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BLENDED LEARNING AS AN INNOVATIVE ORGANIZATION OF THE EDUCATIONAL PROCESS IN HIGHER EDUCATION INSTITUTIONS OF UKRAINE

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Abstract. The authors, based on the analysis of psychological and pedagogical literature, summarizing the results of the study of the experience of cooperation between teachers and students in the educational process of an educational institution, highlighted the specifics of the organization of partnership interaction "teacher-student" in the conditions of a mixed format of education in modern institutions of higher education. The article reveals the theoretical and methodological foundations of blended learning technologies, describes the features of their implementation in the educational process, summarizes positive developments, and outlines typical problems. Researchers emphasize that the use of blended learning technologies determines the combination of different learning formats and teaching styles. It is indicated that mixed learning technologies are the best option for organizing the educational process when it comes to learning during quarantine or pandemic, martial law, limited access to classrooms, which requires teachers and managers of higher education institutions to use non-standard approaches and creativity in meeting educational needs and professional requests of education seekers. The article notes that the use of blended learning technologies in pedagogical practice helps to optimize partnership interaction in the "teacher-student" context, promotes the formation of digital competences, improves program learning results, and increases the effectiveness of the educational process in a higher education institution.

Keywords*:* blended learning technology, partner interaction, educational process, blended learning models.

1. INTRODUCTION

The epidemiological situation that developed during 2020-2021 due to the coronavirus infection COVID-19, the outbreak of a full-scale war on February 24, 2022, by russia made unexpected adjustments and forced everyone to urgently master information and communication technologies and new pedagogical approaches and methods for their organization. Turning to the format of distance learning has become a serious and difficult challenge for all participants in the educational process: teachers, students, and education managers.

Teachers were faced with the task of establishing high-quality teaching of students using digital Internet technologies, motivating them to acquire knowledge independently, teaching them to use various digital applications, solving a number of technical problems related to the launch of

multi-format educational platforms, maintaining communication with all applicants for education, and establishing psychological and pedagogical support and online counseling. It should be noted that both the education system of Ukraine and most of the world's educational systems were not ready for such social transformations and educational challenges.

The task of the study is the theoretical analysis of the essence of the problem and determination of the features of the implementation of blended learning into the educational process of higher education institutions.

In the modern conditions of globalization and digitization of all spheres of social life, the problem of using information and communication technologies in the educational process of educational institutions of various types, the introduction of digital resources and tools to ensure innovative progress in the education of pupils and students, and the improvement of the quality of educational services is becoming an actual issue (Tsependa & Budnyk, 2021). Accordingly, the problem of using modern digital technologies in the professional training of specialists is especially relevant today in the educational space of higher education institutions.

2. ANALYSIS AND DISCUSSION

Research methods: a set of general scientific research methods was used to organize the study. Theoretical: contributed to the generalization and analysis of psychological and pedagogical literature, regulatory framework, which helped to identify key aspects of the problem; empirical: methods of collecting research material (questionnaire of students, surveys of teachers, study of the regulatory framework), interviews with teachers of higher education institutions concerning their readiness to implement ideas, forms and models of blended learning technologies in the educational process.

Analysis of scientific research. The theoretical aspect of the introduction of blended learning into the educational process is reflected in the works of V. Kukharenko, O. Rafalska, N. Rashevska, O. Spirin, Y. Tryus, and others.

The problem of blended learning and the methodology for implementing blended learning are presented in the works of A. Andreev, V. Bykov, N. Korsunska, O. Tykhomyrov, E. Toffler and others.

At the end of the twentieth century, a number of foreign scholars (C. Bonk, C. Greikham, M. Khorn, H. Stucker, S. Laster, G. Otte, S. Zorg etc.) worked on expanding the essence of the concept of “blended learning”.

Blended learning (also known as hybrid learning) is an innovative educational technology that combines synchronous (traditional, face-to-face) learning and asynchronous (digital) learning, giving students more flexibility in mastering educational material and gaining practical experience.

Since blended learning technologies define a combination of different learning formats and teaching styles, they can be an ideal option for organizing the educational process when it comes to learning during the quarantine or pandemic, which requires teachers and managers of higher education institutions to take non-standard approaches and be creative in meeting the educational needs and professional demands of education applicants.

The term “blended learning” gained popularity after the publication of the book by Bonk and Graham (2005) “Handbook of Blended Learning”, in which the authors described three categories of “educational blending”.

