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У журналі вміщені наукові статті з актуальних проблем педевтології, в яких розкриваються поточні глобальні події у галузі освіти, питання євроінтеграційних процесів та їх впливу на розвиток освіти, проблеми підготовки вчителя, загальні питання шкільної освіти та навчання.

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CURRENT GLOBAL DEVELOPMENTS IN EDUCATION

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E-learning and artificial intelligence as key factors in the digital transformation of higher education: challenges, opportunities and development prospects

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Abstract

The article examines the role of e-learning and artificial intelligence in the digital transformation of higher education, addressing the contemporary challenges and demands of the digital society. In the context of globalization and rapid technological progress, educational institutions are obliged not only to transfer knowledge, but also to form students' flexibility and ability to adapt to dynamic conditions. The authors note that the digital transformation of education provides increased accessibility, flexibility and inclusiveness of the educational process, opening up new opportunities for individualization of learning. E-learning is considered as a tool that contributes to the formation of important skills and knowledge through online courses, interactive modules, virtual laboratories and other means that provide flexible access to educational materials and support for the individual pace of information assimilation. In addition, the article highlights the impact of artificial intelligence on changing educational approaches, emphasizing its importance in creating adaptive learning systems that adapt to the knowledge, needs and interests of each student, contributing to increasing motivation for learning and facilitating the assimilation of the material. Particular attention is paid to the challenges that teachers and students face in the process of digitalization of education. The use of the latest technologies not only simplifies routine tasks, but also requires the development of new skills in teachers. It is emphasized that teachers must rethink their role in the educational process and develop the ability to work with digital tools, as their role changes from a traditional source of knowledge to a mentor or facilitator who helps students effectively interact with technology. In addition to the opportunities, the article analyzes the risks associated with the digitalization of education, such as data privacy, ethical issues, as well as the psychological aspects of the impact of technology on students. The authors emphasize the need for further scientific research in the field of digital transformation of education, in particular in the aspects of personalization, reducing cognitive load and ensuring equal access to educational resources. The proposed prospects for scientific research include the development of recommendations for educational institutions on the effective implementation of e-learning and artificial intelligence, taking into account ethical and pedagogical aspects.

Keywords: e-learning, artificial intelligence, digitalization of education, digital transformation, digital transformation of higher education

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Е-навчання та штучний інтелект як ключові фактори цифрової трансформації вищої освіти: виклики, можливості та перспективи розвитку

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Анотація

Стаття присвячена аналізу ролі е-навчання та штучного інтелекту як ключових складових цифрової трансформації вищої освіти, що відображають сучасні виклики та потреби цифрового суспільства. В умовах глобалізації та швидкого технологічного прогресу навчальні заклади зобов'язані не тільки передавати знання, але й формувати у студентів гнучкість та здатність адаптуватися до динамічних умов. Автори зазначають, що цифрова трансформація освіти забезпечує підвищення доступності, гнучкості та інклюзивності освітнього процесу, відкриваючи нові можливості для індивідуалізації навчання. Е-навчання розглядається як інструмент, що сприяє формуванню важливих навичок і знань за допомогою онлайн-курсів, інтерактивних модулів, віртуальних лабораторій та інших засобів, які забезпечують гнучкий доступ до навчальних матеріалів і підтримку індивідуального темпу засвоєння інформації. Окрім цього, стаття висвітлює вплив штучного інтелекту на зміну освітніх підходів, підкреслюючи його значення у створенні адаптивних навчальних систем, що підлаштовуються під знання, потреби та інтереси кожного студента, сприяючи підвищенню мотивації до навчання і полегшуючи засвоєння матеріалу. Особлива увага у статті приділяється викликам, з якими стикаються викладачі та студенти у процесі цифровізації освіти. Використання новітніх технологій не тільки спрощує рутинні завдання, а й вимагає розвитку нових навичок у педагогів. Наголошується, що викладачі повинні переосмислити свою роль у навчальному процесі та розвивати здатність працювати з цифровими інструментами, оскільки їхня роль змінюється з традиційного джерела знань до наставника чи фасилітатора, який допомагає студентам ефективно взаємодіяти з технологіями. Крім можливостей, стаття аналізує ризики, пов'язані з цифровізацією освіти, такі як конфіденційність даних, етичні питання, а також психологічні аспекти впливу технологій на студентів. Автори наголошують на необхідності подальших наукових досліджень у сфері цифрової трансформації освіти, зокрема в аспектах персоналізації, зниження когнітивного навантаження та забезпечення рівного доступу до освітніх ресурсів. Запропоновані перспективи наукових досліджень включають розробку рекомендацій для освітніх закладів щодо ефективного впровадження е-навчання та штучного інтелекту з урахуванням етичних та педагогічних аспектів.

Ключові слова: е-навчання, штучний інтелект, цифровізація освіти, цифрова трансформація, цифрова трансформація вищої освіти

Statement of the problem. The evolving digital society imposes new demands on the educational system, particularly in higher education. Amid globalization and the rapid advancement of technology, the educational process must extend beyond mere knowledge transfer, fostering in students the skills needed to navigate and adapt within a constantly evolving environment. Digital transformation, which is actively reshaping various domains of human activity including education presents new opportunities to enhance the efficiency, accessibility, flexibility, and interactivity of learning. Central to this transformation are e-learning and artificial intelligence (AI), which

significantly impact traditional teaching and learning approaches, enabling a tailored, student-centered educational experience.

The urgency of digital transformation in higher education is underscored by the accelerating pace of technological development, which necessitates that both educators and students acquire a suite of new competencies, particularly those related to effective engagement with digital environments and tools. E-learning facilitates the acquisition of essential knowledge and skills by leveraging online courses, virtual laboratories, interactive modules, and other resources, which allow students flexible, anytime-anywhere access to educational content, thus supporting individualized learning paces. This adaptability has become especially pertinent in light of the COVID-19 pandemic, which dramatically increased the need for remote learning solutions (Lazarenko & Hapchuk, 2023).

AI, with its capabilities for automation and personalization, has the potential to redefine conventional educational methodologies. AI-driven systems enable adaptive learning environments that adjust to each student's knowledge level, interests, and learning needs, which can enhance motivation and improve comprehension. Additionally, AI provides real-time feedback, aids in tracking academic progress, and offers tailored support for students with diverse learning backgrounds, promoting a more responsive and effective educational experience aligned with contemporary pedagogical paradigms (Chen et al. 2023).

Digital transformation also profoundly influences educators, as these new technologies not only simplify routine tasks such as grading but also prompt the development of innovative teaching methods. Educators must be prepared to integrate digital tools into their practice and understand how best to leverage these technologies to optimize learning outcomes (Zheng, 2024). This evolution necessitates ongoing professional development in digital competency, as well as a redefined educational role in which teachers serve more as mentors and facilitators, guiding students in a technology-enhanced learning environment.

Given the challenges and potential of digital transformation, rigorous research into the integration of e-learning and AI in higher education is essential. Such research can advance the effectiveness of educational practices and support students' adaptation to a digitalized world where they are empowered to thrive professionally. It is equally important, however, to consider the risks and limitations inherent to educational digitalization, including potential technical issues, ethical concerns such as data privacy, and psychological factors like decreased motivation stemming from limited teacher-student interaction (Park et al., 2024). Addressing these challenges is not only relevant but also crucial to developing a resilient and effective educational system capable of responding to the demands of the digital era.

Analysis of recent research and publications. Numerous aspects of employing e-learning and AI as pivotal elements in the digital transformation of higher education have been extensively explored by researchers. Key areas of focus include the personalization of learning (Bates, 2015; Carmi, 2024; Geng, 2024), as well as the use of AI in monitoring and evaluation processes (Alwerthan, 2024; Zhou, 2024; Luckin et al. 2016; Martinez-Garcia et al. 2023), providing support in educational activities (Chen et al. 2023; Fischer et al. 2024; Poseletska et al., 2020), and enhancing the accessibility of education for diverse populations (Ding et al. 2024; Ge & Wang, 2018; Lazarenko & Hapchuk, 2023; Zheng, 2024).

Studies highlight the application of AI for automated knowledge assessment and progress tracking, significantly alleviating educators' administrative burden while ensuring greater objectivity in evaluations. Moreover, AI serves as a valuable tool for student support, offering functionalities such as chatbots capable of assisting with problem-solving, clarifying complex concepts, and streamlining organizational aspects of the learning process. These chatbots deliver real-time feedback, enabling students to effectively engage with learning materials a feature of particular importance for remote learners with limited teacher interaction (Ding et al. 2024; Ge & Wang, 2018; Lazarenko & Hapchuk, 2023; Zheng, 2024).

In addition, research underscores the transformative potential of e-learning and AI in expanding access to quality education. Online platforms, including massive open online courses (MOOCs), alongside the integration of translated materials and subtitles, create inclusive opportunities for learners from geographically remote areas and individuals with physical disabilities. Such innovations contribute to bridging educational gaps and promoting equitable access to

knowledge across diverse demographics (Alwerthan, 2024; Zhou, 2024; Luckin et al. 2016; Martinez-Garcia et al. 2023).

The purpose of the article is to undertake a comprehensive analysis of the influence of e-learning and AI on the digital transformation of higher education. It seeks to identify critical opportunities for enhancing educational quality and efficiency while addressing potential risks and challenges faced by various stakeholders in the educational ecosystem. The primary impetus for this analysis lies in the imperative to develop practical recommendations for the effective integration of digital technologies within educational institutions, ensuring a balanced approach that incorporates both technological advancements and pedagogical considerations in the digital transformation process.

Summary of the main material. The primary focus of this research is the analysis of the influence of e-learning and AI on the digital transformation of higher education, with an emphasis on how these innovations are reshaping the structure and methodologies of learning. The analysis is framed around exploring various dimensions of technology implementation, including its potential for personalizing and adapting educational processes. Additionally, the study investigates the opportunities that digital tools offer for enhancing the accessibility and flexibility of learning (Alwerthan, 2024).

The digital transformation of higher education reflects an aspiration to establish new forms of interaction between students and knowledge, with a central emphasis on fostering students' ability to independently acquire knowledge. The integration of e-learning not only facilitates the use of virtual educational resources but also transforms teaching approaches, making them more interactive and flexible. E-learning encompasses a range of technological formats, such as video lectures, interactive exercises, online assessments, discussion forums, as well as virtual laboratories and simulations (Martinez-Garcia et al. 2023; Ge & Wang, 2018).

A key advantage of e-learning is its ability to expand access to education for students from diverse regions and socio-economic backgrounds. This model allows learners to progress at their own pace, which is particularly valuable for those balancing studies with work or other obligations. Studies indicate that access to online courses and massive open online courses (MOOCs) enables students to benefit from the expertise of leading universities and professionals, irrespective of geographical location. Furthermore, e-learning enhances student mobility, as it removes the requirement for physical presence in traditional classroom settings, thus broadening opportunities for acquiring knowledge (Zhou, 2024).

One of the most significant advancements in digital transformation is the application of AI to personalize the learning process. Machine learning algorithms facilitate the development of adaptive educational platforms that dynamically respond to each student's knowledge level, learning pace, and individual needs. For instance, adaptive learning systems can automatically identify areas of weakness in a student's understanding and recommend supplementary resources to address these gaps. This approach enhances the effectiveness of learning by enabling students to progress at their own pace, thereby mitigating the risks of cognitive overload or disengagement with overly familiar material (Bates, 2015; Millidonis et al. 2023; Slushny et al., 2020).

AI technologies also enable the implementation of “learning analytics”, which involves collecting and analyzing data on students' learning behaviors. This analytical process provides insights into individual progress, measures engagement within the course, and identifies topics that present particular challenges. For example, AI-driven platforms can track metrics such as time spent on specific topics, performance on assessments, and patterns of interaction, thereby constructing an objective and comprehensive profile of each student's academic development (Poseletska et al., 2020; Carmi, 2024).

Moreover, AI supports the creation of sophisticated recommendation systems that suggest tailored learning materials aligned with a student’s interests and performance. For example, a student encountering difficulties with a specific topic might receive recommendations to view targeted video lectures or complete additional practice tests. By leveraging these capabilities, AI technologies contribute to a more interactive and individualized learning experience, fostering personalized academic growth and enhancing student engagement (McFarlane, 2019).

The integration of chatbots and virtual assistants into the learning process has recently gained significant traction as a means of supporting students. These AI-powered tools can address routine inquiries, assist with organizational tasks, and provide clarifications on educational content. By offering round-the-clock assistance, virtual assistants reduce the workload of educators while enhancing the efficiency of the educational process. Additionally, chatbots serve as supplementary resources for reinforcing knowledge, enabling students to engage with mini-tests or interactive exercises designed to consolidate their understanding (Ding et al. 2024).

For instance, some higher education institutions have implemented chatbots capable of automatically grading straightforward tasks, such as multiple-choice questions, and delivering immediate feedback on completed assignments. This functionality allows students to promptly evaluate their knowledge and address errors, thereby facilitating a more effective learning experience (Luckin et al. 2016).

The integration of e-learning and AI is also redefining the educator's role, transitioning it from that of a traditional knowledge provider to that of a facilitator, mentor, and consultant. In this capacity, educators guide students in navigating complex information landscapes and support them in developing autonomous learning skills. However, to fully leverage digital tools, educators must acquire advanced competencies, including proficiency in working with adaptive learning platforms, chatbots, and analytics tools for tracking and enhancing student progress (Fischer et al. 2024).

A significant challenge in the digital transformation of higher education is the imperative to enhance teachers' digital literacy. This extends beyond technical proficiency with digital tools to include a nuanced understanding of pedagogical strategies for their effective integration. Educators must learn how to incorporate these tools into the learning process in ways that complement, rather than replace, traditional teaching methods. As noted by Geng (2024), the mere availability of digital resources does not ensure their effective utilization; the success of digitalization ultimately hinges on educators' readiness to continuously develop their skills and adapt to emerging technologies (Geng, 2024).

Digital transformation has the potential to significantly enhance the quality and accessibility of education by providing flexible and convenient learning opportunities for students. E-learning enables learners to study from any location and at their own pace, an advantage particularly relevant for those balancing education with work or other commitments. Furthermore, MOOCs and other digital resources broaden students' access to diverse disciplines, fostering greater knowledge acquisition and increasing overall educational mobility (Ge & Wang, 2018).

Despite these advantages, the digital transformation of higher education also brings challenges, particularly in addressing disparities in access to digital technologies. Limited technical infrastructure or insufficient internet connectivity can hinder students from remote areas or economically disadvantaged groups from fully leveraging the benefits of e-learning. Mitigating this inequality necessitates concerted efforts from both governments and educational institutions to create equitable conditions that ensure all students have access to the tools and resources necessary for effective learning (Chen et al. 2023).

The potential of AI and e-learning presents expansive prospects for the continued evolution of the digital transformation of higher education. In the coming years, advancements in AI technologies are anticipated to further enhance adaptive learning platforms, thereby advancing the personalization of education while fostering new opportunities for interactive and collaborative learning. Future developments may include the refinement of educational data analytics systems, enabling educators to make data-informed decisions tailored to the specific needs of students (Millidonis et al. 2023).

The findings of this study underscore that digital transformation particularly through the integration of e-learning and AI holds the capacity to drive significant qualitative improvements in higher education. However, the success of these transformations will hinge on the ability of educational institutions to effectively respond to contemporary challenges, cultivate digital competencies among educators and learners, and ensure equitable access to digital tools and resources (Chen et al. 2023).

Conclusions. The findings of this study highlight that the digital transformation of higher

education, particularly through the integration of e-learning and AI, presents substantial opportunities for enhancing the quality, flexibility, and accessibility of educational processes. However, this transformation is not without its challenges, which necessitate further investigation and the development of effective strategies for the seamless incorporation of emerging technologies into educational practice. This concluding section synthesizes the key outcomes of the study and outlines potential avenues for future research that may facilitate the successful implementation of digital transformation in higher education.

The application of e-learning and AI technologies enables educational institutions to develop flexible and inclusive educational models, particularly benefiting students who face constraints in attending in-person classes due to geographical, socio-economic, or financial barriers. The study's results underscore the capacity of digital technologies to enhance educational mobility, allowing students to access learning opportunities at a time and place that suits their needs. AI-powered adaptive learning platforms further optimize the educational process by tailoring instruction to the individual requirements of each student, thereby increasing efficiency. A personalized learning approach accommodates diverse learning paces, preparation levels, and interests, ultimately boosting student motivation and improving learning outcomes (Lazarenko & Hapchuk, 2023).

Moreover, digital technologies are redefining the role of educators, transitioning them from traditional sources of knowledge to facilitators, mentors, and coordinators of the learning process. This shift emphasizes the need for teachers to develop competencies in guiding students through technology-enhanced, student-centered learning environments. Future research should focus on addressing the challenges associated with the digital transformation of higher education, including equitable access to digital resources, the ethical implications of AI integration, and the development of effective pedagogical frameworks for technology adoption. By exploring these areas, scholars can contribute to the creation of robust, inclusive, and adaptive educational systems that align with the demands of the digital age.

The digital transformation of higher education, facilitated by e-learning and AI, represents a pivotal trajectory for advancing the quality, accessibility, and interactivity of educational processes. However, the effective realization of this transformation necessitates continued research to address existing challenges and to develop more robust and efficient models of learning.

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New aspects of the methodology of performing a scientific literature review in pedagogical research taking into account digitalization processes

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Abstract

The article is devoted to the study of new approaches to solving the urgent problem of increasing the efficiency of processing the source base of scientific research results in the field of social sciences, in particular Pedagogy, in modern conditions of expansion of the research opportunities spectrum due to digitalization. The authors give a comprehensive description and present a holistic juxtaposition comparison of the five most common types of scientific literature review in pedagogical science: narrative, systematic, semi-systematic, integrative, and meta-analysis based. Having analyzed the Ukrainian and foreign scientists' works on the problem under investigation, the authors found out the peculiarities of the new methodology of searching and analyzing the results of existing pedagogical research. The purpose of the study was to develop methodological recommendations for the implementation of various strategies and approaches to the scientific literature review as an effective and fruitful research method in the study of educational problems. Researchers have proven that under the influence of digitalization processes, not only the paradigm of scientific research is gradually changing, but also significant changes are being made in the methodology of carrying out a scientific literature review. These positive changes have made the process much faster, more convenient and more accurate. Modern search tools allow a researcher to focus on analyzing the content of information, significantly reducing the technical burden associated with searching and organizing data.

Keywords: source base, methodology, scientific literature, review of sources, pedagogical research, digitization

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Нові аспекти методології здійснення огляду наукової літератури в педагогічних дослідженнях з урахуванням процесів цифровізації

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Анотація

Стаття присвячена вивченню нових підходів до вирішення нагальної проблеми підвищення ефективності роботи із джерельною базою результатів наукових досліджень у галузі суспільних, зокрема педагогічних, наук в сучасних умовах повсюдного розширення спектру дослідницьких можливостей завдяки цифровізації. Автори дають вичерпну характеристику та проводять зіставне порівняння п'яти найбільш поширених у педагогічній науці типів огляду наукової літератури: наративного, систематичного, напівсистематичного, інтегративного та на основі мета-аналізу. Проаналізувавши роботи вітчизняних і закордонних вчених щодо заявленої проблематики, автори з'ясували особливості нової методології пошуку й аналізу результатів наявних педагогічних досліджень з метою розробки рекомендації щодо застосування різних стратегій і підходів до огляду наукової літератури як дослідницького методу у вивченні проблем освіти. Дослідниками доведено, що під впливом процесів цифровізації поступово змінюється не лише парадигма наукового пошуку, а й вносяться істотні зміни в методологію здійснення огляду наукової літератури. Ці позитивні зміни зробили процес виконання значно швидшим, зручнішим і точнішим, а сучасні інструменти пошуку дозволяють зосередити увагу на аналізі змісту інформації, суттєво зменшуючи технічне навантаження, пов'язане з пошуком та організацією даних.

Ключові слова: джерельна база, методологія, наукова література, огляд джерел, педагогічне дослідження, цифровізація

Problem setting. Every pedagogical research is a continuation of previous scientific investigations. Therefore, the abilities to search, retrieve, analyze, compare, and generalize scientific information are important for a teacher-researcher, as well as for any scientist in any field. No less valuable is the skill to carry out a critical review of previously performed investigations by other scientists.

Processing large arrays of scientific information is traditional when writing articles, monographs, dissertations, course and diploma papers, other qualifying works, where it can comprise about 20% of the paper's main body. A literature review is generally a systematic way of analyzing and summarizing previous scientific research (Tranfield, et al., 2003). A detailed and correctly systematized analysis of the previously completed research contributes to the further theory development and can create a solid basis for solving different practical tasks and problems (Webster, & Watson, 2002).

By comparing various standpoints and combining the conclusions from many empirical studies of the past, it is possible to obtain highly effective tools for solving new issues arising in society in general and in the field of education in particular.

The Analysis of Sources and Recent Research. The results of the scientific information reviews on a particular problem may vary depending on whether an author is working at a usual review article, or at an article representing owns research results, or at a dissertation section. Recommendations for each of these cases can be found on the websites of universities and R&D institutions. In Ukraine the general methodology for carrying out previously conducted

researches reviews and analyses is presented mainly in textbooks and manuals on the methodology of scientific research. However, they offer only trivial recommendations for the organization and implementation of this type of scientific activity and do not take into account the subtleties of different types of reviews as well as ICT and digital tools capabilities (Kolomiiets, & Gromov, 2017).

