THE PLACE AND ROLE OF ARTIFICIAL INTELLIGENCE IN MODERN LIFE

Yerkibaeva Gulfairuz Ginayatovna

doctor of Pedagogical Sciences, professor of the department
of russian language and literature,
International Kazakh-Turkish University named after
H.A.Yasavi, Turkestan, Kazakhstan

Azimbayeva Sabina Davronovna

3rd year student, International Kazakh-Turkish
University named after H.A.Yasavi, Turkestan, Kazakhstan

Annotation. The article examines the history of development and the role of artificial intelligence (AI) as a key technological trend of the 21st century. It analyzes the strategic importance of AI in reshaping the architecture of the modern education system, specifically its potential to ensure accessibility and personalization of learning. The core methods of AI, including machine learning, neural networks, and big data analysis, are described, and its significance in managing and optimizing social processes is substantiated.

Keywords: artificial intelligence, machine learning, AI in education, neural networks, digital transformation, Big Data, personalized learning.

Introduction

The 21st century is the century of technology. Artificial intelligence (AI) is one of the areas that is making the biggest changes in human life. Artificial intelligence is the ability of computer systems to perform actions characteristic of human thinking (learning, analysis, decision-making, language comprehension). Today, AI is widely used not only in the field of science, but also in everyday life, education, medicine, economics and culture.

Artificial intelligence (AI) is a strategic tool that fundamentally changes the architecture of the modern education system. This is not only a technical assistant, but also a new paradigm that ensures democracy, accessibility and autonomy (staff) in education.

Artificial intelligence as an interdisciplinary field is closely related to the fields of computer science, mathematics, cybernetics, neuroscience, and philosophy. The main AI methods include machine learning, deep learning, neural networks, natural language processing, and computer vision. These technologies allow systems to adapt to the external environment and independently accumulate knowledge.

In modern society, artificial intelligence has become an important tool for managing and optimizing social processes. Information search engines, digital assistants, and algorithms in social networks allow you to analyze user behavior and offer personalized services. This, in turn, increases the speed of information exchange and increases the efficiency of communication processes.

Results and discussion. The idea of artificial intelligence first appeared in the middle of the twentieth century. In 1956, at the Dartmouth Conference, this concept was proposed as a scientific term. At the first stage, AI could only perform simple tasks. Currently, it can analyze big data, learn independently, and make complex decisions. Areas such as machine learning, neural networks, and deep learning have accelerated the development of AI.

The development of AI has gone through several stages:

The initial period (1950s-1970s))

• Programs for solving logical problems

The crisis period (1970-1990)

• Development slowdown due to technical limitations

Renaissance period (after 2000)

• Big data, machine learning, and neural network development.

The main types of artificial intelligence:

From a scientific point of view, artificial intelligence is divided into the following types:

1. Weak (narrow) AI – perform one specific task (for example: voice assistants, facial recognition systems).

2. A strong AI system capable of thinking like a human– (currently not fully implemented).

3. Machine learning - self-learning based on data.

4. Deep learning – complex models based on neural networks.

Nowadays, people use AI every day without even realizing it. For example: voice assistants on smartphones (text recognition, speech comprehension); suggested content on social networks; product offering systems in online stores; Navigation and mapping applications. These systems analyze user actions and help provide a more convenient and faster service.

Artificial intelligence in the field of education opens up great opportunities. Online platforms can analyze the level of knowledge of students and offer an individual curriculum. Virtual teachers, automatic verification systems, and the adaptation of educational materials are all aimed at improving the quality of education. In addition, AI facilitates the work of teachers and allows students to pay more attention.

Materials and methods: In the field of education, AI is considered as an important element of the digitalization of the learning process. Intelligent learning systems assess the level of learning of students and form an individual educational trajectory. Automated assessment systems and a virtual learning environment contribute to improving the quality of teaching activities. In addition, AI expands access to education and creates conditions for the implementation of the concept of lifelong learning.

The AI effectiveness model in education

Opportunity	Description	Result
Personalization	Individual curriculum	Improving the quality of education
Automation	Transferring routine work to AI	Saving teacher's time
Analytics	Real-time monitoring of student progress	Early detection of problems
Availability	Virtual teachers and translators	Equal opportunities

AI in education is not just a technology, it is an "intelligent ecosystem" that empowers students and teachers. In the future, the quality of knowledge will depend on how well the teacher can combine these technologies with pedagogical skills.

