ІННОВАЦІЇ ТА ІНВЕСТИЦІЙНА ДІЯЛЬНІСТЬ

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ARTIFICIAL INTELLIGENCE AS A TOOL FOR COMPETITIVENESS MANAGEMENT OF A DIGITAL UNIVERSITY

Modern technologies are fundamentally changing traditional approaches to management, teaching, and research in educational institutions. The use of artificial intelligence opens up new horizons in optimizing educational processes, personalizing learning, and analyzing large data sets. Its implementation not only increases the efficiency of management decisions but also creates the preconditions for a deep digital transformation of the educational environment.

In this context, the implementation of artificial intelligence is becoming a key factor in determining the competitiveness of an educational institution, its ability to quickly adapt and implement innovations.

The competitive advantages of a digital university are determined by the level of intellectualization of its internal processes, which requires the integration of artificial intelligence technologies into the management decision-making system. The use of machine learning algorithms and neural networks in predicting educational trends, analyzing teaching effectiveness, and managing academic resources helps to strengthen the university's position in the global educational space. According to A.O. Kozynets, the digital transformation of the learning process with the help of artificial intelligence ensures the adaptability of educational programs to the needs of the labor market, which increases the attractiveness of the institution for students and partners [1].

Many researchers point out that today, artificial intelligence allows expanding the possibilities of personalized learning by automating the process of adapting educational content to the individual needs of students [2; 3]. Intelligent learning data analysis systems help determine the best teaching methods, identify gaps in students' knowledge, and recommend effective ways to eliminate them. This helps to increase student performance and motivation, creating conditions for flexible and effective learning.

At the same time, the development of a digital university needs to attract significant resources, which requires the effective use of artificial intelligence technologies to concentrate and rationalize them. A. Komninos et al. in their research indicates that the automation of administrative processes, management of financial flows and resources based on big data analytics can reduce costs and increase the efficiency of the university functioning [4, p. 80]. An important component of competitiveness is the use of artificial intelligence technologies in research activities, which promotes the implementation of innovative solutions and the development of interdisciplinary research.

Increasing the competitiveness of a digital university is possible only if significant resources, including financial, technological, and human resources, are concentrated and directed to the development of advanced educational technologies, rather than traditional administrative procedures. An important role in this process is played by the intellectualization of all levels of university management, which ensures the effective use of innovative potential. The incorporation of modern technologies such as digital avatars, artificial intelligence, and additive learning contributes to the creation of an intelligent university ecosystem where management, educational, and research processes are integrated into a single digital space, ensuring increased decision-making efficiency, resource optimization, and the development of an innovative culture.

The digital transformation of universities takes place in the context of global technological competition, where innovative factors that contribute to the rapid development of the educational and scientific sphere play a leading role [5, p. 260]. The integration of artificial intelligence into the processes of a digital university directly affects labor productivity, teaching quality, and research activity. However, the phenomenon of

productivity in the digital economy indicates the need not only for technological improvement, but also for comprehensive reform of educational and management strategies of universities to increase their competitiveness [6, p. 49].

The widespread implementation of artificial intelligence technologies in the educational process can significantly increase the efficiency of using resources aimed at developing higher education. An artificial intelligence system in the educational environment should include the following key elements:

– an intelligent information retrieval system that ensures the formation of a database of the learning process based on various sources and adaptive updating of information;

– automatically updated digital library containing electronic textbooks, manuals, and methodological recommendations for students and teachers;

– a system for monitoring the level of students' knowledge, including a subsystem for continuous analysis of academic performance, activity, and achievements of each student;

– a library of adaptive control tasks that is dynamically adjusted according to the student's level of training, taking into account their achievements and individual needs;

– an automated system for scheduling and distributing the workload, which optimizes the process of organizing classes and using the resources of the educational institution;

– a system of interaction and communication support that ensures effective integration of students, teachers, and administration of the educational institution, simplifying the management of the learning process.

Therefore, artificial intelligence makes it possible to overcome the challenges associated with the total digitalization of educational processes by automating the analysis of large amounts of data, creating intelligent educational platforms, and developing algorithms for predicting academic performance. Its use contributes to the formation of a new architecture of the digital university, where knowledge becomes a key factor of competitive advantage. Universities that actively integrate artificial intelligence technologies into their activities have more opportunities to attract students, partners, and funding, which is critical in today's globalized educational environment.

References:

1. Козинець А. О. Напрями стратегічного управління системою академічної доброчесності в умовах цифрової трансформації освітнього середовища. *Проблеми сучасних трансформацій. Серія: економіка та управління*. 2024. № 16. DOI: https://doi.org/10.54929/2786-5738-2024-16-04-09

2. Бобро Н. С. Цифрова трансформація освітніх систем. *Ефективна економіка*. 2024. № 1. С. 36–41. DOI: https://doi.org/10.32702/2307-2105.2024.1.36

3. Yahodzinskyi, S. M., Gudz, Y. F., Skliarenko, O. V. Empowering student entrepreneurs: the transformative power of university startup incubators. *Publishing House «Baltija Publishing»*. 2024. P. 66–71. DOI:10.30525/978-9934-26-503-7-16

4. Komninos, A., Santoro, C., Gavalas, D., Schoening, J., Matera, M., Leiva, L. A. (Eds.). Proceedings of the 25th International Conference on Mobile Human-Computer Interaction. ACM. Association for Computing Machinery, New York, NY, United States. 2023. 256 p. DOI: https://doi.org/10.1145/3565066

5. Kubiv, S. I., Bobro, N. S., Lopushnyak, G. S., Lenher, Y. I., & Kozhyna, A. Innovative potential in European countries: analytical and legal aspects. *International Journal of Economics and Business Administration*. 2020. 8(2), 250–264. DOI: https://doi.org/10.35808/ijeba/457

6. Lysenko, S., Bobro, N., Korsunova, K., Vasylchyshyn, O., Tatarchenko, Y. The Role of Artificial Intelligence in Cybersecurity: Automation of Protection and Detection of Threats. *Economic Affairs*. 2024. Vol. 69(Special Issue), pp. 43–51. DOI: https://doi.org/10.46852/0424-2513.1.2024.6