Unfortunately, in Ukraine there are not plenty of published studies on the modern methodology of reviewing available research on Pedagogy. The authors found only a few publications by the Ukrainian scholars, in which the specificity of the pedagogical research methodology is indicated, in particular: the philosophical foundations of scientific research in the field of education (Ogneviuk, 2009); sociological determinants of theoretical and methodological problems of education (Chepak, 2011); feasibility of applying systemic and synergistic approaches to educational problems (Sysoieva, 2012); analyzing of the scientific problem research state in the field of Comparative Education (Hrykov, 2015). There are also several textbooks and manuals on the methodology of scientific-pedagogical research for pedagogical students (Goncharenko, 2008; Sysoieva, & Krystopchuk, 2013).

Nevertheless, the society is developing, scientific information access technologies are being improved, and data volumes are constantly growing. Therefore, the methodology of scientific research in the field of Pedagogy is also undergoing changes.

In our opinion, the most detailed and up-to-date is the textbook by Zavgorodnia and Strazhnikova. However, insufficient attention is paid to the matter of research analysis methodology (Zavgorodnia, & Strazhnikova, 2021).

We consider the textbook by Dr. Alan Gow from the University of Edinburgh to be the most detailed in terms of the literature review methodology, but it does not reflect the specifics of pedagogical research (Gaw, 2021).

We believe that young researchers might get use of the works on the typology of different types of literature reviews, which helps to choose the appropriate methods depending on the research questions (Grant, & Booth, 2009), the methodology of systematic reviews in the social sciences with an emphasis on the practical aspects of their implementation (Petticrew, & Roberts, 2006), and detailed instructions for carrying out and structuring a systematic literature review (Moher, et al, 2009a).

Among the works by foreign researchers, we found several publications that specifically take into account the peculiarities of carrying out literature reviews in the field of pedagogical research. In particular, Kennedy's article discusses the principles of conducting literature reviews in educational research, especially regarding the variety of sources and approaches that can be applied in the educational context (Kennedy, 2007). Biesta emphasizes the fact that educational research cannot be based only on quantitative data, and stands on the importance of taking into account value aspects in pedagogical research and their reviews (Biesta, 2010). Suri's article examines ethical aspects of carrying out systematic reviews in education, which is particularly important in educational research because of the sensitivity of data and the impact on the learning process participants (Suri, 2020). These publications emphasize the importance of adapting common methodological approaches to conducting literature reviews in the context of modern pedagogical realities.

The Purpose of the article is to find out the features of the new methodology for the pedagogical research analysis and provide recommendations for various techniques of literature reviews as an effective research method in the study of current educational issues.

The Results of the Research. The review of pedagogical research has certain specificity in comparison with other fields due to the educational field's peculiarities. Context is especially important in pedagogical research. This includes taking into account the social, cultural and institutional factors that might influence learning and teaching. In other fields (natural sciences, exact sciences), context has less influence because the research is often based on the controlled experiments or objective data. Pedagogical research often needs taking into account such unstable and unpredictable variables as education policy, social inequality, individual characteristics of students and teachers.

Pedagogical research is often based on qualitative methods (interviews, observations, case studies, students' works analyses), which distinguish it from other disciplines that rely more on quantitative methods. This is explained by the need to investigate such deep and subjective aspects of learning as motivation, emotional state, and personal beliefs of students and teachers.

In pedagogical research, the connection between theory and practice plays a crucial role. Educational

innovations as well as new approaches to teaching and learning should not only be theoretically grounded, but also tested in real classroom conditions. In other sciences, particularly exact ones, theory can often exist independently of practical application for a long time.

Pedagogical research often involves work with children and adolescents, which requires particular attention to ethics. Researchers must ensure the protection of participants' confidentiality and care for their psychological well-being. This sets an additional level of complexity that may be less decisive in other fields. The results of pedagogical research should have practical value for the educational system. A literature review in pedagogical sciences is often aimed at analyzing of how research findings can be implemented into both curricula (in particular) and educational policy (in general).

So, the specificity of literature reviews in pedagogical research is their contextual approach, use of qualitative methods, and emphasis on practical application. Therefore, we need a new methodology for carrying out a review of studies on those issues, emergence of which may be often determined by new factors that never existed before (globalization, digitalization, pandemic, martial law, artificial intelligence, etc.).

The following five types of scientific literature reviews are most common in Pedagogy: narrative, systematic, semi-systematic, integrative, and meta-analysis based.

Narrative type is used when the goal is to provide general information about a certain research question or problem. Usually, this type is used to assess the state of problem research and update knowledge on a certain topic. It is used to create an agenda for further research, identify gaps in research, or simply to discuss a specific issue.

Systematic type has clear requirements for the search strategy and selection of scientific publications, which are called inclusion criteria (time period, country, research objects, social conditions, etc.). It can be effective in summarizing the results of research on a specific problem. On its basis, it is possible to obtain evidence of the effectiveness of previously developed pedagogical recommendations, which may become the basis for their further use in practice. Adherence to clear inclusion criteria ensures objective and reliable findings (Moher et al., 2009b). Systematic type is often a method for identifying and critically evaluating the results of previous research on a particular problem, and for collecting and analyzing data for its solution (Liberati, et al., 2009). Its goal is to identify all empirical evidence that meets predetermined inclusion criteria to answer a specific research question or hypothesis.

Systematic type has several advantages. It can be used to determine whether an effect is consistent across peer-reviewed studies and to determine what further studies are needed to demonstrate this effect. This type is also useful for identifying characteristics (historical, cultural, economic, political, etc.) that influence the phenomenon under study (Davis et al., 2014).

Semi-systematic type is appropriate if the problem is too broad in historical, geographical, cultural, and conceptual terms. It is used where both a significant number of factors that caused the problem and theoretical and methodological approaches to its solution are possible. This type is used for aspects that have been conceptualized differently; studied by different groups of researchers in different disciplines; and as a result, hinder the process of a full systematic review (Wong et al., 2013).

Since it is impossible to review every single article that is relevant to the topic, a different strategy is required. Therefore, one evaluates how research in the chosen field has progressed over time or how the topic has developed in research traditions. In general, a semi-systematic review aims to identify and understand all potentially relevant research traditions appropriate to the topic under study and to synthesize them through meta-narratives instead of effect size measurements (Wong et al., 2013).

This type provides a better understanding of complex areas. However, covering broad topics and different types of research, this approach implies that the research process should be transparent and have a developed research strategy. A clear strategy should enable other researchers to judge whether the ideas are sufficiently reasoned, and whether they are justified from a methodological point of view. Semi-systematic (also known as semi-structured) type is often combined with such research methods as content analysis, generalization, comparison, classification, etc. This type can be useful for identifying themes, theoretical perspectives, or general issues within a particular problem or for identifying the components of a theoretical concept (Ward, et al., 2009).

Using such an approach can result in: chronology of a specific problem development; diagrams, maps, and graphs; assessment of the problem solving state at a specific stage; plan or strategy for further research (Snyder, 2019).

Integrative type is closely related to the semi-systematic type and can be useful when scientists analyze research on a specific problem in different but related fields (philosophy, psychology, pedagogy, cultural studies, sociology) in order to create new theoretical models and develop prospects for further research. This type provides a basis for building a new conceptual model or theory. It can be valuable when it is necessary to reflect the development of a particular research field over time or to demonstrate the interdisciplinary nature of a specific problem. Integrative review usually has the purpose of evaluating, critiquing, and synthesizing the literature on a research topic in such a way as to enable the emergence of new theoretical frameworks and perspectives (Torraco, 2005).

Most integrative reviews are designed to address traditional topics or emerging topics. In the case of traditional topics, the purpose is to review the knowledge base, critical analysis and rethinking, extrapolation to new conditions of social development in order to expand the theoretical basis of a specific topic. For new topics, the goal is to create initial or preliminary conceptualizations and theoretical models. This type requires a more critical data analysis, as the goal is not to cover all articles on the topic, but to combine perspectives and ideas from different fields or research traditions.

Integrative review's general purpose is to critically analyze and explore the main ideas and relationships between previously proposed ways of solving a problem. This requires conceptual and predictive thinking skills, as well as transparency and clarity in documenting the process and results of the analysis (MacInnis, 2011). Any integrative review should lead to an expansion of general knowledge and theoretical foundations, rather than a simple description of existing research. That is, it should not be descriptive or historical, as in a narrative review, but should create a new conceptual framework or theory. Using this type, researchers clearly report how the research was conducted, what criteria were used to select the articles, how the integration was done (Torraco, 2005).

Meta-analysis based review is a relatively new type to Pedagogy. In other fields (medicine, economics) meta-analysis is a statistical method of combining the different studies results to compare and identify patterns, discrepancies or connections that arise in the context of several studies on the same topic (Davis et al., 2014). In meta-analysis, each primary study is coded and the results are subsequently transformed into a common matrix to calculate the overall effect size. Meta-analysis is sometimes used to integrate the results of included studies. However, for conducting any meta-analysis, the included studies must have a common statistical measure (effect size) to compare the results. Therefore, in Pedagogy, where different methodological approaches to carrying out research are possible, meta-analysis is difficult to perform.

In general, the quality of any of the described types depends on proper planning, breadth of material coverage, depth of analysis, and logic and clarity of presentation (Moher et al., 2009a). When properly performed, a review of any type can become an effective method of achieving the scientific research goals. Sometimes the review itself can be the purpose of the research. This happens when a researcher needs to evaluate theory or evidence in a particular field, or to test the validity or accuracy of a particular theory, or to compare several theories (Tranfield et al., 2003).

The review type choice depends on the scientific research topic, the research problem and the set tasks. Sometimes it is impossible to use only one type, and sometimes a combination of all types may be the only appropriate variant. Practice witnesses that systematic type is the most accurate one, but its accuracy is the greater the narrower a research question is.

Therefore, a semi-systematic review is used more often, but it requires the development and description of clear steps for its implementation (Wong та ін., 2013). The researchers need to develop own standards and detailed plans to ensure accurate coverage of relevant sources and to be able to answer the research questions. When a clear algorithm is developed and followed, a semi-systematic review can be no less effective a research tool for complex and broad topics than a systematic review.

In the case of an integrative review, even more responsibility and skill is required of researchers, as there are no clear standards and guidelines to follow when conducting such a review (Torraco, 2005). However, a successful integrative review may contribute to emergence of a new conceptual model or theory.

Regardless of which approach is used to carry out a review, it is necessary to take five main steps: development of inclusion/exclusion criteria; defining the review's volumes and topic; processing and analysis of covered sources; comparison and generalization of the results; writing a review text.

The analysis of various standards and recommendations for carrying out literature reviews (Liberati et al., 2009; Tranfield, et al., 2003; Wong, et al., 2013) showed that at the stage of review developing the researcher should set the following questions:

- Is this review really necessary?
- What contribution to science will be made with its help?
- What potential audience will it be addressed to?
- What specific purpose will be achieved?
- What research question(s) will be answered?
- What type of review should be chosen to achieve the goal best?
- What is the search strategy for this particular type of review?
- What are the search terms, databases, and inclusion and exclusion criteria?

At the stages of processing and analysis of sources, the researcher documents basic information, provisions, conclusions; evaluates the quality of the search and analysis process; adjusts the previously developed search plan, expands the scope of sources. At the stage of structuring and writing, the main issues are the review's form and content.

In order to avoid unnecessary work and mistakes, it is worth taking into account the existing reviews on the given problem, to evaluate the number of these studies, to identify possible gaps, to formulate the purpose of own research and the specific research question that will be addressed in the review. All this will help to choose the most appropriate type of review.

After defining the research question and choosing an approach to the general review, a search strategy must be developed to identify relevant sources. This includes selecting search keywords and relevant databases, as well as defining inclusion and exclusion criteria. The keywords selection is especially important, since thousands of scientific works can be found for a certain phrase, and therefore it is worth narrowing down the search spectrum. To do this, we recommend choosing phrases from a larger number of words, but imposing restrictions on publication dates, specifying the type of publications, etc. All these elements of the search strategy and the inclusion and exclusion criteria should be specified in the research methods. In addition, the choice of a specific strategy should also be reasoned and logically motivated.

At the current stage of society, science and technology development, the review of literature acquires new directions and characteristic features. The modern society issues are often interdisciplinary. Their solution is impossible without taking up a comprehensive approach and the involvement of interdisciplinary research teams (Kolomiiets, et al., 2021). Therefore, in modern conditions, a review of literature from only one field of knowledge loses its effectiveness. That is, meta-level reviews are necessary. This will help to see old problems in new realities; to discover new problems that humanity has not faced before; to build new conceptual models for solving pedagogical problems, taking into account as many factors as possible (social, economic, political) that caused to their emergence.

The ICT development has significantly expanded access to various sources of scientific information (international libraries, institutional repositories, scientometric databases). Therefore, the process of searching sources is accelerated, but its strategy is complicated. By keywords, you can find not only the needed scientific information on the Internet, but also advertising, information from commercial sites, as well as low-quality scientific works. Therefore, the first task for the researcher is the selection of databases that contain confirmed reliable information. Such databases are, for example, Scopus, Web of Science, EBSCOhost, Research4life, Science Direct, and Google Scholar (Kolomiiets, & Gromov, 2017).

Such digital tools as Rayyan, Covidence, or EndNote allow automating part of the review process, including managing bibliographic data, selecting articles meeting the set criteria, and organizing them. Text analysis and data processing tools also facilitate meta-analyses and faster synthesis of results.

Such tools for bibliometric analysis as VOSviewer and CiteSpace can help with analyzing large arrays of scientific data, identifying key research directions and tracking collaborations between authors. They allow building citation networks, identifying trends, and visualizing the structure of scientific knowledge. This makes the review more in-depth and systematic.

Other tools, as Zotero, Mendeley, and RefWorks can help with automating the processes of searching, storing, organizing, and citing. This significantly simplifies the management of large numbers of scholarly sources and helps ensure that bibliography lists meet the different citation styles requirements (APA, MLA, Chicago etc.).

The Open Access movement is also an important aspect of digitization. Thanks to this, many scientific articles are available for free, which significantly

lowers the barriers for researchers, especially from regions with limited research funding.

Conclusions. Digitization has significantly changed the procedure for carrying out scientific literature reviews, making the process more efficient, accessible and automated. Thanks to digitization, researchers have gained access to a huge number of scientific publications through specialized databases. Such resources provide an opportunity to quickly find relevant articles, books and other scientific publications on any topic. This significantly speeds up the literature selection process compared to traditional methods that required physical access to libraries.

Thanks to machine learning algorithms and artificial intelligence tools, the search for relevant scientific publications has become more accurate and faster. Search systems can select articles based on keywords, citations, or even research context. This greatly facilitates the literature search and increases the relevant sources selection accuracy.

Consequently, digitization has brought significant changes to the methodology of carrying out reviews of scientific pedagogical literature, and the automated tools allow researchers to focus more on content analysis, reducing the technical tasks associated with searching and organizing data.

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Application of educational simulations in the process of adult education

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Abstract

The article analyzes modern research on the application of simulation games in the process of adult education, in particular in such areas as medicine, aviation, jurisprudence and pedagogy. The advantages of such training methods are noted, in particular, the development of practical skills in a safe environment. The article describes in detail the different types of simulations, such as virtual reality (VR), augmented reality (AR), role-playing and computer simulations, and provides examples of their successful use. In particular, the use of the Body Interact platform for the training of medical professionals, flight simulators for pilot training, and role-playing games in the simulation of court processes and the training of teaching staff are analyzed. It is noted that one of the key advantages of educational simulations is the opportunity to practice practical skills in a safe environment, which is especially relevant for professions that require a high level of responsibility. Also, simulations promote the development of critical thinking, decision-making and teamwork. The article emphasizes the importance of integrating simulation technologies into the educational process. The authors offer recommendations on the development of effective simulation scenarios, the selection of appropriate equipment, and the organization of the educational process. The authors reveal the potential of educational simulations to increase the effectiveness of adult learning and provide recommendations for the optimal integration of these technologies into the educational process.

Keywords: educational simulations, adult education

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Застосування освітніх симуляцій в процесі освіти дорослих

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Анотація

У статті аналізуються сучасні дослідження щодо застосування симуляційних ігор у процесі освіти дорослих, зокрема в таких сферах, як медицина, авіація, юриспруденція та педагогіка. Відзначаються переваги таких методів навчання, зокрема розвиток практичних навичок у безпечному середовищі. У статті детально описані різновиди симуляцій, такі як віртуальна реальність (VR), доповнена реальність (AR), рольові та комп'ютерні симуляції та наведено приклади їх успішного використання. Зокрема, аналізується використання платформи Body Interact для навчання медичних працівників, симуляторів польотів для підготовки пілотів та рольових ігор у моделюванні судових процесів та підготовки педагогічних працівників. Зазначається, що однією з ключових переваг освітніх симуляцій є можливість відпрацювання практичних навичок у безпечному середовищі, що є особливо актуальним для професій, які вимагають високого рівня відповідальності. Також, симуляції сприяють розвитку критичного мислення, прийняття рішень та командної роботи. У статті наголошується на важливості інтеграції симуляційних технологій в освітній процес. Автори пропонують рекомендації щодо розробки ефективних симуляційних сценаріїв, вибору відповідного обладнання та організації освітнього процесу. Автори розкривається потенціал освітніх симуляцій для підвищення ефективності навчання дорослих та надаються рекомендації щодо оптимальної інтеграції цих технологій у освітній процес.

Ключові слова: освітні симуляції, освіта дорослих

Statement of the problem. The modern world is developing rapidly, putting new demands on people for adaptation and constant learning. Traditional teaching methods, such as lectures and practical classes, although still relevant, often do not provide a sufficient level of development of practical skills and readiness to solve real problems. That is why there is a need to find innovative approaches to adult education. One of these promising methods is the use of simulation games.

Despite the growing interest, there is a lack of systematic research on the effectiveness of simulation games for the development of professional competencies in adults.

Insufficient research into the effectiveness of simulation games in andragogy, as well as the lack of clear recommendations for their use in various educational contexts, made it necessary to find out which types of simulation games are most effective for the development of various competencies in adults, how to optimally integrate them into the educational process, and which factors affect the effectiveness of such training.

The need for constant updating of knowledge and skills, the development of technologies and interest in innovative teaching methods caused the urgency of researching the problem of using educational simulations in the process of adult education.

The Analysis of Sources and Recent Research. Khrulenko (2021) studied simulation games in the context of educational technology. Slyusarenko (2007) studied the educational game and its use in the process of training future teachers. Lazko (2023) studied the use of simulation technologies in the educational space of the medical high school.

However, the issue of the effective use of educational simulations in the process of adult education has not yet been worked out in detail.

The Purpose of the article is to analyze and systematize scientific research on the use of educational simulations in the process of teaching adults, as well as a description of practical

recommendations for the use of educational simulations in andragogy.

The Results of the Research. Gamification and simulation are two popular approaches used in the educational process to improve learner engagement and performance.

Educational simulations are a powerful tool that is increasingly being used in adult education. They create a safe space for experimentation, decision making and practical skills acquisition. Why are they so important? Let's take a closer look at the types of educational simulations in Table 1.

Table 1.

Types of educational simulations

Type of simulation	Description	Application examples
Computer simulations	Interactive programs that allow you to simulate various processes and phenomena.	Flight simulators, business simulations, chemical experiments, medical procedures
Virtual Reality (VR)	Immersion of the user in the digital environment.	Simulators for surgeons, driving lessons, virtual tours
Augmented Reality (AR)	Superimposition of virtual objects on the real world using special devices.	Interactive textbooks, equipment maintenance, medical diagnostics
Role playing games	Imitation of real social situations where participants perform certain roles.	Simulations of negotiations, court proceedings, client service
Scenario-based simulations	Practicing certain scenarios that may arise in real life.	Simulations of emergency situations, crisis management, decision-making
Physical simulators	Objects imitating real devices or systems.	Mannequins for practicing medical manipulations, simulators for pilots
Hybrid simulations	A combination of different types of simulations to achieve maximum efficiency.	Simulation of a surgical operation using VR glasses and a physical mannequin

Adult education needs transformation now more than ever due to rapid changes in technology, labor markets and societal needs. Traditional educational models often cannot keep up with the rapid development of modern skills, leaving many adults unprepared for new challenges. As industries embrace automation and digitization, adults need to continually update their competencies to remain relevant and competitive in the workforce. In addition, with the increasing complexity of global issues such as climate change, health care, and technology ethics, adults need to be equipped not only with specialized knowledge, but also with critical thinking and problem-solving skills (Dmitrenko, et al. 2023).

One of the most effective ways to achieve this transformation is through the use of learning simulations. Simulations create immersive, hands-on learning experiences that closely mimic real-world scenarios, allowing students to engage in active problem-solving and decision-making. Unlike traditional classroom learning, simulations promote hands-on interaction, encouraging adults to apply theoretical knowledge in a realistic context. This leads to deeper understanding, better retention of information and the ability to adapt acquired skills to different situations. For example, in healthcare education, simulations can recreate emergency scenarios, allowing students to practice life-saving procedures without the risks associated with real-life situations (Lazko, 2023).

By integrating simulations into adult education, we can improve learning outcomes, make education more tailored to individual needs, and prepare adults for the complexities of today's world. This approach promotes continuous learning, ensuring that people are not only prepared for current requirements, but also adaptable to future changes.

The choice of the type of educational simulation depends on the purpose and direction of learning. For example, in medicine, including during training courses for medical workers, augmented reality services for diagnosing virtual patients have become widely used.

Educational simulations are particularly effective in key areas of adult education where hands-on experience and critical thinking are key to successful learning. Let's consider some of them in more detail.

Medicine - Educational simulations allow medical professionals, doctors and nurses to practice emergency procedures and responses without risk to patients. This is especially useful in preparing for

operations, providing first aid or treating critical conditions.

Business. In the field of business, it is effective to simulate various management scenarios, financial risks, crisis situations or market changes.

