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THE ROLE OF STEAM SCIENCES IN DEVELOPING THE CONSTRUCTIVE ABILITY OF SCHOOL STUDENTS

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Abstract: This article shows the methods and means of demonstrating students' constructive abilities through STEAM subjects.

Key words: STEAM education, design skills, information technology, digital technologies, subjective inventions, technical instruction and modeling.

In the rapidly developing educational process, the use of modern methods and methods for the development of students' constructive ability is being widely improved. At the same time, the teacher creates conditions for the development, learning and upbringing of the individual, and additionally forms the skills of management and orientation.

It should be said that the teaching method shows the joint activity of the teacher and students aimed at achieving a specific goal in the educational process, how to organize and conduct the teaching process, and what actions students should perform in this process.

STEAM subjects are currently the most in-demand subjects. This method allows to conduct education in a mixed way and to form the skills of applying the acquired theoretical knowledge in everyday life. With the help of this method, subjects are taught not in separate branches, but by showing their common connection. This approach helps students to show their creativity. As a result of increasing knowledge and skills, students come up with new ideas and learn to implement them in their everyday life. STEAM

S-science,

T-technology,

E-engineering,

A-art,

M-mathematics

is a modern approach that combines science, technology, engineering, art and mathematics. The goal of STEAM - educational technology is to develop intellectual abilities with the possibility of involving children in scientific and technical creativity using modern information and communication technologies. STEAM technology is used in the USA as well as Russia and Germany.

STEAM education helps students develop the following important characteristics and skills:

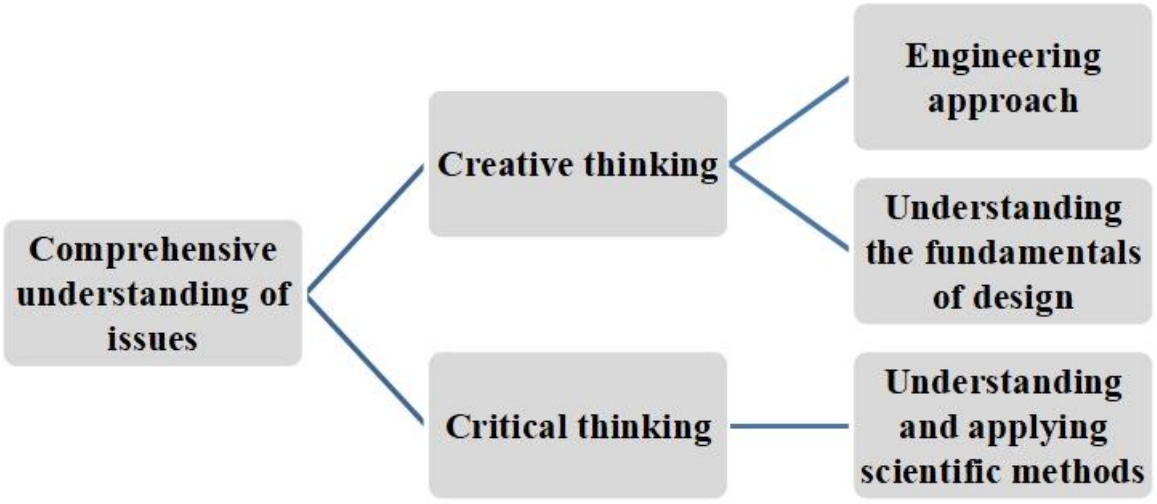

Figure 1. Skills developed in students through STEAM education

The minds of students have developed a lot with the development of the era, so it is natural that they demand a lot from the teacher. Today, teachers have the opportunity to teach using a variety of digital technology tools. The computer as a technical-technological tool of the teacher is such a resource, with the help of which the teacher can create a complete idea of the object in the students in the process of working with the students. This creates a lot of opportunities, especially for a technology teacher. Pupils are engaged not only in knowledge, but also in creative activities. In order for the student to fully master the subject, he should listen carefully to the lesson, and in order to concentrate his attention, he should arouse his interest in the lesson.

