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ІНТЕГРАЦІЯ ЦИФРОВИХ ОСВІТНІХ РЕСУРСІВ У ПРОФЕСІЙНУ ПІДГОТОВКУ МАЙБУТНІХ МАГІСТРІВ ПОЧАТКОВОЇ ОСВІТИ

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INTEGRATION OF DIGITAL EDUCATIONAL RESOURCES INTO THE PROFESSIONAL TRAINING OF FUTURE MASTER'S STUDENTS IN PRIMARY EDUCATION

The article analyzes current trends in the digitalization of education in Ukraine and identifies the role of digital educational resources in the professional training of future master's students in primary education. It has been established that their use contributes to the development of key professional competencies, enhances the motivation of higher education students, and fosters the formation of independent learning skills. The study includes an analysis of theoretical approaches to the use of e-learning, interactive technologies, tools for collaborative work, and learning analytics.

Particular attention is paid to summarizing the experience of the Faculty of Pedagogy, Psychology and Social Work of Yuriy Fedkovych Chernivtsi National University, where

the use of LMS Moodle, online platforms, virtual laboratories, and educational advisory spaces contributes to intensifying the educational activity of future Master's students in primary education, developing their digital competence, and forming skills of both independent and collaborative learning.

The advantages of using digital educational resources for organizing a flexible educational process and ensuring accessibility of digital content are revealed. Prospects for further research are outlined regarding the development and testing of innovative models for integrating digital technologies into the educational process of higher education institutions, which will contribute to improving the quality of education and forming a competent, competitive, and creative teacher of the New Ukrainian School.

Key words: professional training, digital educational resources, future master's students in primary education, integration, digitalization, digital transformation of education, higher education institutions, innovative teaching methods, distance and blended learning.

Анотація. У статті проаналізовано сучасні тенденції цифровізації освіти в Україні та визначено роль цифрових освітніх ресурсів у професійній підготовці майбутніх магістрів початкової освіти. Встановлено, що їхнє використання сприяє розвитку ключових компетентностей, підвищенню мотивації здобувачів вищої освіти та формуванню навичок самостійного навчання. Проведено аналіз теоретичних підходів до використання електронного навчання, інтерактивних технологій, інструментів для спільної роботи та аналітики навчальних даних.

Окрему увагу приділено узагальненню досвіду Факультету педагогіки, психології та соціальної роботи Чернівецького національного університету імені Юрія Федьковича, де використання LMS Moodle, онлайн-платформ, віртуальних лабораторій та освітніх консультативних просторів сприяє активізації навчальної діяльності майбутніх магістрів початкової освіти, розвитку їхньої цифрової компетентності та формуванню навичок самостійного й колективного навчання. Розкрито переваги використання цифрових освітніх ресурсів для організації гнучкого освітнього процесу та забезпечення доступності цифрового контенту в умовах сучасних викликів.

Окреслено перспективи подальших досліджень щодо розробки та апробації інноваційних моделей інтеграції цифрових технологій у освітній процес закладів вищої освіти, що сприятимуть підвищенню якості освітнього процесу та формуванню компетентного, конкурентоспроможного і творчого вчителя нової української школи.

Ключові слова: професійна підготовка, цифрові освітні ресурси, майбутні магістри початкової освіти, інтеграція, цифрова трансформація освіти, заклади вищої освіти, інноваційні методи навчання, дистанційне та змішане навчання.

Purpose of the article. The purpose of the article is to substantiate the effectiveness of integrating digital educational resources into the professional training of future master's students in primary education and to determine their impact on the development of key competencies, digital literacy, and readiness for innovative pedagogical activity.

General problem setting. At present, significant transformational processes are taking place in the system of professional training of future primary school teachers, driven by the implementation of digital technologies and the updating of educational standards. It is worth noting that the Concept of the "New Ukrainian School" (2016) emphasizes the necessity of training a new type of

teacher who possesses the ability to act effectively in conditions of dynamic innovative changes in the educational environment and to respond promptly to contemporary challenges.

Special attention is focused on the preparation of teachers who carry out their professional activities based on the principles of partnership pedagogy, creativity, and innovation, and who are capable of forming a harmoniously developed personality of the learner in the context of the digital transformation of society. Thus, the professional training of future teachers should be aimed at developing readiness for the effective use of digital technologies as an important tool of innovative pedagogical activity.

The relevance of the problem is determined by a number of factors. Firstly, digital educational resources provide access to interactive learning content, which contributes to improving the quality of professional training. Secondly, the formation of digital competencies is an integral component of the professional readiness of future Master's students in primary education, ensuring their ability to adapt to the conditions of digital transformation in education and to apply innovative teaching methods. Thirdly, the insufficient systematic use of digital educational resources in professional training determines the need for scientific substantiation of effective methodological approaches and models for integrating digital technologies into the educational process.

