

## СЕКЦІЯ: ШТУЧНИЙ ІНТЕЛЕКТ В ОСВІТІ

### PERSONALIZED LEARNING THROUGH ARTIFICIAL INTELLIGENCE

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The problem statement is the need to integrate artificial intelligence (AI) into the educational process in order to improve it, given the current technological trends. The author emphasizes the potential of AI in education, in particular, its ability to personalize education, automate administrative tasks, and create interactive learning resources. Thus, the problem is to find effective ways to introduce AI into education, overcome possible difficulties and maximize the benefits of this technology.

In the modern world, digitalization and automation have become an integral part of the educational process anywhere in the world. Artificial intelligence opens up new horizons for improving education, making it more accessible, efficient, and personalized. The use of AI makes it possible to adapt curricula to the individual needs of students, simplify administrative processes, and increase the level of knowledge assimilation. Given the global trends in technology development, integrating AI into education is a necessary step to prepare the younger generation for a future in which technology will play a key role, as development in our world does not stand still and everything is updated at lightning speed. Some examples and characteristics of AI programs shown in the table 1.

*Table 1*

<b>AI PROGRAMS</b>	<b>CHARACTERISTICS</b>
<b><i>Tali AI</i></b>	It is an AI-powered assistant designed to optimize clinical documentation, allowing healthcare professionals to focus on patients rather than administrative tasks
<b><i>KrorApp</i></b>	Contains all KROK tests, starting with the oldest tests. Allows students to complete tasks without restrictions, view correct answers and effectively prepare for a particular type of test
<b><i>Easy Anatomy</i></b>	An excellent substitute for paper anatomy atlases. It is an excellent illustration of any anatomical section of the human body, which allows the student to effectively memorize complex concepts of anatomical names. This AI program also contains tests that allow you to test your knowledge on any topic and improve your results
<b><i>Jill Watson</i></b>	An artificial assistant that automatically answered students' questions in the online course forum. This significantly reduced the time required to answer questions and facilitated the work of teachers
<b><i>Math Pathway</i></b>	A platform that adapts math learning to each student's individual pace. This has led to improved results among students and increased their interest in learning math

In the modern world, the educational system is undergoing significant changes due to the development of technology. Artificial intelligence has become one of the key areas of innovation in education in any country. It provides opportunities to improve the quality of education, optimize educational resources and personalize the educational process.

*What are the benefits of AI in education?*

1. *Personalization of education:* AI allows creating individual educational programs that meet the needs of each student. This increases learning efficiency and student engagement in the process. AI can analyze students' results and adjust the educational plan according to their strengths and weaknesses.

2. *Automation of administrative tasks:* AI can automate routine tasks such as checking papers and organizing the educational process. This allows teachers to focus on developing new educational programs and individual work with students.

3. *Interactive educational resources:* artificial intelligence to create interactive educational programs that make learning more interesting and accessible. Such programs can increase student motivation and improve their understanding of complex concepts [1].

*Challenges and prospects:*

1. *Ethical issues:* the use of AI in education raises questions about data privacy and possible bias in educational algorithms.

2. *Technological accessibility:* not all educational institutions have access to the necessary technological infrastructure for the full use of artificial intelligence.

3. *Development of professional competencies:* teachers need to develop new competencies to effectively use AI in their work. This requires additional education and training for teachers.

4. *Financial costs:* the introduction of AI in educational processes requires significant financial investments, which can be a problem for small educational institutions [2].

Despite the challenges, artificial intelligence has great potential for transforming the educational system and improving quality in education.

*Practical examples of AI implementation:*

1. *Online learning platforms:* many educational platforms use AI to create personalized educational routes. For example, adaptive learning systems can adjust the level of task complexity depending on the students' performance. Online platforms are also used to conduct various lectures, classes, and so on. Zoom, Google Meet, and Microsoft Teams are the most popular tools for this purpose.

2. *Chatbots and virtual assistants:* most universities/schools and other educational institutions use chatbots to support pupils/students in the learning process. They can provide information about class schedules, homework, etc.

3. *Analysis of student data:* AI allows for in-depth analysis of student data, which helps to identify problems in the learning process at an early stage and develop effective strategies to solve them [3].

*The future of education with AI:*

Despite the challenges, artificial intelligence has great potential to transform the educational system and improve the quality of education. Its development and implementation can significantly improve the future of education and provide students

with modern tools for successful careers and personal growth. In the future, we can expect further development of technologies such as virtual and augmented reality in education, which will further personalize the educational process. In addition, AI will help develop new educational models that will be adapted to the needs of the modern world and labor markets.

To effectively implement AI in the educational process, educational institutions are recommended to:

1. *Invest in technological infrastructure*: ensure the availability of the necessary hardware and software to use AI technologies.

2. *Conducting training for teachers*: provide teachers with the opportunity to develop the necessary competencies to work with AI technologies.

3. *Developing ethical standards*: define rules for using data and preventing bias in educational algorithms.

These steps will help educational institutions to fully utilize AI capabilities and provide students with modern educational tools.

Artificial intelligence in education is not only a technological innovation, but also a new way of looking at how to make learning more effective and interesting. Despite the challenges, the potential of AI in education is enormous. AI can adapt educational programs to the individual needs of students, automate routine tasks, and improve the quality of learning through interactive resources. Its development and implementation can significantly improve the future of education and provide students with modern tools for successful careers and personal growth.

### References

1. Hlybovets M. M., Oletsky O. V. Artificial intelligence. Kyiv : Kyiv-Mohyla Academy, 2002.
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## ТЕХНОЛОГІЇ ШТУЧНОГО ІНТЕЛЕКТУ У ПРОЦЕСІ ВИВЧЕННЯ ВИЩОЇ МАТЕМАТИКИ

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