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ПЕДАГОГІКА, ОСВІТА, ФІЛОСОФІЯ ТА ФІЛОЛОГІЯ

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DIGITAL TECHNOLOGIES AS A DRIVER OF INNOVATION IN HIGHER EDUCATION

In today's technologically oriented society, all spheres of life have undergone profound transformations, among which the transformation of Ukraine's education and science system has assumed a particularly significant role. One of the most important directions of this transformation is digitalization, which involves rethinking the role and essence of education and requires deep digital changes, expansion of educational services, and the enhancement of digital skills. With the advancement of technology, the demand for highly qualified professionals is increasing, leading to significant changes in the education system, which now functions not only as an instrument of global integration of knowledge and technologies, but also as a valuable form of educational capital. This necessitates the rapid adaptation of the national higher education system, strengthened coordination, and the formation of a strategic orientation toward integration into the international educational space [1, 2].

Contemporary developments have led to significant changes in the evolution of the education sector, shifted priorities, and posed new tasks and demands for the scientific community. As a result, the challenge of adopting and implementing technologies in the education system to ensure citizens' right to quality education has intensified, the process of digital transformation has accelerated, and rapid adaptation by educational institutions - particularly within the higher education sector - has become necessary. This adaptation requires the adoption of effective decisions to address organizational and methodological challenges under conditions of a continuous educational process [3].

The process of digitalization in higher education not only enhances information technologies, but also leads to the emergence of fundamentally new digital educational models and methods aimed at addressing the challenges of the digital society. It comprehensively transforms learning and teaching, as well as the everyday activities of researchers, academic staff, and higher education applicants. Digitalization in higher education entails the integration of digital technologies into the educational process in

order to improve its quality, accessibility, and flexibility. It is grounded in the principles of digital didactics and encompasses the use of electronic educational platforms, online courses, virtual laboratories, digital resources, and learning analytics. As a result, the roles of participants in the educational process are changing: lecturers assume the roles of moderators and mentors, while higher education applicants become active agents of individualized learning, which fosters the development of digital competencies, academic mobility, and lifelong learning [4].

Digital technologies in higher education significantly increase student engagement by involving even passive and shy learners in educational activities through online tools and personal digital devices. They enable every applicant to participate in task completion and to submit responses, thereby fostering differentiated and inclusive learning. Technological tools correspond to the fragmented thinking patterns characteristic of contemporary learners and help sustain attention, yielding better learning outcomes compared to traditional methods. At the same time, digitalization provides virtually unlimited access to educational resources and digital information sources, substantially expanding learning opportunities beyond physical libraries. Modern digital tools support personalized learning tailored to the individual pace, level of prior preparation, and abilities of each applicant or group. They also facilitate the development of individualized and differentiated tasks by lecturers and allow for flexible adjustment of the learning process. Automated tasks reduce lecturers' workload by saving time on assessment, monitoring, and analysis of learning outcomes. In addition, digital learning contributes to the development of applicants' technological skills and promotes informed selection of effective learning strategies within a digital environment [5].

At the same time, alongside the numerous advantages of digitalization in higher education, certain drawbacks also exist; however, most of them can be mitigated through the careful selection of pedagogical methods and digital learning tools. Digital technologies may distract applicants and weaken social interaction, yet when implemented within a pedagogically grounded framework, they foster collaboration, group work, and active communication. Unequal access to technological resources remains a significant challenge, necessitating the implementation of tools that are accessible to all applicants. In addition, the potential risks associated with the use of online resources underscore the need to develop applicants' critical thinking skills, safe information practices, and personal data protection awareness [5].

In contemporary life, the development of digital competencies has become an essential requirement for all. Therefore, the Ukrainian education system must ensure the development of these competencies among applicants, teaching, and research staff, as well as the enhancement of digital infrastructure and e-services across educational

institutions. This is due to the fact that education, knowledge, and information constitute key determinants in the development of a modern information society [2, 6].

The acquisition of digital competencies is closely linked to the integration of modern technologies in the educational process and the active use of electronic resources. One of the key tools supporting this trend is online learning, which allows applicants to develop knowledge and skills regardless of their geographical location. Online learning is also an integral component of the digitalization of higher education, ensuring flexibility in the educational process and the effective development of applicants' digital competencies.

