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The Secondary Schools Provided are Methods the Scientific and Theoretikal Basisfor the Organization of Mathematics Lessons Based on Integrative Approaches

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

Keywords: integrative approach, methodology, integration, system of education sciences, teaching, subject, mathematics, pedagogical technology, integration of continuity.

President of the Republic of Uzbekistan Sh. M. Mirziyoyev noted in his writings: “Our work to ensure the interests of the younger generation will continue in accordance with the recently adopted Law" On State Youth Policy[1]“. [1; 26]. After all, the future is in the hands of well-educated, intelligent and talented young people. The issues of improving the quality of education and improving the state youth policy have a special place in the action strategy. From the first years of independence, the legal framework of the education system has been formed and a single, continuous model has been created.

The President of the Republic of Uzbekistan Sh. M. Mirziyoyev said: “We will resolutely pursue the state youth policy. Not only will we continue, but we will raise 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 who are independent-minded, have high intellectual and spiritual potential, and are not idle to their peers in any field in the world[2]”. [2; 14]. Therefore, our basic law stipulates that the issue of schooling 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 contro[3]”.[3; 15]. All students studying in secondary schools should focus on mastering the secrets of science and teaching its applications in life.

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. Today, a large-scale work is being carried out on the innovative development of our country. President Sh. M. Mirziyoyev has adopted decrees and resolutions on the public education system, resolutions of the Cabinet of Ministers, and strengthened the legal and regulatory framework for reforms in this area. Taking into account the wishes of parents and the public, the education system in general secondary schools in our country has been re-transferred to an 11-year system.

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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. It was noted at the meeting that the potential of Uzbekistan in mathematics is recognized worldwide. At the initiative of the head of our state, four areas have been selected: the development of priorities in the fields of mathematics, chemistry, biology and geology. Currently, a lot of work is being done to improve this area of science.

Political, economic, scientific, technical and cultural changes taking place in the independent Republic are reflected in the system of public education. Improving the system of continuing education in Uzbekistan, on this basis, bringing the quality of education to the level of world standards, will become the most important task of the education system. The education system in the country has been radically reformed, and major changes have been made in the system of continuing education, including general secondary education. In particular, the secondary education system has been further improved, the Ministry of Preschool Education has been established, and the reforms carried out to update the content of education and increase the efficiency of the educational process are bearing fruit today.

President of the Republic of Uzbekistan Sh.M.Mirziyoev During a visit to the new building of the V.M.Romanovsky Institute of Mathematics, he criticized the outdated method of teaching mathematics. Noting that the teaching of mathematics in kindergartens, schools and universities will now be coordinated by the Institute of Mathematics, they expressed their views and opinions on “creating a new system of teaching mathematics. “Mathematics is in our blood. However, over the past 20 years, the level of knowledge in this field has decreased. Today, our goal in developing this field is to create a competitive environment in mathematics, “he said. Therefore, it is necessary to retrain teachers by creating well-organized, foreign practice-based curricula. The method should be at a level that inspires children to love math. Students should understand the need for this science in life, in all areas, ”said President Shavkat Mirziyoyev. On May 7, 2020, the Decree of the President of the Republic of Uzbekistan “On measures to improve the quality of education in mathematics and the development of scientific research” was signed. It reads: “2020 has been identified as one of the priorities in the development of mathematical science in our country. Over the past period, a number of systematic measures have been taken to bring the science and education of mathematics to a new level[4]”. [4; 1].

As Abror Khudoiberdiev, Professor of Functional Analysis and Algebra, Doctor of Physical and Mathematical Sciences, National University of Uzbekistan named after Mirzo Ulugbek, 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[5]“. [5; 5].

A group of French mathematicians who revised the definition of mathematics under the pseudonym Burbaki introduced the definition of "Mathematics - the science of mathematical structures.”Like all sciences, mathematics has its own alphabet.

In his book "Boundaries and Perspectives of Mathematics", published in 2001 by the International Mathematical Union, the famous Russian scientist V.I. The following description is given by Arnold. "Mathematics is a part of philology based on a specific grammar[6]”. [6; 39]. Mathematics is the study of quantitative relations and spatial forms of the real world, and all mathematical disciplines are the basis for physics, astronomy, chemistry, geography and other sciences. Mathematics is a broad field of science that serves as an important ideological tool in scientific research.

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"MATHEMATICS (Greek mathematike, mathema-knowledge, science) is the science of knowledge based on clear logical observations. Because the first object was a number, it was often considered a "science of calculation[7]" . [7; 513].

Integration issues also play an important role in modernizing the education system. Mathematics is a natural science that plays an important role in the development of future professionals into harmoniously developed people. Mathematics is a basic science in general secondary education, and in its teaching it is advisable to use advanced pedagogical technologies on the basis of "brainstorming", "integrative", "presentation" and using a combination of other disciplines.

The word "integration" comes from the Latin word "integratio" - restoration, replenishment, "integer" - the whole. Mathematical integration has its own infrastructure, its own basic learning technologies.

