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Theoretical foundations of implementation blended learning in the process of training future specialists

Теоретичні основи імплементації змішаного навчання у процес підготовки майбутніх фахівців

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Written by:

Larysa Maksymchuk¹ <https://orcid.org/0000-0001-8691-8100>**Tetiana Artimonova²** <https://orcid.org/0000-0002-6073-6963>**Anzhelika Kurchatova³** <https://orcid.org/0000-0002-1282-837X>**Liudmyla Ishchenko⁴** <https://orcid.org/0000-0003-3382-4148>**Lyudmyla Vovkochyn⁵** <https://orcid.org/0000-0002-8058-7926>


Abstract


The article analyzes the technology of blended learning and its impact on the quality training of specialists. The purpose of the article is to characterize the technology of blended learning, to substantiate its importance for the quality training of specialists, and to find out the main ways of its application in the educational process of higher education institutions. The methodological concept of the article reflects the interaction and interrelationship of categories that are basic in professional thinking and methodological levels in the educational process of higher education institutions. Blended learning has been proven to be more effective than traditional classroom learning in improving student achievement. It has been argued that blended learning is more flexible and accessible to students than traditional classroom learning. The main conditions for the effective application


Анотація


У статті аналізується технологія змішаного навчання та її вплив на якість підготовки спеціалістів. Метою статті є охарактеризувати технологію змішаного навчання, обґрунтувати її важливість для якісної підготовки фахівців та з'ясувати основні шляхи її застосування в навчальному процесі вищих закладів освіти. Методологічна концепція статті відображає в навчальному процесі вищих закладів освітнє взаємодію та взаємозв'язок категорій, які є базовими у професійному мисленні та методологічному рівнях. Доведено, що змішане навчання є більш ефективним, ніж традиційне навчання в класі, у покращенні успішності учнів. Обґрунтовано, що змішане навчання є більш гнучким і доступним для студентів, ніж традиційне навчання в класі. Висвітлено основні умови ефективного застосування змішаного навчання,

¹ Candidate of Pedagogical Sciences, Assistant Professor Assistant Professor of the Department of Foreign Languages, Khmelnytskyi National University, Ukraine.  WoS Researcher ID: GSD-6969-2022

² PhD Researcher of Philosophical Sciences, Dragomanov Ukrainian State University, Ukraine.  WoS Researcher ID: GGE-4769-2022

³ Candidate of Pedagogical Sciences, Associate Professor, Dean of the Faculty of Natural Sciences, Mykolaiv V.O. Sukhomlynskyi National University, Ukraine.  WoS Researcher ID: ITF-5129-2023

⁴ Doctor of Pedagogical Sciences, Professor of the Department of Preschool Teacher Education, Vinnytsia State Pedagogical University named after Mykhailo Kotsiubynsky, Ukraine.  WoS Researcher ID: G-5794-2019

⁵ Candidate of Pedagogical Sciences, Associate Professor, Physical Education and Health Care Department, Cherkasy State Technological University, Ukraine.  WoS Researcher ID: GRQ-6998-2022

of blended learning, technological solutions of blended learning, methodical approaches of blended learning are highlighted, the forms that can be used to implement blended learning are considered. In summary, blended learning is an effective and promising technology for high-quality training of specialists.

Keywords: mixed learning technology, specialist training, higher education institutions, flipped classroom, Learning Management System.

Introduction

The article analyzes the application of blended learning in the educational process of higher educational institutions.

In the conditions of informatization of education, blended learning as one of the varieties of e-learning best meets the task of forming general cultural and professional competencies of the future specialist. The technology of mixed learning has significant didactic capabilities and is characterized by a variety of provided forms, methods and means of learning, their interactivity, various ways of interaction of the subjects of the educational process and most fully corresponds to the specifics of higher educational institutions. The introduction of electronic educational resources into the educational process contributes to the assimilation of the content and practice of the educational material, the performance of control actions, the organization of independent, searching, research, educational activities of students, and the increase of their cognitive and professional interest. The implementation of mixed learning technology effectively affects the components of student learning: cognitive, functional, that is, on the forms and methods of learning organization, on the activation, intensification and effectiveness of learning, and personal and valuable - on the formation of learning motivation, professionally significant aspects.

