

## STEAM EDUCATION SYSTEM AND ITS ADVANTAGES

*Azizova Bahora Numonovna*

*A teacher Finnish Pedagogical Institute of Uzbekistan*

*Rahimova Shahnoza*

*A student of the Pedagogical Institute of Uzbekistan*

---

### Abstract

This article provides information about the STEAM education system, its emergence, goals and objectives, and advantages.

**Keywords:** Modern education, STEAM educational system, integrated approach, teaching method, integration, modern professions, creativity.

---

Today, a lot of attention is paid to the education system. Efforts are being made to improve the efficiency of education by introducing new systems based on different approaches to education. One such system is STEAM education. STEAM (Science Technology Engineering Art Math) education is based on the mutual integration of science, technology, engineering, art and mathematics. These fields are very popular nowadays. That is why STEAM education is developing as one of the main trends.

How did the STEAM education system appear? The STEAM education system is a logical result of combining theory and practice. STEAM was developed in America. Some schools took into account the careers of graduates and decided to integrate subjects such as science, technology, engineering and mathematics, and this is how the STEAM system was born. Later, Art was added to this system and the STEAM system was fully formed. Teachers believe that knowledge of these subjects, or rather, knowledge of these subjects, will help students become highly qualified specialists in the future. How does the STEAM approach affect academic performance? Its main idea is that practice is as important as theoretical knowledge, that is, during learning, we need to work not only with our brain, but also with our hands. The main difference of the STEAM approach is that children use both their brains and their hands to successfully learn different subjects. They «read» the acquired knowledge themselves. STEAM education is not only a teaching method, but also a way of thinking. In the STEAM learning environment, children acquire knowledge and learn to use it immediately. Therefore, when they grow up and face life's problems, whether it is environmental pollution or global climate change, they understand that such complex issues can only be solved by relying on knowledge from different fields and working together. Because here it is not enough to rely on knowledge on only one subject.

The STEAM approach is also changing the way we think about teaching and learning. By focusing on practical skills, students develop their will, creativity, flexibility and learn to cooperate with others. These skills and knowledge are the main educational task. If we say that the main goal of traditional education is to teach knowledge and use this knowledge to think and create, the STEAM approach teaches us to combine our acquired knowledge with real skills.

This gives schoolchildren the opportunity not only to have some ideas, but also to apply and implement them in practice. The most famous example of the STEAM approach is the Massachusetts Institute of Technology (MIT). The motto of this world university is «Mens et Manus» (Mind and Hand). Massachusetts Institute of Technology has developed STEAM courses and even created STEAM Learning Centers at some educational institutions to give children an opportunity to learn and familiarize themselves with the concept of STEAM. According to statistics, since 2011, the level of

demand for STEAM professions has increased by 17%, while the demand for regular professions has increased by only 9.8%. This shows that there is a great demand for this educational system all over the world. But what is the reason for such a high demand? In many countries, STEAM education is a priority for several reasons. In the near future, there will be a very high demand for engineers and high-tech production specialists in the world, including in Uzbekistan.

In the distant future, we will have professions related to technology and high-tech production together with natural sciences, especially bio and nanotechnology specialists will be in great demand. Specialists will need extensive training and experience from various fields of technology, natural sciences and engineering. Integrated education, so what is the difference between this educational system and the traditional way of teaching subjects? STEAM education provides a blended environment where students begin to understand how to apply scientific methods in practice. In this program, students study robotics, designing and manufacturing their own robots, along with mathematics and physics.

Special technological equipment is used in the lessons. The following statements were made at the STEAM forward international conference held in Jerusalem in 2014: Involvement of children in STEAM, this education should start from preschool age, so programs should be included in kindergartens. The language of science is English. If you want to study science and become a scientist, you need to know this language. STEAM education programs are also needed for girls. Girls in science can do things that boys can't because of their discipline. Science should be fun, it should be interesting and attractive for students.

In conclusion, we would like to emphasize that, compared to traditional teaching methods, the STEAM approach in high school allows children to conduct experiments, build models, independently create music and films, and turn their ideas into reality. And drives the creation of the final product. This educational approach allows children to effectively combine theory and practical skills and facilitates university entrance and further studies. In addition, through the STEAM system, a child develops creativity, diligence, curiosity and the ability to solve problems, which is the most important feature today.

#### **References:**

1. R. A. Mavlonova, N. H. Rakhmonkulova, K. O. Matanazarova, M. K. Shirinov, S. Hafizov «General pedagogy», «Science and technology» publishing house T.:2018
2. N. N. Azizkhoyayeva «Pedagogical technologies and pedagogical skills», publishing house «Literary Fund of the Association of Writers of Uzbekistan» T.: 2006
3. J.G. Yoldoshev, M. K. Shirinov, F. I. Ochilov «Pedagogical diagnostics» teaching methodology manual T.:2014