1. Basic blending – at this stage, distance learning components are added to the traditional model of education which contribute to solving certain problems of educational activities.

2. Increased blending – changes without radical transformations related to the search for additional material on the Internet, and access to the content of lectures in online mode.

3. Modified blending – lecture attendees turn into those who solve problems on their own at

the right time. This opportunity arises due to the development of information, communication, and digital technologies.

Today, one of the priorities of the state, as set out in the Law of Ukraine "On the National Informatization Program", is the development of modern information technologies in all spheres of public life in order to increase production efficiency, create a nationwide network of information support for the life of the state, form a system of national information resources, and integrate Ukraine into the global information space (Machuskyy, 2022).

In this context, researcher Morse(2008) emphasizes that "modern technologies have changed communication, cooperation, and learning because knowledge is not only on paper and human memory but in networks and communities; people learn by creating and maintaining ties with "knowledgeable" people, which promotes learning activities outside the classroom".

The modern education system should focus on technologies that develop education applicants' ability to learn, operate and manage information, make quick decisions, and adapt to the needs of the labor market. However, as practice shows, if only traditional forms and methods of teaching are used, students receive information passively, are unable to acquire it independently, and are unable to apply it optimally in practice.

Of course, blended learning technologies are not a universal tool that can change the entire educational process for the better with a single action, but it is a tool that will help to evaluate the process of obtaining knowledge by applicants for education from different perspectives.

This leads to positive changes in the use of technology in the educational process when implementing distance learning, and most importantly, it gives the opportunity to try yourself in a new role – the role of an innovative teacher, the role of a tutor, or a moderator.

Blended learning as a tool for modernizing modern education in practice characterizes technologies that combine new pedagogical methods based on the integration of traditional approaches to the organization of the educational process and digital learning technologies.

Blended learning technologies are a combination of face-to-face learning with a teacher in the classroom and the interactive capabilities of digital technologies in the distance-learning format.

Accordingly, we view blended learning as an innovative synergistic form that allows for more efficient use of the advantages of both face-to-face and e-learning, while offsetting or compensating for the shortcomings of each. For a more thorough coverage of the problem, we will reveal the key characteristics of blended learning technology.

These include electronic submission of materials; the ability to submit work electronically; regular evaluation of work by teachers with detailed comments; the possibility of group work; electronic tracking of progress; adherence to the principles of interactivity in the organization of face-to-face training.

Thus, it is worth noting that blended learning technologies have a number of advantages for both teachers and students. Among the priority ones are the following:

- gaining experience in teamwork by students;
- time flexibility in the organization of the educational process;
- development of student's independent work skills in obtaining the appropriate level of education;
- mastering digital skills during the educational process by both teachers and students;
- a student-centered vector of learning activities for each applicant for education.

Despite the obvious advantages of implementing blended learning technology in the educational process of higher education institutions, it has a number of disadvantages, including the reluctance of many teachers to use the digital format of education, insufficient level of teachers' and students' IT skills, dependence on technology and the Internet, adherence to clear time management for completing tasks, and unlimited access to the Internet and its speed (Tsependa & Budnyk, 2021).

The low level of digital skills is often an obstacle to the widespread introduction of blended learning technologies in the educational process of higher education institutions. Therefore, it is important for teachers and students to periodically organize additional training, workshops, webinars, advanced training courses, and training in innovative programs used in blended learning on Blending Learning platforms.

Another inhibiting factor is that the blended learning format requires technical support and the creation of various video materials, curricula, tasks for test control of students' knowledge (current and final control), test programs, and individual test modules.

Thus, blended learning should be considered as an educational technology, as a pedagogical approach that combines the effectiveness and prospects of socialization in a group with the leading technological capabilities of online learning. After all, as a single, holistic educational process, blended learning technology implies that one part of the cognitive activity of education applicants takes place in the classroom under the direct guidance of the teacher, and the other part consists of independent work with electronic resources individually or in groups.

The use of blended learning technologies in pedagogical practice allows the teacher to achieve the following goals:

- to expand the educational opportunities of education applicants by increasing the accessibility and flexibility of education, taking into account their individual educational needs, as well as the pace and rhythm of learning the educational material;

- to stimulate the formation of the active position of the student: increasing his motivation, independence, and social activity, including in the development of educational material, reflection, and introspection and, as a result, increasing the effectiveness of the educational process as a whole;

- to transform the style of the teacher: to move from the transmission of knowledge to interactive interaction with the applicants for education, which contributes to the design of their own lessons;

- to individualize and personalize the educational process, when education applicants independently determine their educational goals, and ways to achieve them, taking into account their educational needs, interests, and abilities, and the teacher acts as an assistant and mentor.