"The term integration means a whole, and the integration of the mathematical sciences means the interdependence and interconnection of the content of the sciences. The problem of integration is related to the development of science[8]"[8; 92]. This means that the organization of mathematics teaching is based on integrative approaches, and the topics are partially mastered in other disciplines, and their mastery does not pose a problem for students and helps them to complete the level of knowledge. Mathematics is an interdisciplinary integration-educational process and a phenomenon that improves the didactic conditions 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 students' worldview and intellectual potential will develop and mature. In the conditions of interdisciplinary connection (integration) of mathematics, along with the effective development of students' knowledge, an increase in their cognitive abilities, activities, interests, intellectual capacity is achieved. The course should be based on the use of interdisciplinary connections in the teaching of mathematics. Integrated lessons help to form a holistic view of nature and society in the younger generation. Ensuring the teaching of mathematics in secondary schools on the basis of integrated approaches remains one of the main challenges today. This issue is important in the methodology of ensuring the integration of mathematical sciences in the education system on the basis of an integrated approach. Accordingly, the exact sciences are of particular importance today and require updating its content. Specific sciences include mathematics, algebra, geometry, chemistry, computer science and information technology, astronomy, physics, and other sciences. These sciences are the basis of the science of mathematics, on the basis of which new branches of science are emerging, and in mastering them, many concepts require understanding with the mind. One of the main tasks of secondary schools is to form in students the ability to see the world as a single, interconnected unit, its global problems and the ability to see and understand the solutions to these problems. Mathematics should be studied in the education system of kindergartens, schools, secondary special vocational education and higher education institutions, and outside school hours on a continuous and integrated basis. In this way, the integration established in the membership acocid manifests itself as the acociy mechanism of inconpapvaplashtiping the content of mathematical fanlap education. In such an approach, the scientific principle of teaching acquires a completely new quality. Mathematics becomes the main object in the teaching of other sciences. It is this knowledge that serves as a complementary concept, not a recurring one. The use of new pedagogical technologies and integrative methods in the lessons of the general education system requires a great deal of preparation from teachers and students, changes in the classroom and the environment in the student group. The development of today's society is determined by the fact that the product of human thinking is based on the achievements of advanced science. In the

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implementation of this program, we entrust the teaching staff with aspiration, curiosity, creative potential. For this reason, in the system of mathematics education is widely used methodology to ensure the continuity of teaching based on an integrated approach to improving the quality of lessons.

B.M. Mirzaahmedov, E.O. Turdiqulov, M.M. Mamadazimov, O.D. Quvondiqov, Yu.M. Maxmudov, P. Musaev, M.R. Jumaniyozova, M. Aripov, O. Abduquddusov, A.I. Avazboev, R.T. Safarova, U.Yu. Yuldashev, A. Abduqodirov, N. Toyloqov, M. In the research work of Mamarajabov and others, special attention is paid to the organization of reading on the basis of integrative knowledge. An experienced educator, a great scientist, Professor E.O. Turdikulov described integration as follows: "Integration is the process of bringing things together into a whole, a whole, a system, a whole set of knowledge about nature, the solution of knowledge in different disciplines to a single goal. It represents the integrity of the universe. " The integration of the mathematical sciences, in particular, their interconnectedness and interdependence. Analysis of problems related to the integration of school mathematics, mainly the implementation of internal and interdisciplinary relations (I.D. Zverov, V. Maksimova, V.N. Fedorova, V.A. Gusev, V.A. Dalinger, V.M. Monakhov, N.F. Borisenko, T.R. Tulaganov, A.L. Musurmanov, A.D. Salomov and others) Development of integrative course development (V.F. Butuzov, Yu.M. Kolyagin, G.L. Lukankin and others)) methodological mathematical directions, such as strengthening the practical direction (N.R. Gaybullaev, N.O.Eshpulatov, etc.), ensuring consistency in mathematical education (Yu.M. Kolyagin, L.Yu. Nesterova, N.O. Alimov and others) carried out within. Today, traditional teaching is being replaced by person-centered approaches. In this context, the importance of non-traditional forms of teaching-integration is growing. Because, depending on the level of integration, it will be possible to determine the prospects of the technology implemented according to the technique of its application. Indeed, integration is a key factor in the transition to a new qualitative state as a result of the absorption of type-specific content, which can be sufficiently manifested.

"The concept of integration was explained as early as the eighteenth century by the English philosopher and sociologist Herbert Spencer[9]" [9; 67].

