Pedagogic Sciences, Professor, Head of the Department of Mathematics and Computer Science, Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University, Ukraine, kovtonyukmm@gmail.com
[6] Doctor of Science in Pedagogy, Full Professor, Professor of the Department of Pre-school Education, V.O. Sukhomlynskyi Mykolaiv National University, Ukraine, lenatrifonova@gmail.com

Abstract: *The significance of the outlined direction research is determined by the fact that in modern conditions of postmodern society development, the issues of improving higher education and ensuring the quality of the educational process become relevant.*
The need for innovative renewal of the educational process of the higher school is determined by the emergence of a number of psychological and pedagogical problems, taking into account the conditions of postmodernity(mismatch between the needs of employers, the existing state of future professionals training and scientific and pedagogical staff's qualifications, lack of mechanisms for selective processing of information, insufficient provision of information and psychological security of the individual, the need to develop an inclusive educational environment in higher education, etc.). The main conceptual principles of the innovative development of the educational environment in postmodern conditions are highlighted (humanization of the educational process, providing developmental learning and personality-oriented approach).
The article analyzes the foreign and domestic experience of using innovative educational technologies (individualized, personality-oriented learning, as well as gamification of the future training professionals' process), identifies their advantages and disadvantages. Peculiarities of their introduction into the practice of higher education in postmodern conditions are outlined.
Prospects for further research are the development of practical recommendations for the introduction of innovative educational technologies in the future professionals training in higher education.

Keywords: *Professional training; postmodern; postmodern approach in education; improvement of the educational process; individualized training; professional competence.*

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Introduction

The second half of the 20th century was characterized by significant transformations in society's consciousness. The search for a way out of the global crisis led to the emergence of postmodern philosophy, which became decisive for the creation of conceptual foundations of a new pedagogical theory. Its orientation is the formation of a holistic creative personality capable of self-realization and self-determination.

Penetration of postmodern thinking into pedagogical practice led to rethinking the content of the educational process. First of all, attention began to be paid to the development of students' motivation to study, the shift of emphasis from the teacher as the main figure in the educational process to the student, recognition of the priority of individualism and the formation of critical thinking skills (Hossienia, & Khalilib, 2011; Kahraman, 2015). Therefore, pedagogues were interested in peculiarities of human mental processes and the conditions of influence on their course.

The last decade of the twentieth century went down in history as the "brain decade", as innovative research in biology and physiology was initiated, including the study of the human brain's properties. The accumulation of information about the central nervous system's functioning peculiarities has led to their integration into related fields of knowledge. This led to the emergence of neurosciences' numbers, such as neurosurgery, neurophysiology, neurobiology, neuropsychology and more. The formation of a pedagogy applied field - neuropedagogy, which is based on the latest data on human brain functions, ways of displaying educational information in the human mind, as well as individual features of its cognitive sphere (Demchenko et al., 2021; Kosholap, 2021; Prots, 2021).

It was the results of neuroscientific research that gave rise to the concept of creativity and the development of methods for diagnosing and developing talent, which has a special value in a postmodern society. This led to the realization of the need to use the scientific provisions of neuroscience in professional education for the purpose of ensuring effectiveness of future professional training. Higher education institutions should provide training not only for a qualified specialist, but also promote the development of his creative potential and personal qualities that are important for future professional activity and postmodern society as a whole (communication, creativity, empathy, tolerance, etc.). The solution of the outlined problem becomes possible due to the introduction of innovative approaches to the organization of the educational process in higher

education institutions, the improvement of methodological and logistical support of educational disciplines in accordance with modern scientific achievements.

In this context, the opinion of Cooper (2005) is right. It is worth considering the features of the postmodern type of student behavior, which are extremely incompatible with the traditional scheme of training specialists and require an update of its methodology taking into account such features.

Therefore, we substantiate the relevance of the initiated research by the presence of a number of contradictions between:

- the need to rethink the content of pedagogical process, taking into account features of postmodern development of the society and the significant inertia of the introduction of innovations into the practice of higher education;
- the need to identify postmodern trends in professional education as a key element of ensuring its quality and insufficient desire of the teaching staff to change the emphasis in their own activities.

