

## THE PLACE OF ARTIFICIAL INTELLIGENCE TECHNOLOGY IN THE DIGITAL EDUCATIONAL ENVIRONMENT

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**Abstract.** In this article, the advantages of artificial intelligence (AI) technologies in the digital learning environment are analyzed in terms of their contribution to the educational process. The author discusses the potential of AI to improve teaching effectiveness, provide personalized learning tailored to students' individual needs, and predict their success. The article highlights the main technological tools of AI, such as interactive teaching systems, analysis of students' activities, and the role of AI in personalizing education. Furthermore, the article demonstrates how the application of AI in education can improve educational effectiveness and enhance students' learning outcomes.

**Key words:** digital education, artificial intelligence, educational process, innovative technologies, artificial intelligence in education, interactive learning, moral compass.

**Annotatsiya.** Ushbu maqolada raqamli ta'lim muhitida sun'iy intellekt texnologiyalarining ta'lim jarayoniga qo'shgan afzalliklari tahlil qilinadi. Sun'iy intellektning ta'limda o'qitish samaradorligini oshirish, o'quvchilarning shaxsiy ehtiyojlariga moslashtirilgan ta'limni taqdim etish va ularning muvaffaqiyatini prognoz qilishdagi imkoniyatlarini muhokama qilindi. Maqolada sun'iy intellektning asosiy texnologik vositalari, masalan, interaktiv o'qitish tizimlari, o'quvchilarning faoliyatini tahlil qilish va ta'limni individualizatsiya qilishdagi roli yoritilgan. Shuningdek, maqolada sun'iy intellektning ta'limda qo'llanishi natijasida ta'lim samaradorligi va o'quvchilarning o'zlashtirish darajasining qanday yaxshilanishi mumkinligi ham ko'rsatilgan.

**Kalit so'zlar:** raqamli ta'lim, sun'iy intellekt, ta'lim jarayoni, innovatsion texnologiyalar, ta'limda sun'iy intellekt, interfaol ta'lim, axloqiy kompas.

**Аннотация.** В этой статье анализируются преимущества технологий искусственного интеллекта (ИИ) в цифровой образовательной среде и их вклад в образовательный процесс. Автор обсуждает потенциал ИИ для повышения эффективности преподавания, предоставления персонализированного обучения, адаптированного к индивидуальным потребностям студентов, и прогнозирования их успеха. В статье освещены основные технологические инструменты ИИ, такие как интерактивные учебные системы, анализ деятельности студентов и роль ИИ в персонализации образования. Также в статье показано, как применение ИИ в образовании может улучшить образовательную эффективность и повысить уровень усвоения материала студентами.

**Ключевые слова:** цифровое образование, искусственный интеллект, образовательный процесс, инновационные технологии, искусственный интеллект в образовании, интерактивное обучение, моральный компас.

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In education, the possibility of using artificial intelligence to improve education, help teachers, and support more effective individual education is surprising, but a little scary. In order to talk intelligently about artificial intelligence in education, it is first necessary to bypass the fictional science fiction scenarios about computers and robots teaching our children, replacing teachers and removing the human element from fundamentally human activity.

Matthew Lynch ("my views on the future of artificial intelligence in education"), one of the leading writers on the benefits of artificial intelligence in education, carefully studies probability traps along with their advantages and writes that "the use of artificial intelligence in education is valuable in some ways, but we must be extremely vigilant in controlling its development and its overall role in our world".

Moral reasoning is as deep as when using artificial intelligence in any situation. There is no "moral compass" in artificial intelligence. Thus, at first glance, according to TowardsDataScience, in an article on the ethics of artificial intelligence, AI programming is described as "as ethical as its own developer", which defines two important recommendations for moving forward:

Why should we instill morality in the idea of developing a certain technology equipped with artificial intelligence.

In order to fully understand the behavior of technology and make sure that it does not violate our (human) moral compass, we need to control its results.

There is a heated debate about ethics in artificial intelligence in the technology community and beyond, and most university programs are incorporating courses in artificial intelligence ethics into their curricula. Once we have identified a moral elephant in the room, let's talk about the amazing possibilities of artificial intelligence in education.

Potential benefits of artificial intelligence in education

Ideally, Lynch writes in "the EdAdvocate "magazine," AI does not reduce classroom instruction, but improves it in many ways."It summarizes five interesting potential benefits of AI integration in education:

Personalization: "it can be very difficult for one teacher to determine how to meet the needs of each student in their class.... Artificial intelligence systems easily adapt to the individual learning needs of each student and can target education based on their strengths and weaknesses."

