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IMPLEMENTING E - LEARNING IN THE CONTEXT OF FUTURE PROFESSIONAL ACTIVITY

Abstract. Our researches show that studying in higher educational establishments should be constructed in such a way that not only provide students with a certain amount of knowledge, skills and abilities, but also to learn to acquire them on their own through reflection and goal-setting mechanisms, and, equally important, to promote the development of students' personalities in a professional, intellectual and moral plan, thus implementing the principles of personally oriented and competent approaches.

In the process of experimental work we have identified a number of tools and technologies that allow us to combine educational, quasi-professional and educational work with eLearning tools in order to create the innovative competence of future teachers (development, filling and use of informational educational environment, electronic educational resources, electronic educational complexes; studying through socially conditioned and contextually driven experience by means of Web technologies).

It is determined that the advantages of using Web technologies in the educational process are: use of free freemium-resource (MOOC), free training Open Educational Resources; personalization (differentiated and/ or individual approaches; asynchronous learning; interactivity and virtual simulation; implementation of individual and group projects based on Web quests and Blog quests; gameplay and edutainment; the possibility of organizing mixed learning.

We have determined that in the pedagogical institutions of Ukraine the most frequent use of free open resources for information search is the most commonly used for the transition from "knowledgeable" to environmentally and personally oriented content (educational ® quasi-professional ® educational and professional activity), design work, gaming, and models of mixed learning.

It is necessary to extend the exploring the feasibility of using eLearning in the educational process of higher education institutions in Ukraine. This can be done within the framework of a scientific direction called the electronic pedagogy, the subject of study of which is the educational process in the ICT in a saturated environment. In this connection, one of the most urgent tasks of electronic pedagogy is the development of techniques for the use of mixed forms of.

Keywords: future teachers; contextual learning; information educational environment; web technology.

1. INTRODUCTION

Problem statement. European integration of Ukraine necessitates the modernization of the education system, which involves changing and improving all its components: structure, content, technologies, means, methods of knowledge assessment, etc. The main task of higher pedagogical education is the training of teachers who have developed personal and professional qualities that are capable of carrying out innovative pedagogical activities. The solution of this task requires the purposeful formation of the innovative competence of future teachers in the conditions of the system of higher pedagogical education, contributing to their professional and personal formation, formation of innovative potential and innovative culture.

It is important to note that in understanding the essence of innovative processes in education there are two main problems of pedagogic – the problem of studying, generalization and dissemination of advanced pedagogical experience and the problem of introducing the achievements of psychological and pedagogical science into practice. The subject of innovation, the content and mechanisms of innovation processes must lie in the plane of unification of two interconnected

processes currently under consideration, mostly isolated. That is, the result of innovation processes should be the use of innovations, both theoretical and practical, as well as those that are formed at the junction of theory and practice. It's about the fact that the teacher can act as an author, developer, researcher, user and advocate of new pedagogical technologies, theories, concepts. The management of this process ensures the purposeful selection, evaluation and application of the experience of colleagues or the ideas and methods proposed by science.

Analysis of recent research and publications. Widespread innovation leads to changes in the system of teacher training for future professional activities. I. Bogdanova [1] substantiated the application of a specific direction of pedagogical innovation – "techno-mathematics", which studies perfection, transformation and comprehensive renewal of the traditional pedagogical process with the help of technological innovations. More relevant today is the study of the peculiarities of the use of e-learning and its implementation in the projected educational environment of a particular educational institution. In the monograph "Preparing Future Handicraft Teachers for Innovative Pedagogical Activity" we analyzed the application of innovative information and communication technologies (ICT) in the educational process and proved that its implementation in the educational process of higher educational institutions of Ukraine may be partly carried out by means of eLearning [2, p. 100].

We agree with I. Tsidilo, who analyzes the conceptual apparatus eLearning concludes that the term "eLearning" is wider than "electronic-learning", and notes that this concept covers a range of applications and processes [3, p. 26]. M. Meksin believes that eLearning is a modern teaching method using computer and communication technologies, including e-delivery of educational material [4]. Wikipedia states that eLearning includes e-textbooks, educational services and technologies. This is, in essence, an educational process in which, in addition to the full-time and compulsory independent work, there is a developed virtual part which is being implemented by means of Web technologies that provide accessibility, reliability of choice and use of educational content, allow extraterritorially and at any time to receive consultations of the teacher, organizers and communicate with classmates; includes an environment that provides all the necessary teaching materials and allows you to control the learning process.

The aim of the article is to analyze a number of tools and technologies that allow us to combine educational, quasi-professional and educational work with eLearning tools in order to create the innovative competence of future teachers.

