ORGANIZING PROJECT-BASED ACTIVITIES BASED ON STEAM TECHNOLOGY IN PRESCHOOL EDUCATION INSTITUTIONS

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Abstract
This article highlights the importance of the project-based method using STEAM technology for preschool-aged children, the development of logical thinking skills through STEAM education, design activities, and the advantages of engineering activities for children

Keywords: Creativity, imagination, emotions, initiative, mobility, and adaptability in children; the formation of logical thinking, engineering, design, independence in the educational process, integrated learning, STEAM activities, and project-based learning in preschool education.

Introduction

When discussing technologies related to project activities in preschool education and the effective aspects of these technologies in the comprehensive development of a child, it is also important to note that the application of STEAM educational technology in the pedagogical process is an essential tool for achieving the set educational goals. STEAM activities are practical in nature. According to this approach, the foundation of these activities is design, modeling, and design thinking. The tasks assigned to the students are carried out step by step, following a project-based approach When discussing technologies related to project activities in preschool education and their effective role in the comprehensive development of children, it is also important to emphasize that the application of STEAM educational technology in the pedagogical process is a vital tool for achieving the intended educational objectives. STEAM activities are hands-on by nature. According to this approach, the core of these activities lies in design, modeling, and design thinking. The tasks assigned to the children are carried out step by step, following a project-based methodology. Project-based activity is a didactic tool for activating a child's cognitive and creative development, while also shaping their personal qualities. During the implementation of the project, the knowledge gained by children becomes part of their personal experience. Through experimentation, the child seeks answers to questions, thereby developing their creative abilities and communication skills. Using the project as a form of collaborative development between children and adults, educators organize the educational activity in an engaging, creative, and effective manner. The use of projects in preschool education is considered a pedagogical innovation because the project method is

based on the idea that the cognitive activity of preschool children is focused on the results achieved through their joint efforts.

Designing the Daily Schedule in Preschool Education Institutions. The daily schedule in a preschool group is determined by the child's age and their life routine. Each routine activity has a specific duration based on the child's developmental capabilities. During the summer period, which lasts 12 hours, the daily schedule is slightly adjusted: one activity, lasting 15 minutes, is conducted, and during the daytime walk, activities like enjoying the air and sunshine are included, followed by water activities after the walk. During the walk, the educator incorporates activities in the project such as observing nature, the labor of adults, and conducting active games either at the beginning, middle, or half an hour before the walk ends. During the walk, children are given tasks suited to their abilities: depending on the season, in autumn they collect leaves, and in winter, they clean the paths of snow. Organizing a daily schedule for younger age groups is a complex task because these children do not yet possess the necessary skills and need the help and participation of the educator. The educator shows attention to the child with a smile, warm words, eye contact, and questions.

Children in the middle group are independent. It is important to link the design of the daily schedule with the resolution of educational tasks. The educator helps children transition from one routine activity to another and assists them in carrying out these activities. In this process, the proper design of the day by the educator, the correct forms of activities with children, and the methods of play are of great importance. Children need to feel that the educator's words convey kindness and confidence in their ability to complete the necessary tasks correctly. The tone of the educator's voice should never discourage the children or stifle their initiative; instead, they should feel assured of the educator's care and support. Properly organizing the child's daily routine helps them become disciplined, active, and independent. The daily repetition of the routine helps children quickly adapt to the rhythm of their activities, promoting a positive mood.

In the process of planning the educational process, the role of games, practical activities, and their importance in organizing children's lives is emphasized, as well as their significance in holistic education and building the children's community. In games, children increase their need for activity and communication. Play is the most important independent activity for preschool-aged children. The content, nature, and organization of games vary, depending on their objectives.

Games can be divided into two types based on their content: Creative and Rule-based. Creative games are invented by the children themselves. These games do not have predetermined rules. The children establish the rules of the game during the course of the activity. Creative games can be further categorized into the following types: Creative games include the following types:

- Construction and building games
- Role-playing games
- Staged or dramatized games
- Games played with natural materials

The content and rules of rule-based games are determined through the design of the educator. These rules introduce organization and stability into the games, reinforce their content, and

define the next stages of the game, as well as the complexity of relationships and interactions. At the same time, the rules of the game help shy, introverted children become active participants in the game. Rule-based games are also divided into several types:

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- Didactic games
- Physical games
- Musical games

