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DIGITAL PEDAGOGY AS A CONCEPTUAL FOUNDATION FOR CONTINUOUS LEARNING IN HIGHER EDUCATION

Abstract. The article examines digital pedagogy as a conceptual foundation for continuous learning in higher education within the context of digital transformation. The study is motivated by the need to reconsider traditional approaches to teaching and learning, which no longer fully meet the demands of the digital economy, rapid technological development, and individualized educational pathways. Although higher education institutions actively implement digital learning platforms, learning management systems, artificial intelligence, and learning analytics, educational data remains fragmented across different information systems, limiting their effective use for evidence-based pedagogical decision-making, personalized learning, and lifelong learning support.

The purpose of the study is to develop a conceptual model of digital pedagogy that ensures continuous learning through the integration of learner-centred pedagogical principles, digital educational ecosystems, learning analytics, and educational data integration. Particular attention

is paid to the relationships among digital technologies, pedagogical design, learning analytics, and personalized learning trajectories.

The study demonstrates that digital pedagogy should be understood not merely as the use of digital technologies but as a learner-centred pedagogical paradigm focused on students' individual needs, learning activities, and continuous professional development. Effective continuous learning requires integrated digital educational ecosystems capable of consolidating information from multiple educational services into a unified data environment. Educational data integration provides the basis for learning analytics, early identification of learning difficulties, personalization of learning, and informed pedagogical decision-making.

The proposed conceptual framework may serve as a methodological basis for designing digital educational environments, improving learner support systems, and implementing learning analytics in higher education. Future research should focus on developing integrated learner profile models and evaluating their effectiveness in supporting personalized and continuous learning.

Keywords: digital pedagogy; continuous learning; digital educational ecosystems; learning analytics; educational data integration; personalized learning; higher education institutions.

Problem statement and its relationship to important scientific and practical tasks.

The rapid digital transformation of society has fundamentally changed the requirements for higher education. Universities are expected not only to provide learners with professional knowledge but also to support continuous learning, personalised educational pathways, and the development of digital competencies necessary for lifelong professional growth. Traditional instructional approaches, which were primarily designed for stable educational environments, are no longer sufficient to meet the demands of rapidly changing labour markets, technological innovation, and the increasing diversity of learners.

Modern higher education institutions generate large volumes of educational data through Learning Management Systems (LMS), Student Information Systems (SIS), online assessment platforms, communication tools, and various digital learning environments. However, these data are frequently dispersed across independent information systems and remain underutilized for improving educational practice. As a result, educators often lack a comprehensive understanding of learner progress, engagement, and individual learning needs, making it difficult to provide timely pedagogical support and evidence-based educational interventions.

Digital pedagogy offers a conceptual framework that extends beyond the simple adoption of digital technologies. It emphasizes the pedagogically meaningful integration of digital tools, learning analytics, artificial intelligence, and educational data to create learner-centred environments that support accessibility, personalization, and continuous learning. Within this framework, educational technologies serve as instruments for improving teaching and learning rather than as ends in themselves.

Consequently, there is a growing need to develop integrated digital learning ecosystems that enable educational institutions to transform fragmented educational data into actionable knowledge supporting informed pedagogical decision-making, adaptive learning, and lifelong learning. Addressing this challenge represents one of the key priorities of contemporary digital pedagogy and higher education development.

Analysis of Recent Research and Publications. Recent research increasingly interprets digital pedagogy not as the mechanical use of digital tools, but as a pedagogically grounded approach to designing, organizing, and supporting learning in technology-rich environments. Studies on digital pedagogy in higher education emphasize that digital transformation should be connected with educational quality, learner engagement, accessibility, and meaningful instructional design rather than limited to the introduction of platforms or software.

The transformation of higher education is closely related to the growing importance of lifelong and continuous learning. Contemporary universities are expected to support learners beyond traditional degree programmes by creating flexible educational pathways, opportunities for reskilling and upskilling, and conditions for continuous professional development. A scoping review by Hakansson Lindqvist et al. shows that higher education institutions increasingly need to adapt their structures, pedagogical models, and digital infrastructures to support lifelong learning in a digital era (Hakansson Lindqvist et al., 2024).