Information technology (IT). Educational simulations in the IT field are used for training in cyber security, IT systems management or programming. This provides an opportunity to practice problem solving in a safe environment, simulating real threats and challenges.

Aviation. The training of pilots and operators of autonomous systems (drones, cars) traditionally includes simulations to develop the skills of driving and responding to a complex situation. Such simulations minimize risks and provide an opportunity to practice actions in conditions as close as possible to real ones.

Law enforcement activities and emergency situations. Educational simulations will be useful for training police officers, firefighters and rescuers. Simulation of crisis situations allows you to practice quick and effective actions in conditions of stress or danger.

Education. For teachers, modeling is a tool for professional development, modeling of various educational situations, student behavior or teaching methods. This contributes to better preparation for the challenges of the modern educational system.

The implementation of simulations in this field of adult education allows to make learning more interactive, effective and safe, which is especially important for complex and relevant professions (Kobyliansky, et al. 2024).

The training of medical workers involves the use of virtual training tools, such as. For example, the virtual simulation platform Body Interact. This innovative tool of virtual simulation is widely used in institutions of higher education specialized in the medical field, as well as during training of doctors or training aimed at changing the vector of their professional activity. Body Interact allows you to analyze clinical situations and solve diagnostic tasks with the help of "virtual patient" technology. This interactive tool allows you to study the symptoms of diseases in detail, develop and substantiate a treatment plan, as well as monitor the consequences of prescribed therapeutic measures. An important advantage is the possibility of conducting simulation sessions in a remote format. It is worth noting that this method of learning has a number of advantages.

First, virtual simulation eliminates possible risks for both the patient and the doctor.

Secondly, the possibility of effective training in a distance format, which, moreover, is capable of forming high-quality professional competences through training based on practical cases.

Thirdly, the simulation of real clinical situations allows safe and effective testing of new treatment methods that would not be possible to test in real life.

Pilot training can also include mountain flight simulations. This method of training, or professional development, allows you to carry out virtual training in different weather conditions, on different terrain. The main advantages of such simulations are the absence of risks for pilots and passengers, as well as the formation of professional competencies based on practical cases. Today, the most popular flight simulators are Microsoft Flight Simulator, X-Plane and X (FSX).

The simulation game «Model UN» is currently actively used to train lawyers or improve their qualifications throughout life.

Model UN is an educational role-playing game, during which the meeting of various bodies of the UN system is simulated. Its members act as diplomats, reproducing the work of the Organization in compliance with the real rules of procedure. They represent different countries and participate in the discussion of current issues that are on the agenda of the UN.

Special attention should be paid to improving the qualifications of teachers. After all, lifelong education is an indispensable companion of competent education workers. Modeling the process of interaction of various links of the education system of Ukraine, highlighting the strengths and difficulties of communication; identification of values, beliefs of the participants regarding the process of educational reform, priorities in the functioning and development of the school as a social institution; outlining the necessary changes in the education system and forming a vision of how to implement them are the main advantages of using the stimulating game called «Territory of Education».

Let's consider the simulation games in adult education in detail in Table 2.

Table 2.

Simulation games in the process of adult education

Body Interact The first and most advanced virtual patient simulator	
X-Plane A flight simulator with unique features	
Model UN An educational role-playing game, during which a meeting of various bodies of the UN system is simulated	
Territory of education Simulator of the process of interaction of various links of the education system of Ukraine	

The use of educational simulators makes learning more interesting, effective and practically oriented. Educational simulations are especially relevant in the process of adult education, because they help to qualitatively and effectively raise the educational level and form such necessary professional competencies.

Conclusions. Educational simulations have great potential to transform the learning process. They not only increase the effectiveness of learning, but also make it more interesting and exciting. Thanks to the continuous development of technology and scientific research, we can expect that simulations will become an integral part of the educational process in the near future.

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EUROPEAN INTEGRATION PROCESSES AND THEIR INFLUENCE ON THE DEVELOPMENT OF EDUCATION

ЄВРОІНТЕГРАЦІЙНІ ПРОЦЕСИ ТА ЇХ ВПЛИВ НА РОЗВИТОК ОСВІТИ

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Foreign experience in developing professional thinking of future teachers

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Abstract

The article presents a comprehensive study of modern approaches to developing professional thinking in future teachers, which is a critical prerequisite for ensuring the quality of pedagogical activity amidst contemporary educational challenges. Particular attention is paid to analyzing foreign experiences in teacher education, which emphasize the integration of theoretical knowledge with practical experience, the application of innovative teaching methods, and the use of digital technologies. The study examines teacher education models in Finland, Germany, and the United States, highlighting diverse yet complementary approaches to fostering professional thinking. The Finnish model emphasizes deep integration of theory with practice through school internships, enabling future teachers to gain practical experience and develop reflective thinking. The German model focuses on reflective practices through maintaining pedagogical diaries and participating in seminars. The U.S. model prioritizes case-based methods and problem-based learning, fostering critical and creative thinking skills. It has been established that the effectiveness of pedagogical activity largely depends on a teacher's ability to critically analyze information, reflect on their actions, generate new ideas, and apply creative approaches to solving educational tasks. These competencies are fundamental components of professional thinking, which is shaped through interdisciplinary approaches, the use of digital tools, and the integration of modern educational methodologies. The article also outlines practical recommendations for adapting foreign practices to the Ukrainian teacher education system. These include extending the duration of pedagogical internships, integrating reflective seminars and discussions, widely implementing case-based methods in curricula, and using digital platforms and simulators to model real-world teaching scenarios. Special attention is given to the role of international cooperation in developing professional thinking among future teachers. Experience exchange, joint projects, and the integration of innovative practices contribute to the modernization of teacher education in Ukraine and its integration into the global educational landscape. Implementing these recommendations will enhance the preparation of highly qualified educators capable of addressing the challenges of modern education, introducing innovations, and fostering key competencies in their students.

Keywords: professional thinking, teacher education, critical thinking, reflection, digital technologies, innovative approaches, interdisciplinarity

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Зарубіжний досвід розвитку професійного мислення майбутніх педагогів

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Анотація

У статті проведено комплексне дослідження сучасних підходів до формування професійного мислення майбутніх педагогів, що є однією з основних умов забезпечення якості педагогічної діяльності в умовах сучасних освітніх викликів. Особлива увага приділяється аналізу зарубіжного досвіду педагогічної освіти, який базується на інтеграції теоретичних знань і практичного досвіду, використанні інноваційних методик навчання та цифрових технологій. Розглянуто моделі педагогічної освіти Фінляндії, Німеччини та США, які демонструють різні, але взаємодоповнювані підходи до формування професійного мислення. Фінська модель підкреслює значення глибокої інтеграції теорії з практикою через стажування у школах, що дозволяє майбутнім учителям здобути практичний досвід і розвивати рефлексивне мислення. У Німеччині особлива увага приділяється рефлексивним практикам через ведення педагогічних щоденників і участь у семінарах. У США ключовими є кейс-методи та проблемно-орієнтоване навчання, які сприяють розвитку критичного та творчого мислення. Встановлено, що ефективність педагогічної діяльності великою мірою залежить від здатності педагога до критичного аналізу інформації, рефлексії щодо власних дій, генерації нових ідей і застосування творчих підходів у вирішенні педагогічних завдань. Такі компетентності є базовими елементами професійного мислення, яке, у свою чергу, формується через використання міждисциплінарного підходу, впровадження цифрових інструментів та інтеграцію сучасних освітніх методик. У статті також висвітлено практичні рекомендації щодо адаптації зарубіжного досвіду до української системи педагогічної освіти. Зокрема, пропонується розширення тривалості педагогічної практики, інтеграція рефлексивних семінарів та дискусій, широке впровадження кейс-методів у навчальні програми, а також використання цифрових платформ і симуляторів для моделювання реальних педагогічних ситуацій. Особливу увагу приділено ролі міжнародної співпраці в розвитку професійного мислення майбутніх учителів. Обмін досвідом, спільні проєкти та інтеграція інноваційних підходів сприяють модернізації педагогічної освіти в Україні та її інтеграції у світовий освітній простір. Застосування цих рекомендацій сприятиме підготовці висококваліфікованих педагогів, здатних відповідати викликам сучасної освіти, впроваджувати інновації та формувати ключові компетентності у своїх учнів.

Ключові слова: професійне мислення, педагогічна освіта, зарубіжний досвід, критичне мислення, рефлексія, цифрові технології, інноваційні підходи

Statement of the problem. The development of professional thinking is a key task in the preparation of future teachers, because it is the ability to critically understand pedagogical phenomena, make informed decisions, and adapt to the dynamic conditions of the educational environment that ensures the quality of teaching activities. In the context of pedagogical education, professional thinking is considered a multidimensional phenomenon that includes the ability to reflect, critical analysis, a creative approach, and effective solutions to pedagogical tasks.

The concept of professional thinking in pedagogy can be defined as the ability of a future teacher to systematically analyze the educational process, make

decisions based on pedagogical theories and practical experience, as well as form their own pedagogical innovations. Such thinking is an integrative quality that synthesizes the knowledge, skills, and values necessary for successful professional activity. It involves not only theoretical preparedness but also the ability to adapt to new conditions and challenges of modern education, in particular through an innovative approach to working with students and the use of digital technologies (Akimova, 1989).

The Analysis of Sources and Recent Research. The problem of developing professional thinking of future teachers has been studied by ukrainian and foreign scientists: Boichenko, Yovenko, Remekh, Tsyhanok, Kyrychenko, Huba, (2021) (Formation of pedagogical thinking of future teachers); Akimova, Kaplinskyi, Sapohov, (2023) (Features of the use of Smart technology in the training of master's students in universities of foreign countries); Csorba, (2017) (Historical Research - promoting critical thinking to future teachers); Jones, Buntting, Hipkins, McKim, Conner, Saunders, (2011) (Developing students' futures thinking in science education); Ponomarenko, Aryna, Iryna, Marharyta, (2024) (The role of mentoring in fostering the professional identity of future teachers); Volkova, Romanyshyna, (2020) (Foreign experience of professional training of future geography teachers to professional activity).

The Purpose of the article is to identify key aspects of foreign experience in the formation of professional thinking of future teachers, analyze their methodological basis, and outline the possibilities of adaptation to the Ukrainian educational system.

The Results of the Research. The development of professional thinking is the foundation for ensuring high quality education. In the modern world, where knowledge is rapidly updated, teachers must not only have up-to-date information, but also be able to assess its reliability, integrate new ideas into their own activities, and teach students critical thinking and creativity. Future teachers must be ready to solve complex professional tasks that often go beyond standard methods. This requires the development of such components of professional thinking as reflexivity, analytics, creativity, and self-criticism (Akimova, 2008b).

The relevance of this problem is also enhanced by society's demands for high-quality education, which should form not only knowledge, but also key competencies of students. A modern teacher acts not only as a carrier of knowledge, but also as a facilitator of the educational process, a mentor who helps students form personal and social competencies.

The Ukrainian pedagogical education system faces significant challenges. These include a gap between the theoretical training of students and the practical demands of the modern labor market, as well as limited use of practice-oriented teaching methods, which hinder students' ability to apply their knowledge effectively. Teacher training programs also lack widespread adoption of modern educational technologies and digital resources, and they do not sufficiently incorporate successful international practices that enhance professional thinking (Slushny et al., 2020).

Globalization in education creates opportunities for international collaboration and exchange of expertise. To meet these demands, the system must adapt educational programs to global standards and prepare future teachers to work effectively in multicultural environments, using innovative teaching methods from around the world.

Studying and adapting international practices is essential for advancing Ukraine's pedagogical education system. Foreign models provide effective strategies for developing teachers' professional thinking. For instance, Finland's widespread use of problem-based learning fosters critical thinking and self-reflection. Germany's dual education system effectively integrates theoretical and practical training, while the United States emphasizes case-based methods that enhance creativity and problem-solving skills (Volkova & Romanyshyna, 2020).

Incorporating these approaches into Ukrainian pedagogical education could significantly improve its efficacy. Achieving this requires designing curricula tailored to Ukraine's unique educational context and providing extensive professional development for educators to effectively implement these innovations.

Enhancing the professional thinking of future teachers is both a theoretical and practical imperative for strengthening Ukraine's education system and facilitating its integration into the global educational community (Volkova & Romanyshyna, 2020).

Professional thinking in pedagogical activity is an integrative characteristic that combines cognitive, emotional-value, and practical components. It is a complex system that provides the future teacher's ability to critically reflect on pedagogical phenomena, effectively make decisions, creatively approach the solution of educational tasks, and adapt to changes in the professional environment. From a theoretical

point of view, professional thinking is based on the synthesis of three key elements: critical thinking, which involves the ability to analyze information, assess its reliability, and formulate substantiated conclusions; reflection, which allows you to realize your own actions, evaluate their effectiveness, and improve; and creative thinking, which provides an innovative approach to work, the production of new ideas, and improving the quality of the educational process (Akimova, 1989).

Professional thinking is the foundation of effective teaching, allowing teachers to make decisions based on the individual characteristics of students, adapt teaching methods to modern challenges, and develop key competencies in their students (Horokhivska, 2018).

Professional thinking in pedagogical activity is an integrative characteristic that ensures the ability of a future teacher to effectively solve educational tasks, critically comprehend pedagogical phenomena, adapt to changes in the professional environment, and creatively approach their work. This ability is multidimensional, combining cognitive, emotional-value, and practical components that create the foundation for the successful professional functioning of a teacher (Akimova, 1989).

From a theoretical point of view, professional thinking is based on three key elements.

Critical thinking is one of the foundations of professional thinking. It consists of the teacher's ability to analyze information, assess its reliability and significance, and formulate well-founded conclusions. In pedagogical practice, this means that a teacher must be able to evaluate the effectiveness of teaching methods, determine the needs of students, and adequately respond to challenges that arise in the educational process (Csorba, 2017).

Reflection as a component of professional thinking encompasses the ability to be aware of one's own actions, evaluate their results, and improve professional activity. Reflective processes help teachers analyze their mistakes, reflect on their pedagogical achievements, and develop strategies to improve the quality of the educational process. Reflection is also an important condition for professional self-development, as it contributes to the formation of openness to change and readiness to implement innovative ideas (Csorba, 2017; Horokhivska, 2018).

Creative thinking is manifested in the teacher's ability to generate new ideas and adapt teaching methods and tools to the unique needs of each student. This thinking makes it possible to introduce innovative approaches to learning, create non-standard solutions, and promote the development of creativity in students. Creative thinking is also key to developing integrated lessons, interdisciplinary projects, and adapting educational programs to modern challenges (Akimova, 2008a).

Professional thinking is important for pedagogical activity, as it allows the teacher to make informed decisions, taking into account the individual characteristics of students and the requirements of the educational environment. The ability to critically analyze, reflect, and be creative ensures the development of pedagogical skills, improves the quality of teaching, and promotes the formation of leadership qualities in teachers (Poseletska et al., 2020).

In pedagogical practice, professional thinking is the basis for implementing effective teaching methods, resolving conflict situations, and achieving educational goals. It forms in the future teacher not only executive skills but also leadership traits necessary to initiate changes in the educational system. Given today's challenges, the development of professional thinking in future teachers is critically important for improving the quality of education and compliance with global standards (Jones et al., 2011).

In the context of a review of foreign models of teacher education, the educational systems of Finland, Germany, and the USA deserve attention. The Finnish model is distinguished by the integration of theory and practice, where future teachers spend a significant part of their training in schools, acting as interns. This approach forms practical skills in students and promotes the development of reflective thinking. Germany uses a dual system that harmoniously combines theoretical training at universities with practice in schools. Particular attention is paid to reflective thinking through keeping pedagogical diaries, participating in seminars, and discussions. In the USA, the emphasis is on case methods and problem-based learning, which allow students to solve complex educational tasks, analyze real situations, and make effective decisions (Akimova et al., 2023; Jones et al., 2011).

The Finnish teacher education system is widely regarded as one of the most progressive globally, characterized by its seamless integration of theory and practice. Aspiring teachers spend a substantial portion of their training in schools as interns, engaging

directly with students and collaborating with teaching teams. This hands-on experience enables them to gain a comprehensive understanding of pedagogical processes and effectively apply theoretical knowledge in practical contexts.

A key component of the Finnish model is its emphasis on research. Trainee teachers actively analyze educational practices, develop innovative teaching strategies, and conduct experimental studies. This involvement fosters critical reflection on pedagogical phenomena and equips them to devise creative solutions (Borodiienko et al., 2022).

In Germany, the dual teacher education system effectively combines university-based theoretical instruction with school-based practical activities. The approach prioritizes not only the transfer of knowledge but also the cultivation of reflective thinking. Students maintain pedagogical diaries, documenting their actions, analyzing outcomes, and drawing conclusions, thereby enhancing their ability to self-assess and improve. Reflective seminars and group discussions further support this process by providing opportunities to share experiences and engage in critical self-reflection (Lazarenko & Hapchuk, 2023).

The U.S. teacher education model is distinguished by its focus on innovation and practical application. Case-based learning serves as a cornerstone of training, where students analyze real-life educational scenarios to develop decision-making skills, solve complex problems, and foster creative thinking. Additionally, problem-based learning encourages students to address authentic educational challenges, promoting critical thinking, collaboration, and communication skills. These methods not only enhance professional competencies but also nurture the capacity for innovation in teaching (Akimova et al., 2023; Ponomarenko et al., 2024).

Each model offers unique strengths. The Finnish system emphasizes deep immersion in practice, fostering the integration of theory and reflection. The German model excels in cultivating systematic reflective practices that support continuous self-improvement. The U.S. approach prioritizes problem-solving and creativity, equipping future teachers with critical thinking skills and innovative mindsets. Together, these systems provide valuable insights for enriching teacher education globally.

Methods for developing professional thinking include the development of critical thinking, reflection, an interdisciplinary approach, and the use of digital technologies. Methods for developing critical thinking include debates, case studies, and problem solving, which encourage students to form reasoned conclusions. Reflection is implemented through pedagogical journals, portfolios, and group discussions, which help students to realize their achievements and look for ways to improve. An interdisciplinary approach involves knowledge from other fields, in particular psychology, sociology, and technology, which contributes to the formation of complex pedagogical thinking. The use of digital technologies, such as online platforms, simulators of educational situations, and virtual environments, allows future teachers to develop skills in safe conditions (Boichenko et al., 2021; Ponomarenko et al., 2024).

Developing professional thinking in future teachers is a central goal of pedagogical education, as this skill equips educators to effectively solve professional challenges, critically evaluate their practices, and adapt to the evolving educational landscape. Key strategies for cultivating professional thinking include fostering critical thinking, promoting reflection, adopting an interdisciplinary approach, and integrating digital technologies (Boichenko et al., 2021).

Critical thinking is a foundational component of professional thinking. Methods such as debates, case analysis, and problem-solving exercises are commonly employed to enhance this skill. Debates help students articulate their opinions with sound reasoning, evaluate alternative perspectives, and defend their decisions effectively. Case analysis engages students in examining real or simulated pedagogical scenarios that demand critical analysis and creative problem-solving. For instance, they may explore cases involving teacher-student communication issues or the integration of new technologies into education, fostering systems-thinking and innovative approaches (Akimova, 2008a).

Reflection plays a vital role in professional thinking by enabling teachers to assess their actions, evaluate their effectiveness, and plan improvements. Reflective practices include maintaining pedagogical journals, creating professional portfolios, and participating in group discussions. Pedagogical journals provide a structured way to document successes and challenges, analyze underlying issues, and devise solutions. Portfolios serve as both repositories of professional work and tools for self-reflection, tracking growth over time. Group discussions facilitate experience-sharing,

collaborative learning, and constructive feedback, enriching the reflective process (Akimova, 2008a).

Incorporating knowledge from disciplines such as psychology, sociology, technology, and economics broadens the scope of pedagogical thinking. For example, understanding psychological principles of motivation enhances teachers' ability to address students' needs and foster effective learning environments. This interdisciplinary perspective enables a holistic view of education, accounting for individual and socio-cultural dynamics. It also helps students recognize connections between disciplines and apply this integrated understanding to address complex educational challenges (Boichenko et al., 2021).

Digital tools play a transformative role in shaping professional thinking. Platforms for online learning, pedagogical simulators, and virtual environments provide safe spaces for students to practice skills. Educational simulators allow students to analyze scenarios, make decisions, and evaluate outcomes. Virtual classrooms offer opportunities to develop skills in student engagement, educational organization, and the implementation of innovative teaching strategies (Lazarenko & Hapchuk, 2023).

Additionally, digital technologies facilitate self-assessment and reflective practices by automating performance analysis and enabling access to extensive educational resources. These tools encourage independent learning and enhance critical thinking, making them indispensable for modern teacher education (Lazarenko & Hapchuk, 2023).

By combining these methods, pedagogical education equips future teachers with the professional thinking skills necessary to thrive in a dynamic educational environment.

A comparative analysis of foreign models demonstrates their effectiveness in developing professional thinking. The Finnish system provides a high level of practical training, the German system emphasizes reflection, and the American system develops skills in solving complex problems. Adapting these approaches to the Ukrainian context may include the introduction of long-term pedagogical practice, the use of reflective techniques, the integration of case methods, and the introduction of digital tools. Such adaptation will contribute to improving the quality of teacher education in Ukraine and its integration into the global educational community.

Conclusions. The study analyzed contemporary approaches to developing professional thinking in future teachers, focusing on foreign pedagogical education models and methods for fostering this skill. The models from Finland, Germany, and the USA showcase diverse approaches to integrating theory with practice, nurturing critical, reflective, and creative thinking, and utilizing digital technologies to enhance the professional competencies of future educators.