Purposes of the article are:

- determination of the influence of postmodern ideas on the process of improving the professional training of future specialists;
- analysis of the domestic and foreign experience of introducing innovative technologies into the practice of higher education with the aim of ensuring the quality of higher education in the conditions of postmodern development of the society.

Psychological and pedagogical problems of postmodern society

The post-industrial society development has led to a shift of emphasis in all public life's spheres. Interdisciplinarity is inherent in the postmodern society; democracy and pluralism have formed an understanding of the modern higher education, as the inability to ensure the development of the future professionals' necessary qualities.

According to the results of professional training in higher education institutions, the state should get qualified and competitive specialists who have the latest knowledge and technologies. However, according to the results of the analysis of the current state of higher education, reflected, in particular, in the publications of Beheshti (2005), Burbules (2010) and others, it does not have time to respond to the constant updating of information. After all, such a reaction should be manifested not only in the adjustment of educational programs, but also the corresponding update of curricula, content of disciplines, systematic training of scientific and

pedagogical staff, given that it is he who ensures the quality of training. Moreover, the behavior of students is changing in the postmodern era. According to Taylor (2005), they are characterized by indiscipline and inertia to a greater degree than students of the modern era. Students are currently focused on consumption, entertainment and pleasure, rather than hard work for the ephemeral goal of becoming a highly qualified specialist in the future.

The discrepancy between the needs of employers, the current state of future professionals' training and the qualifications of scientific and pedagogical staff has led to a number of psychological and pedagogical problems of higher education that need to be addressed.

One of the key problems of higher school pedagogy is the development of mechanisms for selective processing of information available in the professional field. T. Hlushko (2012) outlines this problem in his research. The scientist notes that the increase in information flow in a geometric progression and the inability to match the amount of information and the number of its sources leads to an increase in work, which is often redundant. The creation of algorithms for selective processing of information in the field of professional activity should ensure maximum consideration of individual needs.

The next issue that requires attention in the system of future professionals training is the need to develop mechanisms to ensure information and psychological security of the individual. Every day the student has to master a huge amount of information. Information flows are reflected in the consciousness and subconscious of the subject, forming a certain social position (Chou et al., 2021). However, there is currently a situation where information protection mechanisms have been developed, in particular by means of copyright confirmation, and there are no mechanisms to protect the subjects of information interaction. Therefore, due to the influence of various information on the future specialist, he may develop stress, depression, the formation of information trauma syndrome or information dependence of varying severity. These issues are relevant in the research of such scientists as Vaccar and Chadwick (2020) and a number of others. An interesting position is Elerding, S. (2016), who believes that the informatization of society creates an opportunity to overcome social inequality in postmodern society.

The importance of this problem is evidenced by the fact that it is the cause of such an interdisciplinary field of knowledge as infoecology (a branch of science that studies the impact of the flows of man-made and social information on humans).

The next key issue of training in the postmodern era is to ensure access to quality education for students with special educational needs. The relevance of this area is indicated by a number of publications, such as Morris, Milton and Goldstone (2019), Craddock and Mathias (2009), Evans (2013) and others, which discuss the features of the implementation of inclusive higher education. We agree with the statement of Chhabra, Bose, and Chadha (2018) that postmodernism is characterized by a desire for social justice, which is reflected in the spread of ideas of inclusion in professional education.

However, it is undeniable that joint learning requires appropriate adjustment of educational programs and curricula, the search for pedagogical technologies that will enable effective learning for all participants in the educational process. In addition, we believe that an important aspect of the successful functioning of inclusive education is the formation of the readiness of research and teaching staff to work in an inclusive environment. A study conducted among research and teaching staff of higher education institutions shows that a negative attitude towards higher inclusive education prevails among them. In particular, among all respondents (112 people) 87.5% (98 people) consider it impossible to ensure the quality of inclusive higher education for all its participants. 12.5% (15 people) consider it possible, but with the appropriate correction of educational programs and the introduction of innovative pedagogical learning technologies. The most common opinion among respondents (expressed by 61.6% of respondents) is that co-education will shift the focus from regular students, to students with special educational needs, which in turn will negatively affect the results of the educational process and training in general.