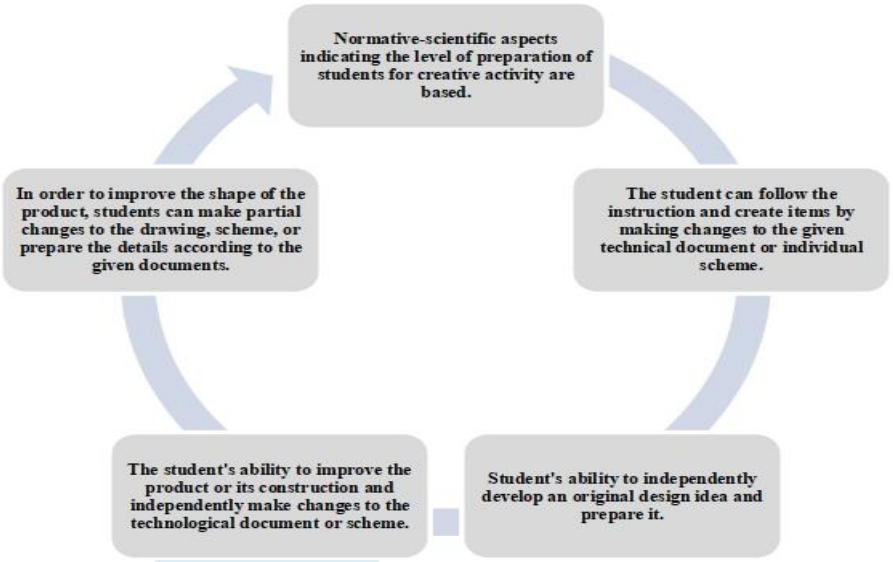

Figure 2. Processes of improving students' constructive qualities

In practical work, technical instruction and modeling is not about making an easily scaled-down copy of a real machine, mechanism, production, but about the construction of technical models based on creative activity, and the production of samples that simplify the principle of operation, but keep their similarity.

It is possible to see students with whom the continuation of any new technical object is mutually dependent. These construction steps are described below.

Phase 1 tries to increase the activities of the technical facility with the active participation of schoolchildren.

The 2nd stage begins with the realization of the technical idea of the construction of a certain technical object.

Stage 3, a model of the new future technical structure (ideally) is developed.

Stage 4, commissioning, develops the content and form of the object that the young technician has come up with.

Step 5, build and test the model in action.

Step 6, test a real sample of the device and the original,

Step 7, approval of technical documents.

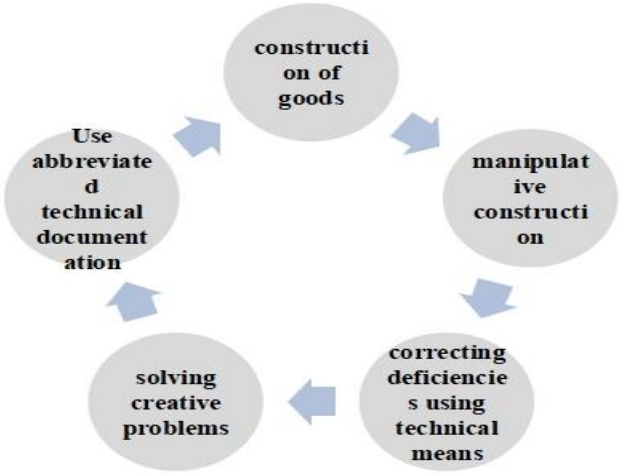

Figure 3. Effective methods used in the development of constructive ability

The use of these methods in a certain order allows to develop students' creative abilities and arouse their interest in the technical field. When the student clearly knows the goal he has set for himself and can determine the stock of knowledge needed for this goal, he feels the need to acquire that knowledge. An active motivational environment is created to the extent that the educational material provided to the students is interesting and can convey to the teacher the professional formation of future junior specialists and to what extent they can improve in the future. Therefore, in order to develop the constructive ability of students, it is effective to teach them in a new and interesting way, to use digital technologies and computer tools effectively, and to integrate subjects with each other. In the conditions of modern education, it is necessary to increase the activity of independent work of students, to develop their creative abilities, to use advanced pedagogical technologies and computer tools. STEAM education is developing as one of the main trends in the world. The conditions of such education are its continuity and the development of children's ability to communicate in groups, where they can gather ideas and exchange ideas. STEAM programs also teach active communication and teamwork.

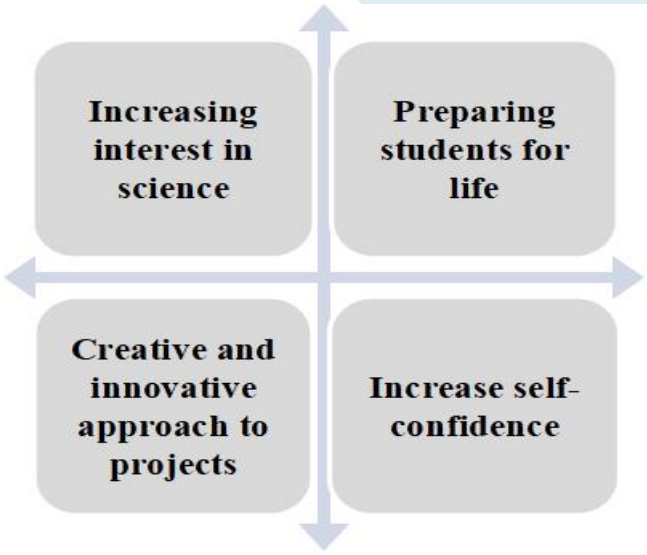

Figure 4. Advantages of STEAM education

In conclusion, the reason why STEAM is so important in developing students' design skills is that every STEAM subject has enough knowledge about the subject and then brings it all together and has a vision. ladi In this way, it is planned to increase the ranks of personnel who can fully meet the requirements of the time, who can make new inventions while being aware of news, and who can work on technical issues using innovative educational technologies.

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