Digital learning environments generate large volumes of educational data, but the pedagogical value of these data depends on how they are interpreted and used. Learning analytics has therefore become an important field for supporting evidence-based educational decision-making, feedback, learner support, and instructional improvement. Research shows that learning analytics can enhance feedback practices in higher education and help educators identify learner needs more effectively (Banihashem et al., 2022). Recent systematic reviews also confirm that learning analytics interventions implemented through learning management systems can support teaching and learning practices when they are pedagogically designed and meaningfully integrated into educational processes (Pan et al., 2024).

Artificial intelligence has further expanded the possibilities of digital pedagogy, particularly in personalization, adaptive learning, automated feedback, and learner support. However, researchers emphasize that AI should not replace pedagogical judgment or reduce education to algorithmic decision-making. Earlier systematic research on AI in higher education already pointed to the need for stronger involvement of educators in the design and interpretation of AI-based educational systems (Bond et al., 2020). More recent studies confirm the rapid growth of AI applications in higher education and underline the importance of aligning these technologies with teaching methods, learning objectives, ethical principles, and student engagement (Crompton, Burke, 2023; Gašević et al., 2015).

International policy documents also stress that digital transformation in education requires governance, trust, data protection, transparency, and human-centred approaches. The OECD argues that effective digital education ecosystems should be shaped not only by technology adoption but also by responsible data governance, institutional capacity, and pedagogical purpose (OECD, 2023). AI supports teachers, learners, and researchers while preserving human agency, ethical responsibility, and educational quality.

Thus, digital pedagogy in higher education develops at the intersection of learner-centred teaching, continuous learning, learning analytics, artificial intelligence, and responsible use of educational data. At the same time, existing studies often discuss these components separately. This creates a research gap related to the need for an integrated pedagogical model that explains how digital learning ecosystems can support continuous learning through data-informed, learner-centred, and ethically responsible educational practices.

The aim of the study. The aim of this study is to develop a conceptual framework of digital pedagogy that supports continuous learning in higher education by integrating learner-centred educational principles with digital learning ecosystems, learning analytics, and educational data integration. The study seeks to examine how the systematic organization and interpretation of educational data can enhance evidence-based pedagogical decision-making, facilitate personalised learning pathways, and support lifelong learning within contemporary higher education institutions.

Research methods. The study employed a theoretical research design based on the analysis, synthesis, comparison, and generalization of contemporary scientific literature on digital pedagogy, continuous learning, educational technologies, and artificial intelligence in higher education. A conceptual analysis was conducted to identify the key components and relationships underlying the proposed framework of digital pedagogy.

Results and Discussion. Based on the conducted theoretical analysis, the proposed conceptual framework identifies digital pedagogy as a learner-centred educational paradigm integrating digital learning ecosystems, educational data integration, learning analytics, and artificial intelligence to support continuous learning.

1. Digital pedagogy as a learner-centred educational paradigm. Digital pedagogy has become a central concept in contemporary higher education as universities continue to adapt to rapid technological, social, and economic change. Although the integration of digital technologies into education began several decades ago, current research increasingly emphasizes that digital pedagogy extends far beyond the use of online platforms or digital learning resources. Instead, it is understood as a pedagogical approach that places learners, their educational needs, and meaningful learning experiences at the centre of the educational process (Laurillard, 2012; Bond et al., 2020).

One of the most influential contributions to this field was made by Laurillard (2012), who argued that technologies should support educational dialogue rather than simply deliver instructional content. Within her Conversational Framework, learning is viewed as a continuous interaction between teachers and learners involving explanation, feedback, reflection, and adaptation. This perspective shifted attention from technological capabilities to the quality of pedagogical design and demonstrated that educational technologies become valuable only when they improve learning rather than merely digitize existing teaching practices.

