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## **ЗМІШАНЕ НАВЧАННЯ ЯК ЗАСІБ ФОРМУВАННЯ ПРОФЕСІОНАЛІЗМУ МАЙБУТНІХ УЧИТЕЛІВ ПОЧАТКОВИХ КЛАСІВ**

**Анотація.** У статті зазначено, що сучасна система освіти покликана реагувати на цивілізаційні й соціально-технологічні виклики XXI століття. Новий зміст освіти заснований на формуванні компетентностей, потрібних для успішної самореалізації особистості в суспільстві. Пандемія COVID-19 та війна в Україні стали додатковими стимулами для створення нових освітніх продуктів, зокрема для розвитку цифровізації освіти, розбудови практик змішаного навчання. У наукових дослідженнях вітчизняних та зарубіжних учених чітко простежується потреба у впровадженні гнучких інноваційних моделей вищої освіти, пріоритетність використання цифрових інструментів викладання, зростаючий запит на формування сучасних фахівців у цифровому середовищі. Відповідно нові, більш складні вимоги ставляться до професійної підготовки майбутніх педагогів, зокрема вчителів початкових класів. Об'єктивно виникла необхідність осмислення сучасної цифрової дидактики, розробки заходів підтримки студента і викладача, нових моделей освіти тощо. Одним із інструментів такої трансформації виступає змішане навчання, що активно розвивається в останні десятиліття і забезпечує орієнтацію навчального процесу на формування нової моделі випускника з урахуванням сучасних стандартів. У статті на основі дослідження педагогічних можливостей технології змішаного навчання проаналізовано переваги та недоліки цієї технології в процесі професійної підготовки майбутніх учителів початкових класів. Автор зазначає, що визначальними в організації змішаного навчання є такі чинники, як: 1) запити студентів; 2) специфіка дисципліни; 3) педагогічні теорії та підходи; 4) співвідношення між викладанням і самостійною роботою студентів. Ефективність упровадження змішаного навчання залежить від гармонійного поєднання цифрових технологій і майстерності їх використання. Змішане навчання – це якісно новий підхід, що трансформує структуру і зміст навчання, змінюючи традиційні ролі викладача та здобувача освіти, а також навчальне середовище. Однією із складових змішаного навчання є технологія «перевернутого класу» – сучасний тренд та інноваційний спосіб організації освітнього процесу. Основною перевагою «перевернутого класу» є здобуття студентами низки компетентностей XXI століття, таких, як здатність самостійно вирішувати проблеми, креативність, навички співробітництва, грамотність у галузі ІКТ. Різні моделі «перевернутого класу» дозволяють використовувати більш широкий арсенал форм контролю знань студентів залежно від завдань, що стоять перед ними. Дослідження, присвячене технології змішаного навчання, показало, що ця технологія сприяє формуванню умінь студентів учитися, підвищує задоволеність і мотивацію майбутніх педагогів. Аналіз даних дослідження засвідчив, що технологія високо оцінюється викладачами за умов наявності відповідного рівня технічної та педагогічної підготовки і належної розробки методичних матеріалів.

**Ключові слова:** заклад вищої освіти, майбутній учитель початкових класів, професійна підготовка, інформаційно-комунікаційні технології, цифрове освітнє середовище, онлайн навчання, змішане навчання, моделі змішаного навчання, технологія «перевернутого класу».