Given the above, we believe that the key point of the development of postmodern education is to ensure the innovative training of future professionals. According to Acar and Tuncdogan (2019), the essence of the innovation of the educational process is not only in updating existing programs and pedagogical technologies, but also in the constant search, development, production of new approaches to solving educational problems and complications.

The main purpose of innovation in postmodern education is to establish a valued attitude to the individual. Innovative vocational education must organically combine professional knowledge and skills, the formation of professional competence and the development of universal values. This position will ensure the logical transition of the vocational education system from one state to another as a result of the synergistic effect.

Innovation in the higher education system can manifest itself at different stages and levels. For example, innovations can be both in the content of education and in professional pedagogical activity, methods of teaching disciplines, technological support of the educational process, and so on. Various aspects of innovation in education are reflected in the publications of Aljawarneh (2020), Fertalj Milašinović and Nižetić (2013), Hassan (2014) and others. In particular, Aljawarneh (2020) explored the features of the interaction of authentic and digital learning technologies, pointed out the problems that arise and possible ways to overcome them. Fertalj, Milašinović and Nižetić (2013) noted the need to take into account the existing levels of cognitive abilities of students in the training of future engineering professionals (Beh, 2014). Hassan (2014) studied the practical and theoretical aspects of innovative learning.

The main idea of postmodern education is the formation of an individual professional style of the future specialist, instilling in him motivation for self-development by building partnership relations between all participants of the educational process (Askeland & Payne, 2006). Bryant, Johnston, and Usher (1997), Giroux (1999), Beheshti (2005) and others also emphasized the need to educate the personality of the future specialist with a postmodern type of thinking.

The publication of Haidamaka et al. (2022) is interesting in the context of our study. However, the authors focused on the analysis of key concepts of innovative postmodern education and offered recommendations for building innovative educational systems. In our research, we emphasize prospects of interdisciplinary and the use of neuropedagogical technologies in the postmodern era.

Based on the analysis of a number of scientific publications, including Borrego, Karlin, McNair and Beddoes (2013), Dekker, Lee, Howard-Jones and Jolles (2012), I. Klemantovich, E. Levanova and V. Stepanov (2016), the main conceptual principles on which the innovative development of the educational environment is based were singled out:

- humanization of the educational process. The need to humanize the training process, taking into account the latest advances in neuroscience, outlined in Søndergaard and Mulder (2012), Tuya and Garcia-Fanjul (1999), Pickering and Howard-Jones (2007). Scholars note that the principles of modern educational innovations should be based on the ideas of anthropocentrism and provide for the reorientation of educational technologies to the development of personal abilities of future professionals;

- developmental learning. This principle involves the construction of an individual educational trajectory for each student, given the differences in

the functioning of the brain and central nervous system. The future specialist in the process of professional training must learn to creatively solve complex socio-economic and scientific and technical problems in the context of their professional activities. Higher education institutions, taking into account the requirement of innovation, should create optimal conditions for self-realization and self-development of each student;

- personality-oriented approach to learning. Continuing the previous opinion, Goswami (2006), Meltzoff, Kuhl, Movellan and Sejnowski (2009) and Howard-Jones (2013) noted that the basis of neuropedagogy is the need to take into account the individual characteristics of each person, the specifics of his intellectual, emotional and volitional sphere, psychophysiological features, etc.

Characteristics of innovative learning technologies in the context of professional postmodern education

In the previous point the nessesity to introduce provisions and methods of neuropedagogy into the process of professional training of future specialists in the conditions of postmodern development of the society is substantiated.

There is a need to characterize the innovative learning technologies available in the educational space and to analyze their effectiveness.

The analysis of the philosophical views of postmodernists on the theory of education provides grounds for identifying and characterizing innovative principles of the construction of professional training:

- systematic innovations. Any educational activity to ensure the expected result must be systematic. Episodicity will not ensure the development of individual personality traits. The need for systematic implementation of neuropedagogical technologies is discussed in the publications of Nicol and Macfarlane-Dick (2006), Howard-Jones, Ott, van Leeuwen and De Smedt (2015), Joaquín García Carrasco, Serrano and García (2015);

- development and implementation of a fundamentally new approach in the system of higher education according to requirements of postmodernism should be based on the developmental and creative component, because as practice shows, the knowledge acquired by students loses relevance in 10-15 years. Professional growth involves systematic training. Currently, the concept of lifelong learning is being promoted and developments in education, the relevance of which has been confirmed by a number of publications, including such anvils as Willey and Gardner, A.

