І Всеукраїнська науково-практична конференція (з міжнародною участю) здобувачів вищої освіти і молодих учених
«Сучасна освіта в глобальному і національному вимірах: виклики, загрози, ефективні рішення»
(м. Тернопіль, 17 жовтня 2024 р.)

СЕКЦІЯ № 1.

МЕТОДОЛОГІЧНІ ЗАСАДИ Й ОСОБЛИВОСТІ РОЗВИТКУ ОСВІТИ В УМОВАХ СУЧАСНИХ ВИКЛИКІВ І ЗАГРОЗ

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AI AND EDUCATION: CHALLENGES AND OPPORTUNITIES

The advent of big data, cloud computing, artificial neural networks, and machine learning has facilitated the development of machines capable of emulating human intelligence. The integration of such intelligent technologies is poised to revolutionize the workplaces of the future. Consequently, Artificial intelligence (AI) is increasingly recognized not only as a tool that enhances human performance but also as the next major disruptive innovation [1]. It is widely considered a central driver of the Fourth Industrial Revolution and is expected to precipitate a similar transformation in the educational sector. In response, AI education is gradually being incorporated into school curricula. However, similar to the initial promises of television and computers as transformative educational tools, these technologies, while enhancing information access, did not fundamentally alter core educational practices [2].

Currently, there are three main directions in the development of artificial intelligence in education:

- Developments aimed at the education system. This includes computer systems designed to manage the educational process and deliver educational content efficiently.
- Developments focused on learners. This area already has numerous advancements that support the learning process, making it more personalized and tailored to individual needs.

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- Developments targeted at educators. These innovations are designed to support and enhance the work of teachers.

The integration of artificial intelligence in education offers numerous benefits that enhance the learning experience for students and improve the efficiency of educational systems. Some key advantages include:

- Personalized Learning.
- 24/7 Access to Learning.
- Automated Administrative Tasks.
- Enhanced Engagement.
- Efficient Assessment and Feedback.
- Support for Diverse Learning Needs.
- Data-Driven Insights.

By leveraging these advantages, AI has the potential to transform education, making it more efficient, inclusive, and personalized for learners around the world.

While artificial intelligence presents numerous opportunities for enhancing education, it also poses several challenges and disadvantages that need to be addressed.

Key disadvantages include:

- Privacy and Data Security Concerns.
- Loss of Human Interaction.
- Digital Divide.
- High Implementation Costs.
- Bias in AI Algorithms.
- Dependence on Technology.
- Complexity of Integration.
- Ethical Concerns.

The central challenge regarding the integration of AI into educational settings lies in determining effective strategies for teaching, learning, and assessment with AI. When discussing the use of AI in education, a common concern among educators, school leaders, and teachers is the potential for students to engage in cheating and plagiarism facilitated by AI technologies. Addressing these challenges requires a range of approaches, including banning AI use, intensifying supervision, embracing AI with equity considerations,

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designing educational practices around AI, and rethinking assessment methods altogether [3]. Incorporating AI into the curriculum is essential for equipping students with the skills necessary to navigate and thrive in an AI-driven future [4].

Additionally, the automation of educational processes, including grading and student assessment, has the potential to lead to job losses among educators and staff members in educational institutions, raising concerns about long-term employment stability in the sector [5].

Thus, artificial intelligence has become an integral part of the digital transformation across various sectors of human activity, including education and science. AI serves as a significant tool in both pedagogical and research processes, while also presenting numerous challenges that will need to be addressed in the future.

References:

1. Lawler R. W. & Rushby N. An interview with Robert Lawler. *British Journal of Educational Technology.* 2013. Volume. 44, Issue 1. P. 20–30. DOI: https://doi.org/10.1111/j.1467-8535.2012.01372.x (date of access: 10.10.2024).

2. Zhai Xuesong, Chu Xiaoyan, Chai Ching Sing, Jong Morris Siu Yung, Istenic, Andreja, Spector, Michael, Liu, Jia-Bao, Yuan, Jing Li, Yan, A Review of Artificial Intelligence (AI) in Education from 2010 to 2020. *Complexity.* 2021. DOI: https://doi.org/10.1155/2021/8812542 (date of access: 10.10.2024).

3. Lodge J. Beyond AI literacy to understanding ourselves as learners with machines. *Keynote talk at HKUST-EduHK Joint Conference on AI and Education* (Hong Kong SAR, China, 29 Jan 2024). 2024. URL: https://aiedu.hk/ (date of access: 10.10.2024).

4. Looi C. K. Charting the uncertain future of AI and education: promises, challenges and opportunities. *Pedagogies: an International Journal.* 2024. No. 19 (3). P. 477–486. DOI: https://doi.org/10.1080/1554480X.2024.2379776 (date of access: 10.10.2024).

5. Москалюк М. М., Москалюк Н. В., Лень А. В. Штучний інтелект в закладах вищої освіти: переваги та недоліки. *Відкрите освітнє Е-середовище сучасного університету.* 2023. № 15. С. 85–96. DOI: https://doi.org/10.28925/2414-0325.2023.157 (date of access: 10.10.2024).