Methods of Using Interdisciplinary Links to Increase the Effectiveness of Science and Mathematics Lessons in Primary School

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ABSTRACT: The methodology of using interdisciplinary connections in increasing the effectiveness of science and mathematics lessons in primary school has been studied.

KEYWORDS: *Primary Education, Science, Mathematics, Pedagogy, Innovation, Lesson, Problem, Insert, Natural Number, Globe, Card.*

INTRODUCTION

Teachers of the education system must have professional qualifications, knowledge of state requirements, knowledge and application of modern innovative educational technologies and their types, individual and differential approach to education, taking into account the individual and his characteristics, and problem-based learning, collaborative technology and The ability to use interactive methods of education, training in the use of information and communication technologies is the basis of the requirements of the Law "On Education" and the "National Training Program".

It is known that in the world there is a large-scale research on the use of innovative technologies in the teaching of all subjects related to mathematics, thereby ensuring the quality of education, developing students' creative abilities, increasing the effectiveness of practical applications of mathematics and career guidance. This, in turn, is of particular importance in the application of innovative strategies in the teaching of mathematics, increasing the activity of students in advanced schools, independent learning and the widespread application of acquired knowledge in practice.

As a result of reforms in science, education and industry in our country, along with all disciplines in the education system, the educational and regulatory documents, material and technical base of mathematics are being updated. As a result of the introduction of computer-based teaching methods, students' interest in mathematics is growing, and the training of qualified and competitive personnel for the real sector of the economy is being achieved. Naturally, there is a need for teachers to pre-design the learning process for teaching mathematics based on the use of such innovative methods. In the measures for the further development of mathematics education, "... in-depth study of important and demanding subjects such as mathematics, physics, chemistry, biology, computer science and foreign languages" 1 has been identified as a priority. In this regard, in the teaching of primary school students in mathematics plays an important role creative approaches that develop creative activity, the design of lesson processes and teaching on the basis of advanced educational technologies.

The state standard for primary education is determined not by subjects, but by areas of education. Standard indicators in the field of education are based on the minimum amount of educational content required by social demand, depending on the level of development, needs and capabilities of children aged 7 (6) -11. The establishment of the state educational standard at this stage allows to limit the scope of educational content, to integrate the spheres of education. The establishment of the state educational standard provides for the modernization of the content of primary education based on a conceptual basis.

In this regard, the establishment of the standard of primary education will allow to modernize the structure of the educational process and the content of the same components, the application of new technologies in the process of primary education. factors can provide a basis for the application of new technologies in the educational process:

to ensure the gradual transfer of educational material in accordance with the content of education, determined in each area of education, included in the process of primary education;

subordination of the educational process to the goals of the spheres of education and ensuring the balance of goals between the spheres of education;

to develop the exact levels of skills and competencies that will be formed in primary school students in each field of education, as well as the requirements for the criteria for assessing learning outcomes on the main parameters of the standard of primary education.

The standard of primary education is a set of standard indicators for the field of education. The criteria and parameters of the standard are indicators of the standard of education.

Based on the current requirements of the time and the principles of education, which are developing along with the development of society, based on world experience, the basic curriculum of primary education in the Republic of Uzbekistan includes mother tongue, mathematics, nature and education.

Mathematics education. Mathematics education in primary school serves to form and develop students' logical thinking skills, to be able to express their ideas independently, to apply their knowledge in social activities and to provide mathematical preparation for continuing education in the second stage of education.

Standard indicators in the field of mathematics education are the ability of children to form an idea of natural numbers and zeros, to develop the skills of careful calculation, to solve practical problems, to teach the use of arithmetic operations on natural numbers, to understand their properties in the plane and to use verbal calculation and mathematical symbols. determined in terms of formation.

Nature education. Introducing children to the surrounding nature, giving them an initial idea of the structure of the universe and natural phenomena, the formation of scientific worldviews, arousing love for nature and teaching them to use it wisely is done through nature education.

Standard indicators in the field of nature education are defined in terms of teaching the child to have an idea about nature and the phenomena in it, to distinguish them, to describe them briefly and to apply them in practice.

Indicators that determine the basis of educational content.

