USE OF ARTIFICIAL INTELLIGENCE IN HIGHER EDUCATION.

Gaybnazarova Dilnoza Murotbek qizi

[1] - assistant, Urgench branch of the Tashkent Medical Academy

Goyibnazarova Kamola Murodbek qizi[2]

- student of group 231/1 of the Faculty of

Physics and Mathematics of Urgench

State University (2nd specialty - correspondence)

Annotatsiya. *Ushbu maqolada sun'iy intellektning (SI) oliy ta'limdagi o'rni va ahamiyati tahlil qilinadi. Sun'iy intellekt ta'lim jarayonlarini avtomatlashtirish, talabalarning individual ehtiyojlariga moslashtirilgan o'quv dasturlarini yaratish, masofaviy ta'lim imkoniyatlarini kengaytirish va ilmiy tadqiqotlarni qo'llab-quvvatlashda muhim rol o'ynaydi. Maqolada sun'iy intellekt texnologiyalarining ta'lim jarayonini individuallashtirish, o'qituvchilarga yordam berish, baholash jarayonini avtomatlashtirishdagi rollarini ko'rib chiqadi.*

Kalit so'zlar: *sun'iy intellekt, oliy ta'lim, individuallashtirilgan o'qitish, avtomatlashtirilgan baholash.*

Аннотация. *В данной статье анализируется роль и значение искусственного интеллекта (ИИ) в высшем образовании. Искусственный интеллект играет важную роль в автоматизации образовательных процессов, создании учебных программ, адаптированных к индивидуальным потребностям студентов, расширении возможностей дистанционного обучения и поддержке научных исследований. В статье рассматривается роль технологий искусственного интеллекта в индивидуализации образовательного процесса, помощи учителям, автоматизации процесса оценивания.*

Ключевые слова: *искусственный интеллект, высшее образование, индивидуализированное обучение, автоматизированное оценивание.*

Abstract. *This article analyzes the role and importance of artificial intelligence (AI) in higher education. Artificial intelligence plays an important role in automating*

educational processes, creating curricula tailored to the individual needs of students, expanding the possibilities of distance learning, and supporting scientific research. The article examines the role of artificial intelligence technologies in individualizing the educational process, assisting teachers, and automating the assessment process.

Key words: *artificial intelligence, higher education, individualized learning, automated assessment.*

Introduction. In recent years, the issue of effective use of artificial intelligence in our country, its introduction into every sphere, has gained urgent importance. These goals are also reflected in the "Digital Uzbekistan — 2030" strategy. In accordance with the strategy and in order to create favorable conditions for the rapid introduction of artificial intelligence technologies and their widespread use in our country, to ensure the availability and high quality of digital information, and to train qualified personnel in this field, the Resolution of the President of the Republic of Uzbekistan "On measures to create conditions for the rapid introduction of artificial intelligence technologies" (17.02.2021. No. PQ-4996), as well as the Resolution of the President of the Republic of Uzbekistan "Strategy for the development of artificial intelligence technologies until 2030" (14.10.2024. No. PQ-358) were adopted. This shows that the need for effective use of artificial intelligence in higher education systems is more important than ever.

The use of artificial intelligence technologies in education allows for the effective and individualized learning process [1].

Main part. The main areas of application of artificial intelligence in education:

1. Individualized education - Systems created on the basis of artificial intelligence provide educational materials adapted to the individual needs of students. For example, adaptive learning platforms create educational programs that are suitable for them, taking into account the level of knowledge, interests and pace of mastery of students. This helps to make the educational process more effective, taking into account the specific characteristics of each student [1,2].

2. Automated assessment - AI technologies allow you to automate the assessment process. Automated assessment systems created on the basis of artificial intelligence help teachers in the process of checking exams and tests. Such systems are capable of not only evaluating answers to standard test questions, but also analyzing essays and other written works. This reduces the workload of teachers and increases the accuracy of the assessment process [1,2].