The knowledge transfer system has radically changed over the past decades, and the amount of knowledge has increased many times. Nowadays, preparing a person for professional activity once, for the rest of his life is no longer possible. The solution to the problem lies in the application of the educational process of institutions of higher education of innovative learning technologies with modern professional training of specialists, the transition to education throughout life, and at the same time, basic

технологічні рішення змішаного навчання, методичні підходи змішаного навчання, розглянуто форми, за допомогою яких можна реалізувати змішане навчання. Підсумовуючи, змішане навчання є ефективною та перспективною технологією якісної підготовки спеціалістів.

Ключові слова: технологія змішаного навчання, підготовка фахівців, заклади вищої освіти, перевернута класна кімната, система управління навчанням.

education should be the foundation for further education and periodically supplemented with programs of additional education. Blended learning and distance learning have a significant potential to meet the needs of modern times in the educational field, in the acquisition of digital literacy by the student, and in the spread of more flexible, innovative forms of education (Mala, 2022).

With a mixed system of education, there is a real opportunity to use those techniques, forms, principles, and technologies that have already proven their feasibility and effectiveness. For example, the modular rating system for evaluating the quality of educational activities of educational space applicants is used in the practice of face-to-face and distance learning. The analysis of the forms of psychological and pedagogical training shows that the educational trajectory is combined learning. In the modern conditions of the development of the educational trajectory, the future specialist must collectively and optimally use educational professional knowledge and opportunities provided by both classical disciplines and new educational technologies. In mixed learning, the basis of the educational process is the intensive, purposeful, controlled independent work of the student who can study according to an agreed individual schedule, in a place convenient for him, using complex special educational tools and an agreed contact opportunity to work with the teacher (Shevchuk & Yashanov, 2022).

Possibilities of blended learning allow to expand the psychological component of learning motivation, to ensure mastery of the methods of performing informational and analytical activities within the framework of training, to acquire knowledge in the chosen profession.

Literature Review

One of the priority tasks of education is the mastering of modern technologies by specialists, the development of their skills in searching for information on electronic media and networks, increasing the quality of specialist education.

The advantages of mixed learning in educational institutions are intensive updating of knowledge obtained from global information resources; expand the teacher's field of activity (regardless of the location of all subjects of the educational process); provide for the special needs of the disabled and other categories of the population; develop cognitive interests, contribute to the formation of their professional orientation, mastery of scientific research methods.

L. Shevchuk, & S. Yashanov (2022) conducted research on the role of modern approaches to blended learning in higher education institutions; singled out the main components, and revealed the meaning of the concept of blended learning; we will present the main approaches to combining learning and its integration, show the advantages of various technologies, give examples of their use in the educational process. We created the concept of combined education, which allows in modern conditions students to education in various combinations and to optimally use the opportunities provided by classical education and the use of distance technologies; showed the role of blended learning in education and characterized the main directions of its development. The principles of unity of organizational foundations and pedagogical foundations, support of dynamic balance, and system of IT training of professional education specialists in mixed education were revealed. The main organizational and pedagogical requirements for blended learning are defined and their role in education based on electronic educational and methodological complexes is analyzed. The structure of the educational methodical electronic complex, which ensures the implementation of the methodical system of education in the educational environment, includes local, autonomous, distance educational courses and methodical support for the use of such courses in the educational activities of specialists. Pedagogical conditions for the implementation of blended learning in the educational space have been developed.

The analysis of scientific sources in the aspect of the selected problem shows that activation of researchers' interest in blended learning. It is

defined in the works of scientists various classifications of teaching methods.

