



APPLICATION OF STEAM TECHNOLOGIES IN PRESCHOOL EDUCATION USING CHILDREN'S EXPERIMENTATION

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ABSTRACT

Ecological education of children is a huge potential for their comprehensive development. A well-thought-out systematic acquaintance of a child with the world of nature allows him to develop the most important operations of thinking. To establish by children the causes of certain phenomena and relationships between objects or phenomena, elementary experiments can be recommended as one of the directions for using STEAM technologies in preschool educational institutions.

KEYWORDS

STEAM-technologies in ECE, experiments and experiments, laboratory, research.

INTRODUCTION

One of the areas of using STEAM technologies in ECE is experimentation. The main advantage of the experimentation method is that it gives children real ideas about the various aspects of the object being studied, about its relationship with other objects and

with the environment. In the process of the experiment, the child's memory is enriched, his thought processes are activated, since the need constantly arises to perform the operations of analysis and synthesis, comparison and classification,



generalization and extrapolation. The need to report on what he saw, to formulate the discovered patterns and conclusions stimulates the development of speech. The consequence is not only familiarization of the child with new facts, but also the accumulation of a fund of mental techniques and operations that are considered as mental skills.

THE MAIN RESULTS AND FINDINGS

It is impossible not to note the positive impact of experiments on the emotional sphere of the child, on the development of creative abilities, on the formation of labor skills and health promotion by increasing the overall level of motor activity.

What is STEAM? If you decipher, you get the following: S - science, Ttechnology, E - engineering, A - art, M - mathematics (natural sciences, technology, engineering art, creativity, mathematics). Today, STEAM education is developing as one of the main global trends and is based on the application of an interdisciplinary and applied approach. Mandatory conditions for such learning are its continuity and the possibility of children interacting in working groups, where they can accumulate ideas and exchange thoughts. STEAM inspires our children - the next generation of inventors, innovators and leaders - to explore like scientists, model like technologists, design like engineers, create like artists, think analytically like mathematicians, and play like children.

Socio-economic transformations in society dictate the need for the formation of a creatively active personality with the ability to effectively and innovatively solve new life problems. But mass learning comes down to mastering standard knowledge, skills and habits, to typical ways of solving the proposed tasks. In this regard, preschool organizations face an important task of developing the creative potential of

the younger generation, which, in turn, requires the improvement of the educational process, taking into account the psychological patterns of the entire system of cognitive processes. Modern society needs an active, enterprising, creative and benevolent citizen. An insufficient degree of development of technical skills slows down the work of the imagination, fetters children's initiative, and reduces the quality of the results of activities. Therefore, it became necessary to introduce STEAM technologies into the educational process of the kindergarten, which makes it possible to create favorable conditions for introducing preschoolers to scientific and technical creativity and the formation of creative thinking and imagination, as well as initial technical skills.

The modern world poses difficult tasks for education: to prepare a child for life in a society of the future, which requires special intellectual abilities from him. The development of skills to receive, process and practically use the information received is the basis of STEM technologies. The introduction of STEM technologies in preschools helps children learn how to quickly navigate the flow of information and put the acquired knowledge into practice. Preschoolers acquire additional practical skills and abilities that are quite in demand in modern life. Exciting activities in the form of games allow you to unleash the creative potential of the child. Children learn to see the interconnection of ongoing events, begin to understand the principles of logic better, and discover something new and original in the process of creating their own models. An integrated approach contributes to the development of their curiosity and involvement in the educational process.

In addition, the environmental education of children is a huge potential for their comprehensive development. A well-thought-out systematic



acquaintance of a child with the world of nature allows him to develop the most important operations of thinking. To establish by children the causes of certain phenomena and relationships between objects or phenomena, to establish relationships obtained as a result of sensations and perceptions, elementary experiments are used. The main advantage of the experimentation method is that it gives children real ideas about the various aspects of the object being studied, about its relationship with other objects and with the environment. In the process of the experiment, the child's memory is enriched, his thought processes are activated, since the need constantly arises to perform operations of analysis and synthesis, comparison and classification.

