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PEDAGOGICAL CONDITIONS FOR IMPROVING THE LEARNING PROCESS IN THE CONTEXT OF THE INFORMATION EDUCATIONAL ENVIRONMENT

Summary. In the articles the concept of an information educational environment, the opportunities and prospects for its use to ensure the educational process are highlighted. The types of information educational environments are distinguished: the environments focused on imparting knowledge; the environments focused on self-guided knowledge acquisition; a mixed type of environments. The functions of the information educational environment are highlighted: formation of motivation to learn; development of students' self-guided work; development of students' abilities to research and creative activities; ensuring the informatization of professional education. It is established that in relation to traditional learning, the information educational environment, in general, can be: supporting the educational process; neutral; and blurring. The principles of the information educational environment construction are formulated: multicomponent, integrity, distribution, and adaptability. The main functional areas of the information educational environment are highlighted: psychological and pedagogical, software and technical, information and communication.

It is stated that the information educational environment is a systemic multicomponent formation, saturated with various resources and didactic opportunities. It is determined that the information educational environment is characterized by certain features. In particular, the information educational environment is subject-oriented, didactic, personal-developmental, unified, integrated, highly technological, multimedia-based, virtual, open, pedagogical, and electronic.

It is determined that the information educational environment is a set of software and technical, educational and methodological, information and communication systems that provide the educational process and are aimed at achieving educational results by students. In accordance with the characteristics and requirements of the information educational environment, the following structural and substantive components are distinguished: content-methodical, software and technical, communicative, organizational and managerial.

The pedagogical conditions for improving the learning process in professional educational establishments in the context of the information educational environment are substantiated: creating positive motivation of students through the organization of reflective activities regarding the current level of students' readiness for learning activities in the information educational; enriching the content presented in the

information educational environment with material that contributes to improving the quality of the learning process; involving students in the learning process in the information educational environment of professional educational establishment by improving their knowledge level of in the context of the blended learning technology. In order to improve the learning process in the information educational environment, the levels of students' readiness for learning activities are identified: low, medium and high, which correlate with the criteria of its development: motivational and value-based, information and technological, communicative and reflective.

Key words: information educational environment; learning process; professional educational establishments; blended learning; learning process quality.

1. INTRODUCTION

Formulation of the problem. Presently, information is the driving force behind the technical, economic, cultural, communicative, and social development of the world and of a person characterized by project-oriented intelligence, the ability to communicate positively, and social responsibility to oneself, society, nature, and the cultural environment.

A person in the information society is faced with the need to master the information technologies as a tool for self-development, self-realization, social and communicative adaptation, resilience, and the ability to continuous education "throughout life".

When teaching students, every teacher should focus on activity-based, developmental technologies that form students' ability to learn, operate and manage information, make quick decisions, and adapt to the needs of the labor market. The reform of the education system is accelerated by the global process of transition to the information society, as well as by economic, political and social changes taking place in Ukraine.

Nowadays, the information processing is a basic human need. In the context of traditional forms and methods of teaching, students, receiving information passively, are unable to acquire and apply it independently. The need to search for new organizational forms and methods of teaching is due to the fact that there is a need to develop a methodology that corresponds to the adaptation of educational institutions to the computer age. Educational establishments should become the most important factor in the formation of new modern life attitudes of the individual. However, these tasks are only possible for those teachers who are able not only to "load" students' memory but also to form their competencies.

The changes in the society have led to the significant shifts in the professional training of future specialists: they must possess new educational and innovative competencies, the ability to work with large amounts of data, achieve a high level of information culture, be motivated and have the developed abilities for professional self-development. The main function of modern professional education is to create an educational environment that will enable each student to receive information in the amount and form necessary for self-improvement and self-study.

That is why one of the tasks of professional education is to achieve a level of awareness, form an information environment, an information activity space that ensures the implementation of educational programs, and foster the information culture and functional literacy and competence.

Analysis of recent research. The problems of informatization of professional training are the subject of research by V. Bykov, R. Gurevych, A. Gurzhii, A. Denysova, M. Zhaldak, M. Kademiia, I. Kozlovska, O. Miniailenko, V. Monakhov, E. Polat, V. Rozumovskyi, S. Sysoieva, L. Shevchenko, I. Shakhina, and others. The methodological foundations of training specialists in the modern information society have been studied by N. Apatova, Y. Vagramenko, O. Davyskyba, V. Klochko, T. Koval, H. Kozlakova, M. Koziar, A. Kolomiets, O. Mykhailenko, N. Morze, V. Oliynyk, V. Osadchyi, O. Spirin, M. Sherman, B. Shunevych, M. Shut, and others. The problems of using ICT in professional training are reflected in the works of A. Asherov, V. Beloshapka, S. Beshenkov, I. Bulakh, Y. Vahramenko, V. Vynogradov, Y. Zhuk, M. Kademiia, G. Kedrovych, M. Koziar, N. Morze, M. Oliynyk, O. Spivakovskyi, O. Spirin, V. Sydorenko, Y. Tryus, I. Shakhina, and others.