In blended learning, both off-the-shelf digital resources and those created by teachers themselves can be used. In this case, preference should be given to integrated digital resources that combine educational content and tools for organizing the educational process.

Blended learning technologies are a priority form of education in modern educational institutions. For example, they provide undeniable benefits for both teachers and students.

Blended learning makes it possible to optimize the time costs of the teacher as well as increase the efficiency of the educational process in general. Under the circumstances described above, the student is an active participant in the educational process, able to build an individual learning trajectory based on his or her own needs and requests. This contributes to the formation of a competent specialist who is competitive in today's environment.

The advantages of blended learning technology also include the integration of asynchronous Internet communication technology into “live” educational courses, which facilitates both independent and collaborative educational experiences. It is also worth noting that the use of innovative technologies improves the attitude to knowledge acquisition as well as the quality of communication between students and teachers. In addition, the analysis of the study conducted on the results of the usage of blended learning technologies showed that it is easier for students to assess the level of understanding of the material using digital modules for assessing knowledge (program outcomes) and the formation of certain competencies (Kukharenko, 2016).

As for specific subjects, it is believed that the use of Blended Learning is particularly effective in teaching humanities subjects. Since humanities disciplines involve the need for live

communication, they determine the need for online reading of texts, watching videos, visual learning of new terms, and key definitions, and "memorization" of words.

Blended learning technologies are a combination of online and offline learning in a single chain that creates a "learning experience" for the education applicant and a course or subject.

Blended learning teaches a student to organize and plan work independently, independently obtain and analyze knowledge, search and select information, make decisions, develop project presentation skills, and engage in self-education.

In blended learning, the theory that an education applicant works out online (whether in the form of independent reading of materials, watching demonstration videos, watching a video of a teacher's lecture, or playing a game) is applied offline (that is in the classroom during classes). All the activities and classes that take place in an educational institution should be combined and practiced, consolidating the knowledge gained by students during independent work or online study.

By learning format, we mean online or offline learning. Offline learning formats include group project work, individual consultations, lectures, seminars, discussions, etc. (i.e. any interaction that takes place in real-time).

By online learning, we mean the format of studying at a computer, where the student chooses the place to study, and controls the time, rhythm, and sequence of tasks.

Therefore, we support the arguments of the researcher Hniedkova (2017) regarding the characteristics of the digital education format, which she interprets as "a purposeful process of interaction between learning subjects, which combines traditional and distance learning, which can take place in the classroom and beyond, in synchronous and asynchronous modes and is based on the widespread use of ICT" (p. 59). When comparing synchronous and asynchronous learning, it is necessary to distinguish the features of each of the specified formats.

Synchronous mode is a type of interaction in which all participants in the educational process communicate, learn, and share information in a common digital environment. At the same time, they use special programs for audio and video conferencing. This format is most similar to offline learning.

The synchronous format involves the real-time cooperation of all participants in the educational process. Its advantage is that it is possible to engage participants instantly and at a specific time.

This is the so-called "live broadcast", during which students can communicate directly with teachers via video or audio communication or chat.

In particular, the synchronous format provides applicants for education with quick feedback from the teacher (you can immediately explain those concepts and notions that cause difficulties for students); organization of group activities; development of communication and collaboration skills; motivation to learn in the process of communication. Synchronous learning formats include webinars, video conferences, virtual classrooms, and online training.

A WEBINAR is an audiovisual broadcast of presentations, seminars, and lectures, during which participants communicate via the Internet using a special application. It involves speakers and feedback from the audience in a chat.

A VIDEO CONFERENCE is a discussion and decision-making, debate, and project defense. All this takes place in real-time. Teachers can accompany the lecture with visuals and communicate directly with applicants for education.

Video conferencing is the main form of online communication with students. Video conferencing is a real-time online conference. It is held on a pre-determined day and time, with students and teachers at a distance. Video conferencing can also be conducted using Microsoft Teams, Google Meet, Skype, Zoom, GoToMeeting, etc.

VIRTUAL CLASSROOM. A virtual classroom is a community of two or more people (teacher-student) who are virtually present in a virtual classroom and, in accordance with the defined educational goals and objectives carry out educational and cognitive activities (Bykov, 2009).