If you want your pupils to treat nature carefully, caringly, humanely, try to reinforce the knowledge that children receive in the classes on familiarization with the natural world and ecology in experiments and experiments.

During the school year, you will be more than just an educator or parent. Now you are the head of the laboratory, and your wards will be your colleagues - laboratory assistants.

Approximate algorithm for preparing and conducting a lesson-experimentation:

1. Preliminary work (excursions, observations, conversations, reading, viewing illustrated materials, sketches of individual phenomena, facts, etc.) to study the theory of the issue.
2. Determining the type, type and subject of the experimenting lesson.
3. The choice of goals, tasks of working with children (as a rule, these are cognitive, developmental, educational tasks).

4. Game training of attention, perception, memory, logic of thinking.
5. Preliminary research work using equipment, teaching aids (in a “mini-laboratory” or “science center”).
6. Selection and preparation of manuals, equipment, taking into account the season, the age of the children, the topic being studied.
7. Summarizing the results of observations in various forms (observation diaries, collages, mnemonic tables, photographs, pictograms, stories, drawings, etc.) in order to lead children to independent conclusions based on the results of the study.

The structure of the lesson-experimentation (approximate)

1. Statement of the research problem in the form of one or another variant of the problem situation.
2. Training of attention, memory, logic and thinking (can be organized before class).
3. Clarification of the rules of life safety in the course of experimentation.
4. Refinement of the study plan.
5. The choice of equipment, its independent placement by children in the study area.
6. The distribution of children into subgroups, the choice of leaders, captains (group leaders), helping to organize peers, commenting on the course and results of joint activities of children in groups.
7. Analysis and generalization of the results of experimentation obtained by children.

REFERENCES

1. Grosheva I.V. “Ilk kadam” State Curriculum of Preschool Education Institution. T.: 2018. - 70.



2. The concept of development of the system of preschool education of the Republic of Uzbekistan until 2030.
3. Ivanova A.I. Ecological observations and experiments in kindergarten. Toolkit. - M.: TC Sphere, 2009. — 56 p., 2009
4. Ecological education of preschool children [Text]: pract. allowance / ed. Prokhorova J.I. - M.: ARKTI, 2003. - 72 p. - (Development and upbringing of a preschooler).
5. Shishkina, V.A. Walks in nature [Text]: textbook method, manual for preschool teachers. educate. institutions / Shishkina V. A., Dedulevich M. N. - 2nd ed. - M.: Enlightenment, 2003. - 112 p.
6. Khojjeva Z. The humanization of didactic relations between teacher and student in modern education //European Journal of Research and Reflection in Educational Sciences Vol 8 (4). https://scholar.google.ru/citations?view_op=view_citation&hl=ru&user=iwLTjkhAAAAJ&citation_for_view=iwLTjkhAAAAJ:gyKSN-GCBoIC
7. Khojjeva Z.U. THE ROLE OF REFLECTION IN THE PROCESS OF EDUCATION AND UPBRINGING // Eastern European Scientific Journal https://scholar.google.ru/citations?view_op=view_citation&hl=ru&user=iwLTjkhAAAAJ&citation_for_view=iwLTjkhAAAAJ:d1gkVwHdPloC.
8. Iskakov B.A. Develop media competence of teachers in a resource center. Abstract of the dissertation for the degree of candidate of pedagogical sciences.-Barnaul. 2013.-p.24.
9. Djurayeva B.A. ACADEMICIA An International Multidisciplinary Research Journal. ISSN: 2249-7137 Vol. 11, Issue 3, March 2021 MPACT FACTOR: SJIF 2020 = 7.4. 328-333 p.
10. Beknazarova S.S. Media Education for Teacher Training: Capacity Building for the Information Society. // Monograph.-T.: Fan, 2016. 106 p.
11. Mamatova Ya., Sulaymanova S., Uzbekistan on the way to the development of media education. Textbook. Tashkent: Extremum-press, 2015.94 p.