Recently, there has been an increase in research on problems of the development and formation of the information educational environment in educational establishments. The issues of educational space are being actively developed by both Ukrainian and foreign sociologists, namely: I. Havrylenko, U. Eko, M. Castells, O. Skidin, Y. Yakovenko, and others.

The studies by V. Bykov, N. Hushchyna, K. Kolos, S. Lytvynova, L. Liakhotska, V. Oliynyk, O. Spivakovskyi, O. Spirin, and others cover the issues of the information educational environment, the availability of information components of the environment, the conditions of interaction and motivation of the members of the educational process, and the structuring of the educational space. However, the works of scientists do not contain a systematic description of the structure of the information educational environment, a mechanism for improving the learning process by means of the information educational environment, which should be aimed primarily at meeting the educational needs of its members (educators and students).

Scientists V. Bykov, O. Glazunova, R. Gurevych, Y. Zhuk, M. Zhaldak, M. Kademiia, V. Kukharenko, N. Morze, V. Oliynyk, E. Polat, V. Radkevych, O. Spirin, M. Fitsula, I. Shakhina and others have convincingly proved that it is in the conditions of the information educational environment, based on the information systems, networks, resources and technologies, the competence approach to training qualified specialists for full-fledged life in the modern information society is effectively implemented.

However, the use of the information educational environment in professional educational establishments requires prompt updating of educational information in the context of the development of science, technology, culture; qualitative changes in methods and forms of educational work; obtaining timely information about the level of cognitive abilities and learning achievements of each student and timely adjustments to the methodology of knowledge acquisition; increasing the volume of self-guided work through the optimal sequence for each student, the speed of perception of the material and the possibility of self-control of the quality of achievements.

The purpose of the article is to highlight the possibilities and prospects of using the information educational environment to support the educational process, to substantiate the pedagogical conditions for improving the learning process in professional educational establishments in the context of the information educational environment.

2. RESULTS OF THE RESEARCH

The modern world is characterized by a state of constant systemic global change. The role of information communications, products and services in the socio-economic and cultural life of humankind is growing. The breakthrough in the development of information and communication technologies has identified deep, meaningful transformations in all spheres of human life, including education. Educational technologies that correspond to outdated technological systems and industrial society are based on the so-called academic system of education, tuned to the requirements of the labor market, within which knowledge is transferred in the classroom, in lessons, and an educator performs the functions of knowledge transferring, control and assessment of learning outcomes [1, p. 61]. In this context, new ways, means and methods are used to train highly qualified specialists who will have the basics of digital literacy and will be able to develop, implement and disseminate the digital education. This task can be achieved through a well-established educational process [2, p. 76].

The scholars identify the following substantive characteristics of the professional and personal development of a future specialist: self-awareness (awareness of oneself in joint activities, one's mental abilities, actions, motives and goals of the behavior; the ability to comprehend, study, analyze something by comparing the image of one's "I" with the Other; to construct and maintain the image of one's "I" in relation to one's capabilities, abilities, social significance, self-respect, self-affirmation, desire to improve social status; self-esteem (value attitude to one's personal qualities, which necessarily implies the need to consolidate positive qualities and dissatisfaction with negative or underdeveloped qualities of one's personality and the desire to make changes in them for the better); self-organization (self-regulation of educational and practical actions, self-expression in educational and practical activities, evaluation, control, adjustment and expediency of activities); self-management (awareness of the rules for organizing one's own actions and attitude, in which values significant for the future specialist are recorded, a certain hierarchy of advantages, about which he is able to report to himself [3, p. 272].

The information educational environment of professional educational establishments is the closest external environment to the student (future specialist), a set of conditions in which his/her educational and professional activity takes place and personal qualities are formed.

The analysis of the scientific literature shows that there is no unambiguous understanding of the concept "Information Educational Environment". In particular, the information educational environment is identified with software systems that simulate processes in the field of exact sciences, with other software products. Almost all publications on the information educational environment issues are limited to discussing hardware and software, and evaluating different options for using new educational technologies.

The analysis of numerous definitions of the "information educational environment" by Ukrainian scholar I. Shakhina allows us to conclude that it is "a set (rather a system) of various subsystems, means of support: information and communication, technical and educational-methodological, which purposefully provide the educational process, as well as participants in the educational process with techniques, means and methods of solving educational problems and ways of acquiring skills in the process of comprehending educational material" [4, p. 248].