## BLENDED LEARNING AS A MEANS OF FUTURE PRIMARY SCHOOL TEACHER PROFESSIONAL DEVELOPMENT

**Abstract.** The research aims to prove that the modern education system is designed to respond to the civilizational and socio-technological challenges of the 21st century. The new content of education is based on the formation of competencies necessary for the individual's successful self-realization in society. The COVID-19 pandemic and the war in Ukraine have become additional stimulus for the creation of new educational products, in particular for the development of the digitalization of education, and blended learning practices. In scientific studies of domestic and foreign scientists, the necessity to implement flexible innovative models of higher education, the priority of using digital teaching tools, and the growing demand for the training of modern specialists in a digital environment can be found. Accordingly, new, more complex requirements apply to future teachers' professional training, in particular primary school teachers. Objectively, the necessity to understand modern digital didactics, develop measures to support students and teachers, and new models of education are in great demand. One of the tools of such a transformation is blended learning, which has been actively developing in recent decades and ensures the orientation of the educational process to the formation of a new model of a graduate taking into account modern standards. The article, based on the study of the pedagogical possibilities of blended learning technology, analyzes the advantages and disadvantages of this technology in the process of future primary school teachers' professional training. The authors highlight the following factors: 1) students' requests are decisive in the organization of blended learning; 2) specificity of the discipline; 3) pedagogical theories and approaches; 4) the relationship between teaching and students' independent work. The effectiveness of the implementation of blended learning depends on the harmonious combination of digital technologies and the skill of their use. Blended learning is a qualitatively new approach that transforms the structure and content of teaching, changing the traditional roles of teachers and learners, as well as the learning environment. One of the components of blended learning is the "flipped classroom technology" - a modern trend and an innovative way of organizing the educational process. The main advantage of the "flipped classroom" is that students acquire a number of competencies of the 21st century, such as the ability to solve problems independently, creativity, cooperation skills, and ICT literacy. Different models of the "flipped classroom" makes it possible to use a wider arsenal of forms of monitoring students' knowledge depending on the given tasks. A study on the technology of blended learning proved that this method contributes to the formation of students' learning abilities, and increases future teachers' satisfaction and motivation. The analysis of research data proved that the technology is highly appreciated by teachers, provided there is an appropriate level of technical and pedagogical training and proper methodical materials.

**Keywords:** higher education institution, future primary school teacher, professional training, information and communication technologies, digital educational environment, online learning, blended learning, blended learning models, "flipped classroom" technology.

### INTRODUCTION

**Formulation of the research problem.** According to the Law of Ukraine "On Education" and the Concept of the New Ukrainian School, the modern education system is designed to respond to the civilizational and socio-technological challenges of the 21st century. The new content of education is based on the formation of competencies necessary for the successful self-realization of an individual in society (Law of Ukraine "On Education", 2017; Concepts of the New Ukrainian School, 2016). The most important challenge is the transition from the pedagogy of knowledge deficit to the pedagogy of excess knowledge. The COVID-19 pandemic and the war in Ukraine have become additional incentives for the creation of new educational products, in particular for the development of the digitalization of education, the development of blended learning practices. Consequently, new, more complex requirements apply to the professional training of future teachers, in particular primary school teachers. Modern teachers face the task of designing an educational process for students immersed in the world of mobile devices, have many opportunities to get information from various sources and have their own point of view on various problems. A decade ago, the ability to create educational content, discuss scientific and methodical ideas was the prerogative of professionals and scientists, now thanks to powerful, convenient and inexpensive mobile technologies, every student has this opportunity. Students' ability to form and improve educational content together with the teacher, activates learning and changes future teachers' attitude to knowledge, transforming learning into a joint activity in the educational community.

Thus, objectively, it is necessary to understand modern digital didactics, develop measures to support students and teachers, new models of education, etc. Learning and teaching in the digital age is undergoing a fundamental transformation, although cognitive processes of learning in general remain the same, the idea of how to teach, who to teach and what to teach has changed significantly.

Blended learning, which has been actively developing in recent decades, is one of the tools of such a transformation. Blended learning as an educational model appeared naturally when independent study of educational material was combined with classroom or online classes under teachers' supervision..

At the current stage of ICT development, distance learning, e-learning, m-learning, based on the use of modern educational platforms, cloud services, online services, and multimedia digital content, have emerged.

Due to the development of e-learning, blended learning has appeared, which combines various models of the educational process, theory and practice of pedagogy, teaching methods, approaches to assessment using digital tools and relying on student-centeredness, collaboration and the construction of educational experience (Garrison, R., & Anderson, T., & Archer, W., 2010).

**Analysis of scientific research and publications.** In the scientific studies of domestic and foreign scientists, the necessity to implement flexible innovative models of higher education, the priority of using digital teaching tools, and the growing demand for the formation of modern specialists in a digital environment can be clearly seen.



The methodological basis for the study of blended learning is the works of such Ukrainian and foreign scientists as P. Aliatan, S. Berezenska, K. Bugaichuk, N. Vaughan, R. Garrison, S. Zorg, N. Oliynyk, T. Oliynyk, O. Rybalko, N. Syrotenko, A. Stolyarevska, V. Kukharenko, S. Laster, B. Loki, M. Lyubomyrska, L. Lutsevych, F. Maidos, K. Mentile, M. Maurice, L. Rizdvyana, G. Sing, H. Staker, M. Horn, O. Chugai, B. Yarmak and others.