The study emphasizes the need to integrate theoretical knowledge with real pedagogical experience to develop practical skills, analytical abilities, and adaptability to the evolving educational landscape. Specifically, the Finnish model, which places a strong emphasis on pedagogical practice, helps students develop a deep understanding of the learning process through reflective thinking. Germany's dual education system fosters self-examination and self-assessment by encouraging students to maintain pedagogical diaries and participate in group discussions. The American model, which incorporates case-based methods and problem-based learning, equips future teachers with the skills to solve real educational problems, promoting critical thinking and decision-making.

Practical recommendations for adapting foreign practices to Ukraine's context include a stronger integration of theoretical knowledge with practical experience. This can be achieved by expanding pedagogical practice, organizing reflective seminars and discussion platforms, and using innovative digital tools to simulate educational scenarios. Incorporating case methods into curricula can help future teachers engage with real educational challenges, while group discussions can further develop critical thinking skills.

Additionally, using portfolios and pedagogical journals will support students in tracking their professional development, reflecting on their achievements, and identifying areas for improvement. An interdisciplinary approach will also be crucial, broadening students' pedagogical thinking and equipping them to address complex educational issues.

International cooperation plays a vital role in teacher education. Exchange programs and joint international projects foster the adoption of innovative approaches, improve pedagogical education quality, and promote the integration of global best practices into Ukraine's educational system. These efforts also enhance the professionalism and competence of teachers and contribute to Ukraine's integration into the global educational community.

In conclusion, integrating foreign pedagogical practices into teacher training in Ukraine represents a crucial step toward modernizing education. Applying contemporary methods to develop professional thinking in future teachers will ensure the success of the educational process and produce highly qualified educators capable of addressing the challenges of the modern world.

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Legal regulation of student mobility in German universities

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Abstract

This study analyses the legal framework for regulating student mobility at German universities. The authors of the article examine the legal framework for the implementation of student mobility in Germany from the perspective of international, federal and institutional levels. Using the methods of analysis, generalisation, and systematisation, the author describes international treaties (Bologna Declaration, Magna Carta of Universities, Lisbon Declaration, Sorbonne Declaration; Mobility Strategy 2020 for the European Higher Education Area (2011), Incheon Declaration (2015), Yerevan Communiqué (2015); federal laws (Federal Framework Law on Higher Education, Federal Law on the Promotion of Education, etc.) The functions of a number of organisations (Federal Ministries, DAAD, Alexander Humboldt Organisation, Conference of German Rectors, German Students' Organisation) responsible for promoting student mobility are described. It is established that their powers include: financing student mobility programmes, establishing cooperation with foreign universities, etc. The authors state that the regulatory framework for academic mobility in German universities is formed at the appropriate level and is in line with global and regional trends. Being at the origins of the Bologna process, Germany has gradually and systematically reformed the regulatory framework in accordance with the main provisions of the Bologna agreements. It has its own Internationalisation Strategy, which guarantees the involvement of universities in this process and thus the basis for the development of academic mobility of students of these universities. This can explain the high level and balance of student mobility in Germany.

Keywords: student mobility, academic mobility, regulatory framework, students, Bologna Declaration, communiqué, strategy, universities, Germany

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Нормативно-правове регулювання студентської мобільності в університетах Німеччини

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Анотація

У пропонованому дослідженні здійснено аналіз нормативно-правової бази регулювання студентської мобільності в університетах Німеччини. Авторами статті розглянуто правове забезпечення реалізації студентської мобільності в Німеччині з позиції міжнародного, федерального й інституційного рівнів. Використовуючи методи аналізу, узагальнення, систематизації, охарактеризовано міжнародні договори (Болонська Декларація, Велика Хартія університетів, Лісабонська Декларація, Сорбонська Декларація; «Стратегія мобільності 2020 для Європейського Простору Вищої Освіти» (2011), Інчхонська Декларація (2015), Єреванське Ком'юніке (2015); федеральні закони (Федеральний Рамковий Закон про вищу освіту, Федеральний закон про сприяння освіті та ін.). Описано функції низки організацій (Федеральні Міністерства, Служба Німецьких Обмінів DAAD, Організація Александра Гумбольдта, Конференція німецьких ректорів, Організація німецьких студентів), які відповідають за поширення студентської мобільності. Встановлено, що до їх повноважень належить: фінансування студентських програм мобільності, налагодження співпраці з закордонними ВНЗ тощо. Авторами констатовано, що нормативна база з питань академічної мобільності в університетах Німеччини сформована на належному рівні та відповідає світовим і регіональним тенденціям. Перебуваючи біля витоків Болонського процесу, Німеччина поступово і планомірно реформувала нормативну базу відповідно до основних положень болонських угод. Має власну Стратегію інтернаціоналізації, що є гарантом залученості ВНЗ до цього процесу, а відтак і базою для розвитку академічної мобільності студентів цих університетів. Цим можна пояснити високий рівень і збалансованість мобільності студентів у Німеччині.

Ключові слова: студентська мобільність, академічна мобільність, нормативно-законодавча база, здобувачі освіти, Болонська декларація, ком'юніке, стратегія, університети, Німеччина

Statement of the problem. Mobility is one of the important trends in modern society, which is actively spreading to all its sectors, including the higher education system. Academic mobility is carried out for the purpose of educational and scientific practices, and is one of the mechanisms of self-regulation of the learning process of current students. A new stage in the development of academic mobility in Ukraine began after it joined the Bologna Declaration. The European integration processes and Ukraine's prospects of joining the European Higher Education Area have intensified the development of academic mobility and significantly expanded it.

For today's students, studying abroad is not only a useful experience, but also, in some cases, an important point on their future CV. For some companies, the availability of foreign study experience for future employees is already an important condition for their employment. Given the social significance of the problem presented, we believe that regulatory support is an important element of the effective implementation of student mobility.

The study of the German legal framework governing academic mobility in German higher education institutions (HEIs) is a relevant research for Ukraine. This is due to the fact that, firstly, Germany is a leading educational and scientific hub in Europe; secondly, it ranks first in the ranking of incoming and outgoing mobility; thirdly, it has considerable

experience in academic mobility and cooperation with domestic higher education institutions.

The Analysis of Sources and Recent Research. The problem of training specialists in the higher education system of Ukraine is addressed by a number of domestic scholars: V. Andrushchenko, T. Boholib, H. Bordovskyi, V. Viktorov, L. Haievska, N. Ostroverkhova, L. Redko. Particular attention in their research is paid to the quality of higher education. The study of academic mobility, its types and periodisation, trends and prospects for the development of academic mobility in different regions of the world has been carried out in scientific works: F. Altbach, M. van der Wende, L. Verbeek, B. Waechter, H. de Wit, G. Laurais, S. Marginson, J. Knight, B. Reeves, H. Ridder-Simoens, J. Sadlak, U. Teichler. Among domestic scholars, it is worth noting the works of A. Antonov, S. Verbytska, A. Hladyr, I. Shpektorenko, and others.

The Purpose of the article is to investigate the regulatory and legal framework for student mobility at German universities.

The Results of the Research. The legal framework for the implementation of student mobility in German universities is considered in the international, regional and institutional aspects. The first one is represented by the Bologna Declaration and other international legal acts regulating academic mobility, the second one is the legal framework of Germany, and the institutional level is the level of educational institutions that use their own regulations to organise and develop academic mobility of students.

Academic mobility is one of the means of achieving the goals underlying the Bologna Declaration (Spilna Deklaratsiia Ministriv Osvity Yevropy "Ievropeiskyi Prostir U Sferi Vyshchoi Osvity," n.d.). The key tasks underlying the declaration are: building a single European Education Area (EEA), strengthening the cultural and intellectual potential of Europe, creating maximum compatibility of the education systems of the countries participating in the Declaration.

It should be noted that the ideas proclaimed in the Bologna Declaration were not new. They were first mentioned in the Magna Carta of European Universities (Bologna, 1988) (Sorbonska Deklaratsiia, 1988) and the Sorbonne Declaration (Paris, 1998) (Velyka Khartiia Yevropeiskykh Universytetiv, 1988). The content of the Magna Carta of Universities includes the principle of overcoming political and geographical boundaries, as well as the need for mutual knowledge and interaction of different cultures, which can be achieved only through mutual exchange of information and joint work. Therefore, academic mobility, mutual recognition of diplomas and qualifications are integral elements for achieving these goals. Recognition of educational documents and periods of study are at the heart of academic mobility.

The Joint Declaration on the Harmonisation of the Architecture of the European Higher Education System by four ministers (UK, Germany, France and Italy) was signed in Soborno on 25 May 1998. This document addresses in detail the issue of creating a single educational space. The signatory countries propose to introduce a European system of credit transfer, transition to two-level education, and encouragement of student and teacher mobility (Sorbonska Deklaratsiia, 1988).

It is worth noting that the problem of recognition of diplomas and qualifications at the international level is still considered to be a controversial issue related to the creation of a single educational space, despite the fact that the relevant document was signed in 1997 in Lisbon. However, before that, a number of documents regulating the recognition of qualifications were already in force. Among them:

- The European Convention on the Equivalence of Diplomas (1953) and its Protocol (1964);
- European Convention on the Equivalence of Periods of University Education (1956);
- European Convention on the Academic Recognition of University Qualifications (1959);
- International Convention on the Recognition of Studies, Diplomas and Degrees in Higher Education in the Arab and European Countries of the Mediterranean Basin (1976);
- Convention on the Recognition of Studies, Diplomas and Degrees in Higher Education in the European Countries (1979);
- European Convention on the General Equivalence of Periods of University Education (1990).

The factors that contributed to the adoption of the Convention on the Recognition of Qualifications relating to Higher Education in the European Region are primarily to facilitate academic mobility through the mutual recognition of qualifications and degrees in the signatory countries. All signatories to this convention are obliged to recognise each other's education documents and periods of study, regardless of race, religion, nationality, social status or beliefs.

Formally, the construction of the European Higher Education Area (EHEA) was completed in

2010, as reflected in the Leuven Communiqué (Lovenske Komiunike, n.d.). This document emphasises the importance of academic mobility in the process of internationalisation of higher education and calls on member states to increase the level of mobility (§18). The document outlines additional mobility mechanisms such as mobility windows and flexible study pathways (§19). It also calls on signatory ministers of education to encourage mobility in third countries in order to balance the flow of mobile students (§19). The ministers of education of the signatory countries also call for encouraging mobility in third countries in order to balance the flow of mobile students (§19).

In 2011, the Mobility Strategy 2020 for the European Higher Education Area ('Mobility for better learning') was adopted. This Strategy makes several references to the Leuven Communiqué in terms of the number of students who have received part of their education abroad (20% by 2020), ensuring balanced mobility within the EHEA and beyond through joint educational programmes, summer schools and international forms of cooperation between universities (Mobility for Better Learning. Mobility Strategy 2020 for the European Higher Education Area (EHEA), 2012). Special emphasis is placed on the problem of the so-called 'brain drain' that occurs within the framework of academic mobility. However, this can be addressed by creating attractive working conditions and other incentives, such as grants (§3).

In our opinion, the content of §7 is important, which states that the regulatory framework of a country should not be an obstacle to mobility and cooperation between universities. The issue of recognition is a basic condition for mobility, so the recognition procedures, according to the Strategy, should have a certain scheme acceptable to both parties. First of all, this refers to physical mobility (§2, p.1a). Virtual mobility is seen as an additional mechanism that promotes mobility, along with the 'international experience at home', which provides 'non-mobile' students with the opportunity to communicate with foreign colleagues at their educational institution (§10).

The UNESCO Incheon Declaration was adopted at the World Education Forum (2015). Its content is structured as a roadmap for achieving the objectives of the Declaration. In the field of education, the 'Framework for Action in Education until 2030' (November 2015) is a key document. In the context of the proposed study, paragraph 4.7 deserves special attention, which states that 'by 2030, it is necessary to ensure that students have the opportunity to acquire the knowledge and skills necessary to promote sustainable development, including through education on sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and awareness of the value of cultural diversity and the contribution of culture to sustainable development' (Vsesvitnii Osvitnii Forum-2015: Inchkhonska Deklaratsiia «Osvita-2030», n.d.).

The leitmotif of the document is that education should promote intercultural dialogue and understanding. The Declaration reflects the current trend of focusing on developing countries - Africa and Asia - in the form of financial support for students to obtain education (scholarships). One of the mechanisms for implementing the main provisions of the Declaration is the development of joint programmes between universities in different countries to motivate students to return to their home university to prevent the 'brain drain' (Vsesvitnii Osvitnii Forum-2015: Inchkhonska Deklaratsiia «Osvita-2030», n.d.). Thus, the completion of the Bologna process did not lead to a complete solution to the issues of recognition of mobility. The Bologna Declaration and other documents that preceded it set basic goals and outcomes for mobility.

As Germany is a federal state, the responsibility for implementing the Bologna provisions lies directly with the HEIs, federal and state governments. The main functions and responsibilities are divided between the state and the Länder - this is a basic federal principle that can be found in the German Basic Law (Grundgesetz, Article 20, § 1) (GG - Grundgesetz FüR Die Bundesrepublik Deutschland, n.d.), which was last amended in 2014.

The first level of regulation of the higher education system is federal, represented by the Federal Framework Act on Higher Education (1999) (Hochschulrahmengesetz, HRG) and the Federal Ministry of Education and Research (Bundesministerium für Bildung und Forschung - BMBF). In 2017, this law was amended (Hochschulrahmengesetz, 1999). The Federal Ministry of Education and Research (BMBF) together with the Federal Ministry of Foreign Affairs (Auswärtiges Amt) and the Federal Ministry for Economic Cooperation and Development (Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung) is responsible for international

cooperation in higher education and for the implementation of the main Bologna provisions (Teichler, 2007). The German Ministry of Education is working on the development of the concept of the country's educational policy, defines the legal framework for the activities of educational institutions, and provides funding for higher education institutions.

International cooperation in the field of education also falls within the competence of the Federation (Article 73, § 1, Article 32, § 1 of the Basic Law). According to Articles 30 and 70 of the Basic Law, the Länder have the right of general competence in the field of culture, which implies their legislative right in matters of education, including higher education. This is the second level of regulation of higher education - the land level.

Based on the above arguments, we believe that Germany is characterised by decentralised education management. The Länder governments develop and implement regional laws on higher education, which mainly deal with personnel and financial issues, based on the Federal Framework Law. The activities of the Länder in higher education are controlled by the Conference of Ministers of Education and Culture of the Länder (Kultusministerkonferenz, KMK), the Conference of Rectors of Germany (HRK), the Federal Land Commission for Education Planning and Research Development (BLK), and the Science Council.

Although the KMK does not have law-making power, it reflects the current state of affairs in the 16 Länder of Germany (Witte, 2006). Another coordinating committee in matters of international relations, including European cooperation, is the Committee for European and International Cooperation (Kommission für europäische und international Angelegenheiten). It deals with issues of cooperation with the European Union in the field of education, culture and science. Committee members deal with issues of cultural exchange and mutual cultural policy.

The committee also regulates the participation of the Länder in UNESCO conferences and committees.Issues of international cooperation of the Land are considered annually by the CMC.

It is a kind of consortium of ministers responsible for education, universities, science and culture, and represents the interests of all the Länder. The conference started its work in 1948. The objectives of the conference were: jointly addressing issues related to education, science and culture; maintaining a high level of mobility of students, teachers and researchers; representing the interests of the Länder in the field of education, science and culture (Standing Conference of the Ministers of Education and Cultural Affairs (KMK), 2015). Universities organise and plan the educational process. However, in recent years, there has been a tendency to transfer a number of powers (financial and administrative) from the state to the university level, thus giving them greater freedom of action and responsibility.

The university level is the third level of regulation of higher education in Germany. In 1994. The Conference of Ministers of Education and Culture of Germany adopted the '11 Theses on the Financial Autonomy of Higher Education Institutions'.

This document granted greater autonomy to universities in solving financial issues. The Federal Act on the Promotion of Education (Bundesausbildingsförderungsgestz, BAföG) provides financial support for students.For more than 40 years, this law has provided an opportunity for German youth and foreigners (who plan to stay or live in Germany for a long time) to obtain higher education by financing their studies.

50% of the tuition fee is provided free of charge, the other half is in the form of a loan not exceeding EUR 10,000, which must be repaid upon graduation. The federal government has been fully funding this project since 1 January 2015, which is a significant support to the regions (German Federal Training Assistance Act (BAföG), 2020).

Since Germany is one of the initiators of the Bologna Process, it was one of the first countries to reform its higher education system in accordance with the basic requirements of the Declaration. In 1998, the framework law on higher education was amended. They introduced the bachelor's and master's degrees and a new system for assessing the quality of education. In 2013, 87% of German educational programmes led to a bachelor's or master's degree, and in 2015 this number exceeded 93% (Highereducationinfigures, 2015). A working group of the European Commission, the Council of Europe, UNESCO, and the Conference of German Rectors developed the German Diploma Supplement. At the same time, the European Supplement is also valid.

One of the basic federal regulations governing the academic mobility of students in Germany is the Strategy for the Internationalisation of German Science and Research, an updated version of which

was adopted in 2013 (Internationalization Strategy (Germany), 2018).

The Strategy declared the main goal to strengthen the role of Germany on the global stage.

The objectives of the Strategy are:

- improving quality through global cooperation;
- development of Germany's potential in the field of innovation;
- internationalisation of vocational training and qualifications;
- work with developing countries to create a global knowledge-based society;
- increase inbound academic mobility (Mobility for Better Learning. Mobility Strategy 2020 for the European Higher Education Area (EHEA), 2012).

A number of organisations are responsible for implementing the basic provisions of the Strategy. Among them: Federal Ministries, the German Student Exchange Service DAAD, the Alexander Humboldt Organisation, the Conference of German Rectors, and the German Students' Organisation (Ausländische Studierende in Deutschland 2012., 2014).

The main funding for university internationalisation programmes and DAAD programmes is provided by the Federal Ministry of Education and Research. The DAAD funds the Double-degrees integrated international study programmes programme, covering the costs of planning and implementing educational programmes and scholarships for German students and students from developing countries, in particular Eastern European countries that do not participate in EU programmes (Mobility for Better Learning. Mobility Strategy 2020 for the European Higher Education Area (EHEA), 2012). Germany's successful international cooperation in education and science is based on several successful projects that represent agreements between the Federal Government and the regions:

- The Pact for Research and Innovation, which promotes the development of non-university research organisations (such as the Max Planck Society, the Leibniz Association, etc.);
- Excellence Initiative, which supports promising research and young scientists at universities;
- The Higher Education Pact, which creates additional study places, promotes research and improves the learning environment and teaching quality at universities.

In 2013 the governments of the Federation and the Länder adopted a joint 'Strategy of the Ministers of Science for the Internationalisation of Higher Education in Germany' (Teichler, 2007). This strategy defines 9 areas of action, including the strategic internationalisation of universities, national mobility, the establishment of a 'culture of welcome', the creation of an international campus, the expansion of international scientific cooperation and transnational educational programmes. The main condition for successful international academic mobility is the recognition of academic credits and qualifications. The basic document for Germany, as well as for the entire EHEA, is the Lisbon Convention (1997). In addition to this document, there are governmental 'Equivalency agreements' between Germany and European countries. For countries from other continents, there are Framework Agreements for Cooperation in Higher Education (Conference, n.d.).

Such agreements contain recommendations for joint research projects, academic mobility programmes, as well as cooperation and policy in higher education. In 2012, the Academic Freedom Act (Wissenschaftsfreiheitsgesetz) and the Act on the Assessment and Recognition of Foreign Professional Qualifications (Gesetz zur Verbesserung der Feststellung und Anerkennung im Auslanderworbener Berufsqualifikationen) were adopted. In the same year, in Bucharest, within the framework of the Bologna Ministerial Conference, Germany and 46 other countries participating in the Bologna Process signed a mobility strategy called 'Mobility for better learning' (Mobility for Better Learning. Mobility Strategy 2020 for the European Higher Education Area (EHEA), 2012). The document calls on countries to join the process of internationalisation, encourage mobility of students, teachers, researchers and university administrators and remove obstacles to its implementation. An example of German cooperation in the internationalisation of higher education institutions is the programme of the German Academic Exchange Service (DAAD) called 'Strategic Partnerships and Thematic Networks', which came into force in March 2012. The DAAD programme provides universities with an opportunity to join this process. Partner universities from 29 countries, together with German universities, participate in 21 programmes. The most represented are the universities of the USA and China (Action Plan (Germany), n.d.).

The German Ministry of Education and Science plans to further promote mobility. It is believed that half of university graduates should have experience of

studying abroad, and one third should have at least 3 months or 15 credits (ECTS) of studying in a foreign partner university.

Conclusions. The analysis of the German legal framework for the implementation of academic mobility of students allowed us to draw the following conclusions: in connection with the global integration processes in the field of higher education and the growth of international student flows, the imperfection of the regulatory framework for academic mobility threatens higher education institutions with a loss of competitiveness and a decrease in the image of the country and the education system. Ukraine can use the experience of Germany in terms of the levels of regulatory support for the development of academic mobility of students: state, regional, institutional.

Having described in detail the main laws of Germany on the higher education system, as well as a number of strategies and pacts in force throughout the country, in which academic mobility plays a key role, we concluded that the regulatory framework for academic mobility is formed at the appropriate level and is in line with global and regional trends. Being at the origins of the Bologna process, Germany has gradually and systematically reformed its regulatory framework in accordance with the main provisions of the Bologna agreements. It has its own Internationalisation Strategy, which guarantees the involvement of universities in this process and thus the basis for the development of academic mobility of students of these universities. This can explain the high level and balance of student mobility in Germany.

Prospects for further research include a comparative analysis of the legal systems in the field of academic mobility in Germany and Ukraine; identification of common and distinctive features of legal support for this issue, as well as outlining the possibilities of implementing the best foreign experience in the domestic legislative framework.

