

**ARTIFICIAL INTELLIGENCE IN PRESCHOOL EDUCATIONAL ORGANIZATIONS:
HOW MODERN TECHNOLOGIES ARE CHANGING PRESCHOOL EDUCATION****Axmadaliyeva Mohlaroy Toxtapo'latovna**

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The article discusses the current implementation of modern technologies in preschool educational organizations, information about artificial intelligence, the use and creation of artificial intelligence programs not only for healthy children but also for children with special educational needs, the advantages and disadvantages of using artificial intelligence in preschool education, methodological assistance to parents and teachers, as well as methods of its application.

Keywords

Artificial intelligence, specialized platform, individual needs, intuitive, adaptive, autism, dyslexia, digital transformation, optimal.

INTRODUCTION

Today, great attention is being paid to the field of education in our country. The work being carried out to reform this system is also significant. We can find proof of these ideas in the work being done to introduce opportunities for using modern technologies in this system and to adapt the education system to high standards and modern requirements. Developing and implementing artificial intelligence (AI) applications for preschool, secondary, and higher education has the potential to positively change the way the younger generation learns science and the methods teachers use to teach lessons.

Several works on artificial intelligence are being implemented in the Republic of Uzbekistan. Fields where artificial intelligence has been introduced include: agriculture, banking and finance, transport, healthcare, energy, and the tax system. These projects have been organized to test artificial intelligence in real sectors. Such projects and programs are also being used in the field of education. In addition, the resolution of the head of our state «On measures to create conditions for the rapid introduction of artificial intelligence technologies» dated February 17, 2021, and the Presidential Decree of the Republic of Uzbekistan dated October 14, 2024, No. PQ-358 «On approval of the strategy for the development of artificial intelligence technologies until 2030» include issues such as the use of artificial intelligence in public administration, the introduction of AI technologies in economic sectors, the development of scientific research, and the training of qualified personnel in AI. The main goals of the strategy include increasing the volume of AI-based products to 1.5 billion dollars by 2030, increasing the number of artificial intelligence laboratories to 10, increasing the share of AI in public services by 10%, and including the country in the top 50 leading countries in the international AI readiness index. The Resolution of the Cabinet of Ministers No. 425 dated July 10, 2025, includes issues on approving the list of priority projects in artificial intelligence for 2025–2026, developing AI infrastructure, and launching new state centers and projects.

Work is being carried out in Uzbekistan to digitize and modernize preschool education. Preschool education coverage has reached 78%, new innovative kindergartens are being established, and modern digital learning environments are being created for children. In addition, «New Generation» kindergartens and children's innovation centers are planned to be established.

The use of digital technologies and AI elements is expected in these centers.

Artificial intelligence is the ability of computer systems to learn, analyze, and make decisions in a manner similar to human thinking. In education, it provides opportunities for individualizing the learning process, analyzing children's knowledge levels, and automating the teaching process. Scientific research emphasizes that artificial intelligence helps personalize and make education more effective.

ANALYSIS OF LITERATURE AND METHODS

Artificial intelligence is a computer program that receives and analyzes data and then draws conclusions based on it. Although it is difficult to call artificial intelligence a program that replaces human intelligence, its accuracy and speed make it a valuable tool that significantly improves people's lives. In recent years, artificial intelligence has begun to permeate various areas of our lives. Education and childcare are no exception. In preschool educational organizations, it can help educators in raising children and improving the quality of education. One such application of artificial intelligence is the creation of various educational games and methods. Such programs can independently identify errors, analyze a child's progress, identify weak points, and set tasks for practicing skills. This speeds up and makes the learning process more effective, while also lightening the workload of educators.

Artificial intelligence can be used to create programs for children with special educational needs. For example, special exercises can be created for children with autism or dyslexia that help them learn and develop effectively.

Artificial intelligence also helps ensure safety in preschool educational organizations. For example, artificial intelligence integrated with video surveillance systems helps monitor children for threats and issue warnings. Thanks to artificial intelligence, parents can monitor their children's health and development, which is stored in a special database. This helps parents better understand their children's needs and desires. In general, artificial intelligence opens new opportunities in education, making learning interesting and adapted to each child. However, it should not be forgotten that educator-teachers and parents remain an important and fundamental part of child upbringing. Organizationally, artificial intelligence needs to be carefully developed to ensure strict confidentiality of all children and preschool data.

The digital transformation of education fundamentally changes approaches to developing preschool education. Next-generation technological solutions turn the learning process into an interesting journey where every child can develop at their own pace. Innovative methods based on artificial intelligence allow creating a personal educational environment adapted to the individual needs of each child.

RESULTS

Modern research in the field of neuro pedagogy confirms the effectiveness of early development through digital technologies. Leading educational centers have noted a 40% increase in learning through interactive teaching methods. The effective use of artificial intelligence in preschool educational organizations opens new horizons for children's early development. Virtual assistants for teachers are developing, providing increasingly accurate recommendations for organizing the educational process. Early talent identification systems help identify children's natural inclinations and develop their potential. Automating administrative processes helps optimize the activities of preschool educational institutions.

Practical Application of Artificial Intelligence in Preschool Educational Organizations

In modern preschool educational organizations, intelligent health monitoring systems that track children's physical activity and emotional state are being actively introduced. Intellectual algorithms analyze behavioral patterns and help create favorable conditions for each child's development. Today, artificial intelligence is becoming an indispensable tool in organizing the

learning process in preschool educational organizations. Machine learning technologies automate routine tasks for teacher-educators and free up time for direct communication with children. Intelligent systems help create individual development plans adapted to each child's unique needs. Adaptive educational programs adjust to learning speed, making learning effective and interesting.