Analysis of researches and publications. The problem of using digital educational resources in the professional training of future teachers is the subject of active scientific inquiry by Ukrainian scholars, including N. Bakhmat, V. Bykov, M. Borysonok, T. Vakaliuk, T. Vasyutina, O. Semenikhina, T. Olefirenko, M. Paguta, I. Pidhoretska, L. Khoruzha, O. Tsiuniak, S. Yatsiuk and others. At the same time, despite a significant number of scientific works, the issue of systematic integration of digital educational resources into the professional training of future Master's students in primary education requires further

comprehensive research, taking into account the transformations of higher education, digitalization processes, and the challenges of wartime.

Outline of the main research material. The digitalization of education in Ukraine is progressing rapidly. In October 2022, the international innovation program "Digital Pedagogy Transformation" was launched, within which Ukraine became the 17th participating country. The program was developed with the participation of the Harvard Graduate School of Education and the University of Michigan and is implemented through the partnership of the Hewlett-Packard Innovation and Digital Education Academy (HP IDEA) in Ukraine and the public organization "EdCamp Ukraine".

The main goal of the program is to develop the digital potential of educators. HP IDEA provides participants with appropriate mentorship, training, and support necessary for creating innovative projects aimed at solving current pedagogical and digital problems in educational institutions. At the beginning of 2023, participation in the program expanded: groups were formed from representatives not only of general secondary education institutions but also of higher education institutions, teacher professional development centers, and postgraduate education institutes (Stoika, 2023, 84–95).

The draft *Concept of the Digital Agenda of Ukraine – 2020* states that digitalization should become an object of focused and comprehensive public administration. The need to develop e-learning and the formation of digital competence among participants in the educational process is also emphasized in the Order of the Ministry of Education and Science of Ukraine "On Approval of the Regulation on the National Educational Electronic Platform" (2018).

We agree with the views of O. Tsiuniak that digitalization contributes to the flexibility of the educational process, reflects the modern paradigm of societal development, and ensures the formation of competitive professionals

who are capable of quickly adapting to rapidly changing and unpredictable conditions. In addition, the digital transformation of Ukrainian education enhances specialists' motivation for self-education and self-development and contributes to achieving new educational outcomes that meet the requirements of the digital society. According to the researcher, the digital transformation of the educational process contributes to equipping educational institutions with electronic digital devices, tools, and systems, as well as to the implementation of information and communication technologies, cloud-oriented technologies, and augmented and virtual reality technologies (Tsiuniak, 2021, c. 23).

Ukrainian researchers argue that digital educational resources should be considered as an integral, dynamic system of electronic educational tools that ensure the organization, support, and optimization of the educational process in the context of digitalization. These include various tools and services, in particular software products, online platforms, video lessons, interactive simulators, electronic textbooks, virtual laboratories, mobile applications, and digital constructors. Such resources not only serve as sources of educational information but also create conditions for active cognitive activity of learners, individualization of learning, development of digital competence, and formation of independent learning skills (Bakhmat, Storchova, Motsyk, Melekestseva, Bratysia, 2023, 1–15).

Particular attention should be paid to the views of T. Olefirenko and R. Polevyk, who argue that modern digital educational resources are not merely sources of educational information but powerful tools for forming key competencies of future teachers. Among such competencies, the authors emphasize digital literacy, analytical and critical thinking, creativity, as well as the ability for self-organization and continuous professional development (Olefirenko, Polevyk, 2024, 127). At the same time, N. Marchuk notes that digital educational tools contribute to

the training of competitive specialists capable of acting effectively in an innovative educational environment and digital economy (Marchuk, 2024, 48–53).

According to O. Yaroshynska, digital educational resources should be considered an important component of the information and communication environment, which encompasses an interconnected set of informational, organizational, methodological, technical, and software support. Such an environment creates conditions for effective informational and educational interaction between its participants and contributes to the professional and personal development of future primary school teachers (Vasiutina, 2023, 43).

Digital educational resources are classified according to various features (functionality, form of presentation, level of interactivity, etc.), which allows for their systematization and the selection of optimal tools for achieving specific pedagogical goals in the professional training of future Master's students in primary education. The main types of digital educational resources include electronic textbooks, interactive educational platforms, video and audio materials, online courses, interactive simulators, virtual laboratories, as well as mobile applications and services for collaborative work.

It is advisable to focus on those digital technologies that have become most widespread in the educational process of Ukraine under current conditions. In particular, e-learning involves the use of digital technologies to organize and implement the educational process, including through online courses, webinars, video lectures, and other forms of distance interaction. Learning Management Systems (LMS), which function as integrated platforms for creating, organizing, administering, and monitoring educational courses and materials, play an important role in supporting such learning. The most common examples of such systems are Moodle and Blackboard.