#### **PURPOSE AND OBJECTIVES OF THE RESEARCH**

The research purpose is to analyze the advantages and disadvantages of this technology in the process of professional training of future primary school teachers, based on the study of pedagogical possibilities of the blended learning technology.

**RESEARCH METHODS:** theoretical analysis of psychological and pedagogical literature; analysis of the practical experience of using blended learning technology in the process of professional training of future primary school teachers.

#### **RESULTS OF THE RESEARCH**

Recently, the educational results of future teachers' training increasingly demand to develop digital competences: digital literacy, data analysis, operating digital media, etc. Today, digital tools have a significant impact on educational activities, making them more effective. Phones, laptops, computers, as well as presentations in digital media, software are actively used in the process of training. At the same time, the following factors are important: 1) students' requests are decisive; 2) discipline specificity; 3) pedagogical theories and approaches; 4) the relationship between teaching and students' independent work. As modern student-centered education is focused on the individual student's achievement, when developing it, it is necessary to take into account specific students' individual differences, such as background knowledge of the subject, available media resources, digital literacy level, socio-demographic characteristics, etc.

Students' needs include cognitive (educational progress), activity (creating conditions for active learning) and humanistic (considering the student as an individual, taking into account his/her preferences, interests, culture, life situations) aspects. The success of modern professional training of future primary school teachers is determined by the orientation of the educational process to the formation of a new model of the graduate taking into account the existing lists of competencies in accordance with the new state standards (Professional Standard, 2020; Standard of Higher Education of Ukraine, 2021), and therefore the educational process is completely redesigned to meet the requirements of the new model. Under these conditions, the determination of the system of learning outcomes under the educational and professional program requires teachers' ability to overcome the stereotypes formed in the teaching of some disciplines, purposeful identification and consideration of student curriculum expectations. Taking into consideration these conditions, educational cases are formed on the basis of the implementation of educational innovations, regular revision of educational programs, accentuation of educational results on universal competencies.

Blended learning is an educational concept that combines traditional learning with distance and online methods. A student acquires knowledge in different ways: face-to-face (by communicating directly with teachers and students) as well as independently (using various modern digital technologies). At the same time, it is not an ordinary lesson in the classroom, as the student acquires a part of the educational material using modern gadgets (in a place convenient for him/her, at a time convenient for him/her and at his/her own pace): it is not distance learning, when the student receives little help from the teacher attending an educational institution only to take exams (Technology of blended learning, 2019, p. 11). Foreign scientists define such models of blended learning as the rotational model (Rotation); flexible model (Flex); personally oriented model (A La Carte); model of enriched virtual environment (Enriched Virtual) (Blended Learning Model Definitions, 2022).

Nowadays engagement of students in various types of educational activities is a priority in comparison with direct instruction, active learning prevails over passive. With the transition to blended learning, the idea of designing a logical, well-planned integrated teaching using educational platforms Moodle, LMS and other tools aimed at improving the quality of university education arose. However, students are not always ready for new pedagogical techniques, they can restrain innovations and promote conservative teaching. Therefore, it is necessary to use technologies that contribute to the gradual students' engagement in new formats of education, and require a radical transformation of professional education. These technologies ensure the orientation of the educational process to the preparation of a new model of a graduate taking into account modern standards. These include technologies of active blended learning.

Blended learning is characterized by a wide range of educational environments: classrooms with interactive whiteboards, flipcharts, etc., the Internet (social networks, websites, widgets, etc.), various technical means (tablets, laptops, mobile phones) that make it possible to implement principles of flexibility and mobility of such training. Blended learning as an educational innovation, which has become a school and university reality today, is associated with the integration of the best traditional and innovative electronic and mobile forms of learning, which give students the opportunity to choose the time, place, and pace of independent learning. This is a new pedagogical worldview that testifies to the growing influence of information technologies in education. The constant development of digital competences of participants in the educational process in the field of using ICT, electronic and mobile resources, as well as the development of their professional abilities and skills in the field of blended learning design, indicates that Ukrainian education has reached serious qualitative changes.

