

## THE IMPORTANCE OF SCIENTIFIC AND TECHNICAL DEVELOPMENT IN THE EDUCATION OF PRESCHOOL CHILDREN

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### ABSTRACT

This article highlights the importance of scientific and technological development in the upbringing of preschool children. It emphasizes the role of modern technologies and innovative teaching methods in fostering children's interest in science, developing creative thinking, and problem-solving skills. Special attention is given to the implementation of STEM education at the preschool level as a foundation for future academic success.

**Keywords:** Scientific and technological development, preschool education, innovative methods, STEM education, creative thinking, early learning.

### INTRODUCTION

Today, scientific and technical progress is considered one of the most important directions of the global community. As the foundation of our country's development and its economic and social stability, innovative approaches and technological advancements play a significant role. President Shavkat Mirziyoyev consistently emphasizes in his speeches and addresses the importance of the upbringing and education of preschool children, considering the preparation of the younger generation as highly qualified specialists in science and technology as a priority state task.

As Sh. Mirziyoyev states, the educational and upbringing process that begins in early childhood is the most crucial period in a person's life, because at this stage children's thinking, abilities, and creative mindset are formed. Therefore, introducing preschool children to scientific and technical knowledge and providing education based on modern technologies are of great importance for raising a successful and well-rounded individual in the future. Enhancing our country's scientific and technical potential requires the implementation of innovative methods in preschool educational institutions and fostering children's interest in technology—one of the key tasks before our state.

### LITERATURE REVIEW

Al-Farabi's Scientific Views on Preschool Children. This article, written by Sanamjon Yuldashova, analyzes aspects of Al-Farabi's philosophy related to preschool education. The author discusses Al-Farabi's views on moral and intellectual upbringing, his contribution to early childhood development, and the relevance of his ideas to modern pedagogy.

2. Socialization of Preschool Children as a Leading Factor in Education. In her article, X.M. Khojamatova examines the process of socialization among preschool children. The article highlights the role of socialization in the educational process and emphasizes the importance of cooperation between parents, teachers, and society.

3. Medical–Pedagogical Monitoring of Physical Development in Preschool Children. Written by Boburjon Kholmakhmatov, Bonu Qahramonova, and Muqaddas Quronova, this article discusses the main tasks of medical supervision in the physical upbringing of children in preschool institutions. It highlights important factors contributing to physical and neuropsychological development.

4. Modern Technologies and Methods in Speech Development of Preschool Children. In this article, Gulnigor Yazdonqulova explores the role of children in the preschool learning process and examines the significance of modern technologies and methods in developing children's speech.

5. Cooperation Between Preschool Educational Institutions, Families, and Schools. Written by Ulugbek Shomurotov, Abduqahhor Mustafakulov, and Fayzali Nomozo, this article provides information, recommendations, and guidelines on establishing effective cooperation between preschools, schools, and parents.

## DISCUSSION AND RESULTS

Today, scientific and technical development is considered one of the most important factors in the progress of countries worldwide. The economy, social life, and culture of nations are closely connected with technology. Therefore, introducing the younger generation to modern knowledge from an early age and raising them as qualified specialists in science and technology is a vital task.

In his addresses, President Shavkat Mirziyoyev emphasizes the importance of familiarizing young people with modern technologies, improving their knowledge and skills, and especially paying attention to preschool education. The preschool period is the foundational and decisive stage of human life; during this time, children's intellectual, physical, and creative abilities develop, and the knowledge gained at this age forms the basis for their future development.

In the context of scientific and technical progress, implementing modern pedagogical technologies, interactive games, robotics, and basic programming in preschool educational institutions helps develop children's creative thinking, logical reasoning, and problem-solving skills. This not only improves the educational process but also provides children with vast opportunities for their future career choices.

Scientific and technical knowledge also fosters independent thinking and encourages curiosity and discovery. This forms a strong basis for developing new industrial sectors based on innovative and high technologies in our country.

The importance of scientific and technical development in the upbringing of preschool children is invaluable. Providing the younger generation with modern knowledge and technologies is the key factor ensuring the future advancement and stability of our state. Therefore, implementing innovative methods in preschools and fostering children's interest in technology should become a primary responsibility of every teacher and parent.

Scientific and technical development refers to the process of applying scientific and technological achievements and innovations in social life. It contributes to socioeconomic progress by generating new knowledge, technologies, and improved production methods. Scientific and technical development significantly transforms all fields—including industry,

agriculture, healthcare, education, transport, and communications—making them more efficient and higher in quality.