(2012), Bekh et al. (2021), S. Dembitska, I. Kobylyanska and S. Pugach and others (2020). Therefore, it is necessary not only to lay the foundation for further professional training, but also to teach future professionals to learn;

- improvement of professional training and professional competence of scientific and pedagogical staff taking into account innovative achievements of psychology and pedagogy. Only qualified staff will be able to take the education system to a new level, taking into account the achievements of neuroscience in their professional activities (Busso, & Pollack, 2015).

We characterize innovative learning technologies, which have proven their effectiveness in domestic and foreign educational practice.

1. Individualized learning. Each person has specific features of the development and functioning of the central nervous system, requires an individual approach to ensure effective mastery of educational material. This approach is implemented in the framework of individualized learning. In the scientific community, the attitude to the content of this technology is quite ambiguous; in particular it is interpreted as

- didactic principle, the content of which is to take into account the individual differences of students, the level of development of their abilities, features of cognition, etc.,
- formation of individuality, which contributes to the acquisition by future professionals of independence, which is the basis of the ability to self-determination and self-regulation;
- formation of the ability to self-realization, which promotes the fullest development of capabilities and abilities of the individual, as well as stimulates the desire to impart knowledge;
- a set of measures aimed at determining the objective factors of learning.

The problem of individualization of learning was considered in the publications Damnik, Proske and Körndle (2017), Egberink, Meijer and Tendeiro (2015) and others. Assimilation of materials, forms of audit and evaluation, etc. It can be implemented on the basis of individualization of learning as a system of relations and provides the following points:

- comprehensive study of individual characteristics of students, their abilities and capabilities;
- availability of teachers trained for such training;
- availability of adapting and individualized courses, programs, etc.;
- developed material and technical base.

The comparison of the characteristics of traditional and individualized learning is given in Table 1. The following key points were

chosen as criteria for comparison: functions and tasks of the teacher during the educational process, functions and tasks of the student, work schedule (mastering the educational material in accordance with the objectives of the educational process) sources which the student receives new information, features of the management of the educational process, ways of maintenance of motivation, possible forms of control and expected result.

Tab. 1. Comparison of traditional and individualized learning (developed by the authors)

№	*Evaluation criterion*	*Technology*	
		Traditional	*Individualized*
1.	Functions and tasks of the teacher	Defines the content, structure of the training course and methods of activity	Performs the functions of coordinator and consultant
2.	Functions and tasks of the student	Perception, assimilation and reproduction of theoretical knowledge and methods of action provided by the teacher	Mastering information from various sources, generating knowledge and developing skills
3.	Work schedule	Tight schedule, according to the schedule of the educational process	Individual educational trajectory with key dates
4.	Sources	Teacher and a fixed list of sources recommended for study	Individual choice of information sources, according to the peculiarities of the individual educational trajectory
5.	Learning process management	Totalitarian or authoritarian, when the governing functions are performed by the teacher	Democratic, the process of cognition takes place on the basis of a pair
6.	Learning motivation	There is a desire to get a certain specialty	There is a desire to get a certain specialty and achieve maximum results
7.	Forms of control	Formal and strict forms of control over a clearly defined schedule	Sufficiently flexible forms of control, in accordance with the set key dates, the development of self-control and reflection,

			time management skills
8.	Expected result	The set of knowledge, skills and teachings in a particular field	The set of knowledge, skills and teachings in a particular field, the ability to use them creatively in the process of professional activity

Generalization of educational practice of introduction of this pedagogical technology, gives the grounds to assert that in real conditions of professional training of future experts individualization of training is relative. This is due to the following points:

- training courses are developed not taking into account the individual characteristics of each student individually, but groups of students in which these properties are similar (for example, approximately the same level of knowledge). Thus, we again get the focus on some average person. It is proposed to eliminate this shortcoming by developing principles for constructing a common educational trajectory with multiple choice at key points of the course. With this approach, each student will be able to make the choice that is right for him;

- during the development of training courses we can take into account only known individual features or their complex combinations (for example, features of perception of educational information by students of a certain age group, etc.). It is possible to orient on each separate student only by studying of its specific features and psychophysiological characteristics as a result of carrying out educational and psychological testing that is impossible;

- in the practice of higher education institutions, individualization is implemented periodically, for example, during the study of elective subjects or training on an individual schedule. However, in none of these cases is it a question of creating an individual educational trajectory due to the complexity of its implementation in the context of mass learning.