The information educational environment is considered by V. Liubarts as "a holistic set of educational situations that progressively change one another, which is understood as a system of psychological, pedagogical, didactic conditions and incentives that puts a person in front of the need to make a conscious choice, to adjust and implement person's own model of professional and personal self-development" [3, p. 272].

As a definition of the information educational environment in professional educational establishments, we understand this concept as "a pedagogical system that combines information educational resources, computer learning tools, educational process management tools, pedagogical techniques, methods and technologies aimed at forming an intellectually developed socially significant creative personality with the necessary level of professional knowledge..." [5, p. 49] and competencies.

Ukrainian scientist L. Vashchenko specifies that "the innovative environment of an educational institution, filled with innovative content and forms of organization, provides conditions for the formation of a new quality of professional scientific, pedagogical and managerial activities, thereby creating a powerful potential resource for development and professional activity" [6, p. 39].

In the collective monograph edited by R. Gurevych, Academician of the National Academy of Pedagogical Sciences of Ukraine [5, p. 36], "three types of information and educational environments are distinguished according to the functional purposes:

1) environments focused on providing knowledge;

2) environments focused on independent knowledge acquisition activities;

3) mixed type of environments.

According to R. Gurevych and L. Konoshevskyi, "the environments of the first type can be either "open" (for example, software shells allow the educator to replace content or introduce new content) or "closed" (complex intellectual environments are a prime example). The communication functions in such information educational environments are used primarily to manage the learning process. The external information resources (distributed databases, virtual libraries, electronic teaching aids, etc.) may be included in the training, but are usually used in a limited context, as a supplement to the content of the main course. At the same time, the concept of learning environment in the context of the developmental learning strategy is gaining more and more recognition, when a wide range of computer capabilities are integrated into learning, which are used in various forms to extract and acquire knowledge" [5, p. 36].

The considered structure of the information and educational environment, based on a personal-developmental approach to education, is aimed at forming a specialist with a high professional culture, who has a developed scientific and professional worldview and is able to compete successfully in the labor market.

"In the future education system, when the information educational space and the information and educational environment will form a single syncretic whole, students will be able to be at any distance from the center of learning and will be geographically dispersed at a considerable distance. Television, personal computers, the Internet, e-mail, etc. will provide not only learning within one country but also in an international open information educational space. Global computer networks, ICT, and digital video technologies will become a dominant component of the education of the information twenty-first century in the coming decades" [7, p. 71].

The concepts of e-learning environment, information environment, information educational environment, etc. have been widely used since the end of the last century both in scientific literature, regulatory documents, and in professional life. A wide range of specialists defines this definition depending on the context of the study or area and the level of implementation. This analysis is aimed at defining the information educational environment of professional educational institutions based on the review of sources and the characteristics described in them [8].

"The information educational environment aims to provide flexible, democratic, open, accessible learning, which is manifested through the free choice of its place, time, content and forms. The virtual world of information educational environment facilitates the study of educational material, diversifies the work of future specialists, allows modeling and researching certain objects, phenomena and processes" [9, p. 139].

To study the context of the information educational environment in professional educational establishments, the following categories were used, which are integral components of the educational process in higher education: educational, organizational and managerial, research category, and extracurricular category.

Speaking about the specific functions of the information educational environment, we highlight the following:

1. Formation of motivation to learn – the educational strategy in the information educational environment is based on high motivation of the student, his/her advanced competencies in using available information in solving educational tasks; language (linguistic orientation of the information educational environment) – being a real language environment necessary for solving specific tasks, it motivates to learn the language.

2. Development of students' self-guided work – education in the information educational environment is built with the help of the "management triad" – three different processes (pedagogical management, self-management, co-management), the quality of students' self-guided work is determined by educational outcomes – competencies.

3. Development of students' abilities to research and creative activities – development of the ability to obtain information from a variety of sources; teacher-student cooperation in research activities, openness of the scientific environment, and an accessible level of student participation in research activities contribute to the development of researcher competence and socialization of students in the scientific community.

4. Ensuring the informatization of professional education and is an innovative block of development of the educational process – the information educational environment performs the function of implementing the development of professional education through informatization and increasing the volume of students' self-guided work; on the other hand, working in the information educational environment is a way for educators to master the methodology of innovative education.

Based on the analysis, we propose a definition of the concept of information educational environment in professional educational establishments. We consider the information educational environment as a socially and pedagogically active space based on information interaction between the educator, ICT tools and students, it is a leading means of educational activity, characterized by wide availability of information and educational resources and individualization of cognitive activity based on the development of motivation to learn and students' self-guided work.

As for traditional education, the information environment, in general, it can be in the following relation to the educational process [10, p. 174]: supporting the educational process; neutral; blurring.

In the first case, the information coming from the environment supports, expands, and deepens the knowledge gained by students in the educational institution. This situation is possible with a centralized information and education policy.