The introduction of Massive Open Online Courses (MOOCs), which broaden access to high-quality educational resources, is particularly relevant in this context. One of the largest and most popular representatives of this trend worldwide is the online learning platform Udemy, which offers over 250000 courses and has more than 80 million learners, including Ukrainian educational institutions that have free access to 12500 of the top courses. The platform provides global access to practice-oriented online courses across various fields and can serve as a high-quality supplement to academic disciplines. The flexibility, mobility, and accessibility of learning, together with the use of social media and gamification elements, contribute to the diversification of educational offerings and the promotion of internationalization in education [7].

Due to agreements between the Ministry of Education and Science of Ukraine and the leading online platform Udemy, applicants of S. Kuznets Kharkiv National University of Economics have the opportunity to pursue informal education, acquire relevant knowledge and practical skills, and have them formally recognized within the educational process. The results of such training may be recognized for the award of educational and professional qualifications, and this recognition extends to students at all levels of higher education, thus ensuring academic flexibility and promoting the principles of lifelong learning [8].

Although massive open online courses effectively ensure access to knowledge and foster the development of digital competencies, systematic and integrated distance learning within higher education institutions necessitates specialized platforms, enabling comprehensive management of the educational process.

Massive open online courses (MOOCs) have proven effective in ensuring access to knowledge and in fostering applicants' digital competencies. At the same time, specialized platforms are employed to provide comprehensive management of the educational process for systematic and integrated distance learning in higher education institutions. This is exactly the role of LMS Moodle (Modular Object-oriented Dynamic Learning Environment), which is widely used by Ukrainian higher education institutions to organize distance and blended learning. The platform enables effective

management of courses, applicants' independent work, and monitoring of their academic progress, combining administrative tools, interactive features, and communication tools for applicants and lecturers in higher education.

Currently, LMS Moodle is the most widely used distance learning platform in higher education and meets the key criteria for effective organization of distance learning. It is characterized by reliability and stability, user-friendly administration and management, intuitive navigation, and a high level of security. The platform's extensive functionality supports effective course organization, facilitates communication, and enables monitoring of applicants' academic progress, while its expandability through plugins enhances adaptability to diverse educational needs [9].

Since 2009, S. Kuznets Kharkiv National University of Economics has been operating a personal learning system (PNS) website [10, 11] based on Moodle, which creates an information and learning environment and integrates electronic teaching and learning courses, knowledge assessment programs, and interactive learning tools. This educational system emphasizes the individual nature of learning and supports the independent work of higher education students. It provides the opportunity to study individual disciplines through interaction among participants in the educational process, even when they are in different locations. The system enhances the quality of education by enriching the learning environment, ensuring equal access to high-quality educational and methodological materials for all participants, and supporting personalized learning and the effective use of information and communication technologies. PNS is accessible both via the university's internal network and the Internet, allowing applicants and lecturers to interact effectively and organize the educational process regardless of location. Available electronic materials and tools also support the systematization of knowledge and the monitoring of independent work.

Currently, more than 1700 courses of PNS are actively in operation at the university, with an average daily attendance exceeding 5000 users. Users can access the platform via mobile devices (phones, smartphones, or tablets) as well as desktop computers and laptops [10].

In the current context, the integration of PNS with the Zoom video conferencing platform creates optimal conditions for effective synchronous learning in a fully remote format. This enables higher education applicants and lecturers to interact in real time, closely approximating the traditional face-to-face learning experience. Lecturers can deliver lectures, practical studies, and laboratory studies while simultaneously using interactive materials, and applicants are able to actively discuss topics, pose questions, and engage in collaborative group activities. This approach significantly promotes a deeper understanding of the material and facilitates systematic monitoring and assessment of learning outcomes. The combination of PNS and Zoom substantially

enhances the overall effectiveness of managing the educational process in a modern remote learning environment.

So, the process of digitization in higher education significantly transforms learning, increases access to educational resources, and fosters the development of applicants' digital competencies. The use of massive open online courses and platforms such as Udemy contributes to the acquisition of practical skills and facilitates the formal recognition of learning outcomes. LMS Moodle, along with integration with video conferencing platforms such as Zoom, provides systematic course management, supports effective interaction between lecturers and applicants, and enables personalized learning. S. Kuznets Kharkiv National University of Economics' personal learning system (PNS) creates conditions for distance and blended learning, facilitating the monitoring of knowledge and applicants' independent work regardless of location. Thus, digital technologies are becoming an integral part of the modern educational environment, ensuring quality, flexibility, and innovation in the learning process.

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