Attempts to implement an individualized learning as effectively as possible have led to the emergence of adaptive technology, which involves the creation of interactive dialogue, the results of which the learning process is personified according to the level of acquired knowledge, skills and abilities of students. Features of adaptive technology are reflected in the publications Kong (2021),. O. Kravets and I. Svyridenko (2016).

The development of information technology has led to the emergence of modern adaptive learning systems, which take into account the

individual characteristics of students' learning activities. Such systems are called intelligent and are currently being disseminated in the practice of training future professionals.

Their main advantages are the ability to differentiate learning depending on the level of knowledge and skills of students, the available experience, individual characteristics of the perception of educational material, the ability to solve problems of varying complexity, and so on. Adaptive learning systems allow the transition from the linear study of educational material, which is offered to all students to the generation of personal content of the educational course, when different students achieve different results.

Adaptive learning systems allow you to assess the level of competence of students at the beginning of the course, which affects the choice of next steps depending on the results, as well as analyze the acquired knowledge and competencies, and compare them with the planned results.

Adaptive learning systems determine what material the user does not understand (or misunderstands), resulting in the formation of hints, for example, in the form of links to useful resources. An example of such a system is a platform with adaptive content CK-12. This is a free English-language resource for learning different subjects with videos, tests, examples, flash cards and other learning materials.

Adaptive assessment systems, which are used for periodic monitoring, have become the most widespread in higher education institutions. Some developers of adaptive learning tools use several adaptation strategies at once. For example, the ALEKS tool combines an adaptive assessment and consistency. It is used as part of an online course on the basics of mathematical analysis - Precalculus from Arizona State University. Adaptation of both content and sequence is carried out by Smart Sparrow - a platform that allows you to develop adaptive and interactive learning materials. Smart Sparrow, together with ASU (Arizona State University) and NASA, recently developed Infiniscope, a series of astronomy games.

2. Innovative methods of personality-oriented learning, which are based on the provisions of their personality-oriented approach in learning (I. Yakimanskaya, 2000), in education (Bekh, 2014; Bondarevskaya, 1995), its philosophical and psychological justification (Podmazin, 2006) and the principles of neuropedagogy (Goswami, 2006; Howard-Jones, 2013).

In theoretical and experimental studies of domestic and foreign scientists, such as Litzinger, Lettuca, Hadgraft, and Newstetter (2011), Willey and Gardner (2012), S. Dembitskaya (2019) and others, it is proved that

personality-oriented learning provides not only motivation to study the material, but also the development of personal interest in knowledge, the desire to learn independently, which is most relevant in the conditions of postmodern society.

The content of this technology is to establish subject-subject relations in the educational process, as well as taking into account the existing experience of each student and respect for him.

Analysis of domestic and foreign experience in the implementation of personality-oriented technologies show the following features:

- psychological: the need to develop students' reflection, creating conditions for free choice of activities and ways to achieve the goal; to form an understanding of responsibility for one's own choice;
- methodical: introduction of dialogical forms of pedagogical interaction, discussions, definition of pedagogical methods, expedient for studying of a certain material, taking into account features of perception of information by educational group, etc.;
- educational: development of empathy, tolerance, kindness, ability to see in each person a unique personality; creating a situation of personal choice, trust, success, creativity.

A comparison of the characteristics of traditional and personality-oriented learning is given in Table 2.