Didactic games are widely used in preschools as an educational and developmental tool. Didactic games are directly related to education and serve as an auxiliary tool. The educator's role in designing the pedagogical process is crucial in organizing the children's lives properly. Designing the educational process: Education is a managed process, and its outcome largely depends on the well-prepared didactic project. A didactic project is the product of an educational technology. Managing the learners' cognitive activities according to the didactic project is considered the pedagogical foundation of educational technology. Just as any process has a beginning and an end, the implementation of a didactic project also has its entry and exit points. Just as many points can be placed between the two points, there are many effective methods and tools for education found in the distance from the beginning to the end of the didactic project. In this context, educational technology serves as the most effective method and aids the educator in choosing the most effective form of educationThe tasks related to the educational process are divided into two parts**: preparing the educational project and implementing the project.**

Preparing the Educational Project:

The project is the product of the educator's activity and has several common characteristics. The project is based on the future joint activity between the educator and the learner. The preparation of the educational project begins with analyzing the content of the subject according to the requirements of state standards. The analysis focuses on how the elements of the content (knowledge, skills, competencies, creative activity experience, and attitudes) are presented in the programs and reflected in the manuals.

Then, the content of the education is studied, and the goals of the educational process are defined. These include the didactic goals of education, the aims of the educator and the learners, the steps to achieve and track these goals, the quantity of tasks to be given, assignments to be completed based on the topics, control stages, and the methods of mastery. All of these activities lead to the creation of an educational model in the educator's mind.

Implementing the Educational Project:

The educational project is directly implemented in the educational environment. In this process, special attention is given to the following activities:

- Introducing the learners to the goals and objectives of the topic being studied, presenting the problems, tasks, as well as the assignments to be given to the children, independent tasks, their execution order, and time frame. Clear instructions are provided to ensure full mastery of the topic, and the standards for mastery are communicated.

- Encouraging active, independent engagement from the learners, drawing their attention to the content of the topic, explaining how it should be studied, and fostering an interest in learning. The goal is to stimulate curiosity, inspire the need to study and complete tasks, and apply emotions, thinking processes, and knowledge to practical learning situations. Additionally, learners are encouraged to gather information on the topic, organize ongoing assessments of the collected data, and implement changes or corrections to ensure complete understanding of the subject;

- **Processing the Knowledge Collected on the Topic:** In the educational process, both expected and unexpected, planned and emergency, as well as random events can occur. During the processing of the knowledge gained, based on the results of ongoing assessments, new changes, additions, and corrections may be made to the project.

- **Drawing General Conclusions on the Topic:** This involves applying the conclusions made to complex educational situations, collecting information on the topic, processing the collected data, analyzing the achievements of the learners, pointing out the deficiencies in the learners' knowledge, skills, and creative activity experience, assigning additional tasks to each learner in the group, and encouraging them to further deepen their understanding of the learning material.

The Object and Problems of the Design Process:

Designing is currently an essential aspect of the pedagogical process. A well-developed pedagogical process technology and other objects help eliminate negative factors that could hinder the educator's role in shaping the learners as individuals. At the same time, it creates individualized conditions for each learner as accepted by the pedagogical system.

The general algorithm for pedagogical design consists of the following steps:

1. **Analysis of the design object:** This involves studying the educational subject, objectives, and the context in which the design will take place.
2. **Selection of design forms:** Deciding on the appropriate methods, formats, and activities that will be used in the design process.
3. **Theoretical support for design:** Establishing the theoretical foundations and frameworks that will guide the design process.
4. **Methodological support for design:** Developing the teaching methods and strategies to be employed in the design, ensuring they align with the objectives and content.
5. **Time management support:** Ensuring that the design process is completed within a specific time frame and the necessary volume of work is achieved.
6. **Material and technical support for design:** Providing the necessary resources, equipment, and materials required for the successful implementation of the design.
7. **Legal support for design:** Ensuring that the pedagogical system and process comply with legal and regulatory requirements.
8. **Establishing computer interaction:** Integrating computer technology into the design process to enhance its effectiveness and efficiency.

Organizing the Educational Activities of Learners:

In the process of equipping children with knowledge, skills, and competencies, as well as developing their abilities and talents, it is crucial to regularly assess and check their knowledge. Assessment and encouragement help determine how effective the methods used in the educational system are and provide insight into the learners' level of mastery.

The effectiveness of the education system is also linked to the preparedness of the teaching staff. A teacher must be able to assess and consider each learner's knowledge level, select the appropriate learning materials, analyze and generalize information, and be well-versed in the educational methods, tools, and forms necessary for pedagogical expertise. A teacher should be demanding of the learners according to the pedagogical situation, skillfully use the appropriate methods, and be able to analyze their own activities and draw conclusions.

The primary educational activity of learners is the acquisition of knowledge, which includes the following components: receiving educational materials, thinking, mastering, and applying. These components are interconnected and are used sequentially throughout the learning process, together forming the entirety of the educational processThe learner's reception of educational material is the most crucial part of the learning process. The effective reception of the learning material plays a foundational role in the educational process, serving as a solid base for further learning activities.