V. Yurchenko (2021) examined the possibilities of obtaining education for psychological and pedagogical training and revealed the forms of training of future specialists through institutional (distance, face-to-face, dual, mixed, network, and workplace) forms of education. The principles on which the new model of professional education should be based are highlighted. The main educational methods are analyzed and the main forms of obtaining higher education are shown, the disadvantages and advantages of distance, mixed, face-to-face, dual, network, and workplace forms of the educational process are revealed. The professional models of the organization of mixed training for the psychological and pedagogical training of specialists were analyzed. One of the most effective forms of education, the introduction of mixed education in institutions of higher education, the scientist determined the necessity and expediency of using the "inverted class" model, such a model of education for the psychological and pedagogical training of specialists, which nullifies the main shortcomings of the educational space and which takes into account all advantages of forms of education.

In the pedagogical literature, blended learning is considered as a qualitatively new form of education based on the principles of independent learning, modern pedagogical methods, technical means of information transmission as a special type of educational activity, which makes the process flexible, variable, multi-vector, makes it possible to train students according to an individual educational trajectory in accordance with personal needs, interests and abilities.

I. Oros, A. Chychuk, & E. Hutterer (2023) as a type of teaching methodology, the technology of mixed learning, which can successfully implement new principled forms and methods of the educational space, using information and communication means of implementation, is revealed. The educational free, open (Open Source) and online platform Moodle (a modular object-oriented dynamic learning environment) is considered. The key features of blended learning are highlighted, its content is considered, and the components of blended learning are highlighted: independent work in the electronic environment of education seekers; classroom traditional classes; and electronic group training (online conferences, etc.). The concept of "flipped classroom" is recognized as a

key concept of blended learning. Instrumental means that implement blended learning in institutions of higher education are described. The main educational-methodical and organizational-pedagogical aspects of various forms of training for the psychological-pedagogical training of specialists are highlighted.

Methods of in-depth study with the use of information and communication technologies is devoted to work S. Shevchuk (2023). S. Shevchuk created an initiation project based on the system of mixed learning, which combines directly (on-site) and indirectly (through the possibilities of online learning) the forms of interaction of future specialists and pedagogical workers, which is presented as a process of optimizing the educational space of the universe, increasing efficiency opportunities for those seeking higher education. The possibilities of transformation of the educational process are shown, which is a necessary condition for the transition of higher education institutions to mixed learning to best ensure the educational interests and needs of those seeking education with the use of modern innovative technologies, pedagogical approaches, which is facilitated by the expedient modern application of the possibilities of digital technologies. The method of implementing blended learning in the professional training of specialists is highlighted, the validity is proved based on the competence approach, the essence is revealed, and the principles and models of blended learning are described.

At the same time, the introduction of modern information technologies in the educational process gives rise to a number of problems related to content, methods, organizational forms and means of training, humanization and humanization education. Distance courses developed for secondary school students of the educational institution, their information content, sequence presentation, use of information tools and terminology only partially meet modern requirements. Therefore, the problem of mixed learning in the psychological and pedagogical training of specialists in institutions of higher education requires greater analysis.

The purpose of the study: to characterize the technology of mixed learning, to prove its importance for the quality training of specialists, and to find out the main ways of its application in the educational process of higher education institutions.

Methodology

To realize the goal of the research, theoretical research methods were used: analysis of psychological and pedagogical, philosophical literature, critical, retrospective and comparative, logical analysis of methodical literature, regulatory and legal official documents, dissertation research in order to determine the theoretical research foundations and the state of the research problem; during the determination of the structural components and content of the blended learning technology in the modern professional training of specialists, the method of didactic modeling was used in the educational process of higher education institutions; the theoretical understanding of practice and the study of ways of applying mixed learning technology as an effective means of psychological and pedagogical professional training of future specialists were implemented; synthesis, comparison, generalization, comparative study of ways of applying mixed learning technology in modern professional training of specialists; forecasting, abstraction, modeling, design, classification – with the aim of clarifying and concretizing the meaningful essence of the problem; formation of a categorical and definitive basic apparatus, construction and substantiation of a functional system for the introduction of mixed learning technology in the modern professional training of specialists;