The emergence of connectivism further expanded the understanding of learning in digital environments. Siemens (2005) proposed that knowledge is distributed across networks of people, digital resources, and technological systems, while learning consists of creating and maintaining these connections. This perspective reflects the realities of modern higher education, where students continuously access information from multiple digital sources, collaborate online, and develop professional competencies beyond the boundaries of traditional classrooms.

As digital learning environments became more complex, researchers also began to examine how educational data could support teaching and learning. Siemens and Long (2011) introduced Learning Analytics as an emerging field capable of transforming educational data into information that supports pedagogical decision-making. Rather than replacing teachers, learning analytics enables educators to identify learning patterns, monitor student engagement, recognize learners who may require additional support, and evaluate the effectiveness of instructional strategies. Recent studies indicate that when implemented within learner-centred educational environments, learning analytics contributes to more personalised learning experiences and improves the quality of feedback provided to students (Viberg et al., 2018; Banihashem et al., 2022).

The growing interest in artificial intelligence has further broadened the scope of digital pedagogy. Holmes et al. (2022) argue that AI technologies should be viewed primarily as instruments that support educators through adaptive learning, intelligent feedback, and personalised recommendations, rather than as autonomous educational solutions. Similar conclusions were reached by Crompton and Burke (2023), whose review demonstrates that the educational benefits of AI largely depend on pedagogical objectives, instructional design, and active teacher involvement throughout the learning process. Recent research on professional higher education in technical fields also demonstrates that the integration of artificial intelligence should be considered an integral component of broader digital transformation, encompassing pedagogical design, institutional change, and the development of learners' professional competencies (Dmytruk et al., 2025).

2. Continuous learning in contemporary higher education. The concept of continuous learning has become one of the defining characteristics of modern higher education. Rapid technological development, the transformation of labour markets, and the emergence of new professional competencies require graduates to update their knowledge throughout their careers

rather than rely solely on qualifications obtained during formal education. Consequently, universities are increasingly expected to support learning that extends beyond traditional degree programmes and continues throughout an individual's professional and personal life (Hakansson Lindqvist et al., 2024).

Unlike traditional educational models, which are largely organised around fixed curricula and predetermined learning trajectories, continuous learning emphasises flexibility, learner autonomy, and the ability to acquire competencies in different educational settings. Formal education is now complemented by non-formal and informal learning, online professional courses, micro-credentials, open educational resources, and workplace learning opportunities. This shift has substantially expanded the educational role of higher education institutions and has encouraged the development of more flexible instructional models (Siemens, 2005; Crompton & Burke, 2023).

The growing diversity of learning pathways also creates new challenges for educators. Students increasingly combine classroom learning with online activities, independent study, collaborative projects, and professional practice. As a result, learning experiences become fragmented across multiple digital environments, making it more difficult for teachers to obtain a comprehensive understanding of learner progress and educational needs (Nagachevska et al., 2025). Recent studies indicate that effective support of continuous learning requires not only flexible curricula but also mechanisms capable of integrating information generated throughout the learning process (Viberg et al., 2018; Gašević et al., 2015).

Another important feature of continuous learning is the gradual transition from teacher-directed instruction to learner responsibility for educational development. Digital environments provide students with opportunities to select learning resources, determine learning pace, monitor their own progress, and receive individualised feedback. At the same time, educators increasingly serve as facilitators, mentors, and designers of learning experiences rather than as providers of information alone. Laurillard (2012) argues that this transformation requires pedagogical models that promote interaction, reflection, and continuous feedback rather than simple content delivery.

The increasing availability of educational technologies has significantly expanded access to learning opportunities; however, access alone does not guarantee meaningful learning. Bond et al. (2020) emphasise that successful continuous learning depends on learner engagement, appropriate pedagogical design, and the effective organisation of educational environments. Similarly, recent research demonstrates that personalised support, timely feedback, and active learner participation remain among the strongest predictors of successful learning outcomes in digital education (Banihashem et al., 2022).