2. THEORETICAL BASIS OF THE RESEARCH

A prerequisite for mastering the methods of activity in production situations is the connection of knowledge and experience. Practical experience is acquired in the process of applying knowledge and professional skills in a variety of situations, in most cases, their integration takes place. Depending on the extent to which the theoretical and practical training in the pedagogical universities is combined, the level of future teachers' professional training depends.

When considering contextual learning, it is necessary to distinguish between the content of learning and the content of education. The content of the study is determined by the curriculum and programs. As our practical experience shows, studying the same content students receive different levels of education. It depends on their individual characteristics, the personality of the teachers, type of activity, level of activity, material and technical base of the university. If we consider the content of education in the context of e-education, one can state that it defines the content of learning and reflects the level of development of personality, competencies, in our study – the innovation competence in the projected educational environment. Also, on the basis of research by E. Bondarevskaya, V. Senko, V. Serikova, V. Slobodchikova, to interpret the content of education in the context of the introduction of eLearning as an integral system of educational and professional experience that in the process of learning becomes an individual, subjective, personal experience future educator.

The transformation of a student into a subject interested in transforming himself into a personality and a future teacher causes the need to change not only the content of higher education,

but also those conditions during which it is implemented – the educational support of the educational process, its technological support, the application of innovative ICT, actualization of independent activity of students and teachers in the educational environment of pedagogical universities.

Our researches show that studying in higher educational establishments should be constructed in such a way that not only provide students with a certain amount of knowledge, skills and abilities, but also to learn to acquire them on their own through reflection and goal-setting mechanisms, and, equally important, to promote the development of students' personalities in a professional, intellectual and moral plan, thus implementing the principles of personally oriented and competent approaches. Nowadays, the educational process has to focus on how to teach how to think, create, analyze, generate new ideas and find solutions. Since the innovative economy requires not just knowledgeable but competent and originally thinking specialists, the rapid development of new technologies, including information, requires a rethinking of the approaches and techniques of the educational process.

3. RESEARCH RESULTS

In the process of experimental work we have identified a number of tools and technologies that allow us to combine educational, quasi-professional and educational work with eLearning tools in order to create the innovative competence of future teachers.

1. Development, filling and use of informational educational environment, electronic educational resources, electronic educational complexes.

The main objective of professional training in modern conditions is the formation of professional knowledge and thinking skills, self-search skills and professional issues, critical analysis of conditions and decision-making. As noted above, the solution to these tasks is almost impossible without the use of ICT.

Based on the study of the experience of informatization of educational institutions in Ukraine and our own pedagogical experience, we determined that a more usual direction of ICT implementation in the educational process of higher educational institutions is the creation and filling of an informational educational environment. The main tasks are: to meet the individual and educational needs of students through the improvement of the level of training in the field of ICT; creation of a single information space through the integration of different divisions and services; a dynamic combination of all communication means through the universal forms of keeping, processing and transmission the information; development of the material and technical and educational-methodical base of the educational institution; improvement of the system of information and methodological support in the management of universities.

In order to deploy an environment in higher educational establishments both freemium platforms (those with basic features free of charge, and some options are required to pay), and platforms that target a mass audience and whose business strategy is based on monetization at the expense of educational institutions or users can be used (Moodle, Office 365, Efront, Illias, LMS Collaborator, eLearning Server, etc.). Work in the environment provides: registration of listeners and teachers, the formation of training programs, training groups; conducting online and offline training; training courses and programs; development of exercises and tests, educational materials in different forms; management of the library of educational materials; provision of case studies (online, offline), interactive communication: forums, graphic, virtual classes, trainings, webinars; saving and analysis of learning outcomes; preparation of various reports on the results of training.

The information educational environment is characterized by openness, the ability to expand and supplement, scalability, integrability, interoperability, adaptability and mobility. Work in the informational educational environment of future teachers provides an opportunity for their training in the context of future professional activities.

The analysis of the development of ICT which are used in professional education shows that not all high schools of Ukraine, for various reasons, can be fully deployed and use informational educational environment. A more local version is the organization of the work of the information

educational portal, which is mainly used for independent work of students, provides unified access to information and has an interactive character.

Informational and educational portal is a platform that contains organized and systematic training information accessed through the Internet (O. Samoilenko [5, p. 138]).