The research is based on the understanding of the ways of applying the technology of mixed learning in the modern professional training of specialists in the educational process of higher education institutions as a designed educational process that forms basic, integral, professional, personal knowledge in future specialists, which are universal, cover professional generalization and contribute to theoretical, cognitive action of education seekers to consciously compare with their skills and knowledge thanks to the formed educational socio-cultural environment, and to compare them with professional professionally standardized actions in the future.

The study implements the special principle of applying the technology of mixed learning in the modern professional training of specialists in a meaningfully updated content of worldview, methodological, theoretical, and practical components of educational disciplines in the educational process of higher education institutions and the acquisition of professional skills and abilities and fundamental knowledge.

The methodological concept reflects in the educational process of higher education institutions the interaction and interrelationship of categories that are basic in professional thinking and methodological levels: procedural and praxeological (the level of technologies, techniques, methods, and scientific research), conceptual and descriptive (specifically scientific and general level of methodology), philosophical-perspective (philosophical level of methodology), analysis of the fundamentalization of ways of applying mixed learning technology in modern professional training of specialists. The methodological concept contributes to the justification of the ways of applying the technology of mixed learning, the fundamentalization of the professional psychological and pedagogical training of future specialists reflects in the direction of a significant increase in the level and quality of the readiness of future specialists for professional activity; development trends of fundamentalization of education and is based on general pedagogical, methodological, philosophical principles.

The methodical concept involves the determination of educational and methodological support for the implementation of the didactic system of mixed education of students in higher education, the selection of the most effective models, forms and methods of organizing this process.

The methodological concept consists of fundamental scientific ideas about the relationship and interdependence of pedagogical phenomena and processes, personality as a subject of active activity and attitudes, personality development in educational activities. Conducted research and obtained results can become the basis for the development of electronic textbooks; technologies, forms and methods of organizing educational activities, adapted to a mixed form of education; new approaches to the formation of intellectual, informational, communicative and social competences; creation of a didactic algorithm for the individualization of learning; solving psychological problems in the conditions of new challenges of society; willingness of teachers and students to cooperate.

The fundamentalization of the application of mixed learning technology in the modern professional training of specialists in the educational process of higher education institutions included the use of training forms, methods, informative and material means,

implementation of conditions; the development of practical personally oriented methodical, educational support for the application of mixed learning technology in the modern professional training of specialists.

Results and Discussion

Blended learning is found in the literature as:

- training in the mixed mode of Mixed-Model Instruction;
- Hybrid Learning;
- symbiosis of online and traditional (offline) education;
- learning through Technology-Mediated Instruction technologies;
- a type of teaching methodology that implements new forms and methods of teaching, using information and communication means of their implementation (Tkachenko & Romanenko, 2021).

Having analyzed the scientific works, we support O. Bazeliuk's (2018) opinion that "mixed learning in vocational education should be understood as a harmonious combination of distance learning (for mastering theoretical knowledge) and real practical activities of students", which will give "the ability to use the advantages of distance and traditional learning, and also avoid the disadvantages that are inherent in each of the specified forms".

Let's name the main features of blended learning:

- 1) active use of the latest modern information and communication technologies to obtain quality education, innovative search for educational material by education seekers, and obtaining new professional knowledge, i.e. information and communication technologies are a full-fledged integral component of the educational process;
- 2) integration of various methods, methodological approaches, means, methods of presenting educational information, new material, and types of innovative activities of education seekers (part of the information is distributed to independent study, and part to group work, regardless of where the training takes place: online or in the classroom (Tkachenko & Romanenko, 2021).