In the second case, the information environment is independent from the traditional educational process. This means that the information circulating in the environment can both support and reject educational information, but, being mutually compensated, it does not have a significant impact on the learning process. This is an idealized model that is true only to an initial approximation.

The third case is a direct comparison of the educational process and the information environment, which is the most common situation today. This comparison is largely due to the fundamental difference between knowledge and information.

The analysis of advantages and disadvantages, existing information educational environments, the current state of information technology and telecommunications allows us to formulate the following *principles* on which the information educational environment should be created [11, p. 53-54]:

– *multicomponent* (the information educational environment is a multicomponent environment that includes teaching and learning materials, knowledge-intensive software, training systems, knowledge control systems, technical means, databases and information and reference systems, information repositories of any kind, including graphics, video, etc.)

– *integrity* (the information component of the the information educational environment should include all the necessary set of basic knowledge in the fields of science and technology with access to global resources determined by the profiles of training, take into account interdisciplinary links, information and reference base of additional training materials that detail and deepen knowledge).

– *distribution* (the information component of the information educational environment is optimally distributed across information storages (servers), taking into account the requirements and limitations of modern technical means and economic efficiency).

- *adaptability* (the information educational environment should not be repelled by the existing education system, not violate its structure and principles of construction, and allow the modification of the information core of the information educational environment, adequately reflecting the needs of society).

The formulated principles are necessary to consider the information educational environment, on the one hand, as part of the traditional educational system, and, on the other hand, as an independent system aimed at developing active creative activity of students using the information technologies [12, p. 556].

In general, it can be emphasized that, in terms of its substantive content, the concept of the information educational environment is quite comprehensive, allowing for the identification of three main functional directions to use the information educational environment: *psychological and pedagogical*, creating conditions for transitioning to a new level of education, ensuring the achievement of new educational results, oriented towards satisfying the educational needs of users; promoting professional and personal development and self-improvement of students; *software and technical*, ensuring the formation and development of the information technology infrastructure of the education system, providing innovative tools of sofware-technical and technological nature for improving learning, communication, and interaction, characterized by hardware and software as well as informational support (the ability to access information carriers); *information and communication*, providing conditions for informational interaction among the subjects of the educational process, providing tools and means for their full communication, promoting the development of new forms of collaboration among participants in the educational process using ICT [13, p. 135].

Moreover, it should be noted that most often the psychological and pedagogical direction of the information educational environment is emphasized by authors (93.55%). This can be explained by the fact that research on the use of the information educational environment is written by educators for whom the psychological and pedagogical component is more significant. The software and technical direction of the information educational environment is ranked second in frequency of use (77.42%). Only in the third place is the information and communication direction (45.16%), indicating some underestimation of the communicative factor in the electronic environment (Figure 1).
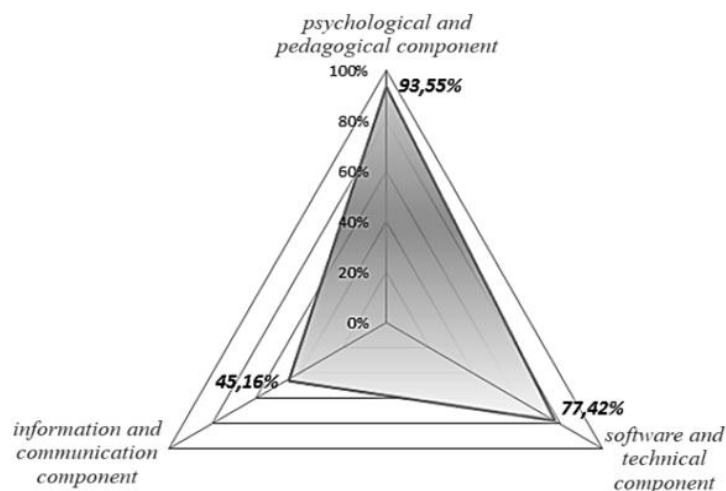

Fig. 1. Functional Directions of the Information Educational Environment Usage in Researchers' Works

Thus, the information educational environment is a systemic multi-component formation enriched with diverse resources and didactic possibilities.

Like any other system, the information educational environment is characterized by certain features. Specifically, it is: *subject-oriented,* as it is filled with specific subject content; *didactic*, encompassing a complex of didactic possibilities that contribute to the improvement of learning; *personal-developmental*, providing tools and instruments for personal development and self-improvement of participants in the educational process; *unified*, realizing comprehensive information provision through the use of unified technological and pedagogical means; *integrated*, combining numerous educational technologies and resources, modules, and environments of different levels; *high technological*, oriented towards achieving new educational results through the use of advanced and progressive contemporary technologies; *multimedia-based*, actively employing multimedia tools; *virtual*, allowing to transfer a part of the educational process and cognitive interaction into a virtual space; *open*, being accessible to all participants in the educational process from any location, at any time, and with any device; *pedagogical*, subordinated to the unified goals of education, upbringing, and personal development; *electronic*, built on network technologies and serving as the functional provision of the e-learning process.