To the main functions of the information educational portal L. Kutsak [6, p. 100] include the following: completeness, targeted and thought-out information; limited audience (target audience); accessibility; the speed of updating information. The various informational resources that the information education portal provides access to include: open electronic funds and catalogs of libraries; information on specialties, structural subdivisions, educational and research programs, laboratories, scientific interests and publications of employees, etc.; students' scientific, creative, sporting societies, projects and groups; sites of private and government grants under which work is being conducted; education and science news; distance learning, studying abroad, advanced training courses and much more.

The portal includes electronic teaching and learning complexes, educational and organizational and informational materials, etc. (for example, the Information and Educational Portal of the Department of Innovative and Information Technologies in the Education of the Educational-Scientific Institute of Pedagogy, Psychology, and Training of Specialists in Vinnytsia Mykhailo Kotsiubynskyi State Pedagogical University. URL: http://ito.vspu.net/). Creating and promoting an educational or full-fledged HR-portal provides: creating a learning content / knowledge base for distance learning and mixed learning programs and solving operational tasks; conducting electronic remote synchronous (webinars) and asynchronous (electronic courses) training; organization of informal / social learning and support for the exchange of experience and knowledge; systematization and prompt placement of information; operational control of the level of knowledge acquisition; stimulating innovation processes in the virtual environment; Increasing the returns from already implemented traditional training programs. In order to provide feedback on the portal, there can also be forums, e-mail, teacher blogs, chat rooms, webinar platforms, online seminars, web conferences, etc.

Electronic educational resources, electronic teaching and learning complexes can be considered as additional educational and methodological tools, integrated with the purpose of collecting, organizing, keeping, processing, transmitting and presenting educational and other kinds of information, allowing to organize the educational and professional activity of students. To their specific functions we include: adaptability; interactivity; realization of visualization of educational information; development of intellectual potential; systematic and structural-functional connection of presentation of educational material; integrity and continuity of the didactic training cycle.

It is expedient to include in the structure of electronic educational and methodical complexes: methodical materials (abstract, educational and work programs); teaching materials (lectures, laboratory, practical work, vocabulary, teacher's blog, student work, etc.); knowledge control (tests, evaluation criteria, tasks for independent work, questions for exam, etc.); literature (basic, additional, Internet resources). All elements are interconnected, have a unified information basis and are developed not only in accordance with the chosen method of training, which is realized with their help, but also within the framework of a unified concept of the training of future teachers for innovative pedagogical activities (URL: http://ito.vspu.net/ENK/index.htm).

Application in the training of future teachers of professionally oriented e-learning complex improves the quality of education, develops the skills of work with ICT, helps to combine traditional and innovative learning tools in future professional activities.

Thus, the informational educational environment, information educational portal filled with electronic learning resources, electronic educational complexes can be considered as a single system, which is a knowledge base, which is constantly being filled and developing in a certain subject area; includes a set of teaching materials and methodological materials, integrates applied program pedagogical products, databases and knowledge, which provide and support the chosen teaching technology teaching. These resources allow teachers of higher educational institutions through the

information component to implement integrated training technology and provide a solution to the problem of guaranteed achievement of the objectives of training future technology teachers to innovative teaching activities.

2. Studying through socially conditioned and contextually driven experience by means of Web technologies.

In [2, c. 102-109], we have analyzed the main aspects of using Web 2.0 and Web 3.0 in education, and it is justified that today in the education of Web 3.0 students teaching teachers are just as important as teachers teaching their students. But the role and responsibility of teaching does not end there. Instead of a system of education that prepares students for a certain role, education Web 3.0 prepares students to become content educators (content entrepreneurs) for lifelong learning.

Life-long learning is a permanent, voluntary and self-motivated pursuit of knowledge for personal or professional reasons. It promotes not only social integration, active position and personal development, but also self-sufficiency, as well as competitiveness in the labor market. The emergence of new and new Web tools and technologies creates great potential for the development and world-wide development of the concept of continuing education. The high speed of changes in the information environment and the development of technologies have become a catalyst and driver for the evolution of Web services. Continuing education has become a new norm.

In the design process developed by A. Verbitsky [7, p. 43] of contextual learning models – Semiotic, Simulation, and Social, for the process of preparing future teachers for innovative pedagogical activities, it is determined that the advantages of using Web technologies in the educational process are:

– use of free freemium-resources for information search, free training Open Educational Resources for continuing education;

– personalization (differentiated and / or individual approaches), which is implemented by means of big data;

– asynchronous learning: teachers and students do not necessarily work simultaneously, education becomes more convenient and accessible, students have the opportunity to study at their schedule in a convenient time for them;

– interactivity and virtual simulation;

– implementation of individual and group projects based on Web quests and Blog quests;

– gameplay and edutainment. Gameplay is one of the main tools that makes learning more interesting and easy. As a result, the trend of contextual education is realized – the integration of education in everyday life and the processes of future professional activity in the game form;

– the possibility of organizing mixed learning – the integration of online studying face-to-face tutoring, such as alternate online classroom training, a combination of online tutorials with periodic access to a trainer or tutor for counseling, a combination of training in the workplace and informal counseling in colleagues or trainer).