The 21st century is the age of technology; artificial intelligence, robotics, biotechnology, cybersecurity, and the digital economy are rapidly developing. Scientific and technical advancements are tools for increasing national competitiveness and addressing social challenges. Thus, every state pays great attention to enhancing its scientific and technical potential.

The contemporary importance of scientific and technical development manifests not only in economic advancement but also in the education system. In our country, familiarizing the younger generation with modern technologies from an early age and exposing them to advanced scientific achievements is considered essential for preparing skilled specialists capable of innovative thinking. This, in turn, creates the foundation for our country to achieve success on a global scale.

**THE PRESCHOOL PERIOD AND ITS ROLE** .Preschool age is one of the most important and sensitive stages in human life. During this period, the foundations of a child's physical, intellectual, emotional, and social development are established. Therefore, preschool education has its own unique characteristics, and organizing it correctly is crucial for the child's future success.

First, preschool children are extremely active and curious; they strive to explore their surroundings and discover new things. Their thinking is shaped by sensory experience, so games, experiments, and interactive activities should be widely used.

Second, since their thinking is not yet fully developed, it is important to teach them simple and understandable concepts. Warm and caring communication with educators and parents plays a decisive role.

Third, preschool children experience a crucial stage in the development of social skills—learning cooperation, problem-solving, and group interaction. Therefore, group activities and games are essential.

Fourth, speech development is intense at this stage; thus, special attention should be paid to language and communication skills.

Correct education during this period creates the foundation for raising independent, knowledgeable, and well-rounded individuals.

**THE ROLE OF SCIENTIFIC AND TECHNICAL DEVELOPMENT IN PRESCHOOL EDUCATION.** Scientific and technical progress significantly influences all aspects of modern life. Introducing advanced technologies to children at an early age is essential for developing their thinking abilities, creativity, and problem-solving skills. Applying technological achievements in preschool education improves learning quality and helps children prepare for future modern professions.

Scientific and technical development in preschools manifests in several areas:

Implementation of STEM education. Fundamental concepts in Science, Technology, Engineering, and Mathematics are introduced through play, helping develop logical thinking and problem-solving skills;



Basic robotics and programming. Simple robotics kits and programming games serve as the first step in understanding technology;

Interactive games and digital devices. Tablets and interactive boards help children learn easily and engagingly;

Development of creative and innovative thinking. Participation in scientific-technical activities encourages children to generate new ideas;

These approaches build children's curiosity, prepare them for modern technologies, and enhance the country's innovative potential.

**MODERN PEDAGOGICAL TECHNOLOGIES.** Modern pedagogical technologies demanded by scientific and technical progress include: Interactive learning tools. Tablets, smart boards, and interactive games make learning engaging and visual; Robotics and programming. Basic robotics kits help develop logical thinking and problem-solving skills; STEM education. A multidisciplinary approach that integrates science and technology into playful learning; Virtual and augmented reality (VR/AR). These technologies allow children to visualize complex concepts and explore new environments; Individualized learning programs. Tailored lessons based on each child's needs enhance learning outcomes; Open educational resources and online platforms. Digital resources help educators reinforce knowledge and expand learning opportunities.

### CONCLUSION AND RECOMMENDATIONS

Scientific and technical development is transforming all aspects of society, including education. In preschool upbringing, applying scientific and technical achievements not only improves education quality but also prepares children for future modern professions. Using modern pedagogical technologies—such as STEM education, robotics, interactive games, and digital devices—makes the learning process engaging and effective, developing creative and logical thinking in children and strengthening their interest in learning.

### REFERENCES

1. Sharipova X. "Bolalarda ilmiy-texnik, ijodiy qobiliyatlarni rivojlantirish." Universal Publishing. 2023-y.
2. Shomuxtorov U., Mustafakulov A., Nomozov F. "Maktabgacha ta'lim muassasasi, oila va maktab hamkorligi." 2023 –y.
3. Asqarov F.A. "Bolalar jismoniy tarbiyasi: o'quv qo'llanma." Namangan davlat universiteti. www.namdu.uz 2022-y.
4. "Maktabgacha ta'lim tashkilotlarida o'yin faoliyatlarini olib borish metodlari." Ilmiybaza.uz. ilmiybaza.uz (2023).