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Methods For Developing 4k Skills In Students Based On The Steam Educational Program

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Abstract: The article discusses methods for developing 4K skills in students based on the STEAM educational program.
Keywords: analytical, creative, technology, engineering, art, mathematics, method, STEAM, 4K skills.

Steam Ta’lim Dasturi Asosida O‘Quvchilarda 4 K Ko‘Nikmasini Shakllantirish Usullari

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Annotatsiya: maqolada STEAM ta’lim dasturi asosida o‘quvchilarda 4 K ko‘nikmasini shakllantirish usullari to‘g‘risida fikr yuritilgan.
Kalit so‘zlar: analitik, kreativ, texnologiya, muhandislik, san’at, matematika, usul, STEAM, 4 K ko‘nikmasi.

STEAM is an English word that means Science, Technology, Engineering, Art and Mathematics, that is, a program based on the combination of science, technology, engineering, art, and mathematics.[1] This program is in its pure form and not separated from each other, but implies an inseparable connection of knowledge that helps young people understand the world around them in all its diversity and appreciate the opportunities it offers. In this regard, mastering the achievements of education, technology, engineering, art, and mathematics will provide important opportunities for the development of students' knowledge and skills.

According to the content of this program, science and technology have already penetrated all spheres of our lives. Without an engineering sector, it is impossible to implement measures for construction or environmental improvement. Mathematics, on the other hand, helps solve many life problems in everyday life. Today, ART, that is, the field of art "theater, cinema, music, and visual arts," has also fully joined STEAM, demonstrating the importance of creativity in modern innovative technologies. Since the main issue in education is the issue of its effectiveness, more and more attention is being paid to art. Because art subjects play an important role in shaping the skills of feeling, feeling, and imagination, which are the foundation for students' mastery of natural and applied sciences. If students practice one of the arts in addition to the main subject, it does no harm to their main areas of study. Painting, sewing, weaving, and music classes help young people solve problems related to communication, socialization, and self-expression; art teaches discipline, observation, and creativity.

STEAM is an education based on an interdisciplinary and applied approach when all five disciplines are integrated into a single educational system.[2] The advantage of the STEAM program is close communication with the outside world and a high level of motivation for students. Children feel that school subjects are completely detached from real life. But STEAM is very different from school lessons. STEAM activity shows children that what they are learning now is embedded in their own future and the future of the world. Knowledge should be practical in nature, we should be able to apply it not only in laboratory conditions, but also in real life. In this regard, this program serves to develop students' knowledge and skills in all aspects of their activities. Learning knowledge is interesting when it is possible to successfully apply theoretical knowledge in practice, which allows children not only to make their own inventions, but also to create their own happy future, and the educational process itself is conducted in an interesting way, promising high practical results and success for every individual in today's high-tech society.

Today, educational institutions are in the process of improving educational materials based on international programs such as STEAM. In accordance with this, certain work has been carried out to update the textbooks. In particular, textbooks for grades 1-4 were prepared based on the 4K model based on advanced foreign experience. The use of the 4K model is a modern approach that has passed many tests, and the skills formed on the basis of this model

constitute the content of STEAM. For example, we used to pay more attention to children's writing and dictate dictations. With new experience, more emphasis is placed on students' critical thinking and the ability to freely express their opinions. Therefore, the implementation of written works, essays, and dictations based on the rules of this international program fosters students' creative, independent, critical, and free thinking. These new modern school textbooks provide an innovative approach. This methodology is aimed at the comprehensive development of children and includes four main competencies.

Collaboration - textbooks are designed to help develop students' ability to work in a team. This helps learners learn skills in collaboration, effective feedback, and mutual support.

Communicativeness - textbooks are aimed at developing students' ability to communicate with others. Students learn to express their thoughts clearly and clearly, listen and understand the interlocutor, and effectively use language tools in conveying information.

Creative thinking - textbooks develop the ability to think creatively and innovate. Students learn to apply new approaches to achieve their goals, develop innovative solutions, and acquire skills in solving creative problems.

Critical thinking is a methodology that involves developing students' skills in critically evaluating information and forming their own opinions and judgments. Learners learn to approach problems from an analytical perspective and form their point of view based on logical thinking.[3]

If we want to help develop these important competencies, we need to organize the learning process in a way that is interesting and useful for children. To do this, we need to be able to develop 4K skills in the modern STEAM education system.

Through the integration of disciplines in the STEAM education system, we need to develop in students collaborative thinking, communicativeness, creative thinking, and critical thinking. To do this, we must avoid traditional lessons, connect lessons with life, and use the methods demanded by the times. We practically applied the combination of STEAM and 4K skills to students, that is,

we discussed the topic "Protecting Nature" with students and discussed with them what can be done for this, and we listed what is harmful to nature. We discussed the things that harm nature, the waste that people produce throughout the day, and the fact that these waste products harm people's lives, and through discussions and discussions, we found that people are throwing waste wherever they want, there are few waste boxes, people are harming nature, there is little propaganda about the need to preserve nature, and people are becoming neglected. We thought about how we could multiply and make garbage cans more convenient, we asked everyone to find a solution and put their idea on paper, and the children drew and made their own sketch.

Through this lesson, we studied the technology of a wastebasket with students, designed it, put the old one on paper, engineered their ideas, engaged in what color it should be, demonstrated their skills, what the size of the wastebasket should be, and created an opportunity for them to apply their mathematical literacy in practice. During our conversations with students, we were able to shape their communicative thinking, that is, communication, solutions to this problem, and their creative thinking. The fact that people can say it when they see that they are harming nature has shown that their critical thinking is developing, that is, they are able to think critically. Thanks to this approach, we were able to provide students with interesting lessons and provide them with modern knowledge. Based on this, we can say that if we combine STEAM and 4K skills, the children will not be bored with the lesson and will learn how to solve problems and find solutions.

Therefore, the use of methods for developing 4K skills in students based on the STEAM educational program yields significant practical results. Therefore, it is advisable to set specific goals in this matter, pay attention to connecting the work of developing students' skills with practice, and expand the scope of such experiments.

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