The use of free open source resources to find information, training courses (MOOC) and open educational resources; personalization (differentiated and / or individual approaches); asynchronous learning ensures the implementation, first of all, the procedures for transferring and assimilating students to sign information (semiotic training model), and during the quasi-professional activity (implementation of individual and group projects based on Web quests and Blog quests, application of interactive technologies and virtual simulation), a substantive and the social content of the activities to be absorbed (simulation training model).

The key determinant of the content of the education of future teachers is the experience of innovative pedagogical activity as actual, acquired during the training, and the potential – the experience of future professional activities and the process of its internalization in educational and professional activity. Therefore, in the process of preparing future teachers it is necessary to include technology of gaming and mixed learning aimed at the gradual formation of innovative competence, behavioral algorithms, professional motifs and installations that underlie the ability to innovate pedagogical activities (social learning model).

We have determined that in the pedagogical institutions of Ukraine the most frequent use of free open resources for information search is the most commonly used for the transition from "knowledgeable" to environmentally and personally oriented content (educational → quasi-professional → educational and professional activity), design work, gaming, and models of mixed learning [8, p. 67].

The need for processing and transmission of large volumes of information requires the integration of various pedagogical technologies with ICT, using the Internet. During the training of future teachers for innovative teaching activities, a special place is the research work of students, it deserves attention to integrating the method of projects and game techniques with the means of Web technologies. Individual and group projects based on Web quests and Blog quests provide interactive training in the context of future professional activities.

The Web-quest concept was developed in the USA at the University of San Diego in the mid-1990s by professors B. Dodge [9] and T. March [10]. Web quest is a reference-oriented activity in which all or partial information is obtained from Internet resources, if necessary completed by a video conference (B. Dodge). Web quest in pedagogy is a problematic issue with elements of a role-playing game, for which Internet information resources are used (T. March).

In our opinion, Web quests are interactive mini-projects, for which Internet information resources are used. Through the implementation of quests, students learn not only to collect and organize information obtained from the Internet, but also to co-direct their activities to perform quasi-professional tasks.

The generalization of the developed approaches to the organization and structure of Web quests allowed us to determine their most optimal structure: 1. Introduction. 2. Tasks. 3. Resources (links). 4. The execution process. 5. Evaluation. 7. Teacher's Page. An interesting experience is the development of Web quests, which, in addition to the listed components, include methodological support (program, calendar-thematic planning, plans and abstracts of lessons, etc.). For example, Web Quest "3D Computer Modeling" (URL: http://ito.vspu.net/ENK/2011-2012/TIMTPN/rob_stud_2012/2013/Nikitin/page-9.html); Web Quest "Computer Graphics" (URL: https://www.thinglink.com/scene/900429232289611776); Web Quest "Golden section and art" (URL: https://monnygrainger.wixsite.com/mysiteis) developed by students for acquaintance of students with computer volume modeling and acquire the knowledge and skills necessary for performing digital volumetric models of simple products.

Experimental work confirmed that the best results are achieved when a student or a group of students does not just work on the quest, but independently develop it according to a certain topic from the curriculum: formulate the purpose and tasks, make a list of roles, information sources according to the chosen role; personal information search plan for the chosen topic; investigate information resources; select artifacts; make a report in the form of a presentation, publication, essay, etc.; discuss problems; represent general problem solving; evaluate the performance of tasks in accordance with the developed criteria; draw conclusions.

The experience of developing and using Web quests has shown that teachers can constantly update and renew teaching materials, and students – to intensify their activities, to increase their interest in a certain topic, and to develop not only theoretical and practical knowledge, but also the necessary pedagogical qualities of an individual – abilities to analyze and select educational material; ability to manage, take collective decisions, skills and abilities, social interaction, leadership and subordination, etc. The level of self-employment, computer skills and the Internet is significantly improved. The work on Web quest builds team skills and promotes the formation of communicative and socio-cultural competence for future teachers.

Experimental work has shown that during the development and implementation of Web quests by such algorithm, there are some difficulties in organizing, communicating, feedback, using references to useful resources, conducting analytical analysis of the work performed. In part, these shortcomings can be overcome by developing Blog quests.