The following applications are used to transmit, save, create educational and methodological materials, support and organize the process of

mixed learning using telecommunications: Student Information Systems (SIS), Learning Management System (LMS), Virtual Classrooms (VC), Learning Content Management Systems (LCMS), Virtual Learning Environments (VLE), Training Management Systems (TMS), Assessment Management Systems (AMS), Social Learning Systems, eBooks Management Systems, Massive Open Online Courses (MOOCs), Learning Analytics, etc.

LMS – Learning Management System – a software computer complex used for the management, development, and distribution of online educational materials with the provision of joint access to them is important for high-quality training and the organization of the blended learning process. If even teachers do not have deep knowledge of programming, then these complexes are available and easy to use. Such materials are created with an indication of the sequence of their study in a visual educational environment. The materials include projects for starting in small groups, individual tasks, and other educational elements for all students of education, based on the communicative and content component (Oros et al., 2023).

Important conditions for the effective application of blended learning are the psychological, motivational, methodical, and technological readiness of the teaching staff of the higher education institution. Important conditions in the context of actions and experience are also: choosing a model of the educational process, designing an educational scenario, organizing the independent work of future specialists, and detailed training (Shuliak et al., 2022).

The technological solutions of blended learning are as follows: the possibility of convenient communication between education seekers and the teacher; for educational materials, it is important to ensure unimpeded accessibility; automation of constant monitoring of the quality of knowledge of education seekers; monitoring the success of the educational process of a higher education institution (Mamatova et al., 2022).

Methodical approaches of blended learning are effective immersion in the educational process of subjects of learning; interaction between students; mastering educational material; construction with personalization of access and work of an individual educational trajectory.

Let's consider the forms by which blended learning can be carried out:

- synchronous remote forms (virtual classes, webinars, coaching, instant messaging, etc.);
- synchronous intramural forms (practical classes, seminars, lectures, etc.);
- asynchronous forms (assessment of knowledge (testing, surveys), education in the use of an electronic system for supporting the educational process, working with web pages, web documents, video and audio files, communication on discussion forums, in educational Internet communities, using e-mail, etc.) (Yurkiv, 2021).

The use of an e-learning platform is a mandatory element of the organization of blended learning (Frolov, 2021). It contains in its structure the learning management system LMS (Learning Management System). Nowadays, many LMS platforms specialize in corporate training. Some are characterized by advanced functions to implement content repurposing. There are private and open-source platforms (BrainCert, Moodle, Open edX, DotLRN, Claroline, Litmos, Sakai, etc.).

In the process of professional psychological and pedagogical training of future specialists, we will highlight the conditions for the effective organization of blended learning:

- 1) permanent filling and creation of an informational and educational environment in the institution of higher education with personalization for the education seeker and the teacher to implement the method and pace of learning, own goals, and opportunities with a clear understanding of the goal of learning to understand educational activities;
- 2) to create conditions for an effective combination of classroom training with online training for knowledge control, to correct educational progress, efficiency, and activity of education seekers, establishing effective interaction between education seekers and teachers and among themselves using digital tools;
- 3) for the effective mastering of the material by those seeking education, methodical design of educational disciplines, educational process, as a sequence of actions, constant updating of educational and methodical material with the use of digital technologies, updating of various forms and methods of organizing the educational process, with the interaction of all participants in the educational process, active support, etc.;

- 4) space for constant exchange of views and ideas of all participants in the educational process, involvement of each student in the educational process, comfortable interaction to achieve group and individual educational goals;
- 5) informational and methodical improvement and organization of educational material for independent work of education seekers, implementation of pedagogical reflection;
- 6) establishment of feedback between students and the teacher;
- 7) to increase the training of future specialists, eliminate educational problems, and introduce systematic monitoring of blended learning (Hazdyk, 2021).

We will reveal the content of the key concept of mixed learning "flipped classroom", in which special attention is paid to aspects of the organization of the educational process and aspects of designing electronic courses.

