

## STEAM TECHNOLOGIES IN THE ORGANIZATION OF PRESCHOOL EDUCATION

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**Annotation:** This article talks about the STEAM technology, its role in the education system and its impact on the children's thinking ability, the development of the STEAM education system in Uzbekistan, and the actions and decisions that have taken place.

**Keywords:** STEAM, Education ,School, Teacher, Student, Public education, learning process, educational system

**Introduction:** The introduction of STEAM is not only a technical change in the teaching process, but also a comprehensive approach that integrates science, technology, engineering, art, and mathematics into a unified system. This integration allows students to acquire both theoretical knowledge and practical skills simultaneously, which is extremely important in today's rapidly changing world. Unlike traditional methods that often separate knowledge from practice, the STEAM approach encourages learners to apply what they have learned in real-life situations and to look for creative solutions to problems.

Unlike traditional education, STEAM technology ensures that knowledge is taught in an integrated way rather than separately. It helps students develop non-standard thinking, the ability to find multiple solutions to a problem, and creativity, which will be very useful in their future activities<sup>1</sup>.

If we expand this abbreviation, we get the following: STEAM stands for Science, Technology, Engineering, Art, and Math. In English, this means natural sciences, technology, engineering, art, and mathematics. Do not forget that these fields are becoming the most in demand in the modern world. That is why today the STEAM system is developing as one of the main trends. STEAM education is based on applying a practical approach and integrating all five areas into a single educational system.

Its main idea is that practice is just as important as theoretical knowledge. In other words, during the learning process we need to work not only with our brains, but also with our hands. Learning only within the walls of a classroom does not keep pace with a rapidly changing world. The key difference of the STEAM approach is that children

<sup>1</sup> <https://ictschool.uz/steam-tabiiy-fanlar-texnologiya-muhandislik-sanat-va-matematika-fanlarini-uygunlikda-oqitish-uslubi/>

use both their minds and their hands to successfully master various subjects. They 'absorb' the knowledge they acquire.

By focusing on practical skills, students develop willpower, creativity, adaptability, and learn to collaborate with others. These skills and knowledge form the main task of education, that is, what the entire educational system strives for. This is the logical result of combining theory and practice. STEAM was developed in the United States. Some schools took into account the career prospects of their graduates and decided to integrate subjects such as science, technology, engineering, and mathematics, which led to the creation of the STEM system (Science, Technology, Engineering, and Mathematics). Later, Art was added, and thus STEAM was fully formed.

Teachers believe that knowledge in these subjects—or more precisely, in these disciplines—will help students become highly qualified specialists in the future. As a result, children strive to gain solid knowledge and apply it in practice immediately. The changes of the past decades are exciting, yet at the same time they cause concern. Along with these innovations, people are now facing many new problems that did not exist before. Every day new types of jobs and even entire professional fields emerge, so modern teachers must reflect on whether the knowledge and skills they teach meet the demands of the time.

If we say that the main goal of traditional education is to teach knowledge and use it for thinking and creativity, the STEAM approach teaches us to combine the knowledge we acquire with real skills. This gives school students not only the opportunity to have certain ideas, but also to apply and implement them in practice. Only the knowledge that can truly be used in real life is genuinely valuable<sup>2</sup>.

In order to raise the quality of education to a new level, on September 5, 2018, the President of the Republic of Uzbekistan adopted Decree No. PF-5538 'On additional measures for improving the public education management system.' It defined the following as the main directions for reforming the public education system:

1. Introducing advanced international experience into the public education system;
2. Implementing modern pedagogical technologies in the learning process;
3. Applying innovative teaching methods;
4. Developing a new generation of educational and methodological literature;
5. Conducting fundamental and applied scientific research.

In order to ensure the implementation of this Decree, the Resolution of the President of the Republic of Uzbekistan No. PP-3931 of September 5, 2018, 'On measures to introduce new principles of management into the public education system,' approved the 'Program of Measures for Further Improving the Public Education System of the Republic of Uzbekistan in 2018–2021.' In Section 11, Paragraph 11 of this Program,

<sup>2</sup> [https://dzen.ru/a/X-UUPbWQzx1kK\\_ED](https://dzen.ru/a/X-UUPbWQzx1kK_ED)

it is stipulated to improve the new state educational standards and curricula of general secondary education and, at the same time, to gradually introduce STEAM (science, technology, engineering, art, and mathematics) methods into practice<sup>3</sup>.

STEAM is a direction aimed at maintaining and improving the current standards of curricula and textbooks in the sciences, training and retraining teachers, purchasing the necessary equipment for schools, renovating school buildings, and developing educational technologies.

**Conclusion:** In conclusion, we can say that it would be a great mistake to remain indifferent to the ongoing changes in today's education system. Therefore, the development of STEAM technology in Uzbekistan will undoubtedly bring many benefits. In the STEAM education system, children learn both practical and theoretical knowledge at the same time, while also striving to solve problems they encounter in life through a creative approach.

Moreover, STEAM education fosters critical and analytical thinking, creativity, problem-solving abilities, collaboration, and adaptability—skills that are among the most demanded competencies of the 21st century. By engaging both the mind and the hands, students not only understand abstract concepts, but also learn how to implement them in practice, which increases their motivation to study and makes the learning process more meaningful.

#### **List of used literature**

1. <https://ictschool.uz/steam-tabiiy-fanlar-texnologiya-muhandislik-sanat-vamatematika-fanlarini-uygunlikda-oqitish-uslubi/>
2. [https://dzen.ru/a/X-UUPbWQzx1kK\\_ED](https://dzen.ru/a/X-UUPbWQzx1kK_ED)
3. <https://cyberleninka.ru/article/n/boshlang-ich-sinfda-tabiiy-fanlarni-o-qitishda-steam-yondashuv/viewer>

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<sup>3</sup> <https://cyberleninka.ru/article/n/boshlang-ich-sinfda-tabiiy-fanlarni-o-qitishda-steam-yondashuv/viewer>