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Issues of Development of Students' Mathematical Skills in the Educational Process

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Abstract: Today, if students' mathematical abilities are formed in educational institutions, their logical reasoning and worldview will develop. By developing mathematical abilities in students from a young age, it opens the door to great achievements in the future. The article deals with the development of students' mathematical abilities during the educational process.

Keywords: ability, mathematics, activity, thinking, professional education, mathematical ability.

In the current conditions of science and technology and social development, the responsibility of educational institutions to prepare the young generation to participate in the development of our society is increasing more than ever. In this regard, it is the current profession to develop the knowledge of students about the basics of science, to educate them with high consciousness, to develop universal and national moral qualities in harmony, to prepare the young generation for marriage and work, to consciously choose socially necessary professions. - are the main tasks of vocational school education.

For this, it is important to take into account the abilities of learners in general secondary education and professional educational institutions. In vocational schools, students should have mathematical skills regardless of which field they choose when they are oriented to the profession.

Educating the young generation worthy of our great scholars such as Muhammad al-Khorazmi, Ahmad al-Farghani, Abu Raykhan Beruni and Mirza Ulugbek, who made a great contribution to the creation of the foundations of the science of mathematics, conveying modern knowledge to students and making the youth of our country enjoy the beauty of mathematics. creating conditions for them to be is considered both a debt and a duty for everyone.

Mathematics is the basis of knowledge of the universe, and it is important in revealing the specific laws of the surrounding events and phenomena, as well as in the development of production, science and technology, and technologies. It is known that the science of mathematics sharpens the human mind, develops attention, educates determination and will to achieve the intended goal, teaches discipline in an algorithmic way, and most importantly, encourages reflection and expands thinking.

As the Honorable President Sh.M. Mirziyoyev noted, "Mathematics is the basis of all sciences. A child who knows this subject well will grow up to be smart, broad-minded, and work successfully in any field." In our country, mathematics has been identified as one of the priority directions of the development of science in 2020, and a number of systematic works aimed at bringing the development of mathematics science and education to a new qualitative level are being carried out. In particular, "The concept of development of the public education system of the Republic of Uzbekistan until 2030", adopted on the basis of the Decree of the President of the Republic of Uzbekistan No. PF5712 of April 29, 2019, On July 9, 2019, "State support for the further development of mathematics education and sciences, also Decision No. PQ-4387 of the Academy of Sciences of the Republic of Uzbekistan on measures to fundamentally improve the activities of the Institute of Mathematics named after V. I. Romanovsky, Resolution No. PQ-4708 of May 7, 2020 "On measures to improve the quality of education in the field of mathematics and develop scientific research", In the Address to the Oliy Majlis dated January 24, 2020, a number of important tasks for the comprehensive improvement and development of mathematics science and education were defined. In particular, the "Mathematics Education Development Concept" from this program was developed in order to ensure the implementation of the tasks set for the comprehensive improvement of the above mathematics education and bringing it to a new level of quality. Mathematics is the basis of knowledge of the universe and the world, and it is of great importance in revealing the specific laws of events and phenomena around us, so that it is impossible to imagine the development of production and science without mathematical knowledge. That is why mathematical culture is a component of universal human culture. The modern goals and objectives of teaching mathematics are as follows:

- formation and development of the system of mathematical knowledge and skills necessary for students to apply in daily activities, study subjects and continue their education;
- formation of a person who can successfully operate in a rapidly developing society, who can think clearly and clearly, critically and logically;
- appreciation of the national, spiritual and cultural heritage, rational use and preservation of natural and material resources, education of mathematical culture as a component of universal culture.

The integration of our country into the world community, the development of science, technology and technology, the competitiveness of the young generation in the changing world requires perfect mastery of the sciences, which means the introduction of international experience and models into the education system, including the teaching of mathematics provided through. This is evidenced by the researches of a number of international organizations on education. Here, the Organization for Economic Co-operation and Development (OECD) aimed to assess the literacy level of 15-year-old students in their mother tongue, mathematics and natural sciences. The results of PISA - the international program for the assessment of student achievement are noteworthy. In addition, it is possible to cite the TIMSS - international monitoring program of the quality of education in mathematics and natural sciences, organized by the International Association for the Evaluation of Educational Achievements (IEA). This study helps to compare the level and quality of students' knowledge of mathematics and natural sciences in different countries and to identify differences in national education systems. Based on the results of the research, it would be appropriate to introduce the content, evaluation criteria and mechanisms of the international evaluation programs to the teaching of mathematics based on the local conditions. STEAM (S - sciences, T - technology, E - engineering, A - art, M - mathematics) educational technology is the knowledge acquired by students in the concrete sciences block module, It is aimed at developing their interest in creating new things by conducting educational researches, carrying out experiments, designing and developing their creativity in order to demonstrate the relevance of their knowledge and skills to everyday life. In the implementation of this technology, students

