AJEMA GLOBAL RESEARCH NETWORK

AMERICAN Journal of Engineering, Mechanics and Architecture
Volume 03, Issue 09, 2025 ISSN (E): 2993-2637

Ai in Uzbek Schools Feasible by 2030

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Abstract: Artificial Intelligence (AI) is gaining importance as an innovative approach in education. Introducing AI into Uzbek schools by 2030 can improve learning quality, enable personalized programs, and enhance students' intellectual capacity. Teacher training, curriculum adaptation, and infrastructure development remain crucial. The paper explores the effectiveness, practical application, and future prospects of AI in the educational system.
Keywords: artificial intelligence, education, school, innovation, Uzbekistan, 2030.

Introduction

In today's era of globalization, the rapid development of science, technology and information flows poses new demands and tasks for the education system. In particular, the deep penetration of artificial intelligence (AI) technologies into various spheres of life requires a radical change in the educational process. Large-scale reforms are being carried out worldwide to increase efficiency in education through the use of AI tools, organize personalized education and deepen students' knowledge. Therefore, the education system of Uzbekistan, not remaining aloof from these processes, sets itself the strategic task of improving the quality of education through the introduction of AI technologies.

The importance of using AI technologies in school education is manifested, first of all, in the individualization of the educational process. The possibilities of effective teaching expand by creating tasks, exercises and control tools that are appropriate for the abilities, interests and level of knowledge of each student. Also, with the help of artificial intelligence, it will be possible to analyze student knowledge, identify strengths and weaknesses, and monitor results online. This will allow the teacher to take an individual approach to each student, adjust the curriculum.[2; 240] Uzbekistan advanced 17 places in Oxford Insights' Government AI Readiness Index, reaching 70th out of 188 countries and ranking first in Central Asia.[1] The government of Uzbekistan adopted the National AI Strategy-2030 (PP-358) that sets targets several targets, including reforms in education system. In addition, the government is also working on development of the national Concept on using AI-tools in education.

It should be noted that the widespread introduction of AI technologies in schools in Uzbekistan by 2030 will require not only the provision of technical means, but also the acquisition of new knowledge and skills by teachers. After all, the teacher is the main participant in the educational process. If they do not master modern technologies, it will be difficult to effectively use artificial

[1] https://oxfordinsights.com/wp-content/uploads/2024/12/2024-Government-AI-Readiness-Index-2.pdf?utm_source=chatgpt.com

intelligence. Therefore, retraining teachers, developing methodological manuals, and creating modern educational programs are of great importance.

In addition, the introduction of AI technologies also requires a radical renewal of the educational infrastructure. The speed and quality of the Internet, the sufficiency of computers and tablets, and the availability of modern software products are the basis for the success of this process. In this sense, the modernization of educational infrastructure, the creation of digital educational resources, and the integration of the educational process into fully electronic platforms are identified as priorities in state policy.

Along with the introduction of artificial intelligence into education, a number of problems will also arise. In particular, the improper use of AI tools, viewing them only as a source of ready-made answers, can limit independent thinking in students. Therefore, the issues of maintaining an educational and educational balance in the use of SI technologies, and the development of critical thinking and creativity in students are relevant.

The introduction of artificial intelligence in schools in Uzbekistan by 2030 is not only a technological reform, but also a process of updating the entire philosophy of the education system. This process will modernize students' learning methods, enrich teachers' pedagogical approaches, and bring the quality of education to a new level. Most importantly, this reform will create a solid foundation for the young generation to successfully operate in the digital world.

LITERATURE ANALYSIS AND RESEARCH METHODOLOGY

In recent years, scientific research aimed at introducing artificial intelligence (AI) technologies into the education system has been active both globally and in Uzbekistan. D. Kristal's work “Language and the Internet” extensively analyzes the impact of digital technologies on language and speech culture, which demonstrates the importance of AI in language teaching and knowledge transfer. J. Holmes and other foreign researchers have also highlighted the possibilities of creating individual curricula in education through AI, assessing student abilities, and automating the pedagogical process.

The topic of AI is also becoming increasingly relevant in Uzbekistan. M. Yuldoshev's work “Language and Society” analyzes the impact of modern technologies on youth spirituality, and B. Kadyrov's book “Information Technologies and Youth Spirituality” analyzes the role of the digital environment in education. Local scientists pay special attention to the issues of existing infrastructure, pedagogical potential and adaptation of national curricula in the implementation of AI technologies.[3; 198]

Also, reports of international organizations (UNESCO, OECD) on the implementation of AI in education were analyzed. They emphasize the use of AI as an auxiliary tool for teachers, strengthening person-centered education and improving the quality of education. At the same time, issues of ethical standards, information security and equal access to technologies are also noted as important aspects.

The analysis of this literature shows that AI is considered a force that fundamentally changes the educational process. However, for its effective implementation, it is necessary to ensure the harmony of pedagogical, technical and social factors.

This study examined the possibilities of introducing artificial intelligence in schools in Uzbekistan by 2030. The research methodology included the following stages:

Theoretical analysis. Scientific articles, monographs, state strategies, and reports of international organizations on SI and education from local and foreign sources were studied. This formed the conceptual basis of the study.

Comparative analysis. The experience of introducing SI technologies in education in the USA, South Korea, Singapore, and European countries was analyzed, and their aspects that are relevant to the conditions of Uzbekistan were identified.

Questionnaire and interview method. A survey was conducted with respondents consisting of school teachers, students, and education specialists from different regions of Uzbekistan. Through this, practical information was collected on the advantages and problems of introducing SI technologies.