These developments indicate that continuous learning should be viewed not as an additional educational activity but as a fundamental principle guiding the organisation of modern higher education. Supporting learners across diverse educational experiences requires learning environments that connect educational resources, learner activities, assessment processes, and pedagogical decision-making within coherent digital infrastructures. This creates the foundation for the development of integrated digital learning ecosystems discussed in the following section.

3. Digital learning ecosystems as the foundation for continuous learning. The growing complexity of higher education has transformed universities into interconnected digital environments where teaching, learning, assessment, communication, and academic administration are supported by multiple information systems. Learning management systems, student information systems, digital assessment platforms, institutional repositories, communication services, and virtual learning environments all generate educational data that reflect different aspects of learners' educational activities. While each of these systems performs a specific function, their educational value increases considerably when they operate as components of an integrated digital learning ecosystem rather than as isolated technological solutions (Laurillard, 2012; Gašević et al., 2023).

The concept of a digital learning ecosystem emphasizes interaction, interoperability, and the continuous exchange of educational information between digital services. Unlike traditional educational environments, where information is often fragmented across independent platforms, digital ecosystems enable the integration of learner activities, assessment results, communication records, and academic achievements into coherent educational processes. Such integration creates opportunities for educators to obtain a more comprehensive understanding of learner development while reducing information fragmentation and duplication (Viberg et al., 2018).

An important characteristic of digital learning ecosystems is their learner-centred architecture. Educational information is organized around learners rather than individual software applications. This approach enables institutions to monitor educational progress across different courses, learning environments, and stages of study, supporting continuity throughout the educational lifecycle. Recent studies suggest that learner-centred digital environments improve the quality of educational decision-making by providing a more holistic representation of learner engagement and achievement (Bond et al., 2020; Banihashem et al., 2022).

The effectiveness of digital learning ecosystems also depends on the quality of educational data integration. Information generated by different institutional platforms often differs in structure, terminology, and level of detail. Without appropriate integration mechanisms, these data remain isolated and cannot effectively support learning analytics, personalised learning, or institutional planning. For this reason, contemporary educational research increasingly highlights the importance of common data structures, standardized learner information, and interoperable educational models that support evidence-informed educational practice (Gašević et al., 2023; Holmes et al., 2022).

Integrated digital ecosystems create favourable conditions for implementing learning analytics, adaptive educational technologies, and personalised learning. By connecting information from multiple educational sources, institutions can identify learning patterns, monitor learner progress over extended periods, and provide timely pedagogical interventions. Rather than functioning as independent technological platforms, digital systems become components of a coherent educational environment designed to support continuous learning and improve educational quality.

4. Educational data integration for learning analytics and personalised learning. The effectiveness of digital learning ecosystems largely depends on the ability to integrate educational data generated across multiple institutional systems into a coherent information environment. In contemporary higher education, learners interact with numerous digital platforms throughout their academic journey, including learning management systems, student information systems, digital assessment platforms, library services, communication tools, and online learning resources. Each of these environments captures valuable information about learning activities; however, when stored independently, they provide only fragmented representations of learner development.

Educational data integration addresses this challenge by connecting information originating from different digital environments into unified learner records that support comprehensive educational analysis. Rather than treating assessment results, learning activities, attendance records, and communication data as isolated datasets, integrated educational information enables institutions to examine learning processes from multiple perspectives. Such an approach creates favourable conditions for evidence-informed educational decision-making and more accurate identification of learner needs (Gašević et al., 2023; Viberg et al., 2018).

The educational value of integrated learner information becomes particularly evident in learning analytics. Siemens and Long (2011) describe learning analytics as the process of collecting, measuring, analysing, and interpreting educational data to improve learning and the environments in which learning occurs. Since its emergence, learning analytics has gradually shifted from descriptive reporting to predictive and prescriptive approaches that support both educators and learners. Recent

systematic reviews demonstrate that learning analytics contributes to earlier identification of learning difficulties, more effective feedback, and improved learner engagement when analytical results are incorporated into pedagogical practice rather than treated solely as administrative information (Banihashem et al., 2022).