perform tasks such as creating projects for making various technical devices, creating a model of the device based on the project and using it in practice, finding its shortcomings and eliminating it. Competency approach to mathematical education implies acquisition by students of various types of skills that allow them to act effectively in situations encountered in professional, personal and everyday life in society 16. Thus, in the competency-based approach, the foundation of mathematical education is focused on strengthening the practical, applied directions. In order to strengthen students' interest in learning general education subjects through the formation of basic competencies and the completion of small educational research, practical exercises and implementation and project work were included in science curricula. This situation not only improves the quality of mastering of a specific academic subject, but also opens opportunities for inter-discipline and connection between science and everyday life and increases the effectiveness of education. In the organization of mathematics lessons, it is necessary to pay more attention to practice than to theory and to some extent abandon the approach based on providing students with ready-made educational materials. It is recommended to use more interactive methods such as cases, research, projects, small learning discoveries in mathematics lessons. It is necessary to use scientific research methods such as observation, experiment, measurements, analysis and synthesis, induction and deduction, comparison and analogy in the formation of minor research skills in students. It is important not only to form knowledge and skills in students, but also to acquire competencies to apply them in life situations. Here, the role of project work is noteworthy. Students are recommended to do only one project work in the subject or field of study they are interested in per academic year. Project work topics are selected by teachers as a problem situation or case within one or more academic subjects. Students can work individually or in groups of 3-4 people depending on their interests. Project work ends with a defense held at the end of the academic year. The defense can be held in the form of a conference within the framework of one or several academic subjects. Individual or group work of students on the topic of project work may include the following educational activities: planning their own research activities, dividing tasks among themselves, setting educational goals for them, gathering the necessary information to find, search for solutions to a problem situation related to the topic, choose the most appropriate one from them and justify it, conduct surveys or experiments if necessary, prepare a report on the results of the project work, analyze and evaluate one's own activities, prepare a presentation for the defense of the project work and protect it. Students usually conduct research on the problem of project work in independent activities outside the classroom.

Mathematics is the science of knowledge based on clear logical observations. Since its original object was counting, it was often considered the "science of calculation" (in today's mathematics, calculations, even operations on formulas, occupy a very small place). Mathematics is one of the most ancient sciences, which has gone through a long history of development, and if we look at the history of a very wide range of studies, even our great people who are advanced in all sciences did not fail to make their contribution to mathematics. Therefore, it is clear that every person with knowledge of mathematics has the ability and talent in any field. As proof of this, we can use the example of the great person Abu Ali ibn Sina. Despite being a scientist, the Great Physician is recognized as a great scientist who made a great contribution to the science of mathematics, that is, introduced the concept of number theory, and there are many such scientists. We can say that there are many opportunities for people who have mastered the field of mathematics or who are interested in it. According to the statistics of scientists, 90 percent of all things that satisfy the needs of all mankind and lighten the burden of the modern technology are created on the basis of mathematical knowledge. By developing mathematical skills in our students from a young age, you can open the door to great achievements in the future [1].

Ability is the individual potential and capabilities of a person. Ability is sharply different from knowledge, knowledge is the result of reading, Ability is a characteristic of the psychological and