Tab. 2. Comparison of traditional and personality-oriented learning (developed by the authors)

№	*Evaluation criterion*	*Technology*	
		Traditional	*Personality-oriented*
1.	Functions and tasks of the teacher	Defines the content, structure of the training course and methods of activity	Motivates to study, organizes cooperation in order to gain knowledge and experience
2.	Functions and tasks of the student	Perception, assimilation and reproduction of theoretical knowledge and methods of action provided by the teacher	Mastering information through the organization of interaction with the teacher, other students, project development, participation in discussions, etc.
3.	Work schedule	Tight schedule, according to the schedule of the educational process	Tight schedule, according to the schedule of the educational process

4.	Sources	Teacher and a fixed list of sources recommended for study	Teacher, other participants in the educational process, the recommended list of sources with multiple options
5.	Learning process management	Totalitarian or authoritarian, when the governing functions are performed by the teacher	Democratic, the process of cognition takes place on the basis of a pair
6.	Learning motivation	There is a desire to get a certain specialty	There is a desire to get a certain specialty, the formation of positive motivation to teach by the teacher through the use of problem-based, project-based teaching methods, etc
7.	Forms of control	Formal and strict forms of control over a clearly defined schedule	Flexible forms of control, according to a clearly defined schedule, not only the final result is evaluated, but also the ways of its activity
8.	Expected result	The set of knowledge, skills and teachings in a particular field	The set of knowledge, skills and teachings in a particular field, the ability to use them creatively in the process of professional activity

One of the types of personality-oriented learning is personalization, which involves shifting the emphasis of the educational process from teacher to student. In 2001, the International Academy of Education, in cooperation with UNESCO, defined the principles of personalized learning. Including:

1) ensuring the active position of students in the process of acquiring knowledge, skills and abilities. According to this principle, the teacher must involve students in dialogue in the learning process, use a variety of pedagogical technologies, to form motivation to learn;

2) formation of social position and responsibility, development of skills of cooperation in collective by involvement in performance of group science projects, etc.;

3) establishing a connection between existing and new knowledge. The theory being studied must be logically integrated into the existing system of students' knowledge. This can be achieved by initiating discussions, reviewing previous material, using graphical methods of

presenting information, such as intelligence maps, models, diagrams, and so on. The effectiveness of this approach is substantiated in the publications of Anohina-Naumeca (2015), Tepper (2014), Watson, Pelkey, Noyes and Rodgers (2016) and others;

4) formation of skills of self-control and strategic thinking.

3. Game technologies, which are based on group, collective solution of educational problems, through specific inclusion in educational activities. The foundations of the use of game technology, or as it is called, the gamification of the training process of future professionals are laid in concepts that describe the functions of the game in the adult world, such as transactional game theory E. Bern "Games People Play" (Berne, 2016), games for training managers G. Shchedrovitsky (Shchedrovitsky, 1983) and a number of others.

In the context of the latest achievements of neuroscience, we agree with the statement of M. Marco (2018, p. 40) that game technologies are psychotherapeutic, aimed at forming a lasting cognitive interest in the subject and future profession through game forms of learning ... by providing comfortable and safe conditions for the development of personality, realization of its natural potential, creative abilities ..., a set of methods, techniques and means of organizing the educational process in the form of didactic games, are characterized by an active educational and cognitive orientation.

We agree with the statement of N. Golovko (2015, p. 19) that the use of game technologies in the training process provides an opportunity to:

- to combine a large amount of problem tasks, which are characterized by multifaceted, variability, variability and probability of obtaining new algorithms for their solution;
- involve as many participants as possible in active interaction in the educational process;
- to form value orientations of future professional activity, to adjust abilities and skills of an estimation / self-estimation, the control / self-control.

In the practice of high school there are different types of games (business, role-playing, didactic, simulation, etc.) and each of them has its own implementation technology. At the same time, a feature of all game methods is the interactive interaction of its participants. Terms of use of game technologies are reflected in the publications of Lavy and Yadin (2010), Beatty, Chen, and Klein (2021), Tiffany Bayley, Wheatley and Hurst (2021) and a number of others.

The analysis of the use of game technologies in the course of preparation of future experts gave the bases to allocate such their advantages

- formation of motivation to study due to the specific organization of joint activities of all participants in the educational process;
- the ability to ensure the development of personal characteristics of students, such as communication, introspection, etc.;
- development of understanding of the complexity of mental, social and organizational processes of interaction between people;
- assisting students to gain experience in certain activities;
- ensuring the activity of all students, while reducing their anxiety and weakening protective mechanisms.