The essence of the "inverted technology" based on the active use of the electronic educational environment is to rearrange the key components of the educational process. When implementing such an "inverted technology", the educational process begins with the setting of a problematic task, where the learner is forced to familiarize himself with the posted material in the electronic course environment to complete it. In the electronic environment, at the same stage, self-monitoring of the understanding of the material is carried out. Thus, the process of assimilation of new material begins with the independent work of education seekers.

An electronic course, properly designed for mixed learning, allows taking into account the individual learning style of students: the type of cognitive abilities, level, and speed of mastering the material contributes to the individualization of the educational process, ensures more active involvement of students in educational activities, increases the success of students in general. Under the condition of a reasonable ratio of independent work and classroom classes with the correct organization of mixed learning, the quality of education in modern conditions will increase.

It is necessary to take into account the high requirements that the form of mixed education puts forward to the level of professionalism of teachers. At the same time, the main emphasis is shifting from administrative tasks and the traditional organization of the educational process to the provision of individualized help

and support to those seeking education and working with databases, by adding to traditional education such online components as discussion of problematic issues, surveys, blogs, online discussions, completing tasks in electronic form, etc., to comprehensive and systematic improvement of educational programs, to solving problems of supporting the learning process, stimulation, motivation. Therefore, educational adaptive programs allow each student to study in a convenient mode and pace and receive differentiated instructions (Vyshkivska et al., 2022).

Let's name the varieties of the inverted class:

- typical – students study new educational material on their own, and perform tasks of a practical nature in class;
- group – students are united in groups for the practical application of new educational information, while they work as a team, teach each other and learn from each other;
- debatable – used in the study of disciplines in which research and visual demonstration of materials are expected;
- "inverted teacher" – students directly participate in the process of creating practical tasks and educational video materials.

When using the "inverted learning" technology, classroom classes should not occupy a central place but should support the process of acquiring the skills and knowledge of students. With this approach, the content of education becomes a starting point and not an end in itself. Emphasis in educational activity is placed on the process of cognitive activity, during which the learner discovers new knowledge based on the content (Shevchuk, 2023).

Blended learning can take place synchronously or asynchronously.

The organization of synchronous training is in harmony with regular face-to-face training. And not much differs from him. Students and the teacher must be in the same place at the same time – virtual or physical.

Asynchronous learning requires flexible coordination of meetings between learners and teachers. Flexible coordination requires mutual respect for time, adherence to agreements, drawing up an individual schedule of interaction, planning one's schedule, and preparing for meetings (Plakhotnik et al., 2023). Teachers should use an effective learning strategy just in

time, precisely on time, because mixed learning involves the performance of practical tasks, independent processing of educational materials, timely submission of control, and homework assignments. That is, to plan, determine, and announce in advance the entire planned volume of tasks that the student of education must perform and indicate how much time it may take to perform a particular task. The teacher needs to offer clear and clear criteria for checking and monitoring the educational achievements of the students. This approach contributes to the optimization of time and resources and allows students of education to form different types of motivation, while teachers must make sure that the materials for processing and studying are available to students of education.

Blended learning of students can take place asynchronously with a large part of independent work (Kuchai et al., 2021). However, the presence of a community that collaborates creatively and learns well contributes significantly to all the achievements of education seekers. The support of interaction between students of higher education and the creation of a community depends to a large extent on the efforts of teachers. Understandably, instructors want to jump straight into teaching their course, but it's recommended that blended learning spend time building community. Such efforts in further professional training play a positive role in joint education, i.e. there is training according to the "peer-to-peer" scheme, project-based training (Hrechanyk et al., 2023).

Students of higher education can collaborate both in virtual space and face-to-face. For virtual interaction, the standard functionality of any of the education management systems is sufficient: there can be cooperation of education seekers on the creation of scientific texts in Google Documents or Wikipedia; joint generation of ideas with the help of virtual boards; joint calculations in Google Sheets, etc (Pasichnyk et al., 2021).