We have determined that blogs can be personal, group (corporate, club ...) or public (open)

according to the author's composition. Accordingly, a teacher's blog (URL: https://iito123.blogspot.com), a student's (URL: http://jxso.blogspot.com; https://pedagogicaandrushchenkol. blogspot.com; https://annabalakirjewa.blogspot.com), a group's (URL: http://3eizapo.blogspot.com; https://deutsche1mdn.blogspot.com; https://blessedgirlm.blogspot.com/) or a project blog (URL: http://vinschool20.blogspot.com; https://webkvestlipach.blogspot.com; https://jugendsprachedeutsch.blogspot.com/p/web.html).

In the Blog-quest, as well as in the Web-quest, the interactive communication of students is carried out with the same algorithm. The work of students in the Blog-Quest stimulates self-reliance in learning, the ability to think critically, promotes increased responsibility and self-discipline of students; enhances their motivation. When working in the Blog-quest, web technologies are used to ensure the collective use of documents, spreadsheets and presentations; collaborative work within a group or educational institution in real time; open publication of documents; group work and centralized keeping of related documents, Web content and other information on one site; placing video files and sharing them, etc.

However, the problem of feedback and communication between teachers and students is not fully resolved. A. Verbitsky [7, p. 82-85] believes that participation in dialogue implies mental and speech activity of a person, and only under this condition professional thinking is formed. This issue can be resolved by using gaming, that is, by using a game mechanic in non-gaming situations to encourage certain behavior [11].

The basic principle of gaming, from a software point of view, is to provide a constant, measurable feedback from the user, which provides the ability to dynamically adjust his behavior. The following main aspects of gaming are distinguished: dynamics – using scenarios requiring user attention and real-time reactions; mechanics – the use of scenario-specific elements of the gameplay, such as virtual awards, statuses, virtual goods; aesthetics – creating a general game impression that promotes the emotional engagement of the user; social interaction – a wide range of techniques that provide user interaction, characteristic of games [12].

Often gamification is identified with related terms "computer game", "gaming technologies" (learning through a real game) that differ from "gamification" according to certain criteria [13] (Table 1).

Table 1

**Analysis of the concepts of "computer game", "gaming technology"
(learning through real game) and "gamification"**

Computer game	Gaming technology	Gamification
For entertainment, may or may not have clear rules	Gaming technologies provide for the definition of training objectives (objects)	Can be a set of tasks with clear goals and achievements
Winning or losing is part of the game	Loss may not be, because the goal – to reach the end of the curriculum (to achieve the educational goal)	Losing can be, and may not be, because the purpose is to motivate to perform certain actions and achieve educational goals
The game is primary; achievement-secondary	Sometimes the game itself is a minor achievement	There may be minor achievements
Computer games are usually long and expensive to create	It is difficult and not cheap to create	No significant financial and time costs needed
The plot and its scenes are part of the game	The content is distributed over the scenes of the game	Gaming elements can be added to the LMS or other learning system in which the content is hosted

Foreign experts are increasingly arguing that the use of gaming technologies and gamification should be carefully thought out and clearly fit the tasks of training. The question of using these two educational trends was at the heart of discussions at the International Learning Solutions Conference, which took place in March 2016 in Orlando, USA, Florida.

P. Devi and his colleagues from Devey eLearning Solutions [14] presented the results of experimental studies in control (trained in the traditional method) and experimental (studied with elements of gameplay) groups. Indicators for students who passed regular online courses and courses with elements of the game did not differ significantly. Scientists note that if students participated in game activities in parallel with the study of the course, their success was higher at all stages of evaluation, and the final score was higher by 7-10% than in the control group students.

We have developed a quest with elements of gameplay on the topic "Processing of graphic information" (URL: https://marinkaangelok.wixsite.com/grafika11; URL: https:// www.thinglink. com/scene/900429232289611776) using the services of saving and creating multimedia resources (Google Docs, LearningApps, ThingLink, Mindmeister, Socrative, ThingLink, Moovly, Online Test Pad, Kahoot, etc.). The passage of the quest allows the teacher to follow the process of performing tasks, since after each step, students fill out a Google document with a table, which includes their surname and time. The result of passing the Web-quest is not only a score, but also a "surprise gift", for example a link to useful resources and interesting information.

According to research by P. Devi, E. Hughes, D. Di Dillon [15] and experimental work, we have identified a number of tips for the application of gameplay in the educational process: it is not necessary to apply gamification in training only because everyone is doing this, you must always remember to indicate the result; if students are well motivated to succeed in learning, they will achieve it, regardless of the presence of gaymic elements in the online course; while working on an eLearning project, you always need to analyze the relationship between goals and project output; the game elements should be included in the test, rather than in the theoretical material of the course, since the theoretical material is significantly overloaded with game elements, and the application of the game during testing helps to overcome psychological barriers, and also allows to check the complex acquisition of competencies.