Mathematics education. The basis of the content of mathematics education in primary education includes the following. Natural numbers and zeros. Counting of natural numbers. Comparison of numbers. Quantities. Comparison of homogeneous quantities. Measurement of quantities. Arithmetic operations on natural numbers and quantities. Rules of arithmetic operations.

Relationships between quantities. Expressions involving numbers and letters. Fractions. Brackets. The order of operations in numerical expressions.

Numerical equations and inequalities. Geometric figures. Measurement of geometric quantities. The point. Cut. Polygon. Circle. Doira. Length. Yuza.

 Creating geometric figures using a compass and a ruler. The relative position of the figures in the plane. The arrangement of the figures. Properties of figures.

Mathematical relations: "more", "less", "ortiq more", "kam less", "… times more", "… times less", equal ".

Nature education.

The basis of the content of nature education in primary education includes:

Animate and inanimate nature. Methods of studying nature: observation and experiment. Body and matter.

The universe. The sun is the closest star. Earth's rotation around its own axis. Moon-Earth's satellite. Globe. Map. Horizon and its main aspects. The main forms of the Earth's surface: mountains, plains and oceans.

Air around us. Weather. Climate change in the seasons. Precipitation. Water in nature.

Natural phenomena. Basic information about the motion of objects, heat, sound, electricity, light phenomena.

Plants. Organs of plants. Cultivated and wild plants. Seasonal changes in plants.

Animals. Domestic and wild animals. Insects. Birds. Aquatic animals. Predators. Living conditions of animals. Man and his health.

Near the map of our country. Nature of our country: mountains and plains, deserts and forests, climate, main rivers, lakes and reservoirs. Subsoil resources. Nature of the capital, regions and the Republic of Karakalpakstan.

The relationship between man and nature. Nature protection.

Minimum requirements for the level of preparation of students.

In order to increase the effectiveness of the study of natural sciences and mathematics, it is advisable to use interactive teaching methods and didactic games. The interactive method helps.

Water is one of the priceless resources. The role of the educational institution and family members in the formation of a culture of not wasting, polluting and protecting it in all respects, its rational use is great.

Water has the property of absorbing all substances. Depending on the amount of solutes in the water, its salinity varies, that is, water containing 0.5 -1 g of salt is called fresh, 7 - 10 g of brine, 10 - 15 g of super-salt water.

Although 3/4 of the planet is covered with water, meeting the demand for fresh water (drinking water) in most of it remains a problem.

The Earth's crust is as follows: the world's oceans are 1,370 million cubic kilometers, groundwater - 60 million cubic kilometers, drinking river water is only 0.23 million cubic kilometers, and the total amount of water is 1.4 billion cubic kilometers.

The above figures show that the volume of drinking water is 2% of the available water on the planet.

If a person loses 2% of body water, he feels thirsty, if he loses 6-8%, he loses consciousness, and if he loses 10%, hallucinations occur. When the body loses 12-13% of its water content, a person dies.

Contaminated water is a source of infectious diseases, dangerous diseases such as diarrhea, diarrhea are spread through water. Water pollution is also caused by man himself, as he throws various household wastes and animal waste directly into canals and ditches.

Students read the text and write answers such as "I knew (confirmed what I knew)", "I knew (received new information)", "I did not know (contradicted what I knew or made me think)" before each sentence (sentence). .

The teacher collects the texts, draws conclusions, and explains to each of the authors of the lines written in the form "I did not know".

Thus, the study of mathematics and natural sciences will acquaint primary school students with the flora of our homeland, the prosperity of our people, the invaluable role in the development of our country, their devotion to the spirit of our ancestors, the pride of Uzbek scientists.

The possibilities of integrative education in mathematics and natural sciences are also wide. First of all, in the field of mathematics education arithmetic, geometric and algebraic materials are given on the basis of a balanced combination. In the process of solving problems of studying geometric material, quantity and measuring them, natural bounties, vegetables, fruits, plants, flowers, pets, birds are used in models and pictures. In addition to mathematical knowledge, love for nature, love of animals and plants Numbers provide an understanding of the motherland, territory, homeland, land area, level, number of rivers, their length and depth, population. Improves the ability to count and calculate, interdisciplinary communication in science and mathematics.

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