

## "THE ROLE OF STEAM EDUCATION IN THE DEVELOPMENT OF TECHNOLOGICAL COMPETENCE OF PRIMARY SCHOOL TEACHERS"

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**Annotation:** *This article reflects on the role of the STEAM (Science, Technology, Engineering, Arts, Mathematics) approach in strengthening knowledge through students' creative thinking, ability to solve problem situations and practical activities in the process of primary education.*

**Keywords:** *STEAM education, practical experience, interdisciplinary integration, creative thinking, experiential education, problem situation, primary education.*

**Аннотация:** *В данной статье рассматривается роль подхода STEAM (наука, технология, инженерия, искусство, математика) в закреплении знаний посредством творческого мышления учащихся, способности решать проблемные ситуации и практической деятельности в процессе начального образования.*

**Ключевые слова:** *STEAM-образование, практический опыт, междисциплинарная интеграция, творческое мышление, эмпирическое образование, проблемная ситуация, начальное образование.*

**Annotatsiya:** *ushbu maqolada boshlang'ich ta'lim jarayonida o'quvchilarning ijodiy fikrlashi, muammoli vaziyatlarni yechish qobiliyati va amaliy faoliyati orqali bilimlarni mustahkamlashda bug' (fan, texnika, muhandislik, san'at, matematika) yondashuvining o'rni aks ettirilgan.*

**Kalit so'zlar:** *STEAM ta'limi, amaliy tajriba, fanlararo integratsiya, ijodiy fikrlash, tajribaviy ta'lim, muammoli vaziyat, boshlang'ich ta'lim.*

The president of the Republic of Uzbekistan on September 5, 2018 in the decree of the president of the Republic of Uzbekistan "on additional measures to improve the management system of public education "PF-5538 on the use of STEAM technologies in primary education training sessions and the coverage of political factors for the technologization of Education, selection and training of, by implementing advanced and transparent organizational and legal mechanisms of retraining and professional development, it is advisable to cite the content of processes in the implementation of modern principles of the formation of personnel policy in the system of public education.

The enrichment of knowledge, the widespread use of its capabilities in achieving the formation of professional skills in a practical way reflects the special practical significance of the educational and educational process. This forms the current requirements for ensuring indirect communication between education and production.

It forms a number of requirements for the development of pedagogical technology, didactic processes, new methods of extensive use of STEAM technologies of modern

teaching in the system of indirect links between direct education and production. For example, the educational information base is broad and its practical importance, increasing its role in improving labor efficiency is directly related to the application of technologies only in theory. Therefore, it was considered the fundamental base of Education.

Mastering the knowledge of Exact Sciences on the basis of STEAM technologies in primary education training sessions, the formation of skills for maintaining a comprehensive accounting of various practical processes in the labor processes of Primary School students includes the didactic principles of this article, features of the educational process.

The application of the STEAM approach in the process of primary education increases the activity of students in the performance of given assignments and projects. When knowledge and skills related to different areas of Natural Science are applied harmoniously, students will have the opportunity to manifest themselves while being satisfied with their activities. As a result of this, their interest in these subjects and their attitude will be deepened. The application of the STEAM approach in the process of primary education increases the activity of students in ts

In the current educational system, the STEAM approach is recognized as a modern pedagogical model aimed at developing not only scientific, but also creative and technological thinking of students. The application of this approach in primary education makes it widely possible for students to independently carry out assignments, work on projects, and acquire new knowledge through creative activities. STEAM strengthens the interdisciplinary connection and creates a natural integration between theory and practice.

The importance of STEAM education in the early stages is that this model allows students to consider scientific concepts not only from a technical or mathematical point of view, but in harmony with elements of art and design. Such an approach will help to more clearly understand the practical application of theoretical information. Students seek to test different approaches to the given task, experiment with materials, formulate their own ideas and create a practical result. This process develops creativity, problem-solving, and innovative thinking in them.

The role of experience and practical activities within STEAM is also very kata, and the application of the experimental method in the STEAM approach evokes the scientific and creative activities of students. Through experimentation, the student develops observation, comparison, analysis, and inference skills. The main goal of the experiment is to form the reader as an active participant in the process of solving the real problem. Another special aspect of steam is that the reader not only uses scientific techniques in the process of achieving the result, but also explores elements of Art, Design Thinking, and technological solutions. This reinforces the creative side of the process and promotes the emergence of new ideas.

It is impossible not to list the types of experiments and their role on Steam either. The experiments used in school practice are divided into the following main groups. Another special aspect of steam is that the reader not only uses scientific techniques in the process of achieving the result, but also explores elements of Art, Design Thinking, and

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It is impossible not to list the types of experiments and their role on Steam either. The experiments used in school practice are divided into the following main groups:

- laboratory experiments;
- research experiments;
- Practical Project Experiments;
- scientific observations conducted in field conditions.

In the elementary grades, experiments connected with technology and Fine Arts are considered a key element of steam. Through these experiences, students will have the opportunity to express scientific ideas through art, create constructs, get acquainted with technological processes and carry out their own projects.

The pedagogical advantages of STEAM experiments are that the experiential activity on which it is based forms the following skills of students:

- \* creative thinking and innovative approach;
  - \* awareness of interdisciplinary connection;
  - \* creating practical solutions;
  - critical thinking;
  - skills to work on the problem;
  - \* take a responsible approach to their activities;
- strengthening the connection between theory and practice.

The current reforms in the field of education, the rapid development of innovative technologies, the widespread use of modern media also require new approaches to the primary education system. Today, it is important that the teacher acts not only as a knowledgeable person, but also as a person who, with the help of modern technologies, is able to independently think, solve problems, work cooperatively and form creativity in students.

In place of the conclusion, it is worth mentioning that STEAM education is important for elementary students not only to strengthen scientific knowledge, but also to develop creative and technological competencies. Organizing experiential activities based on the STEAM approach increases student interest in learning, enhances interdisciplinary integration, and significantly improves the quality of the educational process. In place of the conclusion

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