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Development of Steam International Assessment Program in Primary Education

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ANNOTATION

The article presents the development of the STEAM international assessment program for assessing the level of knowledge of elementary school students.

KEYWORDS: international studies, assessment program, PISA, TIMSS, STEAM.

International assessment and training programs are contributing to the development of students and personnel who are developing our country. Wide-scale reforms are being carried out to improve the thinking of our young people, to get free education, and to apply the acquired knowledge. In fact, the decision of the Cabinet of Ministers of the Republic of Uzbekistan dated December 8, 2018, "People

Decision No. 997 on the organization of international studies in the field of education quality assessment in the educational system was adopted. In particular, in order to implement international programs for the assessment of the knowledge of general secondary school students, the first steps taken. That is, it is planned to widely use assessment programs such as PISA (Program for International Student Assessment), TIMSS (Trends in Mathematics and Science Study), STEAM, in order to bring the knowledge of students to international requirements and to study their compliance. What is the purpose and effect of the STEAM assessment program in primary education? How does the STEAM approach affect academic performance? Its main idea is that practice is as important as theoretical knowledge.

That is, during learning, we should work not only with our brain, but also with our hands. Learning only in the classroom is not keeping pace with the rapidly changing world. The main difference of the STEAM approach is that children use both their brains and their hands to successfully learn different subjects. They "read" the knowledge they received. What is the STEAM Assessment Program? : S – science, T – technology, E – engineering, A – art, M – mathematics, or natural sciences, technology, engineering art, creativity, mathematics.

In simple words, they are the most demanded subjects in the modern world. STEAM education is not only a teaching method, but also an education of logical thinking. Education should be carried out in an integrated manner, not by academic subjects, but by "subjects". In STEM education, interdisciplinary communication and design methods are combined, and it is based on the integration of natural sciences with technology, engineering creativity and mathematics.

In this, preparation for professions related to engineering is carried out. If we use STEAM technology in the teaching of "Science" natural sciences in elementary grades, children will understand nature and study the world regularly, and thus develop their interest, engineering thinking style, the ability to overcome critical situations, team work skills and leadership. They learn the basics of self-expression, which in turn provides a completely new level of children's development.

The main goal of introducing STEAM education is to identify the interests of young students from the school age and to direct them to develop their talent and creativity, to educate scientifically inquisitive and creative personnel by implementing innovations. STEAM inspires students, students explore as inventors and scientists, explore the possibilities of technology, design as engineers, create as artists, think like mathematicians, and of course, children have fun playing.

As soon as the students go to school, they do not sit for hours at the desk, but walk freely in the classroom and acquire knowledge of subjects. Expressing their free opinions, opinions are exchanged. They create new things and ideas. By demonstrating them in practice, they evaluate each other's knowledge and help them work on them by pointing out their shortcomings.

This program is very easy to develop in primary education. Because young students are hungry for knowledge and curious. In fact, it helps to start a program to guide students from a young age based on their talents. In the development of the program, it is appropriate to conduct lessons while reducing the number of students.

Apparently, the number of students should be 12 or 18. The fact that the classrooms are equipped with the latest technology is of great benefit. It is much better to conduct lessons with multimedia files or videos, taking them out into nature, instead of teaching them through books.

Lessons are conducted in an unconventional way. Each student is dealt with individually. In the primary education process, in particular, the disadvantage of the traditional teaching of mathematics is that students work with previously prepared mathematical materials: they perform similar operations on given expressions, solve equations and inequalities, graphs they construct, calculate the value of an expression, etc.

This method is familiar to everyone. We will now withdraw from this method. Homework is no longer done by the teacher, but students are given assignments to each other on the subject. In this way, teachers can check how well their students have mastered knowledge. In the process of finding a solution to a given problem, children will be able to make a model of the objects presented in that problem or draw them based on computer graphics.

And in this, their thinking skills develop. The main thing is the student's mastery of the given materials. Little attention is paid to the development of information processing skills and competencies. The student's knowledge is often tested through repetition. By the time they graduate from primary school, they should learn to work with a computer practically.



Homework assignments are done on a computer, not in a notebook. This brings a lot of comfort to the students. When they move to a higher class, they can easily deal with techniques. In the modeling of programs, they are required to have a creative approach to working on their designs. If the given knowledge is directed correctly, everything will give positive results.

In the STEAM program, students do not work alone. It is desirable for them to work as a team. Because working as a team brings out their free thinking. By focusing on practical skills, students develop their will, creativity, flexibility and learn to cooperate with others.

When they grow up and face life's problems, they understand that complex problems can be solved only by relying on knowledge from different fields and working together. In this curriculum, students can independently perform and creatively perform practical exercises, laboratory work and topics designed to work with tasks that meet the requirements of the international assessment program (PISA, TIMSS) aimed at forming students' logical thinking and practical skills. practical exercises are included that encourage thinking.

Another aspect of this program is that students' knowledge and skills are put into practice. In this curriculum, separate study hours are allocated for laboratory work and control work, designed to work with tasks that meet the requirements of the international assessment program aimed at forming students' logical thinking and practical skills.

In the improved educational programs, the total number of hours allocated to topics is given in the section of the chapters, and their distribution is carried out by the teacher with a creative approach. In particular, the calendar must be distributed without exceeding the total number of hours allocated to the chapters in the curriculum when drawing up a thematic plan.

Effective use of modern educational laboratory equipment in the teaching of natural and economic sciences, the use of information and communication technologies in the course of the lesson, methods of using competence-oriented tasks in the conduct of group activities and events, problematic issues in the teaching of science teachers should familiarize themselves with the solution, research and news in the field of science. Bringing famous industry experts during trainings will help them a lot.

They work harder while being motivated by talking to experts. There is a difference in the conditions created for the development of STEAM in Uzbekistan for students in urban and rural areas. It is a pity that girls have a lower rate of learning STEAM subjects than boys. In the modern world, everyone must learn science equally.

The task of STEAM education at preschool and elementary school age is to create the initial conditions for the development of interest. For children, it is the basis for the development of interest in natural sciences and technical sciences. STEAM is very interesting and dynamic for children, which prevents them from getting bored. They don't notice time passing and they don't get tired.

In conclusion, it can be said that if elementary school mathematics lessons are organized based on the STEAM program, students' interest in science will increase, as well as their knowledge, skills, and abilities will develop. approach is more effective.

A young generation that is properly guided from a young age is the guarantee of the future. Building the future is in the hands of young people, it is up to all of us to support them. The development of Uzbekistan is beneficial for all of us. We will all fight together on this road.

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