Since blended learning is a combination of learning in a higher educational institution (onsite or offline) with a distance form (including online), at the same time, in the modern world, distance learning has become a springboard to quality education with the aim of accelerated implementation of blended learning by institutions of higher education. This made it possible to significantly increase the digital skills of all subjects of the educational process and rethink the traditional models of education used by higher education institutions. Blended

learning requires clear planning of the use of the digital environment and the real one so that they provide the most effective all the needs of the learners.

The implementation and organization of blended learning requires clear preparation, careful planning, a change in attitude towards education, and established patterns of behavior of participants in the educational process (Zavalevskyi et al., 2023). Blended learning removes the mere physical presence of learners in a shared educational space and replaces it with intellectual engagement and creative presence in a shared educational virtual space. Both students and teachers can process and prepare educational materials, having access to the technical means necessary for high-quality education, not necessarily in an educational institution, but anywhere.

Blended learning is based on the following values:

- responsibility – all participants in the educational process are responsible for achieving the educational result;
- integrity – academic integrity for the participants of the educational process becomes very important in the absence of strict control: students of education practice academic integrity at the level of values; teachers trust students that the tasks submitted for verification have not been written off;
- respect for each other's time – requires compliance with educational programs and plans and careful planning;
- mutual respect and trust – respect and trust presupposes the absence of strict control in the activities of the participants of the educational process;
- understanding the full picture of the course
- awareness of the expected educational results and the educational goal will contribute to the formation of a responsible attitude toward the educational results of the participants of the educational process (Shevchuk, 2023).

Blended learning provides significant advantages for a higher education institution:

- increasing the accessibility of a higher education institution to a larger number of education seekers; the possibility of studying with minimal separation from work; more accessible education for persons with disabilities; the availability of

education for those seeking education from geographically distant regions;

- providing students with additional development of soft skills that are highly valued by employers: purposefulness, self-confidence, and ability to learn independently;
- the possibility of solving problems with a lack of study facilities, and limited classroom stock, in a higher education institution;
- reduction of costs for psychological and pedagogical training of students: although preparation for mixed education at the first stages, on the contrary, will require greater not only financial resources, which will significantly decrease in the future;
- the ability to evaluate what is evaluated: with the help of simulators, videos, etc., teachers can check the student's mastery of the planned skills.

Blended learning also has several advantages for students of higher education:

- access to educational materials from any convenient device or place or at any convenient time;
- autonomy of the learner: the possibility of ensuring an individual educational trajectory, choosing an individual learning pace;
- greater interest in learning through the use of innovative methods and approaches, digital technologies, gamification, etc.;
- memorization of a larger amount of material by students;
- development of soft skills: self-confidence, ability to learn, acquisition of communication skills. Therefore, blended learning in the field of higher education is gaining momentum in the world and has a future (Pasichnyk et al., 2021).

The practical implementation in the professional training of specialists in blended learning technology showed that precisely under the conditions of new variations of blended learning models, the use of all components of the functions of complex methodical support of the modern model of education, the expansion of the spectrum of the implementation of interactive technologies in education, it becomes possible to conduct qualitatively, interestingly and effectively in the mode online and offline classroom classes, scientific and practical conferences and seminars, organize independent work of education seekers in chat and forums,

promote research and experimental activities of education seekers (Shevchuk, 2023).

Traditionally, the application of blended learning technology in the modern professional training of specialists in the educational process of higher education institutions takes place in three stages: independent study of the material, classroom interactive classes, and continuation of interactive training and support at the workplace. During the application of mixed learning technology, students have the opportunity to set their own learning pace and choose methods and forms of working with educational material. The use of mixed learning technology in the modern professional training of specialists provides opportunities for an intensive exchange of views, ideas, and beliefs of students in the educational process of higher education institutions, promotes active interaction of students, provides constant feedback between the teacher and students, directs student learning to achieve group goals and individual educational goals (Stoliarenko, 2015).