Blended learning implies that the emphasis is placed on the learner and his/her educational activities, and not on the technologies used for this. The resources and technologies used in the educational process are determined exclusively in connection with the needs of a certain student or a group of students, taking into account the age, the level of previous training, the necessary content of the study, the available printed or digital resources, etc., the purpose of the study. They do not form educational content, but are only a means for its assimilation. Different degrees of "mixing" can be used according to the audience of learners and their needs. The effectiveness of the implementation of blended learning depends on the harmonious combination of digital technologies and the skill of their use, taking advantage of colleagues' experience and



other specialists in this field, conducting experiments. Blended learning involves the teacher's new role, transferring into a tutor, mentor, facilitator, because one of his/her main goals is to facilitate the learning process, to create a psychologically comfortable learning environment. A facilitator is a guide who supports and accompanies the learner in the process of achieving educational goals, encourages, stimulates, helps in solving educational problems, directs the educational trajectory of the student, provides advisory assistance, etc. (The Flipped Class Learning Model, 2018) Thus, blended learning is not just the use of technical means of learning, that is, the mechanical addition of modern interactive technologies to traditional ones, but a qualitatively new approach that transforms the structure and content of learning, changing the traditional roles of the teacher and the learner, as well as the learning environment (Technology of blended learning training, p. 17).

One of the components of blended learning is the "flipped class" technology - a modern trend and an innovative way of organizing the educational process. "Flipped learning" is an educational model in which the traditional presentation of a lecture is transformed into its discussion, in which debatable issues are revealed, projects are presented, practical work is performed, etc., and the video lecture is a key technology component with this approach (M. Yu. Kademia, 2011, p. 112).

As is known, the "flipped class" differs from traditional education in that the theoretical material is studied by the students independently before the training sessions with the help of materials prepared by the teacher, which give the opportunity to work autonomously, and modern information and communication technologies (interactive materials, audio and video lectures, etc.), and in the classroom, students get an active learning experience in interaction with their classmates and the teacher. During the lesson, the teacher uses the time to answer students' questions, discuss educational problems, work individually with students, organize group work, during which students actively communicate, exchange their knowledge, help each other, create a new educational product, apply the knowledge gained in various educational situations, in activities (laboratory work, experiments, creative tasks, joint research projects, etc). Consequently, the classroom is transformed from a place where learners are passive observers to a space where they are actively involved in dynamic learning collaboration.

The main advantage of the "flipped classroom" is that students acquire a number of competencies of the 21st century, such as the ability to independently solve problems, creativity, cooperation skills, literacy in the field of ICT, etc. Thus, not only the approaches to the organization of the educational process, but also the functions of the teacher and students are radically changing. The teacher ceases to be the central figure of the educational process, the only source and translator of knowledge, who motivates the student to study, as a rule, by one or another means of control.

A student, on the contrary, from a passive listener, poorly motivated to study, takes an active position of a person responsible for his/her education, interested in obtaining professional knowledge and skills, as the work is at a more complex cognitive level (all unclear questions that arise in the process of acquiring new educational material, problems of practical application of knowledge in the future profession, etc.) is done during the lesson. Therefore, the teacher's attention is focused on getting ready for such work in class. At the same time, an equally important task, in addition to the assimilation of professional knowledge and skills, is the organization of the student's educational and cognitive activities in pairs and groups, active work with information, that is, the formation of the ability to lifelong learning. Thus, the information provided to the student is not only used to answer teachers' questions in order to get the highest possible grade. The student uses information for future professional activity, he/she analyzes it, applies it practically, develops cognitive skills based on it, that is, learns how to learn. Every modern specialist, and especially a teacher, must possess such an ability. And it is the "flipped classroom" technology that makes it possible to achieve this goal. Having the opportunity to acquire knowledge at a comfortable pace at a convenient time, students achieve the maximum level of development of cognitive abilities and thinking skills.

The technology of the "flipped classroom" significantly changes the process of traditional assessment, based on the reproduction of knowledge and its application in a well-defined academic situation. Different models of the "flipped class" makes it possible to use a wider arsenal of forms of monitoring students' knowledge depending on the tasks they face. In case the information was not provided by the teacher, but students' task was to find it, the methods used to search for information and the quality of the information itself are evaluated. If the student gets the task of informing the group of the received information starting a discussion, the quality of communication within the group, the contribution of everyone to collective knowledge, and the effectiveness of mutual learning are evaluated. Peer evaluation and self-evaluation are also important.