Computer games have become widespread in the training process. Features of using computer games are:

- formation of awareness of the right to make a mistake. Each player will make as many mistakes as needed to complete the task. In the process of such work, an understanding is formed that it is impossible to gain some experience without mistakes and this is normal;
- Instant feedback. Certain steps taken by the game character lead to appropriate changes in the game environment. Therefore, the user understands the consequences of his actions instantly, and not in the long run, as is usually the case in real life;
- sense of progress. Each game point brings some evidence of the achievements of the game character. This creates an understanding that any learning activities lead to an increase in the level of competence, allows you to plan the next steps to obtain the desired educational result;
- providing motivation through an interesting game plot.

Conclusions

Thus, the results of the study give grounds to draw the following conclusions:

1. The change in the requirements for the professional training of a specialist, the need for the formation of his professional competence at a high level and the corresponding value orientations in the conditions of postmodern development of the society led to the need for the development of innovative pedagogical technologies. They are aimed at forming a new type of personality, capable of independently creating itself, changing and improving depending on the conditions. Postmodern pedagogy is based on the recognition of individual values of the personality as a priority in determining the features of the educational process.

2. The intensification of information flows and the globalization of the world economy in the postmodern period have led to an understanding of the need to revise the basics of training. There is an ongoing discussion in the scientific community about updating the content and technologies of vocational education, in particular on the basis of neuropedagogical research. The basis of neuropedagogy is a combination of interdisciplinary research, foremost psychology, pedagogy and neuroscience. The need for this area of research is due to the emergence of a number of problems of higher education pedagogy in the conditions of postmodern development of the society, the main of which is the mismatch between the needs of employers, the current state of training of future professionals and the qualifications of research and teaching staff. In addition, the development of mechanisms for selective processing of information, ensuring information and psychological security of the individual, creating an inclusive educational environment in higher education, etc. is also relevant.

3. The need to use the principles of neuropedagogy in higher education institutions is justified by the content of the innovative formation of the higher education system in accordance with the requirements of postmodernism. Such training contributes to the quality of learning material, the development of the necessary personality traits of future professionals, the formation of a conscious civic position.

The impact of postmodern trends on the organization of the educational process is manifested in the diversification of forms and methods of education. In this context, an analysis of foreign and domestic experience of using innovative educational technologies was carried out. Peculiarities of introduction of individualized training, innovative technologies of personality-oriented training, game technologies, their advantages and disadvantages into the system of professional training are determined.

The advantage of individualized learning is the ability to take into account the psychological and physical qualities of the individual to achieve the maximum effect of the learning process. However, the use of elements of individualized learning in the context of traditional training requires the teacher to study and diagnose the personal characteristics of each student separately, which is technically impossible. Therefore, the leading task of professional training is to provide an individual zone of creative development of the future specialist, in particular with the use of adaptive learning systems.

The peculiarities of the introduction of innovative personality-oriented technologies in vocational education in postmodern conditions are the ability

to ensure the active position of the subjects of study. Students of higher education institutions have a certain professional motivation, which is manifested in the desire to master the disciplines of the professional cycle, but there is no desire to study fundamental disciplines. This situation requires not only the provision of professional guidance to educational material, but also the introduction of appropriate pedagogical technologies that provide an opportunity to intensify educational and cognitive activities. In addition, the different level of formation of general competence of first-year students makes it impossible to ensure the effectiveness of learning for the whole group at the same time. This problem can be solved by personalizing learning as a kind of technology of personality-oriented learning.

The introduction of gaming technology in the education system took place in the 50s of the last century, but they were used mainly for the training of military professionals. At the end of the twentieth century, gaming, technology found a place in the training of managers and is currently working on their use in other fields. The development of information technology has created the possibility of interactive educational games that allow not only to acquire certain knowledge, but also to develop personally significant traits, such as focus, self-analysis and more.

Prospects for further research determine the development of practical recommendations for the introduction of innovative technologies in the training of future professionals in higher education.

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