3. Teacher Support Systems - Artificial intelligence technologies help teachers in creating lesson plans, creating educational materials, and managing the learning process. For example, AI can be used to analyze data on the level of student learning and revise the curriculum based on this [1,2].

4. Virtual Learning Environments - AI technologies play an important role in creating virtual and blended learning environments. For example, through virtual reality (VR) and mixed reality (AR) technologies, students can simulate real-life situations and gain experience.

Here are some of the main AI technologies available for use in higher education:

1. AI tools for organizing individual learning

- Adaptive learning platforms: Platforms such as Coursera, Edmodo, and Smart Sparrow analyze the knowledge level of students and provide them with customized learning materials. In addition, personal assistants developed on the basis of AI, such as IBM Watson, Socratic, or Querium, provide individual support to students during the learning process. These systems can answer students' questions, explain topics they do not understand, and help them absorb information more deeply [3,4].

- Recommendation systems: They recommend courses, additional resources, and learning materials to students. For example, platforms developed by EdTech companies can recommend courses to students based on their interests [3,4].

2. Data analytics and academic performance tracking

- Learning analytics: Platforms such as IBM Watson Analytics and Tableau enable students to analyze their learning outcomes and track their progress. This helps teachers and universities make data-driven decisions [3,4].

- Presentation and summary tools: They help save time when doing research and presenting. For example, SI can be used to create a summary based on the results of students' research.

- Virtual learning assistants and teaching assistants

- Chatbots and virtual assistants: Virtual assistants and chatbots that support the learning process, such as ChatGPT or IBM Watson Assistant, interact with students, answer their questions, and provide support [5, 6].

- Automated assessment tools: Platforms such as Gradescope help teachers automatically review and grade students' written work [5, 6].

- 4. Text and Speech Analysis Tools

- Text analysis tools: Tools such as Grammarly or Turnitin for automatic analysis of students' written work help in detecting plagiarism and assessing the grammatical quality of the text.

- Speech analysis: Voice assistants such as Siri and Google Assistant expand the possibilities of learning in audio format for students and read educational materials aloud [6, 7].

5. Virtual and Augmented Reality (VR/AR) Technologies

- Education with VR and AR: Students can learn in a more engaging way. For example, Google Expeditions or Microsoft HoloLens allow students to virtually experience lab experiments or important historical events [6, 7].

6. Artificial Intelligence for Language Learning

- Platforms like Duolingo and Memrise: Using AI, students can receive personalized language learning materials and help them develop their speaking skills. These AI technologies make learning more engaging and interactive for students, and provide additional support for teachers in managing the learning process. The use of AI in higher education has many benefits, but it also poses a number of challenges. Let's look at some of them:

- Not all students have equal access to technology. This can exacerbate existing social and economic inequalities.

– AI can replace traditional teaching methods, which can lead to a loss of interaction between teacher and student and a decrease in the quality of education.

– Teaching with AI can lead to students relying on automated systems to stop developing critical thinking and problem-solving skills.

– Teachers need to be trained to use AI effectively in the classroom, which requires time and resources [7].

Conclusion.

Trends in the use of artificial intelligence in the higher education system are taking an important place in modern educational processes. Research shows that with the help of artificial intelligence technologies, the possibility of individual mastery of students, effective organization of lessons by teachers, and optimization of educational resources is expanding. Artificial intelligence creates great opportunities for automating educational processes, accurately assessing the level of knowledge of students, creating personalized curricula, and expanding the possibilities of distance learning.

Artificial intelligence effectively helps students and teachers use innovative teaching methods, develop educational materials, and improve individual learning experiences and the quality of education.

Artificial intelligence can automate routine tasks, which allows people to free up time to focus on more complex tasks. This significantly increases work efficiency. Artificial intelligence also allows for the development of new ideas and technologies, and the creation of products and services that were previously impossible.

In the future, artificial intelligence technologies are expected to become an integral part of educational processes, which will take education to a new level and accelerate digital transformation. The correct and purposeful use of artificial intelligence is a key factor in innovative development in the higher education system.

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