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The characteristics of the educational and digital environment of US universities

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Abstract

The article examines the educational and digital environment of U.S. universities as a complex and multifaceted system that integrates modern digital technologies, infrastructure, and innovative approaches to education. The primary components of this environment include digital infrastructure, Learning Management Systems, Massive Open Online Courses, as well as tools such as Artificial Intelligence and Virtual Reality. These technologies enable personalized learning, enhance student-faculty interaction, and simplify access to educational resources regardless of geographical location. The analysis of U.S. universities' practices highlights their leadership in digitalizing the educational process, providing valuable insights for adapting these practices to other educational systems, including Ukraine. However, digitalization comes with challenges such as the digital divide among students from various socio-economic backgrounds, ethical issues in data usage, and cybersecurity concerns. The article emphasizes the importance of developing digital competencies among students and educators. For instance, the integration of digital literacy courses into university curricula prepares graduates for the demands of the modern digital economy. The potential of data analytics to monitor student progress and design personalized educational strategies is also explored. The findings suggest that the educational digital environment of U.S. universities has the potential to serve as a model for global educational transformation. Future research in this area should focus on adapting successful practices to diverse cultural contexts, exploring the long-term implications of digitalization, and assessing its broader impact on education and society.

Keywords: educational digital environment, U.S. universities, digital infrastructure, artificial intelligence, personalized learning, digital literacy

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Характеристика освітньо-цифрового середовища університетів США

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Анотація

У статті розглядається освітньо-цифрове середовище університетів США як складна й багатокомпонентна система, що інтегрує сучасні цифрові технології, інфраструктуру й інноваційні підходи до навчання. Основними складниками середовища є цифрова інфраструктура, системи управління навчанням, масові відкриті онлайн-курси, а також інструменти штучного інтелекту і віртуальної реальності. Такі технології сприяють персоналізації навчання, підвищенню рівня взаємодії студентів і викладачів, а також спрощують доступ до освітніх матеріалів незалежно від географічного розташування. Аналіз практик університетів США вказує на їхнє лідерство в цифровізації освітнього процесу, що може стати цінним джерелом для адаптації цих практик в освітніх системах інших країн, включаючи Україну. Однак процес цифровізації супроводжується викликами, такими як цифрова нерівність серед студентів із різним рівнем соціально-економічного забезпечення, етичні питання у використанні даних та забезпечення кібербезпеки. У статті також наголошується на важливості формування цифрових компетентностей у студентів і викладачів. Наприклад, інтеграція курсів цифрової грамотності в навчальні програми університетів сприяє підготовці випускників до вимог сучасної цифрової економіки. Розглядаються перспективи використання аналітики даних для відстеження навчального прогресу студентів і розробки персоналізованих освітніх стратегій. Отримані результати дозволяють зробити висновок, що освітньо-цифрове середовище університетів США має потенціал стати моделлю для глобальних освітніх змін. Подальші дослідження у цій сфері мають зосередитися на адаптації успішних практик до інших культурних контекстів, довгострокових наслідках цифровізації та її впливі на освіту й суспільство загалом.

Ключові слова: освітньо-цифрове середовище, університети США, цифрова інфраструктура, штучний інтелект, персоналізація навчання, цифрова грамотність

Statement of the problem. Universities play an important role in advancing contemporary education by using many digital technologies and this digital educational environment importantly improves students' learning experiences. This concept provides a framework. It organizes resources and tools. It helps with interactive learning, and knowledge sharing. It also supports research. U.S. universities have created a precious subject of study in their advanced digital educational environment and this offers important understandings for other nations to improve their educational systems.

For several reasons, it can be said that this research is particularly relevant, and the implications are important. Many universities in the United States consistently lead the world. They take the initiative to adopt a wide range of revolutionary digital solutions. This trend shows their commitment to being global leaders in education technology. A model for dealing with many contemporary challenges in education, such as the increasing need for distance learning and the assurance of equitable access to high-quality education, is provided by their digital educational environments, while professionals also need to be prepared in order to thrive within a digital economy. The modernization of educational systems in countries that wish to improve their graduates' global competitiveness can find important understandings in the practices used by U.S. universities (Lazarenko & Hapchuk, 2023).

The importance of this research also lies in its implications for modern scientific practice. The integration of digital technologies is transforming not only educational methods but also research approaches. Digital environments enable the collection and analysis of large datasets, promote interdisciplinary collaboration, and ensure open access to knowledge. These developments foster a new paradigm of scientific inquiry characterized by transparency, rapid information exchange, and the global scope of research initiatives (Bakhmat, 2023).

The potential of digital technologies to enhance the efficiency of education receives particular emphasis. Cutting-edge tools, including learning management systems (LMS), virtual reality (VR), and artificial intelligence (AI), enable the personalization of learning processes to accommodate individual student needs. However, the digitalization of education also introduces significant challenges, such as ensuring cybersecurity, bridging the digital divide among students from diverse socioeconomic backgrounds, and adhering to ethical standards in the handling of data related to students and educators (Smyrnova-Trybulska et al., 2017).

Analyzing the digital educational environments of U.S. universities is vital in light of global educational trends. Expanding knowledge about their structure, functions, and associated challenges can facilitate the development of more effective educational systems in other countries, such as Ukraine, which is actively pursuing the digital transformation of higher education. Furthermore, this analysis provides valuable insights into creating environments that not only address but proactively anticipate the challenges of the modern educational landscape.

The Analysis of Sources and Recent Research. Studies of the educational and digital environment of US universities cover a wide range of issues related to the introduction of innovative technologies into the educational process. In the scientific works of T. Antoshkova, O. Akimova, N. Bakhmat, D. Dzvinchuk, O. Radchenko, O. Kachmar, I. Myskiv, N. Dolinska, key aspects of the use of digital platforms (for example, Canvas, Blackboard), the integration of artificial intelligence into adaptive learning systems and the application of massive open online courses (MOOCs) to increase access to education. Such researchers as D. Larson and K. Anderson, focus on the advantages of digitalization in increasing student engagement and individualization of learning.

At the same time, the impact of digital technologies on the formation of students' critical thinking, overcoming the digital divide and ensuring cyber security in higher education remain insufficiently studied. This establishes a foundation for further research to identify best practices and explore their adaptability to other educational contexts.

The Purpose of the article to investigate the peculiarities of the educational and digital environment of US universities, to identify its key components, advantages, and challenges, as well as to outline the possibilities of adapting successful practices in the context of other educational systems.

The Results of the Research. The educational and digital landscape of U.S. universities is defined by a multifaceted structure that facilitates high-quality education, access to educational resources, and support for research activities. The primary elements of this environment include digital infrastructure, LMS, and MOOCs.

The digital infrastructure in U.S. universities is essential for promoting the accessibility and efficiency of the educational process. Modern institutions are equipped with robust internet connectivity, enabling seamless interaction among students and faculty in virtual settings, and facilitating access to online libraries, databases, and cloud-based services for the storage and sharing of educational materials. Cloud platforms such as Google Workspace for Education, Microsoft 365, and Amazon Web Services (AWS) support centralized data management, streamlined access to resources, and collaborative project work. Additionally, VR Labs, like those at the Massachusetts Institute of Technology (MIT), provide students with opportunities to engage in realistic simulations, particularly in disciplines such as medicine, engineering, and natural sciences (Akimova et al., 2023).

LMS platforms, including Canvas, Blackboard, and Moodle, form the foundation of the educational process in American universities. These systems provide access to course materials, interactive assignments, discussion forums, grading systems, and mechanisms for student-faculty communication. LMSs are also integrated with other digital tools, such as video conferencing platforms (e.g., Zoom, Microsoft Teams), which facilitate the management of remote learning. One of the key benefits of LMSs is their ability to support personalized learning experiences; students can access materials according to their progress, while instructors can utilize analytical tools

to monitor and evaluate the performance of both groups and individual learners (Anoshkova, n.d.).

MOOCs expand access to high-quality education by offering courses through platforms such as Coursera, edX, and FutureLearn. Prominent U.S. universities, including Harvard and Stanford, actively provide MOOCs, allowing learners from anywhere in the world to gain knowledge from experts in various fields. MOOCs contribute to the democratization of education by making educational content available at little to no cost. Furthermore, they serve as a means for universities to attract prospective students who may subsequently pursue formal degree programs (Kuzminska et al., 2020; Bakhmat, 2023).

In conclusion, the educational digital environment of U.S. universities is underpinned by the interconnectedness of digital infrastructure, learning management systems, and open educational platforms. This synergy fosters an innovative approach to education, enhances accessibility to knowledge, and optimizes the organization and delivery of the educational process (Akimova et al., 2023).

The educational digital environment of U.S. universities is increasingly incorporating advanced technologies that transform traditional teaching methods, enhancing personalization, interactivity, and effectiveness. Notably, AI, VR/AR, and data analytics play pivotal roles among these technologies (Küsel et al., 2020).

Artificial intelligence is profoundly shaping educational practices in the U.S., facilitating the development of adaptive learning systems. Platforms such as ALEKS and Smart Sparrow analyze students' progress and adjust learning content to suit their individual needs. For instance, these systems can provide additional exercises or explanations for students who struggle with particular topics, while offering more challenging tasks to those who progress more quickly. AI is also utilized to streamline administrative functions, including grading assessments, managing schedules, and tracking student engagement. AI-driven chatbots, for example, provide students with rapid responses to both academic and administrative inquiries (Vasyliuk et al., 2021).

VR and AR are expanding opportunities for experiential learning, enabling students to engage in immersive simulations. Universities such as Stanford and Harvard have established VR labs to teach complex subjects like medicine, engineering, and architecture. Medical students, for example, can practice surgical procedures within a risk-free virtual setting, while engineering students can simulate the testing of bridge or building models. AR technology is also utilized in classrooms, where interactive models help students study human anatomy, physical phenomena, or historical events in real-time. This approach not only enhances student engagement but also deepens comprehension of intricate concepts (Vasyliuk et al., 2021; Bakhmat, 2023).

Data analytics has become an integral component of modern education, offering in-depth insights into student performance, activity levels, and interactions with learning materials. Platforms like Blackboard Analytics and Tableau enable educators to examine individual learning paths and craft targeted teaching strategies. For instance, Learning Analytics can identify students facing academic challenges and facilitate timely interventions. Additionally, data analytics supports curriculum enhancement by providing feedback based on the performance metrics of various courses. This personalized approach fosters higher student engagement, motivation, and improved learning outcomes (Akimova et al., 2022).

In conclusion, the innovative technologies employed by U.S. universities enhance the quality of education and fundamentally transform the learning process. These advancements make education more interactive, adaptable, and tailored to meet the specific needs of students.

The educational digital environment of U.S. universities profoundly transforms teaching and learning, offering new opportunities while presenting various challenges for all stakeholders in the educational process.

The digital environment of universities facilitates widespread access to educational resources, overcoming barriers of geography and socioeconomic status. Digital libraries and online databases, such as JSTOR and ProQuest, along with interactive platforms like Coursera and Khan Academy, make high-quality education more readily available to a broader audience. The personalization of education has been made possible through the use of LMS and AI, which tailor educational content to individual student needs. Adaptive learning platforms, for instance, provide tasks aligned with a student's current knowledge level and learning pace, thereby fostering greater motivation and academic success (Anoshkova, n.d.).

Despite the benefits, the digital environment poses several challenges for both universities and society.

The Digital Divide. Although technology use is becoming more widespread, not all students have equal access to digital tools and the internet, which contributes to disparities in educational opportunities, particularly among students from low-income or rural backgrounds (Poseletska et al., 2020).

Ethical Issues. The adoption of digital tools raises concerns about the protection of student and faculty data. Automated grading and data analysis systems may introduce biases or misinterpretations in assessing student performance and behavior (Küsel et al., 2020).

Cybersecurity. The frequency of cyberattacks targeting educational institutions is on the rise, posing risks to data confidentiality and disrupting the continuity of the educational process (Dzvinchuk et al., 2020).

The digital learning environment necessitates the acquisition of new competencies by all participants in the educational process. Students are expected to develop skills for effectively using digital tools, critically evaluating online information, and understanding basic cybersecurity principles. Many U.S. universities are integrating digital literacy courses into their curricula to prepare students for successful careers in the digital age (Yingfa, 2020).

Similarly, educators must adapt their teaching approaches to fit the digital landscape. This adaptation involves mastering the use of LMS, creating interactive course content, analyzing educational data, and seamlessly integrating technology into teaching practices. Universities are offering training and resources to support faculty in developing these competencies. For instance, Harvard University runs programs to assist instructors in incorporating innovative educational technologies into their teaching (Yingfa, 2020).

In conclusion, the digital environment substantially redefines the interaction between students and educators, offering new prospects while presenting notable challenges. Ensuring equitable access to digital resources, fostering the development of digital competencies, and upholding ethical standards are essential for optimizing the effectiveness of the educational digital environment (Guerrero et al., 2020).

U.S. universities exhibit exemplary practices in digitalization that significantly enhance teaching, research, and administrative functions. The experiences of institutions such as the Massachusetts Institute of Technology (MIT), Stanford University, and Arizona State University (ASU) illustrate leading-edge implementations of digital technologies in higher education (Moyle et al., 2011).

MIT is recognized as a pioneer in the adoption of advanced digital technologies. A notable achievement is the development of the MIT OpenCourseWare platform, which provides open access to a broad range of lectures, resources, and courses across various disciplines. This initiative exemplifies the democratization of knowledge and supports the global dissemination of high-quality education. Additionally, MIT utilizes VR tools as part of its educational strategies, particularly in STEM programs, where VR simulations help students explore complex physical and chemical processes, facilitating deeper comprehension. The institute also invests in artificial intelligence to analyze large datasets related to student performance, enabling continuous enhancements in educational programs (Guerrero et al., 2020).

Stanford University is at the forefront of leveraging educational analytics and adaptive learning systems. The institution employs systems that track student engagement on LMS platforms, enabling personalized learning experiences. The Class2Go platform, for instance, merges the functionalities of online courses with LMS capabilities to support individualized education. Stanford also integrates AR into its programs, such as in medical studies where students use virtual human body models to interactively study anatomy. Furthermore, the university partners with platforms like Coursera and edX to offer a variety of open courses, broadening access to quality education (Alenezi, 2023).

Arizona State University is renowned for its innovative approaches to distance learning and the integration of artificial intelligence. The university launched the Global Freshman Academy, a platform that provides international students the opportunity to complete first-year courses online for credit. ASU also incorporates AI into its student support services. The ASU Chat chatbot, for instance, assists with administrative inquiries, academic guidance, and career planning. Additionally, ASU employs data analytics to track and evaluate student performance, which facilitates early identification of challenges and the provision of targeted support (Slushny et al., 2020).

Conclusions. The study revealed that the educational and digital ecosystem of U.S. universities

is a sophisticated and dynamic system that integrates innovative technologies, advanced infrastructure, and adaptive learning strategies. Institutions extensively utilize digital platforms, VR, AI, and data analytics, fostering personalized education, enhancing access to knowledge, and improving the overall learning experience. Key benefits of digitalization include the accessibility of educational resources, enabling students worldwide to access high-quality education, and the customization of learning experiences tailored to individual student needs through adaptive technologies. Cutting-edge solutions such as VR/AR and data analytics enhance the interactivity and modernization of education, while MOOCs promote the principle of lifelong learning.

However, digitalization also introduces significant challenges. The digital divide persists as a critical issue, with unequal access to the internet and digital tools limiting opportunities for some students. Ethical considerations surrounding the use of educational data and automated assessments necessitate stringent standards for privacy and fairness. Furthermore, cybersecurity remains a pressing concern, requiring continuous vigilance to protect student and faculty data and to maintain the uninterrupted functioning of educational activities.

Future research in this area spans several vital directions. First, it is essential to examine how successful digital practices in U.S. universities can be adapted to diverse cultural and educational contexts, facilitating the implementation of innovations while respecting local educational characteristics. Second, the impact of the digital learning environment on students' emotional intelligence warrants exploration, as digitalization alters the dynamics of interpersonal interactions in education. Third, long-term analyses are needed to assess digitalization's broader implications for education and society, including its effects on the labor market, social mobility, and cultural evolution. These insights will support the development of strategies to optimize the use of digital technologies in the global education landscape.

In summary, while the digital environment of U.S. universities holds immense potential to transform education, addressing its challenges and leveraging its opportunities are crucial for achieving sustainable progress in the digital age.

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PROBLEMS OF TEACHER TRAINING

ПРОБЛЕМИ ПІДГОТОВКИ ВЧИТЕЛЯ

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The use of modern ICT in distance training of future educators for professional self-development

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Abstract

The article proves that in the process of forming future teachers' self-development skills in distance learning, special attention should be focused on an individual approach to each student, their initial professional and pedagogical abilities, psychological capabilities, the originality of the thesaurus, as well as on the psychological and pedagogical features of forming readiness for professional self-development. It emphasizes the necessity for modern teachers to be theoretically and practically capable of analyzing their professional capabilities and, based on this, to formulate a program for their further professional growth at any stage of their professional activity. The article analyzes the peculiarities of using modern ICT in the distance preparation of future educators for professional self-development, distinguishing the means of telecommunications, methods, techniques, and forms of work. It examines the independent work of students in two aspects: at the reproductive level (working on oneself without any assistance but according to tasks or routines defined by schedules, habits, the instructor's requirements, and societal needs; acting according to the accepted motivational setup; developing acquired knowledge, skills, habits) and at the productive level (working on oneself not by template, but with attempts at novelty, risk, creativity, inventiveness, interest, and the need for self-improvement; introducing changes in content, organization and outcomes of activities). The article substantiates the peculiarities of organising an information and educational environment that allows teachers to more effectively implement ICT and Internet resources at different stages of the traditional education system, create online classes, integrated classes, develop and use their own software and digital educational resources for distance learning.

Keywords: future educators, professional self-development, distance learning, information and communication technologies, educational environment

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Використання сучасних ІКТ у дистанційній підготовці майбутніх педагогів до професійного саморозвитку

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Анотація

У статті доведено, що в процесі формування умінь саморозвитку майбутнього вчителя під час дистанційного навчання особлива увага має зосереджуватись на індивідуальному підході до кожного студента, його вихідних фахових і педагогічних здібностях, психологічних можливостях, своєрідності тезаурусу, а також власне на психолого-педагогічних особливостях формування готовності до професійного саморозвитку. Наголошено на необхідності того, щоб сучасний вчитель теоретично та практично має бути здатний проаналізувати власні професійні можливості й на цій основі сформувати програму власного подальшого професійного зростання на будь-якому етапі професійної діяльності. Проаналізовано особливості використання сучасних ІКТ у дистанційній підготовці майбутніх педагогів до професійного саморозвитку; виокремлено засоби телекомунікацій, методи, прийоми та форми роботи. Розглянута самостійна робота здобувачів у двох аспектах: на репродуктивному рівні (робота над собою без будь-якої допомоги, але за завданням або режимом, визначеним розкладом, звичкою, вимогою викладача, потребою суспільства; дія за прийнятою мотиваційною установкою; розвиток набутих знань, умінь, навичок, звичок) та на продуктивному рівні (робота над собою не за шаблоном, а з пробою новизни, ризику, творчості, винахідливості, інтересу, потребою до самовдосконалення; внесення змін за змістом, організацією та результатом діяльності). Обґрунтовано особливості організації інформаційно-освітнього середовища, яке дає змогу викладачам більш ефективно упроваджувати ІКТ і ресурси мережі Інтернет на різних етапах традиційної системи навчання, створювати Інтернет-заняття, інтегровані заняття, розробляти й використовувати власне програмне забезпечення та цифрові освітні ресурси дистанційного навчання.

Ключові слова: майбутні педагоги, професійний саморозвиток, дистанційне навчання, інформаційно-комунікаційні технології, освітнє середовище

Statement of the problem. The identification of personal qualities of future educators, the specific features of their professional activity and development, as well as the formation of self-development skills, are currently among the primary directions for improving pedagogical education. The preparation of future teachers should be structured as a system of conditions to support their professional growth and self-development (Frytsiuk, 2016). It is essential that modern teachers be both theoretically and practically capable of analyzing their own professional capacities and, on this basis, developing a program for their further professional growth at any stage of their career. This can be achieved by fostering a readiness among future teachers for professional self-development. However, many issues remain unresolved in teacher preparation and there are still numerous theoretical challenges, particularly in preparing future teachers for professional self-development, which has not received adequate attention. This is especially relevant in the context of distance learning.

In the monograph “Modern educational technologies in the digital reality”, published in 2024 and edited by Academician Hurevych (2024), it is noted that "digitalization is significantly transforming existing jobs, creating a need for professionals to acquire new skills (soft skills) to tackle current tasks.

This transformation demands continuous professional development, lifelong learning and the acquisition of skills and competencies for using new software" (Modern educational technologies in the digital reality, 2024). This applies to future teachers as well.

It is worth noting that the megatrends of the last decade show that the world of work is becoming increasingly global, people want to work, learn, communicate and play whenever and wherever they choose. The Internet is turning into a global mobile communication network and cloud technologies are facilitating the rapid growth of online video and multimedia. The world is becoming more open – open content, open data, open resources and open online courses are spreading widely. All of this also applies to the professional training of future educators.

We believe that in order to form the readiness of future teachers for continuous professional self-development, it is essential to stimulate their independent educational and cognitive activities through modern ICT (Frytsiuk et al., 2022).

The Analysis of Sources and Recent Research. The following scholars have made a significant contribution to the study of the problem of using ICT in the training of specialists: V. Bykov, R. Hurevych, M. Zhaldak, M. Kademia, M. Koziar, A. Kolomiets, S. Sysoieva, and others (Frytsiuk, 2016; Gromov et al, 2020; Hubina et al, 2022).