Interactive technologies that promote active engagement of higher education students in the learning

process are also significant. These include gamification tools (Kahoot!, Quizizz), as well as virtual laboratories (e.g., Labster), which enable the simulation of learning situations and increase motivation to learn. A separate group consists of technologies that ensure the organization of collaborative activities, allowing participants in the educational process to interact effectively in real time. Among them are services such as Google Docs, Microsoft Teams, and other collaborative platforms. In addition, one of the most востребованных directions is mobile learning (m-learning), which provides access to educational resources via mobile devices at any time and in any place, which is particularly relevant in the context of distance and blended learning.

Let us analyze the experience of the Faculty of Pedagogy, Psychology and Social Work of Yuriy Fedkovych Chernivtsi National University. One of the important aspects of digitalization of the educational process in higher education institutions is the implementation of an e-learning system based on LMS Moodle, which is used by the university as the main digital educational tool for organizing distance and blended learning. This system provides the creation of distance courses, management of access to educational materials, development of electronic assignments, and automated assessment of students' knowledge. To access Moodle, higher education students and teachers use the university's corporate email, which contributes to the formation of a unified digital educational ecosystem (https://moodle.chnu.edu.ua/?utm_source=chatgpt.com).

The presence of a regulatory document on e-learning technology at the university defines the basic principles of organizing and applying digital educational technologies in the educational process. The document regulates the use of e-learning for all categories of students regardless of the form of study. These digital solutions allow the faculty to implement blended learning formats, increase the accessibility of educational content,

and support the academic mobility of higher education students, which is particularly relevant in the current conditions of digital transformation of education. It should also be noted that the university creates educational advisory spaces and activities, such as the "Academy of Experience," aimed at informal knowledge exchange and skill development between students and teachers, complementing the formal educational process.

The results of the study allow us to state that the use of digital educational resources in the training of future Master's students in primary education provides a number of significant advantages. Firstly, digital educational resources ensure access to up-to-date, diverse, and multi-format information, which expands theoretical knowledge and professional outlook. Secondly, the interactivity and adaptability of many digital tools stimulate students' active engagement, increase motivation to learn, and form skills of independent work with information. Thirdly, digital resources contribute to the development of digital literacy, critical thinking, and the ability to creatively solve professional tasks, which corresponds to modern requirements for the professional activity of teachers.

Conclusions and prospects for further research. The analysis of scientific sources, regulatory documents, and the experience of the Faculty of Pedagogy, Psychology and Social Work of Yuriy Fedkovych Chernivtsi National University confirms

that digital educational resources are an important factor in modernizing the professional training of future Master's students in primary education. Their use contributes to improving the quality of the educational process, ensures access to diverse learning content, activates cognitive activity, creates conditions for organizing individual educational trajectories, and promotes the development of digital competence, critical thinking, creativity, the ability for self-education, and effective professional activity in a digital educational environment.

Prospects for further research are seen in the development and testing of innovative pedagogical models and methods for the application of digital educational resources aimed at increasing the level of research competence formation of future primary school teachers.

REFERENCES

- Bakhmat, N. V., Storchova, T. V., Motsyk, R. V., Melekesceva, N. V., & Bratytsia, H. H. (2023). Current trends in the development of digital competence of future teachers: European experience. *Academic Visions*, 15, 1–15.
- Vasiutina, T. M. (2023). Digital educational environment in the professional training of future primary school teachers. In O. Khvashchevska (Ed.), *Professionalism of a teacher in the context of European digital innovations: Proceedings of the International Scientific and Practical Conference* (Sloviansk, Dnipro, May 16–17, 2023) (pp. 42–44). Sloviansk. <https://bit.ly/43MLYXk>
- Concept of the Digital Agenda of Ukraine – 2020. <https://ucci.org.ua/uploads/files/58e78ee3c3922.pdf>
- Concept of the "New Ukrainian School". (2016). <https://nus.org.ua/wp-content/uploads/2017/07/konczepczya.pdf>
- Marchuk, N. A. (2024). Digital tools in professional education in Ukraine: history of emergence, implementation features, and prospects. *Professional Applied Didactics*, (2), 48–53. <https://doi.org/10.37406/2521-6449/2024-2-8>
- Olefrenko, T., & Polevyk, R. (2024). Digital educational resources as a tool for professional development of future teachers of technological education. *Educational and Scientific Space*, 7(1), 120–130.
- Regulations on e-learning technology. <https://www.chnu.edu.ua/universytet/normatyvni-dokumenty/polozhennia-pro-tekhnohiiu-elektronnoho-navchannia/>
- Stoika, O. (2023). Digitalization of teacher training in Ukraine in the context of the experience of Hungary and the Republic of Poland. *Educology*, 12(12), 84–95. <https://doi.org/10.28925/2226-3012.2023.12.8>.
- Tsiuniak, O. P. (2021). Professional training of future primary school teachers in the context of digital transformation of education. Monograph. Ivano-Frankivsk: Kushnir H. M. 316.

Стаття надійшла