On the basis of this, we can conclude that gamification should not be primary, but rather optional. Yes, it is quite effective for the visual recognition of student achievements, the organization of competitions within the training course, the design of the content of training. But we believe that in fact the educational process must have clear educational goals, the reality of the results obtained and their possible application in life and professional activity, in addition to important organizational changes in educational organizations and subdivisions (support for teachers who design effective teaching programs, design of quality educational facilities, development of information and communication infrastructure of an educational institution, etc.).

We believe that gamification should not distract the listener aside from the intended result – it should help to achieve it. Often using gaming, developers are fascinated by the very game mechanics, forgetting about the goals of the training course. In order to prevent such a situation, it is important to always remember what we want from the user who is passing our course. By adding game elements, you need to immediately check if they help our audience to improve understanding and further use of the information they receive. It is necessary to realize that the main goal of gamification application is to change the behavior of a person or an audience as a whole, that is, gamification is not necessary for entertainment, but for improving the efficiency of the educational process.

4. CONCLUSIONS AND PROSPECTS FOR FURTHER RESEARCH

In our opinion, it is worth to develop and implement the mixed forms of training that will be considered by us in the next section.

Consequently, the use of contextual learning in the implementation of eLearning provides:

– mastering by students not only the content of the curriculum, but also the creative use of the knowledge gained from practice, through the implementation of special creative-search tasks to verify the effectiveness of the introduction of new pedagogical information in the educational process; application of non-standard methods of teaching and upbringing of students; analysis of school curriculum, programs and textbooks from the standpoint of the requirements of pedagogical innovation;

– development of arbitrary, conscious, self-regulating behavior, in the joint activity of the participants the conditions are created for the formation of self-awareness and self-organization, professional and general development of the student's personality;

– active position, as educational disciplines are presented not as a collection of information, scientific information, but as an object of activity (educational, quasi-professional, vocational);

– assimilation of competencies in the context of analysis and solving by students the simulated professional situations, that stimulates the development of cognitive and professional motivation, formation of a person's attitude towards learning;

– combination of individual and collective forms of students' work that allows everyone to share their intellectual and personal potential with others;

– accumulation of experience in the use of educational information as a means of regulating its activities, ensuring its transformation into the personal essence of innovation competence;

– solving the problem of integrating the academic, scientific and professional activities of students through the simulation of processes occurring in science, in production and in society;

– not only the simulation of real professional conditions, but also the provision of the opportunity to reproduce the contradictions faced by a teacher in the process of innovative pedagogical activity;

– transformation of the student from the object of pedagogical influence on the subject of cognitive, future professional and socio-cultural activities.

– search for "pedagogical ideal" through perception, comprehension of new information from the standpoint of tactical and strategic learning tasks; formation of their own position (reading and discussing of a wide range of scientific literature, periodicals, writing works, selection of material about innovative educational approaches, led by masters of pedagogical work, pedagogical systems realized by creative thinkers, highly competent specialists).

The design of training professionally oriented situations is constituted by a system of principles of contextual education (the unity of teaching and education, psychological and pedagogical provision of the student's personal inclusion in educational activities, designing and creating the subject and social contexts for future professional activities, the leading role of the joint productive activity of the teacher and students, the dialogic type of communication, actualization of professionally valuable aspects of the content of education, professional positioning, formation of professional self-conscious of students).

The most popular pedagogical tools for the development of quests, in our opinion, today are:

– gamification of the educational and research process using the approaches and methods specific to computer games, which are applied taking into account the specificity of game thinking in non-gaming space. This approach allows to provide a phased dive into the learning process; get measurable feedback; provide dynamic adjustment of student behavior etc .;

– multimedia and interactive technologies for modeling and forecasting of investigated processes and phenomena, carrying out the experiments in the conditions of simulation on a computer of real experience or experiment (simulators, telepresence, virtual laboratories, virtual reality, complemented reality, etc.);

– Web services for the joint formation and use of collective knowledge (blogs, social networks, Wikipedia, social multimedia, social search systems and bookmark services, social geographic information systems, multiplayer network games, virtual worlds, etc.).

It is necessary to extend the exploring the feasibility of using eLearning in the educational process of higher education institutions in Ukraine. This can be done within the framework of a scientific direction called the electronic pedagogy, the subject of study of which is the educational process in the ICT in a saturated environment. In this connection, one of the most urgent tasks of electronic pedagogy is the development of techniques for the use of mixed forms of.

