

The Role Of Artificial Intelligence And Implications In Digitalization Of The Education System

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Abstract: The article discusses the role and importance of digital technologies today, the emergence, development and types of artificial intelligence systems according to their capabilities, and improving the quality of education through their application in the educational process.

Keywords: Digital technologies, neural networks, artificial intelligence, reactive machine, limited memory, theory of mind, blackboard, online courses.

Introduction: In Digital technologies have become so deeply embedded in our lives that today it is impossible to imagine not only our daily activities, but also the development of socio-economic spheres without them. Naturally, digital technologies, as in other areas, are being implemented in educational institutions around the world, using a system of digital competencies (soft skills) that allow future specialists to quickly adapt to changing trends in the labor market in the environment of digital technologies. The international education concept until 2030, adopted by UNESCO, "Providing access to quality education throughout life" [1] is defined as an urgent task.

In today's rapidly developing world of science and information and communication technologies, the widespread use of digital technologies and artificial intelligence in public and social governance, economy, industry, social protection, education, medicine, employment, agriculture, defense, security, tourism, and other areas remains a key issue in developed countries.

Major reforms are being implemented in our republic in the education system, digital technologies, and artificial intelligence technologies. As part of the implementation program of the "Digital Uzbekistan — 2030" Strategy, the Resolution of the President of the Republic of Uzbekistan "On measures to create conditions for the accelerated introduction of artificial intelligence technologies" was adopted on February 17, 2021. The adoption of these resolutions by the

President is of great importance, as it is aimed at the tasks of the accelerated development of the digital economy in our republic and their implementation [2].

Neural networks, Big Data, and artificial intelligence capabilities are also gradually being introduced into government systems. Among them, the MyID system, which covers the entire country in terms of scale, can be mentioned. According to the Ministry of Digital Technologies, today 23 banks and 5 large state organizations are constantly using this system, and the number of registered users has reached 2.5 million.

MyID primarily allows for biometric identification of a person, which ultimately reduces the time required for the process to 1 second, and completely automates document verification.

Another unique project - the Agricultural Land and Crop Monitoring Project - uses artificial intelligence to monitor fields and create a geoinformation system based on images taken from space and drones, as well as data collected in real time.

the most important issue in this direction. From the 2022/2023 academic year, a total of 245 quotas have been allocated in 6 higher educational institutions for training personnel in the direction of "Artificial Intelligence". It should also be noted that a separate doctoral direction "Digital Technologies and Artificial Intelligence" has been opened.

Based on the presidential decree, the Research Institute for the Development of Digital Technologies and Artificial Intelligence was established under the

Ministry of Digital Technologies. The institution, which brings together doctors of science in the field and leading specialists in various fields, has great scientific potential and is already using it. Within two years, the institute has developed a software product for monitoring the environmental and ecological state of the Aral Sea region and for personal recognition based on the processing of speech signals.

METHODS

Artificial intelligence (AI) is the ability of computer systems to perform creative and intellectual activities that were previously only possible for humans. [3] It combines highly sophisticated new areas of science, such as neural networks, machine learning, natural language processing, cognitive computing, and computer vision.

The term artificial intelligence was first proposed by John McCarthy and his colleagues Marvin Lee Minsky, Nathaniel Rochester, and Claude Shannon at the Dortmund Conference in 1956. John McCarthy is considered the author of the term [4].

In the 1980s, artificial intelligence was recognized as a breakthrough. Scientists began to develop textbooks on the subject.

Also, in 1997, the famous chess program "Deep Blue" was created, which defeated the World Chess Champion Garry Kasparov. In those years, a 6th generation computer project based on neural networks was being developed in Japan.

After that, attention to artificial intelligence increased. From large companies to military institutions, they began to finance this field. As a result, the number of new technologies increased, competition intensified, and artificial intelligence tools became more perfect.

this past time, a great deal of scientific research has been and is being conducted, as a result of which the scope of application of artificial intelligence is rapidly expanding.

The issues of developing artificial intelligence systems have been reflected in the research conducted by Uzbek scientists M.Kamilov, T.Bekmuratov, Sh.Madrakhimov, N.Ignatyev. Russian scientists M.Akhmetov, A.Bazaeva, L.Bocharova, A.Lobanov have conducted scientific research on the development of artificial intelligence systems and their application in the field of education.

Today, in world practice, countries such as Canada, Singapore, the United Arab Emirates, Finland, Japan, China, Italy, Tunisia, the United Kingdom, the United States, Sweden, Mexico, the European Union, Kenya, Denmark, France, Australia, the Republic of Korea, India, and Germany have announced strategies for the

development of artificial intelligence [5]. In addition to the location of world-renowned higher education and scientific research institutions in these countries, the countries have also fully regulated mechanisms to support innovative activities and provide large-scale financial support. As a result, they are attracting many knowledgeable specialists from countries around the world. In our republic, it has been set as a priority task to take a place among the leading countries in innovative development by 2030 through the introduction of digital technologies in various sectors and the development of the digital economy.

