

# CONCEPTUAL BASES OF METHODOLOGY OF INTEGRATION OF MATHEMATICS IN SECONDARY SCHOOLS

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## Key words and terms:

Integrative approach, conceptual, methodologu, integration, system of exact sciences, education, teaching, subject, mathematics, pedagogical technology, integration of continuity.

## Annotation.

The methods and the scientific and theoretical basis for the organization of mathematics lessons based on integrative approaches in secondary schools are provided.

The President of the Republic of Uzbekistan Sh. Mirziyoyev noted, “We will resolutely pursue the state youth policy. Not only will we continue, but we will elevate this policy to the high level required by the times today as our top priority. We will mobilize all the forces and capabilities of our state and society for the development and happiness of our young people as independent thinkers, with high intellectual and spiritual potential, who will not be idle to their peers in any field around the world.” [1;14]. In accordance with the Decree of the President of the Republic of Uzbekistan dated April 29, 2020, the concept of development of the public education system until 2030 was approved. By this time, Uzbekistan is expected to be among the top 30 countries in the world in the ranking of the international student assessment program PISA. Our basic law stipulates that the issue of schools and education should be under the control of the state and society. In particular, Article 41 of the Constitution of the Republic of Uzbekistan states that “Everyone has the right to education. Free general education is guaranteed by the state. School work is under state control”. [2;15]. All students studying in secondary schools should focus on mastering the secrets of science and its application in life. The main priorities in the reform of education policy are to provide students with knowledge, taking into account the nature of the subject, based on the form and content of the organization of teaching mathematics on the basis of integrated approaches. This means that the organization of mathematics lessons in general secondary schools on a sequential basis and on the basis of the interaction of mathematics with other disciplines, as well as on the basis of methodologically organic and logical connection of this subject creates the basis for students to study in further education. Mathematics, as a natural-scientific science, plays an important role in the development of future cadres into harmoniously developed people. This is because the science of mathematics deals with finding mathematical laws that fully and deeply reflect the spatial forms of the real world and the quantitative relationships between them. Mathematics is the main subject in general secondary education, and in its teaching it is expedient to use advanced pedagogical technologies on the basis of "brainstorming", "integrative", "presentation" and using a combination of other disciplines. We inevitably remember the words of our great enlightened ancestor Mahmudhoja Behbudi: "Teach your descendants the science of the future, not only today." Mathematics is a natural science and is inextricably linked with other sciences. It is very important that the teacher takes into account the characteristics of each subject in order to make interdisciplinary connections correctly. The importance of teaching mathematics is enormous and opens the way for students to master the mathematical culture. Forms the knowledge and skills from mathematics required for general secondary education.

As the President of the Republic of Uzbekistan Shavkat Mirziyoyev noted, “Mathematics is the basis of all exact sciences. A child who knows this science well will grow up to be smart, open-minded and successful in any field. ” On January 31, 2020, during his visit to the research institutes on Olimlar Street in Tashkent, President Shavkat Mirziyoyev met with scientists and young researchers. At the initiative of the head of our state, four areas have been chosen: the development of mathematics, chemistry, biology and

geology. Currently, a lot of work is being done to improve this area of science. As Abror Khudoiberdiev, Professor of the Department of Functional Analysis and Algebra, National University of Uzbekistan named after Mirzo Ulugbek, Doctor of Physical and Mathematical Sciences, noted, "Mathematics means not only calculation, but also a child's ability to think and reason. It will be easier for a person with mathematical thinking to find his way in other fields later". [3; 5]

The word "integration" comes from the Latin word *integratio*-restoration, replenishment, "integer". Integration issues also play an important role in modernizing the education system. Mathematical integration has its own technological infrastructure, its own basic educational technology. The interdisciplinary integration of mathematics is an educational process and a didactic condition in all its forms of teaching. In ensuring the integration of mathematics, the materials of closely related subjects should be coordinated with the utmost care. The stronger the mathematical knowledge imparted in secondary schools, the more the worldview and intellectual potential of students will develop and mature.

**Methodology**- is also described as a doctrine of methods or a method of general knowledge. In Macalan, geometry in Greece served as a normative guide in the measurement of land areas, and the science of geometry was seen as an important methodology for the study of philosophy. Ensuring the teaching of mathematics lessons in secondary schools on the basis of integrated approaches remains one of the main problems today. The methodology of ensuring the continuity of mathematical sciences based on an integrated approach to the coverage of this issue in the education system is important. Mathematics is the main object in the teaching of other sciences. A strategy to ensure the integration of mathematical sciences based on an integrated approach is important in covering this issue in the education system. For this reason, the methodology of ensuring the continuity of teaching based on an integrated approach to improving the quality of lessons in mathematics education is widely used.

Thus, along with the study of the conceptual foundations of the methodology of teaching mathematics in secondary schools on the basis of integrative approaches, the concepts and ideas about physics, biology, geography, the universe, society and other sciences are formed and students' worldviews are expanded.

## References:

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2. The Constitution of the Republic of Uzbekistan. Tashkent. Publishing and Printing House "Uzbekistan". 2016. 36 pages.
3. Gulsum SHODIEVA. "My goal is to be a generation worthy of our ancestors." (Honor). "NEW UZBEKISTAN". Socio-political newspaper. №46 (46), 27 March 2020. Page 6.