At the same time, it should be noted that the professional self-development of future teachers has become an important issue in pedagogy and is examined in the research of many scholars. Among domestic studies, noteworthy are the works of P. Kharchenko (formation of readiness for professional self-development in future music teachers); T. Stritievych (development of professional self-development skills in future art teachers); T. Tykhonova (pedagogical conditions for the professional self-development of future computer science teachers) and others. However, the issue of preparing students of pedagogical higher education institutions for professional self-development in new socio-economic conditions, particularly in the context of distance learning, requires separate study.

The Purpose of the article is to analyze the features of using modern ICT in the distance preparation of future teachers for professional self-development, highlighting telecommunications tools, methods, techniques and forms of work.

The Results of the Research. It is worth noting that the "Book of National Education of Ukraine" (edited by V. Kremen) asserts that the primary responsibility for continuous professional development rests on pedagogical and scientific-pedagogical staff, whose role is to sustain and enrich the country's human resources. This category of personnel is specifically required to organically integrate the various components (formal, non-formal, and informal) of the pedagogical and scientific-pedagogical education system. Additionally, the acceleration and intensification of societal changes are reflected in the complexity and rapid informatization of all aspects of life, economic growth and the demand for specialists with research-innovation skills. This calls for an enhanced role of higher (master's, doctoral) formal educational levels (and scientific-pedagogical staff) and encourages the development of a comprehensive system of non-formal and informal education, particularly adult education. For instance, in thirty countries of the Organization for Economic Cooperation and Development, only one percent of the population over the age of 40 remains in formal education aimed at obtaining a certain educational level (according to the International Standard Classification of Education).

We believe that in the process of developing self-improvement skills in future teachers – currently one of the main directions in enhancing pedagogical education – special attention should be focused on an individual approach to each student. This includes their initial professional and pedagogical abilities, psychological capacities, unique thesaurus, as well as the psycho-pedagogical characteristics involved in forming readiness for professional self-development. Therefore, one of the main tasks is to provide students with psychological tools that enable them to express their individuality. It is essential to stimulate and develop students' ability to independently reflect on issues and devise methods and approaches for solving them through individual cognitive exploration.

The significance of students' independent work during distance learning in the context of our research is undeniable, as its primary goal is to develop independence as a personal trait, which is essential for a student's ability to organize and carry out their activities without external guidance and assistance. In this regard, it is important for professional self-development to devise a strategy for forming a system of skills and abilities for independent work among future educators, including through the use of ICT.

It is worth noting the possibility of considering independent work, including remote work, in two

aspects (reproductive and productive). Independence at the reproductive level means working on oneself without any assistance but according to tasks or schedules set by a timetable, habit, teacher's requirement or societal need; a habitual attitude towards daily activities, the external environment, and oneself; acting according to an accepted motivational stance; and developing acquired knowledge, skills, abilities and habits. Independence at the productive level means working on oneself not according to a template but with an element of novelty, risk, creativity, ingenuity, interest and a need for self-improvement; making changes in the content, organization, and outcomes of activities; on one hand, complicating the content of activities, and on the other, simplifying their nature to improve results (Mukoviz, 2008). We believe that, at the productive level, ICT has significant potential for organizing independent work for future teachers, especially during remote learning, aimed at developing their readiness for continuous professional self-development.

Hurevych and Kademiia (2005) distinguish the following types of ICT: data processing technology – for solving well-structured tasks with the aim of automating some routine, repetitive operations (using such ICTs as data collection, processing, and storage, as well as creating reports and queries); office automation technology – for automating and telecommunication support of a specialist's work (using such computer technologies as word processors, spreadsheets, databases, graphic editors, management programs and modern computer telecommunications); management technology – for solving less structured tasks related to assessing the state of an object, identifying causes of changes in the state of the studied object, and analyzing possible solutions and actions (using such ICTs as a database with a system of regular or special reports); decision support technology – for creating information support in the process of solving creative tasks (using such ICTs as a database, multimedia components, etc.); expert systems technology – for imitating the work of an expert in a specific subject area based on artificial intelligence (using such ICTs as databases and knowledge bases) (Hurevych, Kademiia, 2005).

In a distant work with students, it is worth actively using the Internet: email, electronic textbooks, dictionaries, reference books, encyclopedias, teleconferences, blogs, chats, etc.

To foster the readiness of future teachers for professional self-development, it is advisable to encourage senior students to participate in pedagogical online marathons and webinars conducted by the "Osnova" publishing group, which provide opportunities to enhance their professional level. We consider such events and others effective in terms of activating the professional self-development of future educators.

To participate in the seminar, future participants need to select a topic or several topics they would like to listen to and fill out an online application.

In general, participants in the educational online marathon have access to several dozen thematic webinars, the most popular of which include: "Developing competencies as a strategy for life success", "Technology for developing critical thinking: Bloom's taxonomy and multilevel questioning", "Become the change that will change the world around you: shaping your own change trajectory", "How to become a competitive teacher", "Practical use of modern pedagogical technologies", "Web quests in extracurricular activities", "Creative projects in lessons", "Key competencies in the educational process", "Generational theory", "The art of creating presentations: a review of services", "Making the lesson come alive: time-saving technologies in action", "Motivating learning through multimedia game exercises", "Forming critical thinking in the lesson", "Technology of individual cognitive strategies", "Electronic books to assist teachers" and more.

The educational opportunities of distance learning should be realized through the following telecommunication tools: E-mail; web forums; thematic newsletters, electronic journals, Usenet conferences; chat; video conferencing; ICQ; WWW (navigating the Internet); active channels for subscribing to websites; web services: web conferences, bulletin boards, registration forms, tests; mobile Internet, etc.

Students should be encouraged to use cloud computing technologies that allow them to remotely use data processing and storage facilities. The last ones are stored on the server of the cloud service and can be accessed from any place with the Internet and a computer. The most commonly used cloud services are the following: Microsoft Live@edu cloud platform (the services of this platform include: email, virtual whiteboard, website creation and maintenance, creation and editing of Word, Exel, Power Point documents) and Google Apps Education Edition cloud platform (Gmail, Google Calendar, Google Drive - storage for your own files, Google Docs - a service for

creating documents, spreadsheets, presentations, Google Sites - allows you to create websites using built-in templates) (Drone, 2017).

It is significant that teachers and students note the following advantages of Google services: free of charge; one account - all services; familiar interface; cloud storage; minimum access requirements; collaborative document creation; history of all changes; differentiation of access rights; support and development; user community.

The information and educational environment created in higher education institutions (HEIs) plays a significant role in the use of ICT. The organization of this environment allows educators to more effectively implement ICT and Internet resources at various stages of the traditional education system, to create online classes, integrated lessons, to develop and use their own software and digital educational resources, and to utilize media libraries, among other things. For students, such an environment enables them to: use Internet technologies in organizing additional education; utilize computer technologies to prepare for classes; engage in practice tests; participate in online competitions and olympiads; discuss relevant issues on forums, in Skype, on the educational institution's website; prepare intellectually and psychologically for further education; learn to work with information presented in various forms, select and systematize scientific material, create presentations and reports on assigned topics, etc.

Conclusions. Thus, the activation of independent learning and cognitive activity of future teachers by using information and communication technologies is a system of interaction between the student and the educational material by means of ICT, which, provided that it is rationally organised by the teacher, ensures high-quality learning of the material, promotes the formation of independent thinking, actions and attitudes to the proposed task, resulting in the active acquisition of new or activation of already known knowledge, development of new skills, which positively affects the formation of future teachers' readiness.

The study of the possibilities of the information and educational environment of higher education institutions in developing the readiness of future teachers for professional self-development is promising for further research.

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Socio-cultural aspects in the humanistic education of modern youth

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Abstract

The article examines the sociocultural strategic aspects of moral education of modern schoolchildren, based on innovative pedagogical technologies and aimed at shaping the personality on the basis of humanistic and universal values. Social institutions have a purposeful influence on personality development, through which social and cultural experience is reproduced in the individual's consciousness, behavior, and activities. As a result, moral character is formed, characterized by the individual's value-based attitude towards the world, oneself and others, nature, work, and education. These attitudes are grounded in values accepted by society, primarily universal ones. The dominant focus is on the formation of basic humanistic values. Thus, the article aims to prove the importance of the sociocultural aspects of humanistic education for modern schoolchildren and the formation of tolerant interpersonal relationships. Theoretical research methods used in the study include comprehensive, comparative, and retrospective analysis of the literature, along with various empirical methods. In the experimental work, a traditional approach was employed using control and experimental groups of respondents. Methods of mathematical statistics allowed to verify the reliability of the experimental research results. The practical significance of the research consists in the thorough analysis of the socio-cultural aspects of humanistic education, the application of theoretical principles and conclusions to specific scientific and methodological recommendations for the humanistic education of schoolchildren, and the development, testing, and implementation of innovative pedagogical technologies and active forms of educational work with secondary school students.

Keywords: socio-cultural approach, culture, innovative educational technologies, tolerant interpersonal relationships, humanistic values, universal values, value-based attitude toward people

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Соціокультурні аспекти в гуманістичному вихованні сучасної молоді

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Анотація

У статті розглядаються соціокультурні стратегічні аспекти морального виховання сучасного школяра, що ґрунтується на інноваційних педагогічних технологіях і спрямоване на формування особистості на засадах гуманістичних і загальнолюдських цінностей. Цілеспрямований вплив на розвиток особистості здійснюють соціальні інститути, за допомогою яких у свідомості, поведінці та діяльності індивіда відтворюється соціальний і культурний досвід. У результаті формується моральний характер, що характеризується ціннісним ставленням особистості до світу, себе та інших, природи, праці, навчання. Ці установки ґрунтуються на прийнятих суспільством цінностях, насамперед загальнолюдських. Домінуюча увага приділяється формуванню базових гуманістичних цінностей. Таким чином, стаття має на меті довести важливість соціокультурних аспектів гуманістичного виховання сучасного школяра та формування толерантних міжособистісних стосунків. Теоретичні методи дослідження, використані в дослідженні, включають комплексний, порівняльний і ретроспективний аналіз літератури, а також різні емпіричні методи. В експериментальній роботі застосовувався традиційний підхід з використанням контрольної та експериментальної груп респондентів. Методи математичної статистики дозволили перевірити достовірність результатів експериментальних досліджень. Практичне значення дослідження полягає у ґрунтовному аналізі соціокультурних аспектів гуманістичної освіти, застосуванні теоретичних положень і висновків до конкретних науково-методичних рекомендацій щодо гуманістичного виховання школярів, розробці, апробації та впровадженні інноваційні педагогічні технології та активні форми виховної роботи з учнями загальноосвітньої школи.

Ключові слова: соціокультурний підхід, культура, інноваційні освітні технології, толерантні міжособистісні стосунки, гуманістичні цінності, загальнолюдські цінності, ціннісне ставлення до людини

Statement of the problem. Social situation has a significant impact on personal development. The most important factors in this process are education, knowledge, self-sufficiency, charity, the ability to socialize easily, understanding the difference between “good” and “bad”, identifying role models and other qualities of a perfect individual. Undoubtedly, education must be the driving force of this process.

The analysis of the current socio-cultural situation and recent scientific research show, that, in the broader context of social development, the implementation of changes in the field of education and the manifestation of positive trends in the renewal of social spiritual and moral potential play a significant role in terms of general cause-and-effect logic. It stimulates scientific research and the use of comprehensive, practice-oriented pedagogical programs and innovative educational technologies. The success of the overall development strategy of the state and the movement toward a stable, civilized society depends on how democratic the educational process is in its structure and organizational style, together with effective management at the state and regional levels, as well as its orientation toward humanistic and universal values.

We have reached an important stage in the transitional period, when social sciences, especially pedagogy, must follow the fact of how society is

destroying old stereotypes and outdated forms of education, while it is simultaneously developing conceptually innovative approaches to creating modern educational systems, technologies and methods for their programming and flexible modeling. Therefore, researchers pay special attention to identifying the most effective ways of refreshing the methodology of various aspects of the educational process, and in our case, to the formation of a personality, based on the principles of humanistic values orientation.

The educational model requires radical changes with a focus on the future, which is rapidly altering the development paradigm of civilization. Integration processes in society and globalization are steering modern education towards a new pedagogical model - multicultural education - aimed at fostering harmony among ethnic groups and promoting understanding between representatives of different nations and nationalities in the world which is characterized by cultural diversity.

In this context, the socio-cultural approach to preparing youth for life in the multicultural society of the 21st century becomes particularly important. It serves as a theoretical and methodological strategy for the formation of socio-cultural competence.

The Analysis of Sources and Recent Research. The problem of innovative processes in education began to have been actively studied since the 1990s and it continues today. It was investigated by Western researchers (B. Santo, V. Hartman, B. Twiss, R. Foster, J. Schumpeter); the introduction of information technologies has been highlighted by I. Kolchuk, V. Makarova, O. Balykin, N. Kolomiets; innovative technologies in education were presented by O. Udod, O. Kobernyk, V. Kremen, V. Moroz, and in secondary education institutions by I. Bekh, I. Ivanov, L. Katsynska, V. Kyrychok, K. Chorna.

The issues of fostering a culture of interpersonal relationships in modern pedagogical science is studied in different aspects: pedagogy of tolerance (M. Rozhkov, A. Syrotenko, G. Soldatova, L. Shaigerova); ethnic tolerance (O. Baibakov, Z. Malkova, V. Podobed, Yu. Rymarenko, V. Tishkov); technological aspects of fostering tolerance (T. Bilous, S. Gerasymov, O. Kashchenko, B. Riardon, V. Sitarov, I. Skovorodkina, O. Skriabina, P. Stepanov, G. Shelamova); the use of humanities as a means of forming a tolerant personality (L. Aleksashkina, L. Vanyushkina, S. Metlina). Intercultural interaction as a sociological phenomenon has been studied by M. Bagmet, L. Liapina, A. Matezka, A. Pysarenko, L. Ternova. The study of the experience of humanistic education and the formation of tolerance in foreign countries has been the subject of study by A.Dzhurinsky. The issue of fostering tolerant behavior in youth based on the principle of humanism has been researched by O. Baturina, T. Bilous, Yu. Hrachova, Ya. Dovgopolova, O. Zarivna, I. Zhdanova, O. Pugachova, O. Rybak, O. Khizhnak.

The Purpose of the article is to demonstrate the importance of socio-cultural strategic aspects of humanistic education of modern youth and the formation of tolerant interpersonal relationships using innovative educational technologies.

The Results of the Research. Considering the global changes in society, we have identified the complex conditions and value orientations influencing the formation of a personality. This fact forced a deeper study aimed at revealing the systemic factors and updating the methodology of the educational process. The main idea and scope of educational tasks require as the identification of additional material and psychological-pedagogical resources which are closely connected with real practice, as a new understanding and evaluation of the correctness of the conceptual-categorical framework. It also involves reviewing basic categories, theories, and technologies, incorporating knowledge from related sciences as a modern methodological basis. All this refreshes the interpretation of the main features and systemic functional characteristics of the modern educational process, the methods and mechanisms of its pedagogical and cultural regulation, as well as the self-reflection of its participants

The intercultural socio-cultural approach allows young people to see what is common and different in cultures, evaluate their own culture from the perspective of other peoples, and form an individual worldview. In turn, it serves as a way to identify complex interconnections and interdependencies among the structural elements of intercultural and sociocultural competence, contributing to their successful formation in the context of multicultural pedagogical education, ensuring the organization of the educational process based on cultural dialogue, and fostering the tolerant perception of other cultures while teaching others to do the same.

The issue of intercultural interaction receives great attention nowadays. While Ukraine establishes itself as an independent state,

international and interpersonal connections with various countries of the world are rapidly developing. In this regard, the ability to communicate both on business and informal levels becomes crucial for our society, guided by the leading principles of human relations -humanism and tolerant interpersonal relations (Stoliarenko, Stoliarenko, 2014).

Culture is a complex philosophical and social category. We understand culture as a certain social mechanism that reproduces various standards and norms of human behavior. Its development depends on continuity and stability of all positive values, which determine the continuity of social progress. It is a value-oriented form of transformative activity, reflecting the historically determined level of social development, and determining the meaning of human existence. "It is a set of practical, material, and spiritual achievements that reflect the historical level of society and humanity development ..." (USE, 1987). In other literature culture is also described as a collection of human achievements in the fields of production, society, and intellect.

Researchers emphasize a value-oriented nature of culture. For instance, Ziaziun (1997) believes that culture shapes each individual's system of values and regulates their individual and social behavior, serving as a foundation for setting and achieving cognitive, practical, and personal goals (Ziaziun, 1997). Lukashevich (1998) states: "Personal culture is viewed as a set of social norms and values that guide an individual in the process of practical activity" (Lukashevich, 1998). As a symbolic phenomenon, culture is endowed with the following functions: 1) fixing information in various texts (according to Lotman (1973) , culture is "inherited memory"); 2) facilitating communication in society across time (transmitting information from generation to generation) and environment (Lotman, 1973). Culture exists in both material and personal forms, which imply the concern for humanity. Material forms of culture are the results of human activity, representing a system of material and spiritual values: tools, household items, scientific knowledge, philosophical and religious systems, traditions and rituals, moral principles and norms, laws, artworks, and more. Personal (individual) forms of culture are represented by people as subjects of activity and carriers of specific cultural and, as we understand them, humanistic values. Material and personal forms of culture are regarded as a whole, constituting a particular type with humanistic values to different extent. Each nation, as an ethnic and historical entity, possesses its own type of culture. Cultural integrity is also characteristic of regions (European, African, Slavic cultures, and others) as well as historical epochs (Antiquity, Renaissance, Baroque, Enlightenment). Although cultural types change with historical periods, this does not imply a rupture of cultural heritage and traditions, since each new era necessarily inherits the achievements of the previous one. Thus we can regard the cultural history of humanity as a global process, to use the concept of world culture, to perceive humanity as a planetary phenomenon within it, and as a result to analyze the role of universal humanistic values. For this reason, one of the most significant approaches in pedagogical and sociological research is the intercultural, sociocultural, and cultural-historical (or cultural-activity) approach (Lukashevich, 1998). Culture, sufficient for the existence of an ethnic group, stops being such when it comes to the life of a nation. Unlike ethnic culture, national culture presupposes the existence of new types of communication (connections) between people, involving more complex relationships than natural family ties. It is not created by the ethnic group as a whole but by those members of society who assume the function of individual authorship - writers, philosophers, scientists, priests, and artists. The formation of an individual can only occur with consideration of the channels through which they perceive and reproduce the core features of the national mentality. "The dominant feature of the Ukrainian mentality is the complete self-realization of a highly talented people whose historical mission is to harmonize the relationships between generations, peoples, and cultures of the continent, to affirm the model of a democratic and lawful state, a humanist society, a world without empires and wars, and a world of trust, love, and beauty..." (Kononenko, 1996), which proves its deep humanistic content. In terms of forming a humane personality, we consider mentality to be a dynamic, flexible, and promising object of educational influence within specific sociocultural conditions. Understanding one's national identity will allow individuals to respect examples of other cultures, to approach their achievements with tolerance, and to reach consensus in interpersonal relationships.

In terms of our investigation, philosophical analysis has been applied to issues related to humanization of schools, fostering humanity and tolerance in students, especially concerning the formation of a humanistic worldview, education as a means of humanity's survival, reflecting the achievements of civilization, resolving global issues, and the school's cultural function as an institution for the socialization of youth. It also addresses the comprehension of the role of social environment and time, the absolute and relative, the external and internal in life, the development of humanistic educational systems, the hierarchy of factors in forming a humane personality, the common goals of teaching and upbringing, and the choice of moral and educational ideals. Previously, the educational process was typically a direct transmission of ideological goals. The application of the category of values took the form of imperative instructions regarding the final results of upbringing. According to Savchenko (1996), pedagogical theory and practice require the scientific reasoning of at least two systems of values: 1) educational system oriented to modern and future standards (forward-looking), and 2) educational system of values that should be formed within the educational process itself. The widely accepted conceptual development of value orientations in secondary education today describes it as a systematic and widespread part which implies the acceptance of real values by students. It creates the prerequisites for constructive transformative influence on all spheres of life and generates the leading idea of humanizing education, where the individual is considered to be the highest value (Savchenko, 1996). In the sphere of secondary education, the main groups of values have been identified based on this concept. The meaning of the concept is covered by the following principles. For one thing, humanistic values are considered to be basic: the child as the main pedagogical value, and the teacher, who creates conditions for their development and social protection. Hence, the focus is on the idea that the person is regarded not as a means but as a purpose, and thus, the child should not be adapted to the educational system, but the school serves the missions of schoolchildren. The modern understanding of humanistic values lies within the framework of anthropological and sociocultural coordinates. The underestimation of natural factors of human development, along with other factors, coursed its alienation from family ties, its connection with the environment, and lifestyle, as well as neglect of national education. A stereotype was established: social interests are primary, and the person is merely an accessory. Today, a pressing imperative is the development of a democratic form of relationships: if society protects the individual, then the individual also cares for the state. The pedagogical realization of humanistic values is connected with the enhancement of personal culture, engagement with national and universal values, which requires strengthening the cultural focus of schools, humanizing, and increasing the humanities in education. The primary purpose of culture is to enrich and nurture everything that makes human life easier, more noble, and happier, spreading humanistic relationships in society. A priority in the process of humanizing secondary education belongs to the humanities, social sciences, human studies courses, and valeology (health education), which help the schoolchildren to understand the human world and themselves better, master the skills of self-organization and self-regulation. The implementation of the humanistic approach involves emphasizing the integrity of the human personality, which integrates natural, social, and cultural aspects, recognizing the individual as the highest value. The ultimate goal of social development is the person, for whom favorable conditions to live and work must be created. In the process of forming a humane democratic society, the individual's alienation from power, property, and the values created by their labor is overcome. The value of a person is measured by his/her attitude toward work and the degree of his/her involvement in active public activities. It is crucial that the content of various educational processes, their interactions, and the specific conditions in which an individual lives and acts have a positive influence on them, helping to form a humane person - a worthy representative of society.