REFERENCES (TRANSLATED AND TRANSLITERATED)

[1] Bogdanova I. M. *"Professional and pedagogical preparation of future teachers on the basis of application of innovative* technologies" : Diss. Doct. ped Sciences: 13.00.04. K., 2003. 441 с. (in Ukrainian).

[2] Shevchenko, L. S. *Preparation of future teachers of technologies for innovative pedagogical activity.* Vinnytsia, Ukraine: Druk LLC, 2018. 392 p. (in Ukrainian).

[3] Tsidilo I. "E-Learning: Conceptual and Terminological Analysis". *Youth and Market.* 2011. №12 (83). Pp. 25-29. (in Ukrainian).

[4] Mexing, Melling. *E-learning.* Recommendations to the heads of library and information services: [sat. Art.] / ed. Maxin Melling; per. from english N. A. Bagrova, K. E. Korbut; scientific Ed. per. J. L. Schreiberg M: Omega-L, 2006. 224 p. (in Russian).

[5] Samoilenko, O.M. Technologies of organization of independent work of future specialists-agrarians on the basis of the WEB-oriented environment. *mat. International conf. "Intelligent decision-making and computing intelligence".* Evpatoria: 2010. T. 1. P. 136-138. (in Ukrainian).

[6] Kutsak, L.V. "Formation of Professional Competence of Future handicraft Teachers by means of Network Communications": Diss. Candidate ped Sciences: 13.00.04. Vinnytsya, 2015. 290 p.

[7] Verbitsky, A.A. Active learning in higher education: contextual approach: higher Sch., 1991. 207 p. (in Russian).

[8] Shevchenko, L. S. "Contextual education as a means of the future teachers training to innovative pedagogical activity ". *Jornal Association 1901* "*SERIKE* ". Poitiers, France, 2017. Edition 16. P. 67-72. (in English).

[9] Dodge, B. *"WebQuest Taskonomy: A Taxonomy of Tasks".* [Electronic resource]. Available: http://webquest.sdsu.edu/taskonomy.html. Sept. 23,2020. (in English).

[10] March, T. *"Criteria for Assessing Best WebQuests. 2002-2003".* [Electronic resource]. Available: http://www.bestwebquests.com/bwq/matrix.asp. Sept. 13,09,2020. (in English).

[11] *Gartner Redefines Gamification.* [Electronic resource]. Available: http://goo.gl/XaF6MA. Sept.09,2020. (in English).

[12] *What is gamification?* [Electronic resource]. Available: http://delo.ua/lifestyle/chto-takoe-gejmifikacija-i-kak-ona-pomogaet- rasshevelit-sotrudni-202074. Sept. 11,2020. (in Ukrainian).

[13] Games vs Game-based Learning vs Gamification. [Electronic resource]. Available: http://goo.gl/F0nf7W. Sept. 15,2020. (in English).

[14] Devey, P. *"Game On! Designing and Teaching a Gamified Online Course".* [Electronic resource]. Available: https://www.elearningguild.com/conference-archive/index.cfm?id=7192. Sept. 21,2020. (in English).

[15] *E-learning: ten rules for using gamification and videocourses.* [Electronic resource]. Available: https://ra-kurs.spb.ru/2/0/9/1/?id=103. Sept. 25,2020. (in Russian).

ВПРОВАДЖЕННЯ E - LEARNING У КОНТЕКСТІ МАЙБУТНЬОЇ ПРОФЕСІЙНОЇ ДІЯЛЬНОСТІ

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Анотація. Наші дослідження показують, що навчання у ЗВО має бути побудоване так, щоб не тільки надавати студентам деяку суму знань, умінь і навичок, а й навчити здобувати їх самостійно через механізми рефлексії та цілепокладання і, що не менш важливо, сприяти розвитку особистості студентів у професійному, інтелектуальному та моральному плані, реалізуючи, у такий спосіб, принципи особистісно орієнтованого та компетентнісного підходів.

У процесі дослідно-експериментальної роботи нами виділено низку засобів і технологій, що дозволяють поєднати навчальну, квазіпрофесіну і навчально-професійну діяльність засобами eLearning з метою формування інноваційної компетентності майбутніх учителів технологій (розроблення, наповнення і використання інформаційного освітнього середовища, електронних навчальних ресурсів, електронних навчально-методичних комплексів; навчання через соціально обумовлений і контекстуально зумовлений досвід засобами Веб-технологій).