Therefore, the information educational environment is a combination of software and technical, educational and methodical, information and communication systems that ensure the educational process and are aimed at achieving educational outcomes by students.

As the characteristic features of the information educational environment, the researchers emphasize that it: includes tools for managing the educational process; ensures the automation of the educational process in the professional educational establishments; it is a pedagogical system that combines informational educational resources, computer-based learning tools, tools for managing the learning process, pedagogical techniques, methods, and technologies aimed at forming an intellectually advanced, socially significant, creative personality possessing the necessary level of professional knowledge, skills, and abilities; it is oriented towards the development of students' competence [10, p. 224].

In accordance with the characteristic features and requirements, the following structural and content *components* are distinguished in the information educational environment: *content and methodological*, which defines both the subject matter of the information educational environment and the methods and principles of teaching, means and forms of organizing classes, in accordance with the goals and objectives of professional training. The content component includes educational content in all disciplines, a set of information and electronic educational resources, electronic teaching and learning materials, electronic library collections, computer-based learning systems, workshops and simulators, etc. The methodological component contains a description of the methodology for forming a system of knowledge and competencies, author's educational methods and technologies, forms and methods of pedagogical interaction, recommendations for organizing and implementing independent learning and cognitive activities, a description of the results of the educational process, a methodology for monitoring the educational process and diagnosing its effectiveness, etc; *software and technical*, which is considered as a set of software and network tools and resources for improving the educational process, modern software and hardware as a tool for a new educational environment. The technical components include a server, client computers, local networks of the professional educational establishment, broadband channels, telecommunication technologies, etc.; software components include web applications and automated software subject systems for educational purposes; the user can access information resources, information exchange, transmission and broadcasting, means of user self-identification and personal data protection, means of information interaction, databases and knowledge bases, etc; *communicative*, which promotes the development of processes of educational information interaction between students, educators and ICT tools; which includes tools and technologies for the implementation of interactive information communication of subjects in the information educational environment: forums, chats, e-mail, blogs, professional social networks, virtual classes, webinars, video conferences, etc., as well as forms and methods of information interaction; *organizational and managerial*, which defines the organizational, legal and administrative framework (regulatory framework, security system and delimitation of access rights and powers of subjects, etc.) Management system (educational management tools, correction systems, organization of self-monitoring and self-diagnosis of achievements, knowledge management technologies, etc.).

Each of the identified components of the information educational environment can be considered as a separate microenvironment, which will also have all the above features. Structural components of the information educational environment expand opportunities in terms of conducting and managing the educational process, which is unattainable in traditional education.

The main goals of creating a unified information educational environment are related to imparting fundamentally new opportunities for human cognitive and creative activity. This can be achieved through modern information and technical equipment of the main activities in education: educational, pedagogical, research, organizational, managerial, expert, etc. [14, p. 488].

Currently, the researchers are focusing on the creation and support of digital ecosystems, especially in the educational sphere, which are related to the work in the information educational environment of the educational institutions. There is a growing belief that the information educational environment and its didactic capabilities can be one of the means of improving the quality of the learning process in professional educational establishments. Improving the quality of the learning process in the professional educational establishments in the context of the information educational environment is most often considered by researchers in the framework of teaching subject disciplines.

Intrinsic motivation is related to the content of educational activities, and personal motivations of students (knowledge acquisition, obtaining a diploma, profession, matching the profession with aptitudes, etc.) Extrinsic motivation is caused by circumstances external to the subject (social significance of the profession, work in large cities, material security, orientation to the immediate environment).

Improving the learning process in professional educational establishments in the context of the information educational environment is accompanied by the desire to actualize professionally important qualities, search for information for educational, scientific and research purposes, the desire to master ICT and use them in professional activities. Based on this, the motivational and value component is an important component of information competence, but the process of its development is also triggered by motivation.

Another significant component of improving the learning process in the context of the information educational environment is reflective activity. It is known that the final result of reflection shows the result associated with self-analysis and comprehension of one's actions and activities, including professional ones, on the basis of which the choice of appropriate ways and actions in a given situation is made.

The concept consists of six specific stages: the motivation stage (personal attitude to learning activities); the formation of an indicative basis for future action (practical familiarization with the components of the action and the final requirements for it); the stage of material or materialized actions (consolidation or practical mastery); the stage of external speech actions (transfer of external action to the internal plan with reconciliation of speech actions); the stage of external speech to oneself (complete transition to internal actions); the stage of mental actions (reflection – reduction, automation of action, transition from the sphere of consciousness).

