Volume: 3, Issue: 12
Page: 19-25
YEAR: 2021

ISSN 2664-7354 (Online) & ISSN 2708-2687 (Print)

International Journal of Academic Research in Business, Arts and Science (IJARBAS.COM)

Steam Projects and Working On Them

AUTHOR(S): Tolipova Tursuntosh

Abstract

This article discusses the importance of the STEAM approach in education, ideas and feedback on STEAM projects in primary education and how to work on them.

IJARBAS
Accepted 20 December 2021
Published 23 December 2021
DOI: 10.5281/zenodo.5801771

Keywords: development, creative approach to practical work, critical thinking, mathematical modeling, creative thinking, engineering approach, understanding of scientific methods, applies, understand the basics of design,

About Author

Author(s):

Tolipova Tursuntosh

Lecturer at the Department of Preschool,
Primary and Special Education,
Methods of Samarkand Regional Center
for Retraining and Advanced Training of Public Educators,
E-mail: t_tolipova@inbox.uz

Achieving and improving the quality of education requires continuous and continuous improvement of the professional skills of schoolchildren. It is important to create a methodological environment in educational institutions that fills the gaps in the professional skills and knowledge of teachers and develops a creative approach to their practical activities.

STEAM is a new learning technology that combines several disciplines as a means of developing critical thinking, research skills and teamwork skills.

The inclusion of the arts will allow us to expand the student body involved in the project, so children who do not have specific skills in design and math can help the group implement the project aesthetically.

The STEAM curriculum is based on the idea of teaching students using an interdisciplinary and practical approach. Instead of studying each of the five disciplines separately, STEAM combines them into a single curriculum.

STEAM education provides access to scientific methods, technical manuals, mathematical modeling and engineering design. This leads to the formation of innovative thinking, skills and abilities of the student in the XXI century.

According to teachers, integration allows you to succeed in many professions. Almost all experts say that advanced technology increases the motivation to learn and expands the basic knowledge in the field of design and programming.

STEAM training is an innovative way to take our children's skills to the next level. With its help, we can build an advanced human resources base that will allow us to become an economically independent and competitive country.

The rapid development of technology will lead to the most popular high-tech professions in the future: IT professionals, senior data engineers, programmers. The education system meets this social demand with the emergence of a large number of robotics, programming, modeling circles. However, there is a growing awareness of the lack of scientific and technical knowledge. In the future, XXI century skills, partly called 4K, will be in demand.

XXI century skills are a separate field that is now being actively discussed at various levels. The essence of the concept is that in the industrial era, the basic skills that defined literacy were reading, writing and arithmetic. In the XXI century, the emphasis is on critical thinking, the ability to interact and communicate, and a creative approach to business. Thus, the basic skills of the future 4K are formed:

- ✓ Communication
- ✓ Cooperation
- ✓ Critical thinking
- ✓ Creativity

These skills cannot be acquired in laboratories alone or by knowing certain mathematical algorithms. Therefore, experts have come to the conclusion that STEAM should be studied more and more. So, STEAM (S-science, T-technology, E-engineering, A-art, M-mathematics) is a modern approach that combines science, technology, engineering, art and mathematics.

STEAM helps children develop the following important traits and skills: comprehensive understanding of problems, creative thinking, engineering approach, critical thinking, understanding and application of scientific methods, understanding the basics of design.

This approach will help solve life problems in children in the future. In many developed countries, including the United States, Japan, Israel, Singapore, and Russia, this approach has been used effectively to develop children's creative and inventive abilities in preschools.

To teach problem solving together. A controversial, problematic situation is one in which a person finds himself in a difficult situation or situation that depends on the outcome of his thinking during his lifetime. In this case, he does not know how to interpret the event or process. Controversial, problematic situations strain the minds of students, who begin to look for ways to clarify the situation, to face difficulties.

It is only when a person is confronted with a problem that he begins to think. He begins to think and act with the knowledge he has, and comes to the appropriate level.

Students should be able to explain how they did their homework.

It is important for the teacher to be able to express in words what they do not understand in the problem-solving process. It is no coincidence that the German educator Disterveg said, “An incompetent teacher tells the truth, and a good teacher teaches him to find it”. In this case, the teacher's task is not only to explain the topic, but also to be able to put the problem correctly, to keep students interested in their subject, to disturb his feelings and to participate as a partner in solving the problem.

When a student is free to do what he or she wants to do, he or she will develop a sense of self-respect.

The teacher's cooperation with the students during the discussion saves the child from muteness and blind obedience. The lesson becomes a single activity of collaboration that strives towards a common goal.

