

The Effectiveness of the Steam System in Preparing Children for School

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Annotation: The article discusses the development of preschool education organizations, organized educational processes, the development of children's interests and creative abilities, as well as strengthening children's ability to freely and fully express themselves, and the effectiveness of using the educational direction of STEAM.

Keywords: educational direction STEAM, technology, educational technology, interactive technology, educational efficiency, Steam educational program.

The stage of pre-school education is the most important, responsible stage of continuing education, where the foundations of child rearing and education are formed. The main tasks of pre-school education are to bring up children in the spirit of the rich national, cultural, historical heritage and spiritual and moral traditions of the people, to form in children a sense of national patriotism, the need for education in preschool children, their desire to learn. regular preparation for the educational process, the development of children's thinking, the formation of skills of independent and free expression of their opinions, ensuring the physical and mental health of children. At this stage, preparing children for school is one of the most pressing issues. With this in mind, today in our country, radical changes are taking place in the field of preschool education, in the field of preparing children for school. In the field of preschool education, President Sh.M. Mirziyoyev's active initiative, the decrees and decisions being adopted are of great importance.

Preschool children are mainly prepared for pre-school education in preschools and in the family. The development of children in pre-school education institutions and their preparation for school education is carried out in 3 stages.

1. Develop children's speech.
2. Physical development.
3. Spiritual development.

The state requirements for the education of preschool children are formed in a healthy and mature way, ready for school, study. the application of a practical approach, as well as the integration of all five areas into a single education system will have a positive impact on the effectiveness of children's learning.

What is the STEAM education system?

If we spread this abbreviation, we get: STEAM is - S - science, T - technology, E - engineering, A - art and M - math. In English, it's science, technology, engineering, art, and math. Keep in mind that these trends are becoming the most popular in the modern world. That is why today the STEAM system is evolving as one of the main trends. STEAM is based on the direction of education and the application of a practical approach, as well as the integration of all five areas into a single education system. The STEAM education program provides key support in improving the effectiveness of the activities of the five centers established in preschool organizations.

How does the STEAM approach affect learning effectiveness? - His main idea is that practice is as important as theoretical knowledge. That is, when we study, we have to work not only with our brain, but also with our hands. Learning on the walls of the classroom alone is not the same as learning in a rapidly changing world. The main difference between the STEAM approach is that children use both their brains and their hands to successfully explore a variety of topics. They “read” what they learn.

STEAM education is not just a way of teaching, but a way of thinking — in a STEAM learning environment, children gain knowledge and immediately learn to use it. Therefore, as they grow older and face life challenges, whether it be environmental pollution or global climate change, they understand that such complex issues can only be solved by relying on knowledge in different fields and working together. It is not enough to rely on knowledge on only one topic.

The STEAM approach changes our approach to teaching and learning — focusing on practical ability, where children develop their will, creativity, flexibility, and learn to collaborate with others. These skills and knowledge are the main task of education, that is, what the whole education system strives for. . (Science, Technology, Engineering, Mathematics and Art). It is believed that the knowledge provided by educators at these centers based on the STEM system will help children to become highly qualified professionals in the future. After all, children strive to acquire good knowledge and immediately put it into practice.

The changes of the last decade are pleasant, but at the same time worrying. With the invention of these new things, there are many new problems that people have never faced before. Every day new types of work and even entire professional fields appear, so modern educators need to think about whether the knowledge and skills they impart meet the requirements of the time. If we say that teaching and using this knowledge to think and create, the STEAM approach teaches us to combine the knowledge we have acquired with real skills. This gives preschoolers not only the opportunity to come up with some ideas, but also to put them into practice. In the near future, the demand for engineers and high-tech production specialists in the world and therefore in Uzbekistan will be very high. In the long run, we will have professions related to technology and high-tech production, along with the natural sciences.

Integrated Education — So what is the difference between this education system and the traditional way of teaching science? STEAM-education refers to a mixed environment in which children begin to understand how to apply their knowledge in practice. In this program, children, in addition to the knowledge they have acquired in construction centers, learn about robots that design and manufacture their own robots. The center uses special technological equipment.

The following statements were made at the 2014 STEAM Forward international conference in Jerusalem:

- Involve children in STEAM. This education should start at preschool age, so programs should be included in kindergartens.
- The language of science is English. If you want to study science and become a scientist, you need to know this language.
- Girls need Steam training programs. Girls in science can do things that boys can't do because of their orderliness.
- Science is fun! Science should be fun, it should be fun and engaging for kids.

In conclusion, it should be noted that, compared to traditional teaching methods, the STEAM approach in preschool education encourages children to experiment, listen to music independently, turn their ideas into reality and create the final product. . This educational approach allows children to effectively combine theoretical and practical skills and facilitates university entry and further study.

Introducing water to the children of the preparatory group at the Science and Nature Center

The facilitator will prepare a number of visual aids related to the topic before conducting the experiments.

The experiments are mainly carried out in the following order:

- announcement of the purpose of work;
- tutor's guidance;
- Explain the task;
- work on visual aids;
- initial research, observation;
- Explain the results of the work - an interview;
- draw conclusions.

Research with water

1. Properties of water (clarity).

Objective: To acquaint children with the properties (clarity) of water.

Equipment: water, milk and 2 tsp

The course of the experiment:

1. From children to bottled water and milk

ask for spoons.

2. Ask in which bowl the spoons are visible.

3. Why is there a spoon in one glass and a spoon in the other? (Because the water is clear and colorless, it looks like a spoon in a glass of water.)

Corollary: The children conclude that the water is clear and the milk is white, so they look like spoons in a glass of water.

2. Properties of water (no taste)

Objective: To acquaint children with the properties of water, ie its tastelessness.

Equipment: A glass of water, a glass of juice.

The course of the experiment:

1. Have children drink a glass of water.

Q: Does the water taste good?

2. Have the children drink a glass of juice.

Q: How does the juice taste?

Conclusion: Children have concluded from experience that water has no taste.

3. Properties of water (shapelessness)

Objective: To give children an idea of the liquidity of water and its shapelessness.

Equipment: An empty container, a glass of water and two containers of different shapes.

The course of the experiment:

1. Children are given 2 dishes. One with water, the other empty.
2. It is recommended to carefully pour the water in the container.

Q: Is the water well drained? Why? (Because water is liquid, if it was thick, it would not flow in streams and rivers)

3. Display water in two different shapes. Q: What is the shape of the water?

Conclusion: Children conclude from their experiments that water is a liquid and has no form.

4. The role of water in nature.

Objective: To explain to children that water is life.

Equipment: Various utensils, bottled water.

The course of the experiment:

1. Plant a flower pot in a pot.
2. Water maintenance.

Corollary: Water is the lifeblood of plants

know your location

5. What mixes or does not mix in water?

Purpose: Some things mix in water and do not disappear.

Resources: Water, sand, sugar, paints, spoons in a bowl.

Take water in two bowls. Put sand in the first bowl and mix. Did the sand mix in the water? Put a spoonful of sugar in the second bowl. Is the sugar mixed in the water? Let's add some dye to the water in another bowl. What happened? Mixed in water.

Each child should be given a separate bowl, spoon, and other necessities.

6. Ice is solid water

Purpose: to introduce the properties of water.

RESOURCES: Ice of various sizes, containers

We give large and small pieces of ice to each child in separate containers. Touch it with your hands and watch it melt. Which piece of ice melts faster? What happened to the piece of melted ice? Cold water. If it's winter, watch the snow. Have the children observe the melting state according to the size of the ice.

Conclusion: Ice, snow and water.

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