In this study, we consider it appropriate to use reflection activities to improve the learning process in the information educational environment. Summarizing the above, we define the following as the first pedagogical condition for improving the learning process in professional educational establishments: creating positive motivation of students through the organization of reflective activities regarding the current level of students' readiness for learning activities in the information educational environment of in professional educational establishments.

Therefore, the second pedagogical condition for improving the learning process is the enrichment of the content presented in the information educational environment with material that contributes to improving the quality of the learning process.

Taking into account the active nature of students' readiness for learning activities in the information educational environment, the third pedagogical condition is the involvement of students in the learning process in the information educational environment by improving their level of knowledge in the conditions of blended learning technology.

Thus, the following pedagogical conditions for improving the learning process in the information educational environment of professional educational establishments are hypothetically defined: creating positive motivation of students through the organization of reflective activities regarding the current level of students' readiness for learning activities in the information educational environment; enriching the content presented in professional educational establishments with material that contributes to improving the quality of the learning process; involving students in the learning process professional educational establishments by improving their level of knowledge in the conditions of blended learning technology.

Improving the learning process in professional educational institutions in the context of professional educational establishments is based on a set of methodological approaches (systemic, activity-based and competence-based) and requires taking into account didactic principles. Didactic principles are the basic provisions that determine the content, organizational forms and methods of the educational process in accordance with its common goals and patterns. The principles of learning will indicate the normative bases of learning, taken in its specific historical form. Within the framework of the study, the following didactic principles are necessary for use:

1. The principle of consistency and systematicity, which implies ensuring the consistent acquisition of a certain system of knowledge by students in various fields of science, systematic training. This principle is revealed in the development of students' readiness for learning activities in the information educational environment of higher education step by step, from simple to more complex forms, and it should be taken into account not only within any one discipline but in general for the overall work in the information educational environment.

2. The principle of visibility is the "golden rule" (according to J. Komenskyi), which in the context of modern technologies "is more relevant than ever and is actively used in the educational process. Visualization in the information educational environment allows to ensure the required level of learning materials assimilation (based on the use of the maximum set of senses involved in the perception of information) through the use of multimedia-based learning tools and technologies: video, animation, sound, static and dynamic graphic images. Thus, visual aids allow educators to perform the function of managing the cognitive activity of students, which involves them in the necessary skills of generalization, application of the acquired knowledge in practical activities. The use of visualization forms, which not only complements verbal information but also acts as a carrier of information, contributes to increasing the degree of mental activity of students" [10, p. 155-156].

3. The principle of accessibility. Its essence is in the individual approach of students, building an individual trajectory, taking into account the already accumulated knowledge. This principle is fully integrated with the current level of ICT development and is one of the main ones in the context of educational activities in the information educational environment. According to foreign scientists (A. Aggarwal, P. Makkonen), "the principle of accessibility of educational activities is realized by providing unimpeded access to educational resources, regardless of location, time and other factors, only access to the Internet is required" [15, p. 100]. The implementation of this principle is reflected in the distribution of massive open online courses, which are organized and positioned by the world's leading universities free of charge.

4. The principle of consciousness and activity. The basis of this principle is a deep and self-conscious mastery of knowledge through one's own mental activity. Scholars note that a student's cognitive activity is a factor that determines the results of learning activities. Based on this, the design of the educational process allows for independent activity of students, the formation of motives, cognitive activity through the use of adequate teaching methods and tools. The components of the information educational environment (cloud technologies, mediated interaction, etc.) and teaching methods (basket-method, case-method, etc.) contribute to increasing students' activity.

5. The principle of linking theory and practice. It allows the practical consolidation of theoretical knowledge and is based on the implementation of the acquired knowledge of ICT in the practical activities of students.

As our research shows, it is advisable to improve the learning process in the context of the information educational environment using blended learning technology, which will ensure a combination of classroom and e-learning with an emphasis on professionalism, efficiency of knowledge transfer processes, and an interdisciplinary approach. This technology combines the positive qualities of classroom learning with the advantages of e-learning and distance learning technologies.

The interaction between the two types of learning complements the strengths of each and minimizes negative factors. Comparing traditional (classroom) forms of learning, where direct communication between an educator and a student prevails, and learning with the use of e-learning tools, we can identify the advantages of each of these forms. One of the advantages of e-learning is technological mobility, i.e., the wide availability of learning content without territorial and time restrictions, which results in flexibility, interactivity, and the ability to adapt to different learning environments. However, one of the most important advantages of classroom learning is the personal contact between the educator and the student, which is a motivational and emotional component.

The use of elements of distance education technologies in traditional learning can have an additional impact on improving the quality of the learning process in professional educational establishments in the context of the information educational environment. The concept of blended learning, which includes a combination of traditional and e-learning, is now widespread.

Over the past decade, blended learning has been the most popular type of learning in educational institutions in Europe and the United States, given the successful combination of traditional learning and the use of modern technologies.