The application of mixed learning technology in the modern professional training of specialists in the educational process of higher education institutions can be carried out in the following forms: synchronous face-to-face forms (seminars, lectures, practical classes, etc.); synchronous remote forms (webinars, virtual classes, instant messaging, coaching, etc.); asynchronous forms (assessment of knowledge (testing, surveys), training in the use of an electronic learning support system, video and audio recordings, working with documents and web pages, communication via e-mail, Skype, in discussion forums, educational online communities, etc.) remotely (Kasyan et al., 2018).

The organization of the application of mixed learning technology requires the solution of difficult methodological, organizational, and educational tasks in the educational process of higher education institutions: the organization of technical support; choosing a model of mixed learning, which should solve specific tasks set by the institution of higher education; training of teachers to work in the format of mixed education (training of personnel); development of regulatory requirements and methodological recommendations for the organization of the educational process based on the model of mixed learning (providing regulatory and methodological support). This makes it possible to qualitatively divide the material into "face-to-face" and "online", create instructional materials

for students and teachers, develop recommendations for the clear use of information and communication technologies in the teaching of professional disciplines, and use interactive methods of active learning in the classroom (Yurchenko, 2021).

The paradigm of developmental education most fully corresponds to the idea of distance and traditional education. Therefore, the organizational-pedagogical model of blended learning synthesizes the advantages of three approaches to the organization of the professional training process:

- andragogically oriented to the peculiarities and needs of education seekers, the adult population: learning based on experience and with the help of action;
- personally oriented, aimed at the development of the meaningful motivational and value component of the personality and mental, communicative, reflective, creative, and other abilities of students;
- context-oriented, on the involvement of the specifics of professional subject and social activity of specialists in the educational process, taking into account their real problems and experience; transparency of boundaries between educational and professional activities.

The combination of these approaches and their ideas makes it possible to create such an integrated educational environment that will satisfy the needs of employers, take into account the peculiarities of students, and ensure their orientation towards the development of professional competence by solving both professional and educational problems (Shevchuk & Yashanov, 2022).

Conclusions

The technology of blended learning is characterized and its importance for quality training of specialists is proved, the main ways of its application in the educational process of higher education institutions are clarified, and the main features of blended learning are named.

The applications described in the article are used to transmit, save, create educational and methodical materials, and support, and organize the process of mixed learning using telecommunications.

The importance of the Learning Management System computer software complex, which is

used for the management, development, and distribution of online educational materials with the provision of shared access to them, is shown for quality education, and organization of the mixed learning process.

The main conditions for the effective application of blended learning, technological solutions of blended learning, and methodical approaches of blended learning are highlighted, and the forms by which blended learning can be implemented are considered.

The use of an e-learning platform is shown to be a mandatory element of the organization of blended learning.

The content of the key concept of blended learning "flipped classroom" is revealed, within which special attention is paid to aspects of the organization of the educational process and aspects of designing electronic courses. Varieties of the inverted class are characterized. The operation of mixed learning synchronously and asynchronously is shown.

The stages of the traditional application of blended learning technology in the modern professional psychological and pedagogical training of specialists in the educational process of higher education institutions are considered.

The organizational-pedagogical model of blended learning synthesizes the advantages of three approaches to the organization of the professional training process. The organization of the application of mixed learning technology requires the solution of difficult methodical, organizational, and educational tasks in the educational process of higher education institutions, which is disclosed in the article.

We recommend that higher education institutions provide training for specialists in the use of information and communication technologies, and that higher education institutions develop assessment strategies suitable for blended learning.

Conducted research and obtained results can become the basis for the development of electronic textbooks; technologies, forms and methods of organizing educational activities, adapted to a mixed form of education; new approaches to the formation of intellectual, informational, communicative and social competences; creation of a didactic algorithm for the individualization of learning; solving psychological problems in the conditions of new

challenges of society; willingness of teachers and students to cooperate.

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