Second, humanistic values in education cause the shift from an authoritarian-disciplinary educational model to a personality-oriented one. The essential characteristics of this transformation include the individualization of personality development, the creation of conditions for self-development and self-improvement, and the conscious understanding of one's abilities and life goals. Methodologically, these processes rely on the principle of natural conformity and motivational-processual support for the educational process. The

personality-oriented educational system creates a new pedagogical ethic with its characteristic feature - mutual understanding. It: a) changes the positions of students and educators in the course of communication, establishing not role-based but personal communication (support, empathy, respect for human dignity, trust); b) considers dialogue as the dominant form of interaction, encouraging the exchange of thoughts and impressions, and the modeling of life situations; c) includes specially designed situations of choice, advancement of success, self-analysis and self-evaluation - that moral knowledge which is especially important for the student. And the most important fact is that this system suggests teachers should master various approaches to educational process. Modern educators must know not only one universal approach but several methods suitable for achieving the goal. Thus, the most significant features of personality-oriented education are the multiplicity of methods, the ability to organize educational work at different levels of complexity simultaneously, taking into account each student's level of moral development, affirming by all means life values (both physical and emotional well-being), and fostering a positive attitude toward the world and other people. The analysis of the educational work in schools revealed that, in some cases, teachers face difficulties in accepting the values of the personality-oriented pedagogical process, caused by sharp contradictions in their personal value orientations. In such a situation, some teachers experience a collapse of values concerning self-affirmation in society, the inability to meet professional self-improvement needs due to the lack of financial support for the educational process and their pragmatic demands. The situation becomes more dramatic when social stratification offers numerous examples of successful life models that do not necessarily require responsibility or professionalism. That is why social, material and methodological support for teachers is of great importance as well as the development of their professional self-awareness, the so-called “core” of their personality (motives, attitudes, beliefs, ideals).

The humanistic personality-oriented educational process lays the foundation for the culture of the individual: moral, intellectual, physical, ecological, aesthetic, economic, and legal. Therefore, culture must be treated as a whole in defining the basic component of secondary education in order to help students not only acquire a system of humanistic values but also prepare them for life in a specific socio-cultural environment. The main task of a teacher in the period of changes is to assist each individual in his/her self-realization, understanding the value of his/her own life and that of others, protecting and enriching the highest spiritual values, and understanding the essence of his/her existence. Educators must pay special attention to the issues of personal humanistic values as a vital form of the student's moral activity.

Third, secondary education, as a condition for human survival, primarily involves the formation of ecologic humanistic thinking and the providing of adaptive functions. The humanistic ideal of the past was associated with ideas of total control (struggle, domination, conquest, and mastery) over social and natural processes by humans. New understanding of nature and human development corresponds to the idea of their common evolution and partnership and cooperation. An important humanistic value of secondary education is the ecological consciousness, which is considered to be the imperative of survival and humanity's global responsibility for normal life in straightened circumstances (Akimova, 2023). The urgent task of schools is to define and ensure the pedagogical and productive conditions for fostering values-based attitudes connected with the humanistic education of students. To solve this task, it is necessary to define the goals at different stages of development and find a balance between multidisciplinary and monodisciplinary approaches to the educational process. The adaptive abilities of education mean that students develop their intentions and skills for peaceful social life, respecting the rights and freedoms of every individual. To reach this goal, educators must follow simple and clear principles and rules of pedagogy of tolerance, which is an integral part of educational philosophy (Stoliarenko, Stoliarenko, 2014). When intolerance, racial, religious, and ethnic conflicts take place, it is essential to start practicing peaceful coexistence, especially in the period when human consciousness is actively being formed. The educational process must help to develop communication skills (readiness for group interaction, mastering linguistic and cultural achievements of humanity), which foster the abilities to cooperate and independently exist in unfamiliar situations. The individual is formed in an open society, so understanding the importance of

psychological and physical security (safety in life activities, behavior in extreme situations) becomes an important component of the adaptive potential of education.

The most commonly used words to describe modernized education are: a person, a child, spirituality, individuality, national and universal culture, health, choice, responsibility, diversity, and tolerance which are all treated as values. It is important that these categories are realized by teachers and become the driving force for their professional culture and everyday job. Education and society are closely connected with each other. Therefore, it is necessary to develop the theoretical principles of pedagogy as an independent science, while expanding knowledge in the field of "philosophy of education", which can provide methodological and worldview-oriented advice for educational practice. We are still learning to live in terms of philosophical pluralism. Our task is to make sure that ignorance does not once again lead to the adoption of a single "correct" ideology, which would immediately become the standard for practical transformations not only in education but in other areas of human coexistence. This is the essence of the humanistic concept of education with three main groups of values, which was suggested by Savchenko (1996) and we share his point of view. The humanistic approach to fostering value-based attitudes toward others best meets modern demands and it satisfies the needs and interests of students. Humanization involves "humanizing" not only the school atmosphere but the entire educational environment, including extracurricular activities. There is a need in significant changes in the nature of tolerant interpersonal relationships and the organization of the educational process, aiming at awakening the student's own efforts and self-organization.

In our study we used methods of statistical analysis with elements of computer technologies (Gurevych, 2019). A traditional approach to organizing research work was used. Control and experimental groups of respondents were formed. The study revealed that, in comparison with the control groups, the majority of participants in the experimental groups manifested humanistic qualities and overall value-based attitudes toward individuals at above average and high levels. The statistical significance of the differences in the manifestation of humanistic qualities between the two groups was identified using Fisher's -test.

$$\varphi^* = (\varphi_1 - \varphi_2)\sqrt{\frac{n1 \cdot n2}{n1 + n2}}$$

φ_1 – value for the experimental group; φ_2 – value for the control group; n1 – number of students in the experimental group; n2 – number of students in the control group. First, the value of φ, which equals the percentage of each group was calculated. φ_1 = 1.525, φ_2 = 1.586. The corresponding values were calculated by the formula, and the resulting value was emp ≈ 2.18. The critical values krit,, corresponding to statistical significance levels, are as follows: krit 95% = 1.24, krit 99% = 2.02. Since the obtained value emp > krit 99%,, we can reject the null hypothesis H0. The difference in the evaluation levels of the value-based attitude towards people between the control and experimental groups is quite significant and statistically reliable. The coefficient of this evaluation for the representatives of the experimental groups compared to the control groups increased from -0.18 at the beginning of the study to 0.56 after its completion, whereas in the control groups, it only increased from -0.16 to 0.25, confirming the working hypothesis about the effectiveness of the pedagogical conditions and the set of modern, interactive educational forms and methods implemented in the experimental groups (Martynets, 2020) and it proves the effectiveness of the proposed model of the educational system (Stoliarenko, Stoliarenko, 2021). The relationship between the levels of value-based attitudes of students towards people and the creation of pedagogical conditions, whose effectiveness was proven within the experimental methodology, was established. Thus, we can conclude that the implementation of a personality-oriented model of humanistic education creates favorable conditions for the formation of value-based attitudes towards individuals in each person and provides effective realization of the tasks of humanistic education of modern youth.

Conclusions. The article presents a theoretical analyses and our approach to solving the scientific problem under discussion. Humanistic education of modern youth and the formation of tolerant interpersonal relationships can be effectively achieved if the socio-cultural methodological approach be

considered in the general strategy of moral education of youth, with the implementation of innovative educational technologies and active forms.

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Valuable determination of the formation of professional competencies of future history teachers

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Abstract

The article investigates the critical importance of cultivating professional competences in future history teachers. It argues that fostering these competences is not just a technical exercise, but a fundamental element in preparing educators who can significantly impact student development and shape their worldview. The purpose of the article is to study the value determination of the formation of professional competences of future teachers of history. The value determination is a fundamental element in the training of professional competent history teachers who are able to effectively influence the development of students and shape their worldview orientations. The article emphasizes the importance of pedagogical skill, encompassing: teaching skill (the ability to design, implement, and assess effective learning experiences in history), innovation (the capacity to adapt and develop new teaching methods to address the evolving needs of students and the educational landscape), reflexivity (the ability to critically self-evaluate teaching practices, analyze student learning outcomes, and continuously improve instruction). By nurturing these interconnected competences, the article proposes that future history teachers will be better equipped to: effectively influence student development (this includes fostering critical thinking, historical awareness, and a well-rounded understanding of the past), shape worldview orientations (effective history teachers can guide students in developing a deeper understanding of the world, their place within it, and the values that shape human societies), adapt to modern educational challenges (the ability to innovate and reflect allows teachers to remain current with evolving pedagogical approaches and address the needs of a rapidly changing world). Overall, the article positions the development of professional competences as a cornerstone in preparing history educators who can significantly contribute to a well-informed and engaged citizenry.

Keywords: value determination, professional competences, pedagogical skill, innovativeness, reflexivity, future history teachers

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Ціннісна детермінація формування професійних компетентностей майбутніх учителів історії

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Анотація

У статті досліджено важливість формування професійних компетентностей у майбутніх учителів історії. Розвиток професійних компетентностей є не просто технічною базою, а фундаментальним елементом у підготовці педагогів, які можуть суттєво вплинути на розвиток учнів і сформувати їхній світогляд. Метою статті є дослідження ціннісної детермінації формування професійних компетентностей майбутніх учителів історії. Ціннісна детермінація є основоположним елементом підготовки професійно компетентного вчителя історії, здатного ефективно впливати на розвиток учнів, формувати їх світоглядні орієнтації. У статті наголошується на важливості педагогічної майстерності, яка охоплює: саму педагогічну майстерність (здатність проєктувати, впроваджувати та оцінювати ефективний досвід навчання історії), інноваційність (здатність адаптувати та розробляти нові методи навчання для задоволення мінливих потреб учнів та освітній ландшафт), рефлексивність (здатність критично самооцінювати практику викладання, аналізувати результати навчання учнів і постійно вдосконалювати процес навчання). Розвиваючи ці взаємопов'язані компетентності автор передбачає, що майбутні вчителі історії будуть краще підготовлені для: ефективного впливу на розвиток учнів (виховання критичного мислення, історичної обізнаності та всебічного розуміння минулого), формування світоглядних орієнтацій (можливість направляти учнів у розвиток глибшого розуміння світу, свого місця в ньому та цінностей, які формують суспільство), адаптуватися до сучасних освітніх викликів (здатність до інновацій та рефлексії, що дозволяє залишатися в курсі педагогічних підходів, які розвиваються, і вирішувати потреби світу, що швидко змінюється).

Ключові слова: ціннісна детермнація, професійні компетентності, педагогічна майстерність, інноваційність, рефлексивність, майбутні вчителі історії

Statement of the problem. The transition from the assimilation of information by students to the formation of competencies necessary for professional activity and self-improvement at the beginning of the 20th century was marked by the transition from that stage. A competency-based approach in education facilitates the integration of higher education students into society and addresses significant challenges within education and industry. The democratic transformations occurring in the country have necessitated the exploration of innovative strategies for the development of various societal aspects and institutions, including the higher education system. Higher education institutions are increasingly prioritizing the comprehensive training of specialists who are responsive to evolving labor market demands. One of the primary objectives of higher pedagogical institutions today is to cultivate competent, adaptable, and competitive professionals capable of independently and creatively tackling professional tasks in a rapidly changing educational environment.

The "New Ukrainian School" concept emphasizes the continuity of all educational stages and is distinguished by the extension of the duration of secondary education, the implementation of competency-based standards, and the provision for students to modify their educational and professional training courses based on individual preferences. This model of general secondary education integrates the attainment of general secondary education with

vocational training opportunities (Nova ukrainska shkola n.d.).

The professional activities of future educators within the New Ukrainian School framework are predicated on their training as highly skilled specialists well-versed in contemporary global educational standards. These educators are prepared to facilitate pedagogical interactions that foster the development of each student's personality and address the challenges of life formation (Protsenko, n.d).

The Analysis of Sources and Recent Research. The theoretical basis of this research is numerous scientific studies on the formation of professional competence in future students of higher pedagogical education directly at the stage of their training in an educational institution (Akimova, Hapchuk, Hrytsenko, Luís, Lunevich, Makisheva, Miguel-Revilla, Rapanta, Sapogov, and many others).

Improvement of the system of training specialists in institutions of higher education through the introduction of the competence approach was considered in the pedagogical studies of: Akimova, Bartolo, Gomez-Trigueros, Gromov, Haluziak, Loboda, Ortega-Sanchez, Parra-Monserrat, Protsenko, Smyth. The researchers substantiated the tasks, content, methods and forms of education of higher education seekers. In particular, Protsenko draws attention to the fact that the formation of competences will be more effective if teachers, to fill the gaps in the relevance of academic knowledge for the graduate, will introduce into practice author's courses that reflect the current level of scientific achievements as much as possible. It is encouraging that the work of the idea generator is an example of such an approach.

The Purpose of the article is to study the value determination of the formation of professional competences of future teachers of history.

The Results of the Research. In the training of prospective educators for the New Ukrainian School, the objectives of educational reform hold significant prominence. The New Ukrainian School initiative represents a fundamentally novel strategic framework for advancing comprehensive secondary education. It encompasses substantial overhauls in curricular content, educational methodologies, didactic practices, and assessment strategies, all geared towards enhancing the learner-centric nature of education, fostering developmental progression, cultivating competencies, and promoting democratic principles (Nova ukrainska shkola n.d.).

The imperative to enhance the level of professional competence among prospective educators, characterized by their capacity for autonomous and innovative thinking, adeptness in educational modeling, and proficiency in generating and implementing novel pedagogical methodologies, is underscored by several key considerations:

- Primarily, a pedagogue endowed with professional competence exerts a constructive influence on nurturing creativity among students within the educational milieu.
- Secondarily, heightened professional competence correlates positively with enhanced performance outcomes in the educator's professional endeavors.
- Tertiary, such competence facilitates the realization of professional potential, as evidenced by the operational dynamics of emerging educational institutions such as lyceums, gymnasiums, and academically specialized schools (Haluziak et al., 2019).

The ongoing cultivation and refinement of a teacher's professional competence are imperative, particularly amidst the transitional phase coinciding with the execution of the "New Ukrainian School" Concept and the preparatory measures for educators to navigate novel educational landscapes. The emergence of a novel breed of pedagogue characterized by proactive engagement, critical thinking, and self-reflective practices necessitates a closer alignment between higher education curricula and authentic professional contexts. The developmental trajectory of educators, akin to any specialized professional, hinges not only on the acquisition of profound theoretical insights but also on the perpetual honing and augmentation of practical competencies and aptitudes (Parra-Monserrat et al., 2021).

For an educator within the framework of the New Ukrainian School, attaining a robust professional preparation is contingent upon specific personal attributes. Such attributes are indispensable for executing primary functions with excellence, thereby substantiating societal confidence in the education of future generations. As underscored by Akimova et al. (2023), educators must be equipped with comprehensive expertise in their subject matter, supplemented by adept comprehension of psychological and pedagogical principles. Additionally, foundational pedagogical proficiency is deemed essential for effective instructional practice (Akimova et al., 2023).

Every vocation necessitates the cultivation of specific intrinsic attributes as foundational elements for the development of professional acumen within the respective domain of practice. Notably, the Framework of the New Ukrainian School delineates essential qualities incumbent upon educators, including an affection for children and the capacity to discern in them burgeoning citizens endowed with boundless potential. These fundamental attributes are indispensable for educators, given their daily interactions with youngsters who are still in the process of accruing social acumen, exhibiting variegated behavioral tendencies, and occasionally deviating from established norms and conventions (Miguel-Revilla et al., 2020).

A teacher must always be able to restrain himself, not to rush to make rash decisions, especially in an excited state. Education is a long process. Therefore, a future teacher must possess the following qualities:

- organizational skills, ability to work with a children's team. The teacher must be able to organize himself and his pupils for various types of activities. In the educational process, not only paired relationships are established: teacher-student, but also relationships between the teacher and the children's team. The ability to organize a team and work with it is, on the one hand, a key to the success of educational work, and on the other hand, it is the preparation of students for active activities in the conditions of coexistence in social groups of adults;
- comprehensive development. Students are inclined to actively learn about the surrounding reality, they want to get answers to many questions.
- Therefore, in addition to in-depth knowledge within his academic discipline, a teacher must possess a certain level of knowledge in various fields. And this requires work capacity and self-demand;
- optimism, love of life, sensitivity, humane attitude towards people. The teacher's work is aimed at creating the greatest values on earth - the treasures of the mind and soul;
- creative thinking. A teacher must constantly be in a creative search (Akimova, Sapohov et al., 2023, Bartolo & Smyth, n.d.).

Furthermore, the educational reform in Ukraine is integral to the broader paradigm shifts within educational systems, underscored by the acknowledgment of knowledge as a catalyst for societal welfare and advancement. These transformations encompass the formulation of novel educational benchmarks, the ongoing refinement and reassessment of pedagogical curricula, the augmentation of educational and didactic resources, textbooks, and instructional modalities. The cultivation of these attributes is imperative for prospective educators within the New Ukrainian School, contingent upon a robust foundation of professional competence and the cultivation of sophisticated professional aptitudes and competencies (Pro vyshchu osvitu: Zakon Ukrainy vid 01.07.2014 № 1556-VII. n.d., Nova ukrainska shkola, n.d.).

Competence – knowledge in a certain field, some issue, authority, power of attorney in solving some case, scope of powers (rights, duties) of a certain body or official according to the statute of the institution, organization. The following aspects of a teacher's professional competence are distinguished:

- special (in the field of the taught subject);
- methodical (in the field of means of forming students' subject competences);
- psychological and pedagogical (in the field of educational activity);
- autopsychological (reflection in the field of pedagogical activity).

Formerly, the educational system prioritized the meticulous and protracted dissemination of knowledge from educator to student. Presently, however, the dissemination of knowledge has evolved into a multifaceted, multidirectional endeavor, drawing from diverse sources and avenues. In this evolving landscape, educators are tasked with assuming the role of collaborative partners with students in fostering the development of essential competencies. This paradigm shift aligns precisely with the role delineated for educators within the framework of the New Ukrainian School (Pro vyshchu osvitu: Zakon Ukrainy vid 01.07.2014 № 1556-VII. n.d., Nova ukrainska shkola, n.d.).

The "New Ukrainian School" Concept delineates several critical reform areas:

- The incorporation of new curricula designed to cultivate key life competencies;
- The adoption of a partnership-based pedagogical approach founded on mutual respect among all educational stakeholders;
- The cultivation of a motivated teaching force equipped with the requisite qualifications and incentives to act as catalysts for change;
- A strong focus on individual student uniqueness, with personalized strategies to meet each learner's needs;

- The integration of value-based education as a core element of the educational framework;
- Structural modifications to enhance access to high-quality education for all school-aged children;
- The advancement of school autonomy;
- The establishment of a contemporary educational environment that fosters the creative potential of both students and educators (Nova ukrainska shkola, n.d., Loboda et al., 2023).

A contemporary educator must engage in continuous self-improvement, rapidly acquire new knowledge, master emerging technologies, and adapt swiftly to the evolving demands of society. The role of the teacher is shifting from being a primary source of information to facilitating the younger generation's ability to manage their own learning processes. Consequently, the Ministry of Education and Science now mandates, rather than merely encourages, teachers to embrace change. Additionally, official documents outlining the professional and personal qualifications for future educators emphasize the importance of motivation, competence, creativity, flexible thinking, accountability for one's outcomes, and self-development abilities. The New Ukrainian School Concept delineates the primary directions for national education reform, which include creating a modern educational environment, updating content and structure, emphasizing value-based education, and focusing on student-centered approaches. This Concept is currently being implemented in primary school standards and practices, and is subject to extensive public discourse regarding general secondary education standards and other issues related to the comprehensive renewal of the Ukrainian education system (Makisheva et al., 2024).

The cultivation of professional competencies in future history teachers is a crucial element in preparing highly qualified educators. This process involves instilling a comprehensive set of values, beliefs, and attitudes that shape a teacher's professional activities and effectiveness. The primary components of this value formation include:

- Professional values and ideals: Respect for historical truth, patriotism, and moral responsibility.
- Personal qualities and traits: Critical thinking, communication skills, empathy, and tolerance.
- Professional competencies: Methodological competence, information technology competence, and research competence.
- Pedagogical skills: Teaching proficiency, innovation, and reflectiveness.
- Societal value orientations: Humanism and social justice.

It is advisable to examine these components in greater detail to fully understand their impact on the training of future history teachers (Lunevich, 2021).

The formation of professional competencies in future history teachers is a critical component in the preparation of highly qualified educators, significantly influencing their professional success. A primary element of this process involves instilling professional values and ideals during their training.

Foremost among these values is respect for historical truth. Future history teachers must maintain objectivity and accuracy in presenting historical facts, ensuring they rely on credible sources and avoid distorting historical events. This respect for historical truth necessitates the development of critical thinking skills, enabling teachers to analyze various sources and prevent a biased approach to history education. Such an approach equips students with the ability to independently assess historical events and draw their own conclusions (Akimova et al., 2023).

Patriotism is another crucial aspect, encompassing a love and respect for one’s country and its history. This value not only fosters national consciousness but also helps students understand their identity and place in the world. Future teachers must balance this with an appreciation of global history, recognizing that national history is part of the broader global historical narrative. This perspective encourages students to develop tolerance and respect for other cultures and peoples, a necessity in today's interconnected world.