DISCUSSION

related to human consciousness: language understanding, teaching, discussion, problem solving, translation, and similar capabilities. Artificial intelligence consists of algorithms and software systems designed to perform various actions, and performs a number of tasks that the human mind can perform based on information entered into an information base. Artificial intelligence is also considered an "intelligent" technology that includes complex analyses and programs that work with large amounts of data, and is capable of logical, consistent reasoning and making recommendations. Experts consider artificial intelligence to be the basis of the fourth industrial revolution.

The following 4 types of artificial intelligence can be distinguished:

1. Reactive machines. An example is the Deep Blue computer, equipped with a chess program that defeated world champion Garry Kasparov in the 1990s. Deep Blue is a computer that can recognize and predict chess pieces on a chessboard.
2. Bounded memory. This artificial intelligence system can use past experiences to shape future decisions. Certain decision-making functions in autonomous vehicles are designed this way. Observations are used to derive information about future actions. These observations are not stored permanently.
3. Theory of mind. This is a psychological term that refers to the understanding that others have their own beliefs, desires, and intentions that influence decision-making.
4. Self-awareness. The emergence of artificial intelligence involves the creation of writing systems and the almost eternal storage of information at the quantum level. A self-aware machine understands its current state and can use the information to determine what others are feeling [6].

For example, machine learning technology is a

computer system that can “learn” knowledge deeply to process data. These systems, based on an algorithm written by the programmer who created it, independently analyze huge amounts of data and experiments, find commonalities and patterns, and “enrich their knowledge” on this basis. For example, 570 GB of data was used to train ChatGPT, which is now famous all over the world. This is an indicator that far exceeds the limits of human thinking. ChatGPT, in which Microsoft invested \$ 10 billion at the beginning of the year, can freely chat with you in many languages, write articles or poems.

The use of artificial intelligence not only automates any process, but also allows it to be carried out in accordance with the specific task of a person, organization, or production, becoming more efficient over time - the better the neural network understands the details and needs, the better it works [7].

requires not just the "digitization" of individual processes from the education system, but a comprehensive approach that sets new goals and changes the structure and content of the educational process. The emergence of modern information and communication technologies and their "integration with educational technologies" has led to fundamental changes in the field of education:

educational tools based on the use of information technologies in education began to be used: Blackboard, online courses, simulators, training courses, online worlds, etc.

Secondly, information technologies have individualized education, in which the learning process and content are adapted to the needs of students and their individual characteristics (reading speed, learning style preferences, etc.).

Thirdly, game-based forms of teaching, which allow for effective and comprehensive mastery of the subjects being studied, have begun to be actively introduced.

Fourth, education, especially for university students and adults, is becoming more subject-oriented and practice-oriented; projects such as startups, business projects, and business plans are being put at the center of education [8].

RESULTS

The simplest and most understandable use of artificial intelligence is in knowledge control, that is, in automated checking of homework, identification and correction of errors, and assistance in grading by the teacher. This can be used both in distance learning and in the usual educational process. In addition, intelligent technologies help to eliminate plagiarism, which is the main problem in conducting online exams.

A proctoring system based on artificial intelligence technologies analyzes images from video cameras and user activity to determine whether a person is taking the test and to help eliminate fraud [9].

One such area is the education system, where many people understand the use of artificial intelligence in education as "robot teachers", which is somewhat different from reality. We can find artificial intelligence in personalized learning systems, information retrieval, chatbots, special education systems for children, inclusive education systems, learning process control systems, and student knowledge assessment systems. Using such systems, it is possible not only to increase students' knowledge, but also to reduce the burden on teachers. One of the important requirements for organizing modern education with the help of artificial intelligence is to achieve high results in a short time without spending excessive mental and physical effort. To convey certain theoretical knowledge to students within a certain time, to form skills and competencies in them for a specific activity. Assessing the level of knowledge, skills and competencies acquired by them requires high pedagogical skills from the teacher. The implementation of this important task requires combining traditional teaching methods with advanced pedagogical and information technologies in educational institutions [10].

CONCLUSIONS

continues to transform education today in the form of the following processes:

- In the process of globalization and scientific and technological progress, the importance of artificial intelligence in the education system is increasing;
- Through testing and assessment systems, new measurements and criteria can be created for students and learners using artificial intelligence;
- opportunities for more effective and widespread use of differentiated and individualized education have been created;
- Feedback, which plays a very important role in education, can be automated to suit the needs of students with artificial intelligence.

to transform any industry, but the possibilities are not endless.

The main disadvantages of artificial intelligence are that,

- ✓ Any inaccuracies in the data will affect the result;
- ✓ accuracy of the data being entered ensures that artificial intelligence systems operate without errors;

- ✓ An artificial intelligence system designed for one field will not work for another. [10]

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In conclusion, we must not forget that every technology created should always serve humanity, improve its standard of living, and advance human progress.

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