Strengthen the will and teach creativity. Learn to differentiate between positive and negative goals to build students' self-confidence. It’s easier to achieve pleasant goals. It takes more willpower to overcome obstacles. Teach students to be tolerant. Explain that in some cases you need to be able to wait. Explain the benefits of failure. Analyze the student's mistakes. Don't force

students to do anything. Don't pay attention to the student's gender. The strength of willpower does not depend on the gender of the student!

Use fictional characters as role models to show your reader how fun it is to achieve your goals. Conduct temperament treatments with the student. It teaches endurance and freedom. Encourage students to follow the rules of etiquette. Behavioral skills in society are closely linked to the expression of will.

"If it works, your knowledge will last for a while, and it will be even more intense", said M.Ulugbek.

Armed with knowledge, students learn that science is a practical necessity, how productive forces have evolved, innovations in technology and economics, and how science can continue to evolve, and science in turn can help improve lives. The role of experience in the development of science is great. The validity of scientific theories is tested in practice: it is either confirmed or denied by experience. The complex relationship between such theory and practice must be understood by students as they learn the basics of science.

"Greatness is not a matter of words and deeds.

Half a job is better than a hundred words", said Abdulkasim Firdavsi.

STEAM is transition from classroom to project activities in secondary schools, the transfer of fundamental knowledge to functional knowledge, the integration of disciplines through the process of active application in practice, the search for new solutions to problems at the intersection, if necessary, the introduction of innovative ways of successful implementation of practical and methodological tasks, such as orientation to exploration.

PROJECT 1: "DENTAL HYGIENE" PROJECT

In this project, students will try to understand the dangerous diseases that can be "transmitted" to the human body through the use of dentists in the process of dental treatment and their negative consequences, researching the question of **"Dental Hygiene"**.

Students are divided into small groups by the teacher, and each group is given individual tasks.

TASK FOR GROUP 1:

1. To study the types of dental diseases and their causes.
2. Collect answers to the questionnaire from other students.
3. "Keep your teeth healthy!" write a story (essay) on the topic.

TASK FOR GROUP 2:

1. Gather information about dental hygiene, how to follow dental hygiene.
2. Get elementary students to complete questionnaires.
3. **Prepare a play on the topic "Follow good dental hygiene!"**

TASK FOR GROUP 3:

1. Collect and record statistical data on the transmission of infectious diseases through dental equipment
2. Discuss the negative consequences of these diseases and how to prevent them through a telegram.
3. Make a model of a tooth out of plasticine. They listen to expert advice, draw conclusions.

TASK FOR GROUP 4:

1. Students can independently find and memorize poems and proverbs about teeth.
2. Draw a tooth picture. Making a tooth model out of plasticine.
3. "Dental health is a pleasure!" making a headline poster.

The materials collected by the students will be monitored by the teacher and appropriate instructions will be given. The dentist's explanations, instructions, and advice are used effectively. Parents also support their children with their help and guidance in gathering information online.

When everything is ready as in the brochure, the students will present their activities for the school community and students on the **"Dental Hygiene"** project. Parents are definitely invited to the event. Students will be awarded by nomination.

LIST OF REFERENCES:

Proceedings of the international online scientific-practical seminar "STEAM approach to education: goals, processes and prospects", Samarand, September 30, 2020, https: //t.me/STEAMprogram

Proceedings of the "Seminar for Uzbekistan on Science, Technology, Engineering and Mathematics (STEM)", September 24, 2020.

Frolov A.V. The role of STEM education in the "new economy" of the United States // Questions of a new economy. -2010.- No. 4 (16). -P. 80-90.

Khotuntsev Y.L., Nasipov A. Technological education of schoolchildren in the UK, France, USA, Australia, Sweden and the Netherlands // Science and school. 2010. No. 2. P. 67-71.

Dzyubenko O.R. Using STEAM - technologies in literature lessons and in extracurricular activities. Methodological collection: "STEM – technologies in educational organization", 2020, Ulyanovsk, 40 p.

ELECTRONIC EDUCATION RESOURCES:

1. http://www.edu.uz – Portal of the Ministry of Higher and Secondary Special Education of the Republic of Uzbekistan.
2. http://www.uzedu.uz – Portal of the Ministry of Public Education of the Republic of Uzbekistan.

3. http://www.multimedia.uz (http://www.eduportal.uz) - Website of the Center for Development of Multimedia General Education Programs under the Ministry of Public Education of the Republic of Uzbekistan.

Cite this article:

Author(s), Tolipova Tursuntosh, (2021). "Steam Projects and Working On Them". **Name of the Journal:** International Journal of Academic Research in Business, Arts and Science, (IJARBAS.COM), P, 19- 25, **DOI**: http://doi.org/10.5281/zenodo.5801771 , Issue: 12, Vol.: 3, Article: 4, Month: December, Year: 2021. Retrieved from https://www.ijarbas.com/all-issues/

Published by

AND

ThoughtWares Consulting & Multi Services International (TWCMSI)