The "flipped classroom" method as a way of organizing teaching gives students a number of advantages. Observations show that students show great interest in learning the material, they like this learning format, they appreciate the opportunity to learn at their own pace and differentiated approaches. Among the key advantages of the new method, we can also mention the increase in the accessibility of education, it improves the assimilation of new knowledge by students. Among the key advantages of the new method, we can also mention the increase of the accessibility of education, it improves the assimilation of new knowledge by students. When interviewing future teachers about the advantages of this method, they noted that they liked to define their own learning goals, to work out materials on new topics independently, especially additional materials and resources, they were impressed by their own initiative, the ability to build their learning trajectory independently, taking into account the recommendations provided by the teacher, to learn at their own pace, using enough time for it, track their progress and evaluate achievements, monitor the learning process, like to express their own opinion about what they have read, heard, seen, participate in discussions during training sessions. As a result, the students state an increase in the feeling of satisfaction from learning, i.e. positive motivation of the educational process.

The results of the study of the experience of self-study at home indicate that such work is comfortable for students and improves the quality of learning the material in the classroom. Before starting work with the teacher, students get acquainted with the topic that will be discussed in the class, as a result, they feel more prepared and confident in the class. This reduces





the factor of excitement and stress, sets the mood for active participation in the discussion during the class. Some students additionally search for materials related to the topic. They have the opportunity to study at their own pace, in a comfortable place and at a convenient time for them, without feeling stressed, and can return to the material as many times as necessary.

As the survey revealed, the difficulties in teaching students with the help of the "flipped classroom" technology often lie in the fact that some of them are not going to connect their future life with the profession of a teacher and are not motivated to study, therefore, as a rule, they are passive, prefer traditional education, complain about lack of time, technical support, proper workplace, etc. to perform independent tasks. The results of the teachers' survey showed that 27.3% of them already used the flipped classroom technology in their practice. 50% did not have such experience, but had a desire to implement the technology. Thus, 77.3% of teachers were ready to work using the "flipped classroom" method. 22.7% of respondents have heard about this technology, but do not know how to use it. However, the transition to online teaching is often not easy for teachers either, as it is necessary to build new principles of network interaction, new rules of conduct, and roles. The main problems in this case are the feeling of overload (longer working day, constant request for feedback from students, new tools that need to be learned and applied), psychological discomfort associated with placing in a space using educational resources and critical feedback on them, doubts about meeting the expectations of colleagues and students, etc.

Despite certain difficulties (insufficient knowledge of ICT, "labor-intensive" development of educational courses, difficulties with insufficiently prepared students for classes, etc.), the teachers noted that the flipped classroom "gives an opportunity to use the time in the classroom productively", "contributes to an individual approach to students", as well as active participation of weaker students in education." Thus, auditorium work becomes more effective and purposeful.

At the same time, criticism of excessive attention to digital tools can be found in the scientific works of individual authors. Some researchers believe that technologically mediated learning with the use of various educational services is often of a commercial nature and does not contribute to the holistic growth of the individual.

There are calls to be more critical of modern technologies and to pay attention to whether they are really paving the way to the desired future of education (Teräs M., Suoranta J., Teräs H., Curcher M., 2020).

### CONCLUSIONS AND PROSPECTS OF FURTHER RESEARCH

Thus, blended learning is an educational technology that combines teacher-directed learning, online learning, and experiential learning. At the same time, the online environment implements the tasks of motivation, personalization and must meet certain requirements (adaptability, autonomy, instant feedback), and the teacher's role is transforming significantly, they become tutors, mentors, facilitators.

A study devoted to the technology of blended learning showed that this technology contributes to the formation of students' learning abilities, and increases future teachers' satisfaction and motivation.

The analysis of research data proved that this technology is highly appreciated by teachers, provided there is an appropriate level of technical and pedagogical training and proper development of methodical materials.

A comprehensive study and evaluation of the long-term advantages and disadvantages of these methods is necessary for the successful implementation of "flipped classroom technology" and other blended learning technologies in the practice of future elementary school teachers' professional training.

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