"Also, Abu Rayhan Beruni, Ghiyosiddin al-Kashi, Umar Khayyam, Nasriddin at-Tusi, our great scholars al-Khwarizmi, Abu Nasr Farabi, Ahmad Fergani, Abu Ali ibn Sino, It is no coincidence that in the process of studying the intellectual heritage of Mirzo Ulugbek, Ali Kushchi and other scholars in the development of mathematics, attention was paid to expanding students' worldview, increasing their knowledge, educating them in a sense of patriotism and national pride1[10]"[10; 3]. The implementation of these tasks will depend on the further improvement of the educational process, the adoption of a new scientific-methodological approach and other measures. Mathematical applications are not only in physics, astronomy and biology, but also its methods and results are widely used in public service theory, reliability theory, mathematical linguistics, production design and optimal management, product quality control and other purposes. The purpose of teaching mathematics on the basis of integrative approaches is to strengthen the theoretical knowledge acquired, to obtain additional knowledge on the basis of identified topics. It also requires improving the quality of all math lessons. Analyzing and comparing existing theoretical knowledge and practical experience in mathematics serves to find ways to solve examples and problems, to consolidate, repeat, evaluate knowledge, to form independent, critical thinking, non-standard thinking. For the sessions to be fun, each issue or assignment in these sessions should have a character that triggers their higher activities, not just for dry memorization. In particular, the use of various non-traditional methods in mathematics lessons in secondary schools is yielding effective results today. The main task of teaching mathematics in secondary

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schools is to educate students in the spirit of conscientious attitude to work, to make education more humane, to provide each member of society with the mathematical knowledge, skills and abilities necessary for work and daily life in today's market economy. consists of. The practical significance of the school mathematics course is growing day by day. Mathematics is one of the basic sciences of general secondary education. It serves as an important tool in the study of other sciences. This is especially true of the natural sciences. In the study of mathematics, students should be accustomed to expressing their ideas clearly and completely, concisely and meaningfully, and should have the skills to perform mathematical writing in an understandable, orderly and literate manner. In the practice of teaching mathematics in secondary schools on the basis of integrated approaches, attention is paid to the organization of lessons on the basis of innovative technologies in accordance with modern requirements. The main purpose of teaching mathematics in secondary schools is to teach students to form and develop logical, algorithmic, abstract thinking, mathematical thinking, to express their ideas and conclusions in a reasonable way, to acquire and apply mathematical apparatus sufficient to solve theoretical and practical problems of economics. is to teach students to construct and analyze mathematical models of problems. There is a serious need for integration, logic and consistency of other disciplines of mathematics, further deepening and liberalization of their most modern management systems. Analyzing and comparing existing theoretical knowledge and practical experience in mathematics serves to find ways to solve examples and problems, to consolidate, repeat, evaluate knowledge, to form independent, critical thinking, non-standard thinking. In particular, the use of various non-traditional methods in mathematics lessons in secondary schools is yielding effective results today. The practical significance of the school mathematics course is growing day by day. Mathematics is one of the basic sciences of general secondary education. It serves as an important tool in the study of other sciences. This is especially true of the natural sciences. In the study of mathematics, students should be accustomed to expressing their ideas clearly and completely, concisely and meaningfully, and should be able to perform mathematical notations in an understandable sequence. Education is always in need of improvement and renewal. Therefore, as much as possible, we need to explore new ways of teaching. Because students don't like the same pattern of lessons, it makes them bored. As a result, the student is not able to master the lesson well. The variety of methods so as not to exceed the norm, not to bore the students, further increases the effectiveness of the lesson. In the teaching process, we must pay great attention to teaching with an approach to the forms of oratory, conversation, storytelling, independent work, written work, connecting with time, relying on independent thinking and integrative methods. Based on the methodology of integrative approaches in the teaching of mathematics, it is recommended to educate students, taking into account the nature of the science, based on the form and content of the organization.

"Methodology (from the words method and ... logy) - a system of principles and methods of organization, restoration of theoretical and practical activities of the researcher, as well as the doctrine of such a system. Methodology is also defined as the doctrine of methods or the method of general knowledge. Methodology can also be viewed as an algorithm for scientific knowledge, understanding and changing reality. In Greece, for example, geometry served as a normative guide in the measurement of land areas, and the science of geometry was considered a methodology for the study of philosophy. At the entrance to the tomb of Pluto was written: "Whoever does not know the geometry, do not come in front of us." Socrates and Aristotle made a significant contribution to the development of methodology[11]". [11; 614].

Integrated lessons help to form a holistic view of nature and society in the younger generation. The economic, political, social and cultural development of developed countries today is closely linked with the development of science. New pedagogical innovative skills of teachers are to enrich the

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content of pedagogical activity, to ensure the effective acquisition of innovative knowledge, skills and abilities, such as scientific innovation, emerging discoveries, the introduction of new ideas and best practices, based on the comparison of best practices. At the same time, they can exchange wise words, proverbs, riddles, legends, ideas in the interactive process. Students can develop creative independent thinking skills by reading the words in the app, creating interdisciplinary integration problems, creating problem situations, and answering questions. Along with the teaching of mathematics in secondary schools on the basis of integrated approaches, the use of technical means: projector board, stand, flipchart, smart boards is important for the development of students' independent thinking and increase lesson effectiveness.

Mathematical integration has its own technology infrastructure, its own basic learning technologies. 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 students' worldview and intellectual potential will develop and mature.

So, by teaching mathematics in secondary schools on the basis of integrative approaches, we will be able to expand the mathematical worldview of young people, who are the future of our free and prosperous Motherland, to demonstrate their potential.

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