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**CONFERENCE ARTICLE**

**Development Of Collaboration And Creativity In Children Through Steam Project-Based Activities In Preschool Education**

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**ABSTRACT**

This article reveals the essence of project activity based on the STEAM approach in the preschool education system, as well as its significance in developing children's cooperation skills and creative thinking. STEAM technologies contribute to the formation of independent thinking, the ability to work in a team, find non-standard solutions and overcome problem situations in preschool children. The article also presents methodological recommendations for organizing effective project activity.

**Keywords:** STEAM, project activity, creativity, cooperation, innovative education, preschool age, problem situation, competence.

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**INTRODUCTION**

In our country, special attention is paid to educating the younger generation as educated, intellectually developed and spiritually mature individuals. In this regard, large-scale reforms are being implemented in the education system, state programs and government decisions aimed at improving the quality and effectiveness of education, as well as improving the activities of educational institutions, are being developed. Along with this, great importance is attached to finding solutions to existing problems in the field of education quality, improving the content of education and scientifically based management of the educational process.

The development of pupils' creative abilities through STEAM technologies in preschool educational organizations has received international recognition. In particular, at the international conference "STEAM Forward", held in Jerusalem in 2014, a decision was made on the need to involve children in STEAM education starting from preschool age and to introduce relevant programs in kindergartens.

The main ideas of the STEAM approach in preschool education are as follows:

- practical knowledge is as important as theoretical knowledge;
- in the process of lessons, children use not only thinking, but also practical actions;
- the educational process must correspond to the rapidly changing conditions of the modern world;
- conditions are created for the development of children's creative abilities in all educational areas;
- opportunities are formed for independent acquisition of knowledge.

The modern approach "STEAM education" (Science — natural sciences, Technology — technologies, Engineering — engineering creativity, Art — art and creativity, Mathematics — mathematics) plays an important role in organizing the educational process aimed at the comprehensive development of

preschool children. Today, STEAM technologies are being actively introduced into educational practice and demonstrate high effectiveness in teaching and upbringing.

In the process of introducing STEAM technologies into the preschool education system, the concept of integration also acquires important significance. Children master this process through play activity. When organizing games, the educator mainly uses indirect methods of guidance: children's active and leadership qualities help support the initiative of peers, involve shy children in the game and form skills of collective interaction. During the game, children improve communicative relations, learn to express their opinion and defend their own position.

The educator, acting as an organizer, discusses the theme of the game and the distribution of roles with children in advance. As a result, children develop teamwork and cooperation skills. STEAM activity encourages children to work in small groups. In the process of group work, children develop the following social skills:

- the ability to listen to one another;
- respectful attitude toward the opinion of peers;
- distribution of roles;
- achievement of a common goal;
- the ability to come to an agreement;
- a sense of collective responsibility.

Projects based on cooperation help children become active participants in society.

The STEAM approach in preschool education is an integrative pedagogical technology that supports a child's natural curiosity, learning through experience and the development of creative thinking. Project-based STEAM activity contributes not only to the formation of scientific and technical concepts, but also to the development of such important competencies as teamwork, argumentation of one's own opinion, communication and the

search for creative solutions.

In the course of project activity, children jointly perform various tasks, understand their role, learn responsibility and interaction with peers. Experiments, the creation of structures, elements of technical creativity and collective solution of simple tasks activate creative thinking.

STEAM projects are considered one of the most effective methods for developing creativity, because in the process of work the child:

- freely uses various materials;
- finds non-standard solutions;
- creates new forms and structures;
- embodies imagination in practical activity;
- independently solves problem situations created by him or her.

In the process of STEAM activity, the teacher acts not as a leader, but as a mentor and assistant. This creates conditions for children's independent search, asking questions, putting forward hypotheses and practical verification of their own ideas. During project activity, the child develops reflective thinking through the questions: "what?", "why?", "how?".

In addition, STEAM projects help children understand interdisciplinary connections: mathematics is connected with measurement and counting, technology with construction, engineering with problem-solving, art with design, aesthetics and creative self-expression, and natural sciences with observation and experimentation. As a result, children develop not only creative and communicative abilities, but also logical thinking, initiative, the ability to analyze information and make decisions in life situations.

The STEAM program is based on the scientific concept of Lev Vygotsky: "Properly organized learning leads the child's development."

The STEAM education system contributes to the development of creativity, curiosity and one of the most important modern qualities in children — the ability to solve problems. "STEAM thinking" is formed from early childhood. Thanks to STEAM technologies, children study the surrounding world, develop research interest, an engineering style of thinking, the ability to find a way out of difficult situations, teamwork skills, leadership qualities and the foundations of self-realization, which ensures a qualitatively new level of child development.

A developmental environment and activities aimed at developing the creative abilities of preschool children play an important role in the formation of the child's personality. Studies by scientists and psychologists show that children with developed creative abilities are distinguished by greater emotional stability, establish friendly relations more easily and interact effectively with others. The process of developing children's creative activity in all age groups largely depends on the educator's emotional attitude toward the tasks and their implementation. Benevolent support for children's searches and the general creative orientation of pedagogical guidance are of particular importance.

## Conclusion

Thus, the integration of the STEAM approach into the preschool education system is an effective pedagogical technology that supports children's natural cognitive activity, stimulates research activity and the development of creative potential. STEAM classes organized on the basis of project activity strengthen the skills of joint work, exchange of opinions, distribution of roles and responsibility. This approach contributes to the development of creative thinking, initiative, the ability to solve problems, put forward design ideas and test them in practice.

In addition, play-based and experimental STEAM projects help children understand the relationship between mathematics, technology, natural sciences and art, which contributes to strengthening interdisciplinary integration.

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