

USE OF ARTIFICIAL INTELLIGENCE IN EDUCATION AND FUTURE PERSPECTIVES

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Artificial intelligence (AI) technologies have the potential to bring about significant changes in the field of education, making learning and teaching processes more effective and personalized. The application of AI in the modern education system creates innovations not only in teaching methods, but also in areas such as communication between teachers and students, assessment, and preparation of educational materials. The use of artificial intelligence in education creates broad opportunities to improve and personalize educational processes. However, when applying AI, attention should also be paid to problems such as ethical issues, data privacy, and the balance of human-machine cooperation. In the future, it is expected that the quality of the education system will increase with the integration of technology into the educational process. Artificial intelligence (AI) technologies have penetrated almost all areas of society in recent years. Whether in healthcare, education, or business, artificial intelligence systems increase work efficiency and provide people with innovative solutions. However, the rapid development of AI has both positive and negative consequences. One of the most important advantages of artificial intelligence is to automate work processes and achieve higher productivity. For example, in healthcare, artificial intelligence plays a major role in the early diagnosis of diseases. Artificial intelligence algorithms help in the timely detection of diseases by analyzing medical images. In education, more appropriate methodologies are offered to students through personalized learning tools.

Keywords: Artificial Intelligence, education, development of artificial intelligence

However, the widespread application of artificial intelligence also raises a number of concerns. The biggest problem is the loss of jobs due to automation. According to estimates, millions of jobs may be replaced by artificial intelligence technologies in the coming decades. Another issue is the violation of the confidentiality of personal data. The ability of artificial intelligence systems to collect extensive data is causing serious discussions in terms of human rights.

In the future, artificial intelligence is expected to develop further and find solutions to various problems of society. Artificial intelligence will play a particularly important role in solving environmental problems. For example, more effective technologies can be developed to reduce carbon emissions. In addition, governments and international organizations should develop legislative frameworks to ensure the ethical use of artificial intelligence.

As a result, artificial intelligence, while making human life easier, also raises important ethical and social issues. In order for it to have a positive impact on society in the future, along with the development of technology, awareness and regulatory work in this area should also be a priority. The correct direction of artificial intelligence can create invaluable opportunities for society.

As artificial intelligence develops, education also develops, and as a result, artificial intelligence and technology are widely used in the education sector in a number of countries. The main purpose of this article is to examine the application of artificial intelligence in education and what consequences this will lead to in the education system in the future. The application of artificial intelligence in education will be useful in overcoming a number of difficulties in the modern education system. Considering that we live in the 21st cen-

tury, it is necessary to especially emphasize the importance of the application of artificial intelligence in education.

Today, artificial intelligence and its applications are effective in almost every field, such as energy, mining, agriculture, healthcare, voice assistants, online chat and communication, and software. However, it would be wrong to think that artificial intelligence is not applied in education. The application of artificial intelligence in education first began in 1980 with the use of desktop computers in the classroom. In later periods, this application expanded further with the discovery of other devices that replaced computers in addition to them. Studies show that in the last 4 years (2018-2022), the use of artificial intelligence in education has increased by approximately 43%. It should be noted that the first to put forward the idea of using artificial intelligence in education were psychologist Burrhus Frederic Skinner, the founder of behaviorism theory, and Sidney Leavitt Pressey, a professor of psychology at Ohio State University. The application of artificial intelligence in education has played a major role in solving many problems. On the other hand, it would not be a correct approach to consider artificial intelligence as the only way out to solve all the problems in the education system.

Before talking about the concept of artificial intelligence, it is appropriate to look at the concepts of the brain and natural intelligence and their mutual relationship. In order to better understand the mechanism of perception, learning, and assimilation of the brain, it is first necessary to study how it works. Some scientists believe that human While some argue that technology with feelings and control can be created in the future, citing a number of similarities between AI and robotics, others argue that no technology, no matter how advanced, can be compared to the human brain.

In general, the concept of human intelligence is often associated with concepts such as consciousness and soul. However, there is no universal definition of this concept. In very simple terms, intelligence can be understood as the process of accepting external factors, transforming them into knowledge, and using them. Some researchers accept that intelligence can continuously renew itself. Gardner, one of the scientists whose name is often mentioned in his research on the human brain and intelligence, gave human intelligence a concept that can solve problems and distinguish the shapes of different objects. Nils Nilsson, on the other hand, put forward the theory that "artificial intelligence aims to create an imitation of natural intelligence."

When we look at the history of artificial intelligence, we come to the conclusion that it has existed since ancient times. It is clear from Greek mythology that giant automatons known as Talos were used to protect the island of Crete from pirates. In 1943, Walter Pitts and Warren McCulloch proposed the principle of operation of brain neurons based on mathematical theory, and this was accepted as an important step in artificial intelligence. In the 1950s, the English mathematician Alan Turing wrote an article seeking an answer to the question, "If a person can solve any problem by using his logic and decision-making skills, why can't robotics do the same?" The term "artificial intelligence" was first used in 1956 by scientist John McCarty. In the 1960s, Joseph Weizenbaum created a program called ELIZA. This program convinced people who corresponded with it that it was not a computer but a person who was talking to it. The program also had such a feature that it often expressed the thoughts of the person who corresponded with it in a different way. For example, in response to the sentence: "I don't feel well," it would respond with "Why don't you feel well?" Science has gone through three important periods regarding artificial intelligence:

As a result of my research, I would like to say that the creation of smart classrooms, monitoring the student-teacher relationship and students' motivation for lessons, will undoubtedly create a number of improvements in the education system. It is true that many studies are being conducted and projects are being implemented related to the application of artificial intelligence in the education system. However, it would be

appropriate to note that this application is still in its early stages of use. In my opinion, more research needs to be conducted in order for artificial intelligence to be used in classrooms and these should be applied in practice. Most importantly, there is a need to educate teachers more on this subject. Especially, during the Covid-19 pandemic in 2020, the importance of applying artificial intelligence in education was revealed. Therefore, in my opinion, the sooner students are introduced to artificial intelligence, the better, and most importantly, the quality of education will increase. However, since companies engaged in the production of artificial intelligence are mostly software companies, it is difficult for them to develop applications according to the needs of any school and the education system as a whole. Therefore, I think that it is necessary for these companies to cooperate with schools. The opinions of students should also be taken into account in the development of such technologies. Only then can it be possible to achieve the development of technologies that meet the requirements of the education system.

References:

1. Abbasov, R. (2022). Artificial intelligence and education: Modern challenges and opportunities. Baku: Science and Education Publishing House.
2. Guliyev, A. (2021). Development of technology in education and the role of artificial intelligence. *Azerbaijan Pedagogical Journal*, 12(3), 45-52.
3. Huseynova, S. (2023). Application of artificial intelligence in inclusive education: Challenges and opportunities. *Education and Innovation Journal*, 15(2), 78-85.
4. Narimanov, T. (2020). The future of artificial intelligence technologies in education. *Materials of the Azerbaijan Modern Education Forum*, 10, 23-28.
5. Aliyeva, N., Mammadova, G. (2021). Application of artificial intelligence in the learning process: Azerbaijani experience. *Baku State University Collection of Scientific Articles*, 7, 56-63.
6. Gadirli, F. (2022). Digital transformation and artificial intelligence in education. *Journal of Digital Innovations and Education*, 5(4), 34-40.
7. Zahidov, A. (2023). Ethical issues in artificial intelligence and education. *Azerbaijan Scientific Journal*, 16(2), 99-106.