Blended learning is understood as a set of methods, technologies and ways of managing the educational process that combine classroom and distance work (synchronous and asynchronous). E-learning can include distance learning technologies and is divided into two main types: asynchronous e-learning and synchronous e-learning. This form of learning is based both on interaction with the electronic educational environment and on the use of contact interaction with the educator in an active form (face-to-face and distance). It has been found that the combination of these forms of learning and their interaction has a positive impact on educational activities. E-learning tools have the principle of complementarity, which consists in the simultaneous existence of any object of complementary and opposite pairs of features, attributes, the simultaneous and vivid manifestation of which is impossible or unlikely. On this basis, the information educational environment can serve as a platform for the integration of various forms of education (full-time, part-time, etc.).

Blended learning technology can be used both during classroom interaction and the interaction of an educator with students by means of the information educational environment. Nevertheless, the use of electronic educational resources in classroom work (for example, multimedia presentations) is not pure e-learning.

The ratio of e-learning and traditional learning within the blended learning technology may vary depending on various factors, including discipline, subject area for which such training is planned; age of students; level of training of students; technical equipment, infrastructure that can be used for training (including technical infrastructure).

The organization of blended learning should be based on a balance between the extent to which modern e-learning tools are used and the use of pedagogical technologies of traditional learning. The work on the implementation of blended learning technology is based on the joint parallel or sequential use of elements of traditional and e-learning organized by the educator. However, it should not be assumed that students' activities are passive; on the contrary, the joint work of students and the educator is interactive.

Some scholars note that "the use of ICT in educational activities helps to effectively solve many labor-intensive tasks within the framework of pedagogical science. At the same time, the combination of contact and distance work allows to develop students' abilities to work independently in an information-rich environment. The combination of the advantages of classroom and distance work forms a blended learning technology. It is based on the interaction of students not only with the interactive environment using a computer but also with the educator in an active form (face-to-face and distance), when the learning material studied independently is summarized, analyzed and used to solve problems. In this aspect, the blended learning technology will be understood as a well-thought-out model of interaction between participants in the educational process aimed at achieving the planned results, using the integration of traditional forms with the use of modern tools for implementing e-learning in the context of the information educational environment" [5, p. 157-158].

In order to improve the learning process in the professional educational establishments in the context of the information educational environment, we have identified the levels of development of students' readiness for learning activities – *low, medium* and *high*, which correlate with the criteria for its development.

Low level (0-40%). There is an increased level of motivation, focused on formal learning (obtaining a diploma and grades) rather than on acquiring professional skills and knowledge. The desire to master new technologies is weakly expressed; there is a mastery of standard PC programs, the ability to search for information on the Internet, and interaction with ICT only in an asynchronous format. Reflection activities are weakly expressed. This level is characterized by basic knowledge of basic technologies; indicators of low motivation and reflection can be observed in students who are just starting their studies and have not yet adapted to the conditions of ICT.

Table 1

Criteria and levels of students' readiness for learning activities in the information educational environment

Criteria/Levels	Low	Medium	High
Motivational and value-based		There is little interest in ICT, the role of ICT in the modern world is not actualized, and the focus is on getting grades and a diploma.	Clearly expressed motive and conscious focus on acquiring ICT knowledge, high interest in ICT, high awareness of future profession.
Information and technological	Proficiency in standard programs, knowledge of the basic structure of a PC, ability to search for information on the Internet, low-level privacy and security on the Internet.	Active use of standard programs in professional activities, ability to work with cloud technologies, and Internet access is at a sufficient level.	Using additional functions of standard programs, adapting them to different needs, ensuring a high level of security on the Internet, and using cloud technologies in the educational process.
Communicative	The ability to interact with the ICT asynchronously, expressed implicitly, or absent at all.	Interaction with the ICT and its organization based on visual aids, there are basic skills of synchronous and asynchronous communication	Organization of platforms for online communication, free synchronous and asynchronous interaction from any access point.
Reflective	Weakly expressed activity (low level of self-analysis of professional activity) of reflection.	Independent understanding of mistakes made, critical attitude to information in professional activities.	Accumulation of useful professional experience, a high degree of analytical activity, self-analysis.

Medium level (41-70%). There is an interest in information technology, motivation is mostly aimed at gaining knowledge. The standard PC programs are used in professional activities, the cloud technologies are used, and the basic skills of synchronous communication on the Internet are present. There are elements of self-analysis of professional activity, critical attitude to information. This level is characterized by a fairly high level of knowledge and skills in the field of ICT, proficiency in programs, and the use of technology to solve everyday problems.

High level (71-100 %). It is characterized by the transition from ICT proficiency to their actualization and the transition to the process of self-education and experience gainined within the framework of professional activities. Unimpeded contact through most technologies, organization of mass events remotely.