Moral responsibility is the third significant value, involving an awareness of the ethical implications of a teacher's influence on students and society. Future history teachers must recognize that their role extends beyond mere knowledge transmission; they shape students' worldviews, value systems, and civic attitudes. Hence, it is essential that history teaching adheres to high ethical standards, respecting human dignity and rights. Moral responsibility also entails teachers serving as role models, exemplifying high moral standards through their behavior and attitudes toward events and phenomena (Akimova & Sapohov, 2011).

The value-based formation of professional competencies in future history teachers encompasses not only professional values and ideals but also the development of personal qualities and traits essential

for effective pedagogical practice. Foremost among these personal qualities is critical thinking. The ability to analyze and evaluate histo rical sources and events allows future educators to avoid bias and maintain objectivity in teaching history. Critical thinking also facilitates the development of students' skills in independently analyzing information, forming their own conclusions, and understanding the complexity of historical processes. Teachers who exercise critical thinking can more effectively address students' questions, stimulate discussion, and encourage a deeper exploration of history.

Communication skills constitute another vital personal trait. The ability to effectively convey knowledge and ideas is fundamental to a successful learning process. Future history teachers must be capable of explaining complex historical concepts in a clear and accessible manner, engaging in constructive dialogues with students, and fostering their interest and active participation. Strong communication skills also enable teachers to create a positive classroom environment where each student feels comfortable and confident in expressing their thoughts and views (Akimova & Sapohov, 2011).

Empathy and tolerance are also crucial qualities. Future history teachers need to understand and appreciate diverse perspectives and cultures, particularly when teaching controversial and sensitive historical issues. Empathy allows teachers to better comprehend their students' needs and experiences, fostering a more harmonious and inclusive learning environment. Tolerance helps teachers instill respect for diversity in students, emphasizing the importance of dialogue and cooperation in a multicultural world (Ortega-Sanchez & Gomez-Trigueros, 2020).

The evaluation of the formation of professional competencies among prospective history teachers encompasses the cultivation of these competencies, which are essential to the training of highly qualified educators. These competencies equip teachers with the skills necessary to perform their professional duties effectively, enhance the educational process, and influence the comprehensive development of students. A critical professional competency is methodological competence, which involves the mastery of contemporary methods of teaching history. Future educators must be well-versed in various pedagogical approaches and capable of adapting them to specific conditions and student needs. This includes the use of interactive learning methods, project-based activities, didactic materials, and visualization tools. Methodological competence enhances the effectiveness of the educational process, making it more engaging and accessible to students (Luís & Rapanta, 2020).

Another vital professional competency is information technology competence. In the modern educational landscape, information and communication technologies (ICT) are integral. Aspiring history teachers must be proficient in utilizing ICT to improve the learning experience, which involves employing electronic resources, online learning platforms, multimedia, and interactive tools. This makes learning more dynamic, interactive, and personalized, catering to the individual needs of each student.

Research competence is also a crucial element of the professional training for history teachers. It encompasses the ability to conduct scientific research, analyze historical sources, critically evaluate information, and integrate research findings into the educational process. This competency enables teachers to foster scientific research skills in students, promotes a deeper understanding of historical processes and phenomena, and cultivates critical thinking (Luís & Rapanta, 2020).

Therefore, the evaluation of the formation of professional competencies among future history teachers encompasses not only professional values and personal qualities but also the development of essential professional competencies. Methodological competence, information technology competence, and research competence are pivotal components that ensure high-quality teaching, foster an innovative approach to learning, and equip students with the necessary skills for independent analysis and critical evaluation of information. These competencies are cultivated through systematic efforts at all stages of professional training, including educational programs, pedagogical practice, and continuous professional development (Akimova et al., 2023).

The value assessment of the formation of professional competencies for prospective history teachers also includes the development of pedagogical expertise, which is a fundamental aspect of effective teaching practice. This encompasses teaching skills, innovation, and reflexivity, all of which ensure the high quality of the educational process.

Teaching mastery involves the utilization of effective pedagogical technologies and techniques. Future history teachers must be adept in a variety of methods that enable them to convey knowledge

effectively, stimulate student interest, and encourage active learning. This includes interactive methods, project-based learning, discussions, and the use of visual and multimedia tools. Proficiency in teaching significantly enhances students' understanding of the material and the development of their analytical skills (Hrytsenko, 2020).

Innovation constitutes a crucial aspect of pedagogical expertise. It entails a readiness to implement new methods and approaches in education. Future history teachers must be receptive to contemporary pedagogical concepts, adept in utilizing modern technologies, and capable of integrating the latest scientific research into their teaching practices. An innovative approach enriches the learning experience, making it more dynamic, relevant, and engaging for students, thereby fostering their creative thinking and independence (Akimova et al., 2023).

Reflexivity, or the ability to self-reflect, is another essential component of pedagogical expertise. It involves the continual enhancement of one's professional skills through the analysis of personal teaching practices, identifying strengths and weaknesses, and seeking ways to improve the educational process. A reflective approach allows teachers to adapt their methods and strategies to meet the needs of students, ensuring more effective teaching.

The value orientations of society significantly influence the development of professional competencies in future history teachers, with humanism and social justice being particularly prominent. Humanism entails the recognition of human values as paramount in the educational process. Future teachers should cultivate in students a respect for human dignity, tolerance, and empathy. A humanistic approach fosters the development of moral and ethical qualities and creates an atmosphere of mutual understanding and cooperation in the classroom (Haluziak et al., 2019).

Social justice involves ensuring equal opportunities for all students, regardless of their social, economic, or cultural backgrounds. Future history teachers must advocate for the inclusion of all students in the learning process, support those facing challenges, and ensure access to quality education for everyone. This contributes to the formation of a just and inclusive society.

The formation of these values and competencies necessitates systematic efforts at all stages of professional training for history teachers. This includes:

- educational programs: developing curricula that integrate value orientations into the content of education. These programs should incorporate modern methods, innovative approaches, and ethical aspects of teaching history;
- pedagogical practice: providing future teachers with opportunities to apply their acquired knowledge and skills in practical settings. Pedagogical practice enables students to consolidate theoretical knowledge, gain practical experience, and develop professional competencies;
- professional development: facilitating continuous professional growth through courses, seminars, and conferences. Ongoing professional development allows teachers to update their knowledge, engage with the latest research, and exchange experiences with colleagues (Ortega-Sanchez & Gomez-Trigueros, 2020).

Thus, the evaluation of the formation of professional competencies is a fundamental element in training history teachers who are not only adept at transferring knowledge but also in shaping the value orientations of the younger generation. This comprehensive development, encompassing professional values, personal qualities, competencies, and pedagogical skills, ensures high-quality teaching and positively impacts students' growth.

Conclusions. Valuable determination of the formation of professional competences of future history teachers is an extremely important aspect of the training of highly qualified teachers who are able to effectively influence the development of students and shape their worldview orientations. It includes a number of components, including professional values and ideals, personal qualities, professional competences and pedagogical skills. Basic professional values and ideals, such as respect for historical truth, patriotism and moral responsibility, lay the foundation for ethical and objective teaching of history. Personal qualities such as critical thinking, communication skills, empathy and tolerance contribute to an effective learning environment where every student can feel heard and understood.

The development of professional competences, in particular methodological, information technology and research, ensures high quality of teaching, integration of the latest technologies and scientific research into the educational process. Pedagogical skill, which includes teaching skill, innovation and reflexivity,

contributes to the continuous improvement of the professional activity of teachers, ensuring adaptation to the modern challenges of education. Value orientations of society, such as humanism and social justice, form in future history teachers an understanding of the priority of human values and the need to ensure equal opportunities for all students. The integration of these orientations into educational programs, pedagogical practice and professional development contributes to the training of teachers who are able not only to transfer knowledge, but also to shape the value orientations of the younger generation.

Thus, value determination is a fundamental element in the training of professional competent history teachers who are able to effectively influence students and promote their comprehensive development. Systematic work at all stages of professional training, including educational programs, pedagogical practice and continuous professional development, ensures the formation of values and competencies necessary for successful pedagogical activity.

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GENERAL ISSUES OF SCHOOL EDUCATION AND TRAINING

ЗАГАЛЬНІ ПИТАННЯ ШКІЛЬНОЇ ОСВІТИ ТА НАВЧАННЯ

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Modelling situations of social interaction as a condition for enriching the social experience of high school students

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Abstract

The article proposes to consider the essence of the pedagogical situation as a meaningful specification of the spatio-temporal act of pedagogical interaction and the context of the conditions in which the actions of the teacher and other subjects of the pedagogical process are carried out. The peculiarities of object, subject and subject-object pedagogical situations are analysed. Attention is focused on the fact that the optimal solution to the pedagogical situation is provided by the experience, intuition, effectiveness of the teacher's planning or improvisation. It is noted that the situation of social interaction is a type of pedagogical situation with a social dominant. The components of the social interaction situation are: target component (motivational support, indicative information, goal setting); content component (subject area and actual task or system of tasks); operational component (methods of interaction of participants, type and directions of activity); reflexively – a critical component (valuable content of activity, social interaction skills, reflection of one's own experience).

Keywords: pedagogical situation, situation of social interaction, high school students, modelling, components of the situation, socialization, social competence

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Моделювання ситуацій соціальної взаємодії як умова збагачення соціального досвіду старшокласників

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Анотація

У статті пропонується розглядати сутність педагогічної ситуації як змістовну специфікацію просторово-часового акту педагогічної взаємодії та контексту умов, у яких здійснюються дії вчителя та інших суб'єктів педагогічного процесу. Аналізуються особливості об'єктних, суб'єктних та суб'єкт-об'єктних педагогічних ситуацій. Акцентується увага на тому, що оптимальне вирішення педагогічної ситуації забезпечується досвідом, інтуїцією, дієвістю планування чи імпровізації вчителя. Зазначено, що ситуація соціальної взаємодії є різновидом педагогічної ситуації із соціальною домінантою. Компонентами ситуації соціальної взаємодії є: цільовий компонент (мотиваційна підтримка, орієнтовна інформація, цілепокладання); змістова складова (предметна область і власне завдання чи система завдань); операційний компонент (способи взаємодії учасників, вид і напрямки діяльності); рефлексивно – критичний компонент (ціннісний зміст діяльності, навички соціальної взаємодії, рефлексія власного досвіду).

Ключові слова: педагогічна ситуація, ситуація соціальної взаємодії, старшокласники, моделювання, компоненти ситуації, соціалізація, соціальна компетентність

Statement of the problem. Contemporary education aims to foster socially active individuals capable of creative thinking, critical approach to resolving life's challenges, active decision-making, and advocating for their own effective positions, among other attributes. Consequently, the modelling of social interaction situations becomes relevant, as it facilitates their application in adolescents' daily lives and ensures the acquisition of experience in choosing effective behavioural models. The growing interest in applying a situational approach in pedagogical research is driven by the fact that situations indirectly reveal the set of internal determinants of human behaviour, including their values, motives, needs, interests, and the ability to actualize their personal potential during interactions with educators (Orban-Lembryk, 2005). Nevertheless, there exists a contradiction between the necessity of modelling social interaction situations for enriching the social experience of high school students and the insufficient development of theoretical and methodological foundations of the researched issue. This creates a challenge in utilizing social interaction situations for the acquisition of social and personal development among high school students.

The Analysis of Sources and Recent Research. In recent research and publications, the modelling of situations of social interaction as a tool for stimulating the development of personal qualities has been explored by various authors, including O. Akimova, O. Antonova, S. Goncharenko, O. Dubasenyuk, I. Ziazun, V. Kaplinsky, V. K. Savchenko, N. Khamska, S. Chaichenko, and others.

G. Ball, I. Bekh, G. Kostyuk, O. Kobyrnyk, G. Soroka, and others interpret situations of social relations through the aspects of subject-object and subject-subject interaction. The preparation of teachers to handle situations in the student environment is addressed in the works of O. Antonova, O. Dubasenyuk, and T. Semenyuk.

The category of a situation is discussed by O. Dubasenyuk and T. Kapska as a unit of the educational process, representing the objective state of a specific pedagogical system within a particular time frame and is understood as a set of subject conditions,

actions, and ways of their modification (Dubaseniuk & Vozniuk, 2010; Kapska, et al. 2000).

According to V. Moskalenko, the concept of a situation has gained particular relevance in the context of the transition from "pedagogy of actions" to "pedagogy of the environment." The most effective forms of human interaction with the environment are projected through the description of a pedagogical situation (Moskalenko, 2013).

Pedagogical literature explores various types of situations, including those intentionally organized and naturally occurring, imaginary and real situations, conflict situations, problem situations, non-standard situations, situations of difficulty, and other. The diversity of pedagogical situations provides a basis for leaving this list open, especially considering the emergence of new types of pedagogical activities or interactions that give rise to new types of pedagogical situations.

Therefore, a pedagogical situation can be understood as the substantive specification of the spatial-temporal act of pedagogical interaction and the context of the conditions in which the actions of the teacher and other participants in the pedagogical process are carried out. The situation determines the nature of the pedagogical interaction environment, its duration, the conditions, and the relationships that emerge among the subjects involved.

Scholars like S. Goncharenko, V. Kaplinsky, L. Milt, while analysing the situation as a pedagogical tool, note that the structural composition of the situation corresponds to the structure of the integral pedagogical process. In essence, the pedagogical situation is a variety of pedagogical system (Kaplinskiy, 2021; Milto, 2013). According to Dubasenyuk (2003) an elementary unit should possess all essential characteristics of the integral pedagogical process. Therefore, within the structure of a situation, the following elements are identified: the subject matter of the participants' activity, the motives and incentives for their activity, the composition and functions of interaction participants, methods and forms of their interaction, developmental variants, driving forces, and mechanisms of situation development (Dubaseniuk, et al. 2003).

Based on the predominant relationships within the situation, we can identify alternative theoretical positions that elucidate the understanding of the situation through the aspects of subject-object and subject-subject interaction (Honcharenko, 2012):

1. Object situations (Ball, Bekh, Kostyuk): The essence of such situations lies in the external conditions that contribute to the activation of specific internal incentives of the subject. Furthermore, these situations are determined by regular cause-and-effect relationships among their constituent elements.

2. Subjective situations (Kobyrnyk, Soroka): These situations are defined solely by the subject's current needs, their readiness to express and realize their own position, attitudes, and more. The proponents of this approach conclude that a person's behaviour is not determined by the objectively described situation but by the situation as it is given to the subject in their experience, as it exists for them.

3. Subject-object situations or situations of wholeness, which combine the objective and subjective aspects of the situation into a coherent unity through the process of personal sense-making (Milto, Strylets, Smolyanko): From the perspective of person-oriented and anthropological approaches to the educational process, which understand subjectivity not as something imposed from the outside but as something intrinsic, the pedagogical situation becomes a process-oriented characteristic of the educational process. It actualizes the personal potential associated with the selection of socially valuable educational content and facilitates the personal growth of its participants.

The most valuable perspective for our research is the third position, which considers situations in education as situations of sense-making that arise under the influence of external factors at the moment of interpretation by the subject. Through the means of situations (a complex of their external and internal parameters), individuals can be assisted in orienting themselves in new circumstances, in communicating with unfamiliar people, in making optimal decisions in conditions of danger, conflict, and adapting to the realm of future professional activity.

To summarize the abovementioned information, we can define a pedagogical situation as a component of the pedagogical process that characterizes its state at a specific time and in a particular space with regard to the subject. This is particularly relevant to the subject because the decisive factor is not the objective course of events and phenomena or their existence but the event, i.e., the existence for someone, the personal experience of something by an individual or society. A pedagogical situation is a situation of the necessity of jointly creating a way for different individuals to interpenetrate and enrich their unique worlds with

each other and with the common world of all humanity (Dubaseniuk & Vozniuk, 2010).

At the core of this understanding of the pedagogical situation is the recognition of each person's self-movement and the uniqueness of the world they create themselves. The existence of different worlds allows for the possibility of their mutual enrichment. Every person is a unique opportunity for humanity to break free from the confines of the existing reality. The collision and intersection of different worlds create the potential for these worlds to mutually penetrate each other.

Therefore, a situation is defined as a set of all conditions – external and internal, objective and subjective – that place an individual in new circumstances, transform the usual course of their life activities, and require them to develop a new model of behaviour. This process is preceded by reflection, understanding, and re-evaluation of the situation at hand.

The Purpose of the article is to define and justify the problem of modelling situations of social interaction as a determining factor in enriching the social experience of high school students.

The Results of the Research. The analysis of the proposed definitions, along with our understanding of the socialization process, allow us to consider that a situation of social interaction is a type of pedagogical situation with a social dominance that places the student in new conditions, prompting them to choose the ethical foundations for their behaviour, seek the meaning of what is happening, make responsible decisions, thereby acquiring social experience. In this process, the student has the opportunity to test themselves, demonstrate initiative, enter into relationships with other individuals, assess their life position, and acquire skills for understanding and accepting others, constructing their own experience and life program.

The components of a situation of social interaction are as follows:

- The target component (motivational support, orienting information, goal setting).
- The substantive component (subject area and current task or task system).
- The operational-activity component (methods of interaction among participants, types and directions of activity).
- The reflexive-critical component (the ethical content of activity, social interaction skills, reflection on one's own experience).

Situations of this kind may be based on: problematic situations, exercises, didactic games; cognitive tasks with real-life content; embedding educational tasks in the context of real-life problems; systematizing life observations; sensory exploration dialogue; a variety of textbook work forms; observation and experiments; storytelling about the history of scientific revolution, artistic interpretations etc.

Savchenko proposes models of situations that are suitable for use in communication with adolescents, such as the "Interview" and "Insecure, Confident, and Aggressive Responses." These exercises improve students' communication and predictive skills, including the ability to listen to a conversation partner, understand, and accept others.

It can be argued that situations of social interaction, primarily aimed at acquiring social experience and developing a subjective position, prioritize forms of work such as dialogue, play, projects, research, conferences, and group activities.

The design of situations of social interaction stimulates self-awareness among students as subjects of socialization, who carry of specific social experience, and are members of society with their own lifestyle, capable of being active, making independent decisions, and acting autonomously. Utilizing situations of social interaction in the educational process is oriented toward fostering the social competence of high school students. In the course of designing these situations, educators should have an understanding of students' social and life experiences, the level of development of their socially significant qualities and skills. Educators must formulate the purpose and clarify which subject activity will create the situation, determine the psychological states and experiences through which participants must pass to gain relevant experience, identify which social phenomena can be involved for them to acquire social experience, encourage students to adhere to the rules of the activity, engage them in dialogue, and explore meanings. Educators should define the social aspects of the activity and help students "discover" themselves (Krasnovsky, 2005).

In a situation of social interaction, students are not merely engaged in carrying out tasks or actions. They perceive the activity as a whole, with the motivations that drive it, critically assess information, events, and their own actions, revise past meanings, actively seek new ones, articulate their thoughts and conclusions, and make responsible decisions. These actions become an engaging process, a play of creative

forces, accompanied by the joy of communicating with partners, the need to take responsibility, and the expectation of determining the social ranking of the activity being performed. High school students experiment in the realm of exchanges and relationships with other people, gain self-assessment and self-esteem experience, develop problem-solving skills, assess their life situation and themselves within it, control their emotions, develop the ability to understand and accept the other without losing themselves. The actions and experiences that constitute the essence of situations of social interaction inspire high school students to take responsibility and mobilize their will to overcome obstacles (Krasnovsky, 2005; Orban-Lembryk, 2005).

Entering a situation, a high school student expresses their "self," informing others about themselves as carriers of certain values, relationship rules, thereby becoming aware of the advantages they can rely on.

In the modelling of such situations, the role of the teacher is pivotal, as their activity is aimed at enhancing the ability to create and utilize this aspect in professional work.

For educators, it is important to envision the genesis of the situation, its origins, causes, triggers, and motives. They should understand its essence, the "deployment of forces" of the participants and their states, circumstances, and the potential outcomes of resolving the problem. The choice of a course of action, that is, decision-making, is the responsibility of the educator, the optimality of which is ensured through their experience, intuition, and the effectiveness of planning or improvisation.

Dubaseniuk, et al. (2003) consider the modeling of professionally-oriented situations as a particular form through which a teacher can envisage their near and distant professional future, anticipate possible ways of achievement, and avoid crisis and stressful situations in communication with students. Utilizing the scientific contributions of these authors allows for the identification of methods for designing professionally-oriented situations, including:

- The method of prospective lines: used for designing and planning one's own activities, assessing strengths, possibilities, and orientation towards achieving specific pedagogical goals.
- The method of professional communication: used to establish relationships with students and their parents, to establish emotional contact, maintain pedagogical tact, persuade partners in communication, and create a positive psychological atmosphere during conversations.
- The "golden mean" method: focuses on the teacher's ability to adapt the communicative connection with students based on their individual characteristics, such as listening, showing empathy, understanding their problems, and fostering friendly feelings in the student community.
- The variable tactics method: centres on the teacher's ability to adapt their communication direction with students depending on the individual characteristics of the conversation partners.

The method of professional self-control: comprises techniques for self-control of professional relationships, knowledge, and the mental state of the teacher. These techniques assist in self-development (searching for and analysing information, controlling its acquisition and assimilation), understanding the ways of regulating professional relationships in the pedagogical community, and demonstrating readiness to create a positive microclimate within the team and constructively resolve pedagogical situations.

Conclusions. All in all, a situation of social interaction, directed at the development of a high school student's position as a subject of socialization, stands as one of the most critical conditions for shaping the social competence of high school students in the educational process of a general secondary education institution. Preparing teachers to develop the ability to model situations of social interaction is one of the key tasks in shaping the social competence of students.

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