The internal conditions for effective mastery of educational material are crucial for the learning process. First and foremost, the learner must have an internal need for learning the material. The internal assimilation of knowledge is retained from the moment of response to the examination, but after answering, it may be forgotten. The success of assimilation is also linked to the learner's active engagement in the process. When a learner is interested in the material and works on their own, they can reach the highest level of mastery. Another important internal factor for effective assimilation is the learner's understanding of the material. If the learner does not understand the topic or the information being presented, no matter how much effort they put into learning, the material will not be effectively mastered and will remain superficial.

External Factors of Reception:

The primary factors influencing the reception of educational material are mainly dependent on the content of the material itself. These factors vary depending on the complexity of the material, the clarity and abstraction of the technical materials used, and their relevance to practical application.

Memory:

Memory is one of the most important components of receiving educational material, as it involves retaining new information and being able to apply it theoretically and practically at any given time. When a learner actively engages with the material, they are more likely to retain it and apply it effectively. The effectiveness of memory retention largely depends on the learner's willpower and personal traits, such as concentration and motivation.

Forming Skills and Competencies in Applying Knowledge:

It is well-known that the ability to apply knowledge in practical activities reflects the degree to which it has been mastered. The application of theoretical knowledge in practice—such as performing laboratory tasks or solving problems based on the knowledge acquired—represents independent mastery of the material. In this process, knowledge expands, improves, and evolves into deeper, more thoroughly internalized understanding.

It is also important that learners engage in independent work when organizing their learning activities. Personal knowledge enhancement is a critical aspect of education, as the process of self-development is largely placed on the learner's shoulders. This self-directed learning fosters a sense of responsibility for one's own development and contributes to their growth as an independent and self-reliant individual.

REFERENCES:

1. O'zbekiston Respublikasi Prezidentining "O'zbekistonning yangi taraqqiyot davrida ta'lim-tarbiya va ilm-fan sohalarini rivojlantirish chora-tadbirlari to'g'risida" 07.11.2020-yildagi PF-6108-son Farmoni.

2. D.Z.Solidjonov. STEAM ta'lim tizimi va unda xorijiy tillarni o'qitish "Science and education" March 2021, Volume 2 ISSUE 3.

3. Xalikova U. M. The Interaction of science and society-the path to modernization and innovative development. International online scientific theoretical conference. UO'K 001.1:004:37:330:796/799 KBK 94.3 T-2/ UDC 371.322.3/ 10.06.2020/ Namangan/ 243-bet.

4. Gafurova Salokhiddinovna D. ADVANTAGES OF USING STEAM TECHNOLOGY IN PRESCHOOL EDUCATIONAL ORGANIZATION. – 2023.

5. Gafurova D. Maktabgacha yoshdagi bolalarning tadqiqotchilik qobiliyatlarini shakllantirishda STEAM texnologiyasining ahamiyati. O'ZBEKISTON MILLIY UNIVERSITETI XABARLARI, 2024, [1/5/1] ISSN 2181-7324 94-96 bet.

6. Волосовец Т.В., Маркова В.А., Аверин С.А. STEM-образование детей дошкольного и младшего школьного возраста. Парциальная модульная программа развития интеллектуальных способностей в процессе познавательной деятельности и вовлечения в научно-техническое творчество: учебная программа / Т. В. Волосовец и др. — 2-е изд., стереотип. — М.: БИНОМ. Лаборатория знаний, 2019. — 112 с.: ил. Рецензия № 224/07 от ФГБОУ ВО «ИИДСВ РАО» Протокол № 7 от 26 сентября 2017 г. заседания Ученого совета ФГБОУ ВО «ИИДСВ РАО»

7. M.J.Shokirova. Maktabgacha yoshdagi bolalarning ijodiy faoliyatini shakllantirishda "STEAM" zamonaviy yondashuvi https:/doi.org/ 10.5281/zenodo.6582213 SCIENCE AND INNOVATION INTERNATIONAL SCIENTIFIC JOURNAL ISSN: 2181-3337 2022 № 2. 241-b.

8. Rajabova L.Ch. Implementation of STEAM technology in preschool education. Экономика и социум.-2021.- №12(91) l'ISSN: ISSN 2225-1545. 527-530-b.

9. Kotova E. V., Kuznetsova S., Romanova T. A. Maktabgacha yoshdagi bolalarning ijodiy qobiliyatlarini rivojlantirish: Uslubiy qo'llanma. M .: TC Sphere, 2010. - 128 p. Belova E. S. P. Torrens testidan foydalangan holda maktabgacha yoshdagi bolalarning ijodiy salohiyatini aniqlash // Psixologik diagnostika. 2004. No 1. S. 21-40.