Integrated educational data also provides opportunities for personalised learning. Instead of offering identical educational pathways to all students, higher education institutions can increasingly adapt learning activities to individual progress, competencies, and educational needs. Personalisation may include adaptive learning resources, differentiated assessment strategies, individualised feedback, and recommendations for further learning activities. Holmes et al. (2022) argue that such approaches become particularly effective when supported by the responsible use of AI and continuous educator involvement in interpreting analytical results.

An important aspect of educational data integration is that it strengthens rather than replaces pedagogical expertise. Learning analytics provides educators with additional evidence regarding learner progress, but educational decisions continue to depend on professional judgement, instructional experience, and direct interaction with students. Consequently, digital technologies should be regarded as instruments that support pedagogical practice rather than as autonomous systems that determine educational outcomes. This understanding corresponds to the learner-centred principles of digital pedagogy discussed in the previous sections and establishes the conditions necessary for sustainable, continuous learning in higher education.

The relationships identified through the theoretical analysis are synthesised in the proposed conceptual model of digital pedagogy presented in Figure 1. The model places the learner at the centre of an integrated digital educational ecosystem in which learner-centred pedagogical principles, digital learning environments, educational data integration, and learning analytics interact to support personalised and continuous learning.

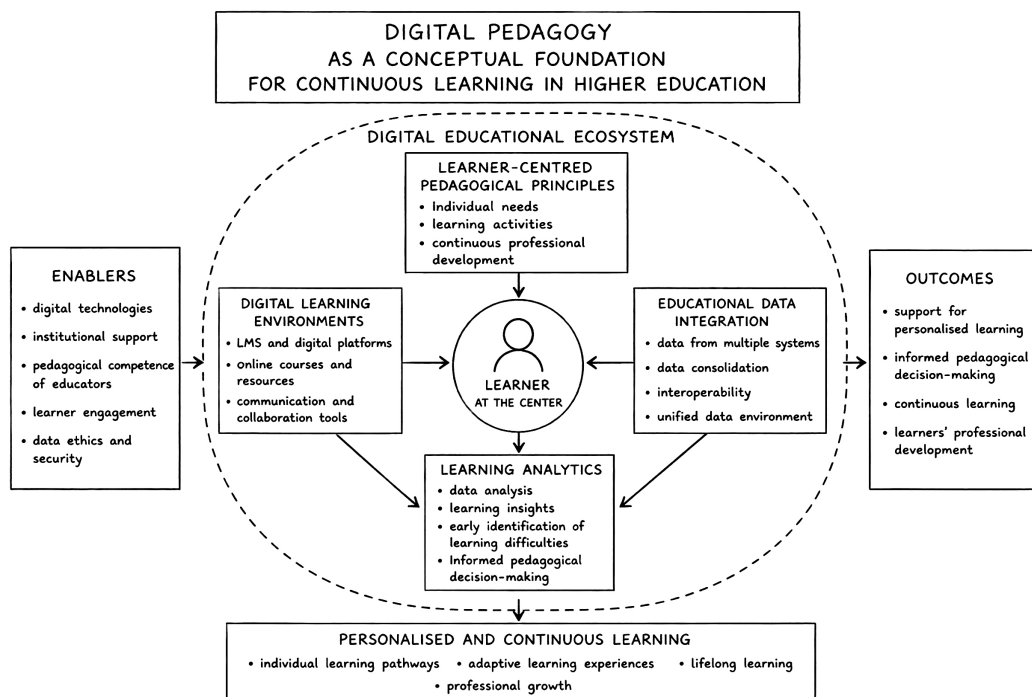


Figure 1. Conceptual model of digital pedagogy for continuous learning in higher education

One possible approach to implementing educational data integration is to develop a unified learner profile that consolidates information on learner activities, academic achievements, competencies, and learning trajectories across institutional digital environments. Such integrated learner representations provide educators with a comprehensive view of learner development and create the informational foundation for personalised learning and evidence-informed pedagogical decision-making. The conceptual implications of unified learner profiles for digital pedagogy require further investigation and therefore constitute a separate direction for future research.