A virtual classroom is a special educational environment in which classes are held, that simulate the activities of a face-to-face format and use analytical e-learning tools. When studying in a virtual classroom, either individually or in a group format, students can use a variety of tools and digital resources: a virtual whiteboard, chats, personal file storage, etc.

While working in a virtual classroom, you can demonstrate your work in PDF, Word, Excel, PowerPoint, JPEG, and Google Classroom, share your screen (demonstrate your desktop), download videos from YouTube, and send links to the necessary resources.

ONLINE TRAINING. An online class during which participants, accompanied by a trainer, solve practical tasks aimed at developing professional and universal skills.

The asynchronous mode can cover (but is not limited to) a variety of media, audio, and video lessons. With the help of asynchronous learning, education applicants work at their own pace and at a time convenient for them.

Teachers should indicate the deadlines for completing assignments sent for feedback, and provide an indicative class schedule for course participants so that they have an idea of what they should do and when. The asynchronous mode can be applied to various forms of digital and online learning. For example, a teacher may record his or her own short video tutorials, explanations, or learning tasks that students complete on their own (Chervinska et al., 2022).

Asynchronous distance learning is just as necessary as synchronous learning because there are applicants for education who need more time to work through a particular topic. There are also course students with different educational needs, so this ensures differentiation and an individual approach.

The asynchronous format can include (but is not limited to) a variety of media, audio, and video lectures. With the help of asynchronous learning mode, education applicants work at their own pace and at a time convenient for them.

The asynchronous mode is applied to various forms of digital and online learning.

The synchronous mode of distance learning includes massive open online courses, online literature, blogs, forums, chats, and e-mail.

MASSIVE OPEN ONLINE COURSES. Massive open online courses with interactive exercises and open access via the Internet. Examples: Coursera, EdX, Udacity, Prometheus, EdEra.

ONLINE LITERATURE. E-textbooks, virtual workbooks, outlines, etc.

BLOG. A website the main content of which is posts, images, or multimedia that are regularly added.

FORUM. A form of communication between teachers and students in distance learning. Usually, forums have the ability to attach files of various types and sizes.

CHAT. Communication between network users in real time, means of online chat communication. There are several types of chat rooms: text, voice, audio, and video chat.

E-MAIL. A standard Internet service that provides for the transmission of messages in the

form of plain text and other forms (graphic, sound, video).

The components of ensuring the implementation of blended learning technologies in the educational process of higher education institutions include:

- the electronic schedule of the educational process (lectures, meetings, consultations, schedules of the educational process, and independent work) is available to students;
- the scope, of course, materials are defined and applicants for education are informed about it. They know what materials they need to study/work on their own;
- the time required to study and process the course materials;
- instructions for completing tasks are clear to applicants for education;
- expected learning outcomes and criteria for their confirmation and assessment are clear to applicants for education;
- hours of individual and/or group consultations between teachers and education applicants are provided and clearly defined;
- organizational and technical parameters (e-mail addresses and access rights to educational materials, where to send or upload completed assignments).

At the same time, the integrated use of blended learning technologies (and not just its technical component) teaches students to be more responsible and independent. At the same time, they can also be given the role of a tutor/assistant when it comes to the use of modern technologies, smartphones, etc.

Tab. 1

Means of mobile communication for interaction between teachers and students in distance learning

Form	**Service**	**Purpose**
Parent conferences	Zoom, Google Meet, Cisco Webex Meetings, Microsoft Teams, Moodle GoToMeeting	Organization of webinars
Consultations Trainings Conversations Assignments	Viber, Whatsapp, Telegram, Slack, Messenger, Skype	Organization of communication via messengers (individual or group)
Parent-teacher conferences	Classtime, Mentimeter, Kahoot, Poll Everywhere, Google Forms, Microsoft Forms, Edpuzzle, ClassMarker	Conducting surveys
All forms of interaction	Google Drive, Docs, Presentations, Google spreadsheets, Google photos; OneDrive, Office 365	Content collaboration

The analysis has shown that when organizing the educational process in a blended learning environment, the student-centered approach is fully implemented, when the teacher directs all his or her activities to the development of individual characteristics of each student, and becomes a mentor and consultant for an applicant for education in the search for and generation of new knowledge.