What is an "intelligent ecosystem"?

In a traditional environment, if education is linear (teacher -> textbook -> student), in an ecosystem it becomes dynamic and alive.: The AI records and systematically analyzes each step of the student (access time to the platform, speed of task completion, errors). The ecosystem is "growing" in real time, making the material more difficult or easier depending on the student's level. AI provides the teacher with analytics, the student with an individual plan, and the parent with the dynamics of the child's development with specific data.

The pedagogical skills of a teacher in the conditions of AI are not destroyed, but, on the contrary, transformed.

The combination of these two looks like this:

Direction	The role of AI (technology)	The role of the teacher (mastery)
Provision of content	Fast delivery of theoretical information, data, and translations.	An explanation of the value, ethical aspects, and connection of information with life.
Evaluation	Checking tests and technical errors in seconds.	Assessment of the emotional state, motivation and creative potential of the student.
Problem solving	Identifying knowledge gaps with mathematical precision.	Providing psychological support to the student, encouraging them to get out of trouble.
Creating an environment	Launching virtual labs and simulators.	Organization of a team spirit, a culture of discussion and human communication in the classroom.

The quality of future education is based on the balance of these two concepts:

1. High technology. This is to make the learning process as efficient and fast as possible using the capabilities of AI. Algorithms and digital platforms are responsible for this.

2. High-level humane communication. This is the teacher's orientation towards the student (mentoring), his inspiration and assimilation of values (ethics, kindness, critical thinking). A specific example: The AI can detect that a student cannot solve a math problem and offer them 10 different video tutorials. But to rid a student of

the fear of "I can't" at that moment and to instill confidence in his talent depends only on the teacher's skill.
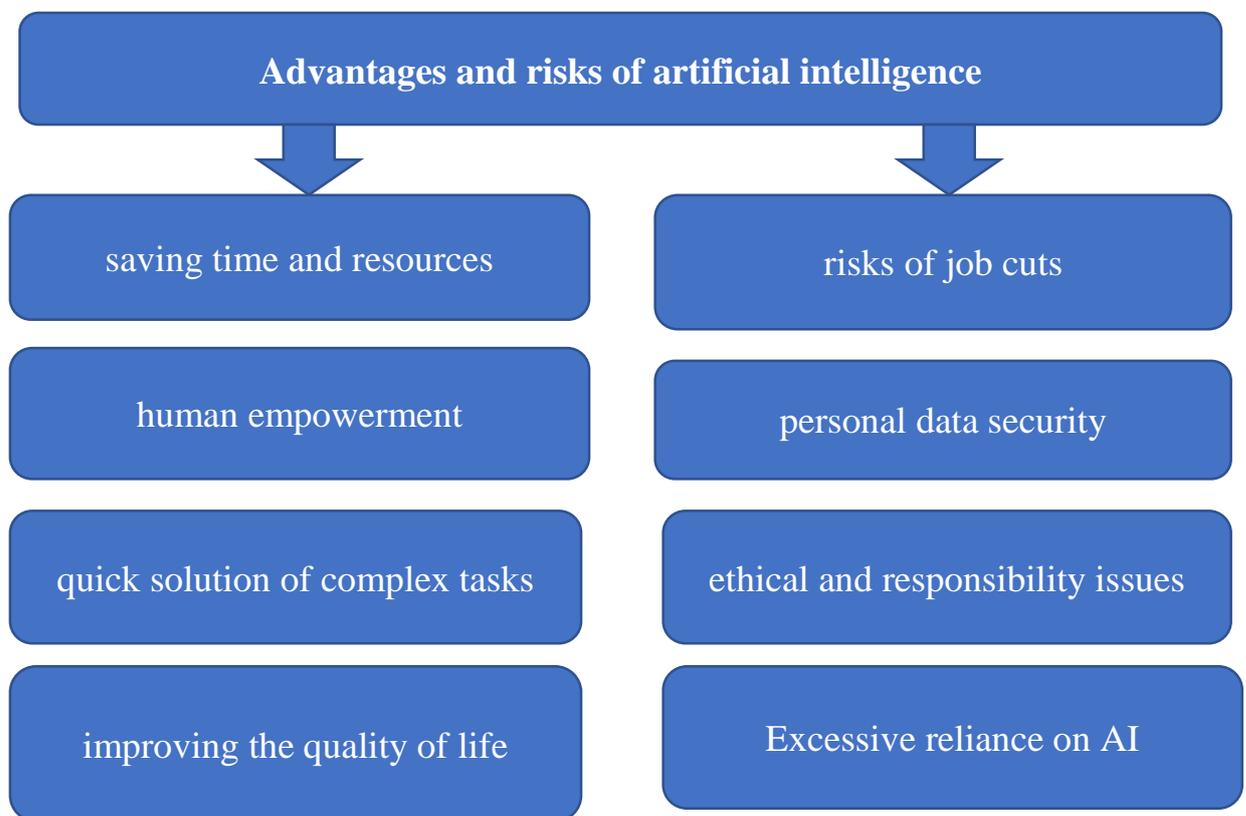
3. New competencies for teachers:

To combine AI with pedagogical skills, a modern teacher needs the following skills:

Data reading competently: Understanding the analytics provided by AI and planning a lesson based on it.

Prompt-engineering: preparation of high-quality educational material and assignments with a clear AI question.

Ethical Moderation: Tracking students' correct, academic use of AI.

AI in education is not a substitute teacher robot, it is an exoskeleton that gives teachers "super-capabilities." If a teacher combines this technology with his skills, the education system moves from mass learning to mass independent learning.

Advantages and risks of artificial intelligence	
saving time and resources	risks of job cuts
human empowerment	personal data security
quick solution of complex tasks	ethical and responsibility issues
improving the quality of life	Excessive reliance on AI

It is important to manage the development of artificial intelligence responsibly, in the interests of humanity.

Artificial intelligence continues to evolve and play an important role in areas such as smart cities, autonomous healthcare providers, and fully automated manufacturing. However, AI does not completely replace humans, but instead serves as their assistant. Creativity, emotions, and humanity always come first.

Artificial intelligence is an integral part of modern life. It gives impetus to the development of science and technology and makes life easier for people. However,

the proper use of AI, understanding its capabilities and limitations is an important task of modern society. Only if artificial intelligence and humans work together can a sustainable and secure future be created.

According to scientific forecasts, artificial intelligence will be regularly implemented in all spheres of society in the future. Areas such as smart infrastructure, personalized medicine, and the digital economy, which are closely related to AI technologies, will develop. However, artificial intelligence should not be considered as a complete replacement for humans, but as a means of expanding their intellectual capabilities.

The widespread use of artificial intelligence raises a number of ethical and legal issues. These include the confidentiality of personal data, the fairness of algorithms, responsibility for decision-making, and changes in the labor market. Therefore, it is extremely important to form a regulatory framework governing the development of AI and to adhere to ethical principles.

Conclusion. Thus, artificial intelligence is one of the main factors of the social, economic and scientific development of modern society. It increases the efficiency of human activity and opens up new opportunities. In addition, responsible and scientific use of artificial intelligence is considered one of the main conditions for ensuring the sustainable development of society.

References:

1. McCarthy J. Artificial Intelligence. — Stanford University, 2007.

2. Russell S., Norvig P. Artificial Intelligence: a Modern Approach. — Pearson Education, 2016.

3. Turing A. Computing Machinery and Intelligence. — Mind Journal, 1950.

4. Goodfellow I., Bengio Y., Courville A. Deep Learning. — MIT Press, 2016.

5.Kai-Fu Li. AI Superpowers: China, Silicon Valley, and the New World Order. — Houghton Mifflin Harcourt, 2018.

6. Bostrom N. Superintelligence: Paths, Dangers, Strategies. — Oxford University Press, 2014.

7. Nazarbayev University. Fundamentals of digital technologies and artificial intelligence. - Astana, 2021.

8. Ministry of Science and Higher Education of the Republic of Kazakhstan. The concept of artificial intelligence development. - Astana, 2022.

9.UNESCO. Recommendations on the ethics of artificial intelligence. - Paris, 2021.10.

10.Kozhakhmetova A. T. Information technologies and artificial intelligence. Almaty: Kazakh University, 2020.