The introduction of digital technologies in preschool educational organizations requires special attention to ensuring information security. Specialists are developing strict protocols for protecting personal data and rules for using smart devices. It is important to maintain a balance between technological innovations and traditional development methods.

The ethical aspects of using artificial intelligence in preschool educational organizations are becoming a topic of active discussion in the professional community. Specialists emphasize the need to preserve live communication between teachers and children. Technology should not replace human interaction in the educational process but should complement it and improve the quality of education.

Prospects for Technology Development. The development of artificial intelligence technologies is opening new opportunities for improving preschool education. Artificial intelligence in preschool educational organizations helps create innovative early development methods. Specialized educational platforms are becoming increasingly intuitive and adaptive, taking into account each child's individual needs. Virtual assistants for teachers are developing, providing increasingly accurate recommendations for organizing the educational process. Early talent identification systems help identify children's natural inclinations and develop their potential. Automating administrative processes helps optimize the activities of preschool educational institutions.

New Horizons in Preschool Education. The digital transformation of preschool education continues to develop rapidly, opening new opportunities for early childhood development. Artificial intelligence is becoming a reliable tool in creating an effective educational environment. However, it should be remembered that technology is a tool that needs to be continuously integrated with existing educational methods. The future of preschool education lies in a comprehensive approach that combines traditional methods with innovative technologies. This symbiosis allows creating favorable conditions for the comprehensive development of children, taking into account each child's individual needs.

Mind mapping is a unique and simple method of memorizing and organizing information that stimulates memory and thinking, developing children's creative and oral abilities. The characteristics of mind mapping include:

- **Visual** – mind mapping presents information as objects, drawings, and sequences of movements;
- **Attractive** – it has its own aesthetic appeal, which not only makes it interesting but also pleasant to look at;
- **Memorable** – the map is easy to remember due to the use of both hemispheres of the brain and images and colors;
- **Temporary** – the map helps identify information gaps;
- **Creative** – mind mapping stimulates creativity and helps find innovative solutions to problems;
- **Reviewable** – reviewing the map after some time helps you understand the big picture, better remember information, and add new ideas.

Main Directions for Using Smart Technologies in Preschool Education:

- Automating routine tasks for teachers;
- Creating individual development plans;
- Monitoring children's physical activity;
- Analyzing behavioral patterns;

- Adaptive educational programs.

The mind mapping method is a universal method for understanding the world around us and the accumulated knowledge of humanity, creating continuity between preschool and school. Using mind mapping in implementing the state education standard allows integrating all areas. Mind maps in preschool education include: «Autumn», «Transport», «Winter Games», «Little Red Riding Hood», «My Homeland», «In the Village», «The Human Body» and others.

CONCLUSION

In conclusion, we need to widely introduce digital technologies into the field of education and transfer the field of education to digital technologies. It is impossible to deny the increasing role and influence of information technologies in the development of a well-rounded personality, its independent career choice, self-formation in a professional sense, and improving professional skills. Today, great attention is being paid to the education system in our country. The work being carried out to attract young people to the education system and to organize their time meaningfully is also among these. Today, many spiritual and educational activities are being organized in the field of education. Conversations with young people are also being held. The reason is that the process of educating today's youth has become not only a family and school matter but also one of the daily issues on a global scale. Now we live in a society where science is developing. Our youth are keeping pace with the times. Many young people spend their time using various idle networks. This naturally has a negative impact on today's youth in the field of education and upbringing. For these reasons, we need to direct young people to educational processes. To develop this field and widely introduce artificial intelligence in the field of education, we need to adapt the field of education to the demands of the times.

Artificial intelligence creates great opportunities in preschool education. It makes education individual, interesting, and effective. However, it is necessary to solve problems such as technical infrastructure, teacher qualifications, and data security. The advantages of artificial intelligence and individual education opportunities in preschool education include:

First: Artificial intelligence analyzes each child's knowledge level, interests, and learning speed and gives them appropriate learning tasks. As a result, each child receives education according to their abilities.

Second: Making the learning process interesting – AI-based interactive games, animation programs, and voice assistants attract children's attention and turn learning into an interesting process.

Third: Improving speech and language development. Artificial intelligence technologies analyze a child's pronunciation, vocabulary, and speech development, identify errors, and teach correct pronunciation.

Fourth: Tracking child development – AI systems constantly analyze children's knowledge levels, learning outcomes, and activities. This gives educators the opportunity to accurately track the child's development process.

Fifth: Lightening the work of educators – Artificial intelligence automates assessment, quickly analyzes data, and helps plan the learning process. As a result, teacher-educators can engage in more creative and educational activities with children.

Like every work, there are also problems in implementing artificial intelligence. Let's look at some of the problems in introducing artificial intelligence:

1. **Insufficient technical infrastructure.** In many preschool educational organizations, computers, internet, and modern technologies are insufficient. This makes it difficult to introduce AI technologies.

2. **Insufficient teacher qualifications.** Some educators do not know how to use artificial intelligence technologies and do not have sufficient knowledge of digital technologies. Therefore, special training and professional development courses for teachers are necessary.

3. **Children becoming overly attached to technology.** Excessive use of artificial

intelligence-based devices may reduce children's physical activity and real communication.

4. **Data security problem.** AI systems collect various information about children. Therefore, protecting personal data and using secure systems is important.

5. **Lack of programs and platforms working in Uzbek.** AI educational programs and special platforms for children have not yet been sufficiently developed.

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