Conclusions and Prospects for Further Research. The study demonstrates that digital pedagogy has evolved into a learner-centred educational paradigm that extends beyond the integration of digital technologies into teaching. Contemporary higher education increasingly requires educational approaches that combine pedagogical design, continuous learning, digital learning ecosystems, educational data integration, and learning analytics to support meaningful and personalised learning experiences.

The findings suggest that fragmented digital educational environments cannot fully support evidence-informed pedagogical decision-making or continuous learner development. Integrating educational data generated across institutional digital systems creates opportunities for a more comprehensive understanding of learner progress, facilitates personalised learning pathways, and enhances the quality of educational support provided by educators.

The proposed conceptual framework presents digital pedagogy as an interconnected educational system in which learner-centred instructional design, digital learning ecosystems, educational data integration, and learning analytics function as complementary components supporting continuous learning in higher education. Rather than viewing technology as an independent objective, the framework emphasizes its pedagogical value in improving teaching, learning, and institutional decision-making.

Further research may focus on developing practical models for implementing integrated learner profiles and evaluating their effectiveness in supporting personalised learning and continuous educational development within higher education institutions.

References

- Banihashem, S. K., Noroozi, O., Van Ginkel, S., Macfadyen, L. P., & Biemans, H. J. (2022). A systematic review of the role of learning analytics in enhancing feedback practices in higher education. *Educational Research Review*, (37), 100489. <https://doi.org/10.1016/j.edurev.2022.100489> (in English).
- Bond, M., Buntins, K., Bedenlier, S., Zawacki-Richter, O., & Kerres, M. (2020). Mapping research in student engagement and educational technology in higher education: a systematic evidence map. *International Journal of Educational Technology in Higher Education*, 17(1). <https://doi.org/10.1186/s41239-019-0176-8> (in English).
- Crompton, H., & Burke, D. (2023). Artificial intelligence in higher education: the state of the field. *International Journal of Educational Technology in Higher Education*, 20(1). <https://doi.org/10.1186/s41239-023-00392-8> (in English).
- Dmytruk, A., Hrytsiv, V., Babkina, M., Skril, I., Vyslobodska, I., & Smilevska, M. (2025). Integration of artificial intelligence technologies into the digital transformation of professional higher education in technical fields. In *Professional education and personnel training* (pp. 110–143). <https://doi.org/10.15587/978-617-8360-16-0.ch5> (in English).
- Gašević, D., Dawson, S., & Siemens, G. (2014). Let's not forget: Learning analytics are about learning. *Tech-Trends*, 59(1), 64–71. <https://doi.org/10.1007/s11528-014-0822-x> (in English).
- Holmes, W., Porayska-Pomsta, K., Holstein, K., Sutherland, E., Baker, T., Shum, S. B., Santos, O. C., Rodrigo, M. T., Cukurova, M., Bittencourt, I. I., & Koedinger, K. R. (2021). Ethics of AI in Education: Towards a Community-Wide framework. *International Journal of Artificial Intelligence in Education*, 32(3), 504–526. <https://doi.org/10.1007/s40593-021-00239-1> (in English).