Thus, building a unified information educational environment will help to achieve:

– improving the efficiency and quality of the learning process;
– intensification of the process of scientific research in educational institutions;
– reducing time and improving conditions for additional education and adult education;
– increasing the efficiency and effectiveness of management in educational institutions and the education system as a whole;
– integration of national information education systems into the global network, which will greatly facilitate access to international information resources in education, science, culture and other areas.

3. CONCLUSIONS AND PROSPECTS OF FURTHER RESEARCH

Thus, the use of the information educational environment develops a critical and constructive perception of the world and contributes to the development of a systematic approach to the objectively existing reality for both the educator and students, since these technologies allow not only to study, create and effectively use knowledge, but also to analyze the information received individually, taking into account the characteristics of almost every student, since such technologies contribute to active independent educational activity.

Systematization, structuring of information and its presentation in an interactive form can significantly improve the access to information educational resources. The creation of the information educational environment in the educational institution promotes the logical ordering of information, its systematization and structuring, and creates the prerequisites for effective self-guided work of students.

Within the framework of the unified information educational environment, the formation and development of an open education system supported by organizational, pedagogical and information technologies is taking place. In this environment, architectural and structural solutions provide open standards for interfaces, formats and protocols for information exchange in order to create mobility, stability, efficiency and other positive qualities achieved by creating open systems. Thus, the system of open pedagogical education is a set of didactic, technical, informational and organizational approaches. At the same time, the basis of the educational process is the purposeful, controlled, intensive self-guided work of students, who can study in a convenient place, according to an individual schedule, having a set of special teaching aids and the agreed possibility of contacting the educator by phone, e-mail or regular mail, via chat or social network, as well as a personal contact using the developed information educational environment.

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ПЕДАГОГІЧНІ УМОВИ ПІДВИЩЕННЯ ЯКОСТІ ПРОЦЕСУ НАВЧАННЯ В УМОВАХ ІНФОРМАЦІЙНОГО ОСВІТНЬОГО СЕРЕДОВИЩА

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Анотація. Висвітлено поняття інформаційного освітнього середовища, можливостей та перспектив його використання для забезпечення освітнього процесу. Виокремлено типи інформаційно освітніх середовищ: середовища, орієнтовані на надання знань; середовища, орієнтовані на самостійну діяльність з набуття знань; змішаний тип середовищ. Виділено функції ІОС: формування мотивації до навчання; розвиток самостійної роботи учнів; розвиток здібностей до науково-дослідницької та творчої діяльності учнів; забезпечення інформатизації професійної освіти; є інноваційним блоком розвитку освітнього процесу. Встановлено, що по відношенню до традиційного навчання інформаційне освітнє середовище, в цілому, може бути: як підтримуюче освітній процес; нейтральне; розвиваюче. Сформульовано принципи побудови ІОС: багатокомпонентність, інтегральність**,** розподіленість, адаптивність. Виділено основні функціональні напрями використання ІОС: психолого-педагогічний, програмно-технічний та інформаційно-комунікативний.

Констатовано, що ІОС є системним багатокомпонентним утворенням, насиченим різноманітними ресурсами і дидактичними можливостями. Означено, що ІОС характеризується певними властивостями. Зокрема, воно є: предметним, дидактичним, особистісно-розвивальним, єдиним, інтегрованим, високотехнологічним, мультимедійним, віртуальним, відкритим, педагогічним, електронним.

Визначено, що ІОС – це сукупність програмно-технічної, навчально-методичної, інформаційно-комунікативної систем, що забезпечують освітній процес і спрямоване на досягнення учнями освітніх результатів. Відповідно до характерних особливостей і вимог в ІОС виділено такі структурно-змістовні компоненти: змістовно-методичний, програмно-технічний, комунікативний, організаційно-управлінський.

Обґрунтовано педагогічні умови підвищення якості процесу навчання в закладах професійної освіти в умовах ІОС: створення позитивної мотивації учнів за допомогою організації рефлексивної діяльності відносно готівкового рівня сформованості готовності учнів до навчальної діяльності в інформаційному освітньому середовищі ЗПО; збагачення змісту, представленого в ІОС матеріалом, сприяючим підвищенню якості процесу навчання; залучення учнів до процесу навчання в ІОС ЗПО, шляхом підвищення їх рівня знань в умовах технології змішаного навчання. Для підвищення якості процесу навчання в ЗПО в умовах ІОС виділено рівні розвитку готовності учнів до навчальної діяльності: низький, середній і високий, які співвідносяться з критеріями її розвитку: мотиваційно-ціннісний, інформаційно-технологічний, комунікативний та рефлексивний.

Ключові слова: інформаційне освітнє середовище; освітній процес; заклади професійної освіти; змішане навчання; якість процесу навчання.

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