physiological structure of a person. Ability is different from skill. Ability is seen as a gift given to a person. In most scientific sources, ability is equated with skill. Ability improves in the process of acquisition of skills and competencies by a person. Any type of ability consists of a complex psychological concept of a person, which includes a system of characteristics proportional to the requirements of the activity. Therefore, ability should be understood not as a single feature, but as a synthesis of features that can meet the requirements of a person's activity and provide an opportunity to achieve high performance in this activity. The basic feature for all abilities is observation, that is, the ability to understand a person, to be able to see one or another sign from an object, to distinguish. One of the leading features of the ability is to creatively imagine the essence of things and events. It is a result of the formation and development of a person, but also has a natural source. This natural resource is often referred to as the mind. The mind is manifested in excessive interest, inclination, and desire for a specific activity or many things. Mental targets should be understood as the natural basis of the internal capabilities of abilities. It is the product of enthusiasm, inclination, hard work, hard work, demandingness. Ability is divided into general and special categories. General ability means high mental capacity and development. Ability can be formed naturally and developed based on a specific plan. There are ways to develop the ability through inclination or aspiration to a certain activity, identifying natural mental targets, engaging in continuous activity under the guidance of a specialist, using special means of improving the ability, maximally developing the symptoms of a person's activity, carrying out a special approach to the human personality in harmony with general requirements, and other ways. A high level of ability shows talent and genius. Abilities are, in fact, innate. Although the ability is innate, its development also depends on the social environment [2].

In the course of activity, a person's ability is not only manifested, but at the same time his inclinations are formed. That's why it is necessary to consciously engage in various types of work without waiting for them to come across by chance. Only active activities in different directions will allow you to learn and test your inclinations.

Mathematical ability is the ability to acquire mathematical methods of thinking, interest in mathematics, logical thinking, ability to analyze and generalize, successful acquisition of mathematical knowledge, etc.

On mathematical abilities V.A. Krutetsky worked. Mathematical skills include mathematical memory, the ability to think logically in the field of quantitative and spatial relations, generalization of mathematical material with a quick expansion, easy and free transition from one operation to another, striving for accuracy, simplicity, economy and efficiency of reasoning and solutions.

The core of mathematical abilities was developed by V.A. Krutetsky believes that the mathematical direction of thinking. As auxiliary properties, the individual-psychological characteristics in the sensory and mental areas show a clear reserve of certain knowledge, skills and abilities in the appropriate field that meet the requirements of mathematical activity.

According to V. A. Krutetsky, a psychologist who studied mathematical ability, which is considered one of the special abilities, any type of activity requires a combination of certain qualities of a person. V. A. Krutetsky talks about mathematical skills that are the characteristics of mental activity, and first of all he touches on a somewhat common misconception among teachers. First, the ability to calculate quickly and accurately at the beginning of mathematical abilities does not always correlate with the development of true mathematical abilities. Second, students who are gifted in mathematics are thought to have excellent memories for remembering formulas, numbers, and numbers. However, the large number of numbers, facts, figures, and formulas in mathematics are much less based on the ability to remember quickly and firmly. V. A. Krutetskyi says that the abilities to mathematics affect the nature of perception of mathematical problems. Competent students, while perceiving the problem, can immediately distinguish the indicators that

are important for a specific type of the problem and the quantities that are not important for a specific type and are important for a specific option. Thinking of gifted students (in the process of mathematical activity):

a) with quick and broad generalization;

b) with a tendency to make complete conclusions;

c) mobility of thought processes, variety of viewpoints in solving problems, with easy and free transition from one mental activity to another;

g) is characterized by striving for accuracy, simplicity, and rationality in solving the problem.

The memory of students with mathematical abilities is manifested differently in relation to different elements of mathematical systems. Their memory is generalized. Types of problems and methods of solving them, schemes of ideas, arguments and proofs are quickly remembered and firmly stored in memory. When it comes to remembering concrete data, numbers, numbers, it should be said that it is neutral in relation to mathematical abilities. Such students differ in their well-developed spatial imagination. However, they may not rely on visual images when solving some problems. For them, logic in some sense takes the place of "figurativeness", they have no difficulty when dealing with abstract schemes [3].

Therefore, in the process of education, the development of students' mathematical abilities means that learners constantly acquire new knowledge in mathematics and develop their interest in learning, and form their basic and subject-related competencies; to ensure the continuity and consistency of education, the integral connection of mathematics curricula in general education institutions with the curricula of professional educational institutions; on the basis of harmonizing national and universal values in students, education of real human qualities, formation of loyal, perfect mature personality; to increase the quality of education through the widespread introduction of modern and innovative pedagogical methods of teaching and information and communication technologies into the process of teaching mathematics; to identify, support and develop students' individual, mathematical abilities, create conditions for their high-level education, formation and development of their creative potential; It consists in improving students' mathematical knowledge and forming independent creative thinking skills, directing them to the profession, consciously choosing professional education institutions, and assisting in mastering professional education programs.

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