Tutoring: AI systems "can measure the student's reading style and available knowledge to provide personalized support and guidance."

Assessment: of course, AI can help assess exams using the answer key; but it can also "gather information about how students work and even evaluate abstract assessments, such as essays."

Feedback on course quality: for example, if many students answer a question incorrectly, "AI can focus on specific information or concepts that students lack, so teachers can purposefully improve materials and methods."

Meaningful and immediate feedback to students: some students may be hesitant to take risks or receive critical feedback in the classroom, but "with AI, students can make the mistakes they need to learn and get the feedback they need to improve."

Most of the opportunities designed for artificial intelligence in educational centers are aimed at reducing the amount of time teachers spend on tedious work in order to devote time to more meaningful work.

Automation of administrative tasks is also one of five potential advantages highlighted by author, futurist, and technology consultant Bernard Marr, who cites figures predicting a 47.5 percent increase in the use of artificial intelligence in education in the United States in 2017-2021.

In a video dedicated to the potential of artificial intelligence in education, Marr explains why he sees artificial intelligence as having a "huge impact" in education - "artificial intelligence is not a threat to

teachers; it was created not to replace teachers, but to better educate our children."He imagines a future hybrid model designed to" get the best out of our systems and teachers with artificial intelligence." Marr defines the capabilities of artificial intelligence to help improve our education:

Differentiated and individualized education

Automation of administrative tasks

Tutoring and support outside the classroom

Universal introduction for all readers

Examples of artificial intelligence in education

Matthew Lynch is inspired by the call of an" old school teacher who believes artificial intelligence is disrupting education "and addresses a wide range of topics in his work," 26 ways artificial intelligence can change education for the better". For example:

Adaptive learning: "applied to teach students basic and advanced skills by evaluating their current skills and creating a directed learning experience to help them qualify."

Assistive technology: SI can help students with special needs receive a more equitable education, such as "reading passages to a blind student."

Early childhood education: "artificial intelligence is currently used to support interactive games that teach children basic learning skills and more."Data and Learning Analytics: "

Currently, artificial intelligence is used by educators and education administrators to analyze and interpret data," allowing them to make better informed decisions.

Planning: helping administrators plan courses and help people manage their daily, weekly, monthly or annual schedules.

Facilities management: SI is effective in"monitoring the state of energy, Wi-Fi and water services; warning facilities management personnel when problems arise".

Overall School Management: currently, artificial intelligence is used to manage entire schools, provide student accounting systems, transportation, AT, maintenance, planning, budgeting, etc.

Writing: Lynch argues that not only artificial intelligence is already helping students improve their writing skills, he admits: "I now use grammar and a usage app to help write this article."Continuing his list, Lynch also cites the current use of artificial intelligence in education, including:

1. Classroom / behavioral management;
2. Planning a lesson;
3. Class audio-visual;
4. Mother-teacher dialogue;
5. Learn a language;
6. Preparation for the test;
7. Rating;
8. Education management systems;
9. Gamification to increase student activity;
10. Personnel planning and Deputy management;
11. Advanced training;
12. Transport;
13. Technical service;
14. Finance;
15. Cybersecurity;
16. Safety and security.

Examples of how artificial intelligence is currently used in higher education:

1. Define plagiarism;
2. The integrity of the exam;

3. Chatbots for registration and storage;
4. Education management systems;
5. Transcription of faculty lectures;
6. Advanced online discussion boards;
7. Analysis of student success indicators / 2020;
8. Academic research;
9. Connected campuses.

The list of AI-based special technologies currently being used in education is expanding day by day. Below are a few of them:

Thinkster math: described by its creators as "a tutoring program in mathematics that uses human interaction and artificial intelligence to create personalized curricula;

Jill Watson: a virtual teaching assistant with artificial intelligence presented by the Georgia Institute of technology in 2016;

Brainly: social networking site for class questions;

Nuance: software for speech recognition used by students and faculty members; able to transcribe up to 160 words per minute; especially useful for students struggling with writing or in need of facilities;

Cognii: AI-based products for K-12 and higher education institutions, as well as corporate training organizations, including virtual teaching assistant;

KidSense: a tool for transforming into voice text with algorithms built to recognize the sometimes difficult-to-translate speech of young students, including AI educational solutions designed for children;

Content technologies: educational design and content application solutions powered by artificial intelligence research engines;

Dr. Scott Parfitt explained that Content Technologies Inc. develops systems for the study of artificial intelligence aimed at "transforming big data into information and data into knowledge".

"We sent an engine, it begins to read every article that can read at the speed of light. He studied his material," Parfitt says. The company's education-oriented solutions include:

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