- Laurillard, D. (2012). *Teaching as a design science: Building Pedagogical Patterns for Learning and Technology*. London: Routledge. ISBN 9780415803878 (in English).
- Lindqvist, M. H., Mozeliuss, P., Jaldemark, J., & Innes, M. C. (2023). Higher education transformation towards lifelong learning in a digital era – a scoping literature review. *International Journal of Lifelong Education*, 43(1), 24–38. <https://doi.org/10.1080/02601370.2023.2279047> (in English).
- Long, P., & Siemens, G. (2011). Penetrating the Fog: Analytics in Learning and Education. *EDUCAUSE Review*, 46(5), 30–40. <https://er.educause.edu/articles/2011/9/penetrating-the-fog-analytics-in-learning-and-education> (in English).
- Nagachevska, O., Dmytruk, V., Voloshyn, M., Myklash, L., Fuchyla, O., & Kolesnyk, H. (2025). Advancing intercultural communicative competence in future specialists in IT and Computer Science: development and implementation of the “Navigating Cultural Diversity” course project. In *Professional education and personnel training* (pp. 3–34). <https://doi.org/10.15587/978-617-8360-16-0> (in English).
- Oecd. (2023). OECD Digital Education Outlook 2023. <https://doi.org/10.1787/c74f03de-en> (in English).
- Pan, Z., Biegley, L., Taylor, A., & Zheng, H. (2024). A Systematic Review of Learning Analytics. *Journal of Learning Analytics*, 11(2), 52–72. <https://doi.org/10.18608/jla.2023.8093> (in English).
- Siemens, G. (2005). Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning*, 2(1), 3–10. http://www.itdl.org/Journal/Jan_05/article01.htm (in English).
- Viberg, O., Hatakka, M., Bälter, O., & Mavroudi, A. (2018). The current landscape of learning analytics in higher education. *Computers in Human Behavior*, (89), 98–110. <https://doi.org/10.1016/j.chb.2018.07.027> (in English).

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ЦИФРОВА ПЕДАГОГІКА ЯК КОНЦЕПТУАЛЬНА ОСНОВА ЗАБЕЗПЕЧЕННЯ БЕЗПЕРЕРВНОГО НАВЧАННЯ У ВИЩІЙ ОСВІТІ

Анотація. Статтю присвячено дослідженню цифрової педагогіки як концептуальної основи забезпечення безперервного навчання у закладах вищої освіти в умовах цифрової трансформації. Актуальність дослідження зумовлено необхідністю переосмислення традиційних підходів до навчання і викладання, які вже не повною мірою відповідають вимогам цифрової економіки, стрімкому розвитку цифрових технологій та потребі у формуванні індивідуалізованих освітніх траєкторій. Незважаючи на активне впровадження закладами

вищої освіти цифрових навчальних платформ, систем управління навчанням, засобів штучного інтелекту та навчальної аналітики, освітні дані залишаються фрагментованими між різними інформаційними системами, що обмежує їхнє ефективне використання для обґрунтованого прийняття педагогічних рішень, персоналізації навчання та підтримки концепції навчання впродовж життя.

Метою дослідження є розроблення концептуальної моделі цифрової педагогіки, яка забезпечує безперервне навчання шляхом інтеграції людиноцентричних педагогічних принципів, цифрових освітніх екосистем, навчальної аналітики та об'єднання освітніх даних. Особливу увагу приділено дослідженню взаємозв'язків між цифровими технологіями, педагогічним проєктуванням, навчальною аналітикою та персоналізованими освітніми траєкторіями.

У статті доведено, що цифрову педагогіку слід розглядати не лише як використання цифрових технологій в освітньому процесі, а і як сучасну людиноцентричну педагогічну парадигму, орієнтовану на індивідуальні потреби здобувачів освіти, їхню навчальну активність та безперервний професійний розвиток. Ефективне забезпечення безперервного навчання потребує функціонування інтегрованих цифрових освітніх екосистем, здатних об'єднувати інформацію з різних освітніх сервісів у єдине інформаційне середовище. Інтеграція освітніх даних створює підґрунтя для застосування навчальної аналітики, своєчасного виявлення навчальних труднощів, персоналізації освітнього процесу та ухвалення обґрунтованих педагогічних рішень.

Запропонована концептуальна модель може стати методологічною основою для проєктування цифрових освітніх середовищ, удосконалення систем підтримки навчання та впровадження навчальної аналітики в закладах вищої освіти. Перспективи подальших досліджень пов'язані з розробленням моделей інтегрованого профілю здобувача освіти та оцінюванням їхньої ефективності для підтримки персоналізованого й безперервного навчання.

Ключові слова: цифрова педагогіка; безперервне навчання; цифрові освітні екосистеми; навчальна аналітика; інтеграція освітніх даних; персоналізоване навчання; заклади вищої освіти.