Accordingly, the student develops confidence, independence, ability and willingness to manage their study, both for the successful completion of an educational program or course and for lifelong learning.

3. CONCLUSIONS

Thus, blended learning technologies are not a universal tool for organizing the educational process, but they can be considered as an option for optimizing the educational process in the distance learning format under the conditions of martial law in higher education institutions.

However, for the most part, it is a tool that will facilitate the organization of the educational process through innovative formats of education, provided that the process of acquiring knowledge is analyzed using other approaches, which will change the attitude to technology, and most importantly, will give all participants in the educational process the opportunity to try themselves in a new role.

Prospects for further scientific research are associated with the problems of training teachers to implement blended learning in the educational process.

REFERENCES

[1] Bonk, C. J., & Graham, C., R. (2005). The Handbook of Blended Learning: Global Perspectives, Local Designs. John Wiley & Sons. E-Book: Pfeiffer.

[2] Bykov, V. (2009). Models of organizational systems of open education: monograph. Atika. (in Ukr.)

[3] Chervinska, I., Struk, A., Prytulyak, O., & Nykorak, Ya. (2022). Media technologies as an effective means of improving the quality of the educational process in institutions of higher education. *Educational Horizons*, *55(2),* 69-73. https://doi.org/10.15330/obrii.55.2.69-73 (in Ukr.)

[4] Hnedkova, O. (2017). Experimental verification of the effectiveness of knowledge control of future English language teachers using distance learning. *Scientific Bulletin. Series: Pedagogy, psychology, philosophy, 259,* 58-69. http://journals.nubip.edu.ua/index.php/Pedagogica/article/view/11088 (in Ukr.)

[5] Kukharenko, V. (2016). Theory and practice of blended learning: monograph. Miskdruk, NTU KhPI. (in Ukr.)

[6] Machuskyy, V. (2022). *Law of Ukraine "On the National Informatization Program"* (№ 2807-IX). Business Law Electronic Resource. https://www.businesslaw.org.ua/national-informatization-program/ (in Ukr.)

[7] Lytvynova, S. (2009). New technologies of e-learning for students who have not attended school for a long time. *Computer in School and Family, 7,* 16-20. (in Ukr.)

[8] Morze, N. (2008). Models of effective use of information and communication and distance learning technologies in a higher education institution. *Information Technologies and Learning Tools, 2(6)*, 336-346. (in Ukr.)

[9] Smirnova-Tribulskaya, E. (2007). Fundamentals of forming information competencies of teachers in distance learning: Monograph: National Pedagogical University named after M. P. Dragomanov. Kherson: Ailant. (in Ukrainian)

[10] Tsependa, I., & Budnyk, O. (2021). Digital education. Collection of scientific works. Vasyl Stefanyk Precarpathian National University. (in Ukr.)

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Червінська Інна, Мельник Надія, Галюк Надія. Організація партнерської взаємодії «викладач-студент» в умовах змішаного формату навчання в закладах вищої освіти України. *Журнал Прикарпатського університету імені Василя Стефаника*, **10** (1) (2023), 216–224.

У статті на основі аналізу психолого-педагогічної літератури, узагальнення результатів вивчення досвіду співпраці викладачів і студентів в освітньому процесі закладу освіти увиразнено специфіку організації партнерської взаємодії «викладач-студент» в умовах змішаного формату навчання в сучасних закладах вищої освіти України. Авторами розкрито теоретико-методологічні засади технологій змішаного навчання, описано особливості їх упровадження в освітній процес, узагальнено позитивні напрацювання, окреслено типові проблеми. Дослідники наголошують, що застосування технологій змішаного навчання визначає поєднання різних форм і стилів викладання. Вказано, що технології змішаного навчання є оптимальним варіантом організації освітнього процесу, коли йдеться про навчання в період карантину чи пандемії, воєнного стану, обмеженого доступу до навчальних аудиторій, що вимагає від викладачів та менеджерів закладів вищої освіти нестандартних підходів та креативності у задоволенні освітніх потреб і професійних запитів здобувачів освіти. Доведено, що застосування в педагогічній практиці технологій змішаного навчання сприяє оптимізації партнерської взаємодії в контексті «викладач-студент», сприяє формування цифрових компетентностей, покращує програмні результати навчання, підвищує ефективність освітнього процесу в закладі вищої освіти.

Ключові слова: технологія змішаного навчання, партнерська взаємодія, освітній процес, моделі змішаного навчання.