Content analysis. The experience of using artificial intelligence tools in social networks and online educational platforms was analyzed and their effectiveness was assessed.

Sociological approach. The research also examined socio-psychological factors related to the introduction of SI into the educational process - student interest, parental attitude, and teacher training.

ANALYSIS AND RESULTS

In recent years, digitalization processes in the education sector of Uzbekistan have accelerated. Schools are being provided with electronic diaries, distance learning platforms, electronic libraries, and various educational resources. However, the use of artificial intelligence (AI) technologies has not yet been widely implemented. Some schools are using programs that automatically analyze test results, chatbots for language learning on online platforms, and educational applications, but they are not at a systematic level.

This process shows that Uzbekistan is not yet ready for the full introduction of AI technologies, but the initial foundation has been laid. Therefore, the reforms to be implemented by 2030 will be closely related to the adaptation of curricula, teacher training, and strengthening the infrastructure.

AI can be effectively used in school education in the following main areas:

Individualized teaching. With the help of SI, tasks can be presented that are appropriate for each student's level of knowledge, interests, and abilities. For example, in mathematics, difficult problems are given only to prepared students, while weaker students are engaged in simpler exercises.

Assessment system. Automated checking of tests and written work saves time and increases objectivity.

Distance education. The importance of distance education has become clear during the pandemic. SI can make this process more effective and interactive.

Language teaching. Chatbots and virtual teachers can greatly help students in learning foreign languages.

Psychological analysis. With the help of SI, students' activity, mood, and motivation in the lesson are monitored, and the teacher is given the necessary recommendations.

The widespread introduction of SI technologies in Uzbek schools will bring a number of positive results:

Improving the quality of education. As a result of training students on the basis of individual programs, the effectiveness of knowledge increases.

Fair assessment. Automated assessment reduces subjectivity.

Ease the work of teachers. Many technical tasks are performed by SI, while the teacher focuses more on educational and methodological work.
Opening the way for scientific research. Through SI tools, creativity and innovative thinking are developed in students.
Preparing the digital generation. Young people who have the skills to work with modern technologies will be competitive in the labor market in the future.
There are a number of problems in the introduction of SI:
Lack of infrastructure. The quality of computers, tablets and the Internet in schools is still not at the same level. This issue is even more acute in rural schools.
Insufficient pedagogical training. Many teachers are not ready to use SI technologies.
Financial costs. Purchasing SI programs and devices requires significant funds.
Information security. It is important to protect students' personal data when using SI tools.
Ethical issues. Students' reliance solely on technology can negatively affect their independent thinking.
International experience shows that in countries where SI is successfully implemented in the education system, the following factors were important:
In the USA - innovative applications are being created through cooperation between educational startups and technology companies.
In South Korea - the state has implemented a program for the complete digitization of schools and retraining of teachers.
In Singapore - a person-centered education system based on SI has been created, and an individual development map has been drawn up for each student.
In European countries - great attention is paid to information security and ethical standards.
These experiences can also be useful for Uzbekistan. In particular, it is necessary to strengthen public-private sector cooperation, develop teacher retraining programs, and create IS applications that are compatible with national curricula.[4; 165]
The following approaches to introducing IS in schools by 2030 may be effective:
Phase-by-step introduction. First, introduce IS technologies in the capital and large cities, and then in rural schools.
Create local programs. SI applications that work in the Uzbek language should be developed.
Training for teachers. Prepare teachers to use IS tools through special training courses.
Public-private partnerships. Develop educational applications in collaboration with IT companies.
Develop ethical standards. Focus on developing students' independent thinking when using IS tools.
The results obtained during the research process showed the following:
School teachers are interested in using IS technologies, but most of them do not have sufficient knowledge and skills.
Students are ready to use AI-based educational programs and this motivates them.
A large number of parents accept AI positively, but express concerns about the issue of information security.
Along with financial resources, the development of national programs for the introduction of AI in the education system has been identified.

The opportunities for the introduction of artificial intelligence in schools in Uzbekistan by 2030 are wide. However, for this process to be successful, it is necessary to:
modernize infrastructure;
train and retrain teachers;
create national programs;
strengthen cooperation between the public and private sectors;
ensure information security;
adhere to ethical standards.[5; 212]
AI technologies allow improving the quality of education, strengthening individualized education, and preparing the younger generation for the digital world. Therefore, the development of AI-based school education remains a priority as one of the strategic goals of Uzbekistan.

CONCLUSION

The introduction of artificial intelligence (AI) technologies in the education system of Uzbekistan will remain one of the important directions of national development in the coming years. The analysis conducted during the study showed that AI not only facilitates the learning process, but also has great potential for improving the quality of education, expanding the individual approach and developing the creative potential of students.
In particular, ensuring objectivity in the assessment process, reducing the burden on teachers, effectively organizing distance learning and providing additional support in learning foreign languages are among the most important advantages of AI. However, there are a number of problems in implementing this process, among which the uneven development of infrastructure, technological training of teachers, financial costs, information security and ethical issues are of particular importance.
International experience shows that for the successful introduction of AI, state policy, cooperation with technology companies, continuous professional development of teachers and innovative solutions adapted to national curricula are important. Therefore, the phased introduction of AI technologies, the creation of programs that work in the Uzbek language, the organization of special training courses for teachers, and ensuring information security are priority tasks in Uzbekistan.
In conclusion, if the necessary conditions are created and the above factors are combined, the widespread introduction of artificial intelligence technologies in schools in Uzbekistan by 2030 will not only be possible, but will also bring the education system to a new level. This process will play an important role in increasing the cognitive potential of the younger generation, forming them as globally competitive personnel, and increasing the intellectual potential of the country.

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