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RESEARCH ARTICLE OPEN ACCESS

Use of Steam Learning in Primary School Technology

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ABSTRACT

This article is devoted to improving the methodological training of future primary school teachers based on the STEAM educational approach. STEAM education is aimed at developing students' integrated knowledge and skills in various fields, which helps them develop creative thinking, problem-solving, and practical skills.

Keywords: STEAM education, methodological training, integrated learning process, creative thinking, problem-solving, practical skills.

INTRODUCTION

In the modern education system, the methodological training of teachers plays an important role in their successful activity. The STEAM educational approach is of particular importance in this process, as it allows students to understand the connections between different disciplines and apply them in practice.

STEAM education combines science, technology, engineering, art, and mathematics, aimed at providing students with integrated knowledge and skills. This approach helps students develop creative thinking, problem-solving, and practical skills. STEAM education is aimed at providing students with the knowledge and skills necessary for solving real-world problems.

In the modern world, things that cannot be imagined without technology, art, science, and engineering thinking are increasingly converging and ceasing to contradict each other. The ability to cooperate and demonstrate creative abilities, the ability to convey the meaning of one's statement to others in the most understandable, visual form in any type of activity, ranks first among the important abilities that should be developed throughout life [3].

– Advantages of STEAM education:

– integral learning not by topics, but by topics;

– application of scientific and technical knowledge in life;

– development of critical thinking and problem-solving skills;

– formation of self-confidence;

– active communication and teamwork;

– development of interest in technical sciences;

– creative and innovative approach to projects;

– taking into account the age and individual characteristics of each child;

– development of motivation for technical creativity through activities;

– initial vocational guidance;

– introducing children to the technological innovations of life. [1;p.228]

Today, STEAM education is developing as one of the main trends in the world, and the application of a practical

approach is based on the integration of five areas into a single educational scheme. The conditions for such education are its continuity and the development of children's ability to interact in groups, in which they can collect and exchange ideas. Therefore, the main educational program includes such modules for the development of logical thinking as: lego-technologies, children's research. Thanks to the STEAM approach, children understand nature, regularly study the world, and thereby learn their interests, engineering thinking, the ability to overcome critical situations, the ability to work in a team, and the basics of leadership, self-expression, which, in turn, provides a fundamentally new level of children's development.

To improve the methodological training of future primary school teachers, the following areas have been developed:

Integrated lessons: Teachers should conduct integrated lessons by showing connections between different subjects. For example, by adding elements of art in mathematics lessons, lessons can be interesting and understandable for students.

Practice-based learning: To enable students to apply theoretical knowledge in practice, practical exercises and projects should be organized. This helps students develop problem-solving and creative thinking skills.

Using modern technologies: Teachers should use modern technologies, including computer programs, interactive whiteboards, and other technological tools. This provides students with the skills necessary for successful work in the modern world.

The STEAM educational approach serves the development of students' systemic thinking, creativity, and critical thinking, and requires a high level of methodological training from teachers. There are the following main approaches to improving this process:

In many countries, STEAM education is highly valued for the following reasons:

1. In the coming years, there will be a sharp shortage of IT specialists, programmers, engineers, specialists in high-tech production, and other similar specialties in the world;

2. In the future, professions that are difficult to imagine now will emerge, all of which are related to technology and high-tech production in connection with the natural sciences. Especially, the need for bio- and nanotechnology specialists will increase;

3. Future specialists are required to have comprehensive training and knowledge in various fields of education: natural sciences, engineering, and technology.

4. Motivational, cognitive, activity-based, and personality-oriented approaches are important in the practical application of STEAM educational technology in education [2; p. 69].

In the training of future primary school teachers based on the STEAM approach, the main attention should be paid to methodological and practical aspects. This, in turn, contributes to the development of students' creative thinking and familiarization with modern technologies and methodologies.

Methods of using STEAM education in primary school technology are as follows:

1. Project-based learning: Students are given various projects, and through the implementation of these projects, they gain knowledge. For example, students can build simple robots, houses, or bridges.

2. Creating problem situations: Students are given problem situations and learn by solving these problems. For example, students can create a water purification system or a wind power plant.

3. Organization of STEAM clubs: STEAM clubs are organized in schools, where students implement various STEAM projects.

4. Using interactive games and simulations: Students learn in an engaging way through interactive games and simulations.

STEAM education plays an important role in increasing the interest of primary school students in the subject of technology, forming practical skills in them, and developing the skills necessary for future success.

CONCLUSION

In conclusion, it can be said that the STEAM educational approach plays an important role in improving the

methodological training of future primary school teachers. This approach helps develop students' creative thinking, problem-solving, and practical skills by providing them with integrated knowledge and skills. Continuous improvement of teachers' methodological training and the use of modern technologies lead to an increase in the effectiveness of STEAM education.

REFERENCES

T.B. Nazarov, T.G. Suyundikov, S.Kh. Umarov. STEAM is a method of teaching natural sciences, technology, engineering, art, and mathematics in harmony. // Vol. 3 No. 33 (2024): MODELS AND METHODS FOR INCREASING THE EFFICIENCY OF INNOVATIVE RESEARCH. Pp. 226-230.

https://interonconf.org/index.php/ger/issue/view/169

S.A.Abdumajitova. History of the development of steam educational technology in foreign countries // Education and innovative research (2023, No. 10) pp. 68-72.

Алексеев Н.Г., Леонтович А.В., Обухов А.С., Фомина Л.Ф. Концепция развития исследовательской деятельности учащихся // Исследовательская работа школьников. 2002. No. 1. P. 24-33.

Sorokina T.E. From STEM to STEAM education through the Scratch software environment // Modern information technologies and IT education. 2015. Vol. No 11. P. 362-366.