Визначено, що перевагами використання Веб-технологій в освітньому процесі є: застосування безкоштовних відкритих ресурсів (freemium-ресурсів), безкоштовних навчальних курсів (МООС) та відкритих освітніх ресурсів (Open Educational Resources); персоналізація (диференційований та/або індивідуальний підходи); асинхронність навчання; інтерактивність та віртуальне моделювання;

виконання індивідуальних і групових проектів на основі Веб-квестів та Блог-квестів; гейміфікація і edutainment; можливість організації змішаного навчання.

Визначено, що в педагогічних ЗВО України найбільш часто для переходу від «знанієвого» до середовищно та особистісно орієнтованого змісту (навчальна → квазіпрофесійна → навчально-професійна діяльність) застосовуються безкоштовні відкриті ресурси для пошуку інформації, проектна робота, гейміфікація та моделі змішаного навчання.

Слід розширювати дослідження з визначення можливостей застосування eLearning у освітньому процесі ЗВО України. Це можна проводити в рамках наукового напрямку, що носить назву електронна педагогіка, предметом дослідження якої є освітній процес у ІКТ насиченому середовищі. В зв'язку з цим однією з актуальних задач електронної педагогіки стає розроблення методик застосування змішаних форм навчання.

Ключові слова: майбутні вчителі; контекстне навчання; інформаційне освітнє середовище; веб технології.

СПИСОК ВИКОРИСТАНИХ ДЖЕРЕЛ

[1] Богданова, І. М. "Професійно-педагогічна підготовка майбутніх учителів на основі застосування інноваційних технологій" : дис. … докт. пед. наук. : 13.00.04. К., 2003. 441 с.

[2] Шевченко, Л. С. *Підготовка майбутніх учителів технологій до інноваційної педагогічної діяльності.* Вінниця, Україна: ТОВ «Друк», 2018.

[3] Цідило, І. "E-Learning: Понятійно-термінологічний аналіз". *Молодь і ринок.* 2011. №12 (83). С. 25-29.

[4] Мэксинг, Меллинг. *Электронное обучение.* Рекомендации руководителям библиотечных и информационных служб: [сб. ст.] / под ред. Мэксин Меллинг; пер. с англ. Н. А. Багровой, К. Э. Корбут ; науч. ред. пер. Я. Л. Шрайберг. М: Омега-Л, 2006. 224 с.

[5] Самойленко, О. М. "Технології організації самостійної роботи майбутніх фахівців-аграріїв на основі WEB-орієнтованого середовища". *мат. Міжнар. конф. «Інтелектуальні системи прийняття рішень та проблеми обчислювального інтелекту».* Евпатория: 2010. Т. 1. С. 136-138.

[6] Куцак, Л. В. "Формування професійної компетентності майбутніх учителів технологій засобами мережевих комунікацій" : дис. … канд. пед. наук: 13.00.04. Вінниця, 2015. 290 с.

[7] Вербицкий, А. А. *Активное обучение в высшей школе: контекстный поход* : метод. пособие. М.: Высш. шк., 1991. 207 с.

[8] Shevchenko, L. S. "Contextual education as a means of the future teachers training to innovative pedagogical activity ". *Jornal Association 1901 "SERIKE ".* Poitiers, France, 2017. Edition 16. P. 67-72.

[9] Dodge, B. *"WebQuest Taskonomy: A Taxonomy of Tasks".* [Electronic resource]. Available: http://webquest.sdsu.edu/taskonomy.html. Sept. 23.09,2020.

[10] March, T. *"Criteria for Assessing Best WebQuests. 2002-2003".* [Electronic resource]. Available: http://www.bestwebquests.com/bwq/matrix.asp. Sept. 13.09,2020.

[11] *Gartner Redefines Gamification.* [Electronic resource]. Available: http://goo.gl/XaF6MA. Sept. 09,2020.

[12] *Що таке гейміфікація?* [Електронний ресурс]. Доступно: http://delo.ua/lifestyle/chto-takoe-gejmifikacija-i-kak-ona-pomogaet- rasshevelit-sotrudni-202074. Вер. 11,2020.

[13] Games vs Game-based Learning vs Gamification. [Electronic resource]. Available: http://goo.gl/F0nf7W. Sept. 15,2020.

[14] Devey, P. *"Game On! Designing and Teaching a Gamified Online Course".* [Electronic resource]. Available: https://www.elearningguild.com/conference-archive/index.cfm?id=7192. Sept. 21,2020.

[15] *E-learning: десять правил использования геймификации и видеокурсов.* [Електронний ресурс]. Доступно: https://ra-kurs.spb.ru/2/0/9/1/?id=103. Sept. 25,2020.