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GROWING LOGICAL THINKING IN STUDENTS AND DEVELOPING INTEREST IN SCIENCE THROUGH SCIENTIFIC AND PEDAGOGICAL METHODS

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Abstract: This article describes the importance of learning mathematics and ways to make it easier to learn, the views of scholars on the subject, and ways to get children interested in mathematics.

Keywords: math, knowledge, skill, patience, student, essence, thinking, observation, reflection.

Nature speaks in mathematical language: the letters of this language are circles, triangles and other geometric shapes. As each school-age child steps on the threshold of school, he or she will have a unique excitement and anxiety, such as a high level of student learning, discipline and order, and a culture of conversation and communication based on established criteria. perform responsibilities and duties.

The positive formation of students' perceptions of the school and the educational process in it, the development of a harmoniously developed generation depends, first of all, on the skills, knowledge, experience and skills of teachers, self-study and advanced pedagogical technologies of today. Depending on use.

Each block of science taught in the elementary grades is important depending on the task at hand. Mathematics, in particular, is the exact science that can prove exact calculations, dimensions, quantities, values, hypotheses and observations, and the solution of problems. This begs the question, why is math a difficult science (the opinion of most students and some teachers)? Observations show that most students in the classroom, even their parents, see math as a difficult subject to master. However, it is educators who do not have the above pedagogical competencies and parents who do not pay attention to the education of their children that complicate the subject.

Properly covered, it will withstand a great deal of adverse conditions. Let's look at an example: In the subject of equations, if the equations are applied in their place according to a predetermined law, the value of the unknown number is determined, the lengths of the surfaces and sides of the shapes, for any shapes, quickly using the formula and easy to find. For example, we can find the sum of the lengths of the sides of any rectangle: $P = 2 \cdot (a + b)$. From the above formula it can be found that the perimeter of any triangle: $P = a + b + c$ is equal to the sum of the lengths of the sides. For example, if the sides of a given triangle are a = 6 cm, b = 8 cm, c = 9 cm, then P = 6cm + 8cm + 9cm P = 23 cm. Or, it is enough to know the sequence of actions in finding the solution of the expressions. Elementary math basically consists of 4 operations: addition (+), subtraction (-), multiplication (·), and division (:). After all, as Galileo Galilei said, mathematics is our daily life, our way of life, the creatures that surround us, or rather, we see with our eyes and think with our minds, and the result is cash. a science in which observation is clear and fluent, probabilities and assumptions are correct, social and economic issues are solved with this science, and cognitive skills are developed on the basis of logical coherence.

The main goal is to explain the topics identified in the curriculum to students by creating a lesson plan for each subject and its content, using advanced pedagogical practices, innovative methods, skillful use of pedagogical technologies in the classroom. For example, it is necessary to apply different didactic methods to the teaching process in order for the student to master the subjects of mother tongue, mathematics, reading, science, education, etc.

In fact, why do we use didactics? What is didactics? Didactics is derived from the Greek word "didacticos", which means teaching, learning, and is important in the teaching process and its meaningful organization. Didactics, in turn, is a branch of pedagogy that develops the theory of teaching and learning. It is understood that the set of methods and techniques found in the lessons to ensure that the topics are clear and easy to master is didactics and is the art of teaching skillfully. The great scholars of the Near and Middle East who founded scientific didactics; Great thinkers such as Khorezmi, Kindi, Farabi, Abu Rayhan Beruni, Abu Ali ibn Sino, Umar Khayyam, Ali Kushchi, Tusi, encyclopedic scholars, "Renaissance" laid the foundation for the flourishing of the Eastern Renaissance, the great Czech child Jan Amos Comenius, the selfless Swedish man Johann Heinrich Pestalozzi, and the German pedagogue A. Disterveglar made invaluable contributions to the development of didactic education and science in Europe. The founder of the science of algebra, our great ancestor Khorezmi, did important work on the development of the theory that a person needs continuous education and upbringing, and therefore develops through constant work, study, research, observation, inductive and deductive thinking. defined the principle of unity of individuality and commonality. While Khorezmian science taught the perfection of repetition and study, the teacher Abu Nasr al-Farabi developed a classification of teaching methods, dividing teaching into practical and theoretical methods, and practical teaching in this theoretical teaching. put forward the idea that the knowledge gained is related to the activity of applying it in practical life.

Our ancestor Abu Rayhan Beruni, who found that there is a wonderful continent like America on the other side of the globe, said that teaching should be consistent and instructive, in accordance with a clear purpose, and developed and taught according to a certain systematic order. mentioned in his works. Abu Ali ibn Sina, a scholar of medical sciences, said that knowledge is the basis of all results, and that the knowledge of the universe and man can be understood through knowledge plays an important role in the theory of teaching. Jan Amos Kamensky, on the other hand, compares human life to the life of a tree and interprets the process of educating the pupil in four stages: the sprouting-primary school, the flourishing-high school period. , the ripening of the fruit, its ripening, the transformation of the azm tree into the stages of human maturity. These great scholars have developed and enriched in their practical practice the importance of conveying and knowing science to the student, as well as convenient and consistent methods of teaching and learning science. They emphasized that didactics as an art of teaching and that each student develops unique practical skills in the subject. No matter how important it is to build knowledge and skills, modern didactics cannot be limited to this area. There is a need to develop the scientific and pedagogical basis of the teaching and learning process, which will give optimal results in the education and development of today's students with advanced science and technology, advanced human society, developed intellectual potential. We know that didactic principles aimed at the acquisition of knowledge and skills in terms of the development of students directly in the educational process have yielded certain results. However, the main goal should not be to achieve any results, but to ensure that the highest efficiency of teaching is to ensure that students develop into well-rounded, potentially, spiritually mature, well-rounded individuals. . To do this, it is necessary to develop a new national education system - the educational process, reflecting the harmony of a new, national mentality and rich historical heritage, with the effective use of modern educational practices. While the main goal in didactics is to form the pupil's worldview, the educational process analyzes the tasks of developing students' ability to express themselves independently, initiative, initiative, and some other qualities that are unique to the individual. To date, more than ten thousand didactic methods of advanced teaching methods have been developed, the main goal of which is to bring up a harmoniously developed generation. It is obvious that the creation of the necessary scientific and pedagogical basis for the implementation of these

tasks, of course, depends more on the theory of education than didactics. Based on this, we need to be able to answer questions such as, "How can we make math easier to deliver and deliver to the reader?" We would like to share the following recommendations that I have used in my practical experience and that have yielded positive results. For example, to start and strengthen a new topic: "Who is faster", "Smart match", "Who will score the first goal?", "Who will go to the first finish?", "Skillful player". "Creator of Nature", "Flower", "Quickly calculate", "Honor to the top", "Ring of intelligence", "Do not go astray", "Do it right", "Who will solve many examples?" "Think, seek, find", "We think", "Don't sit idle", "Quickly equalize the equation", "Are your equations correct?", "To 100" ldir ",“ We make 1000 ",“ Whose sun is shining ",“ Cheerful Mathematics ",“ Wheel ",“ Cheerful relay ",“ Knowledge contest ",“ Test your knowledge ",“ Who will go to the destination first? " (house, sun, rocket, mountain, peak, school), etc. a teacher's professional skill — personal experience — depends entirely on himself or herself. For example, let's look at the didactic method of "Who counts faster" to strengthen multi-digit numbers.

756+844=	932+898=	976+354=
784+966=	485+695=	342+878=
657+773=	348+452=	560+490=
229+611=	779+881=	990+660=
593+867=	448+992=	883+117=
229+771=	338+552=	450+150=
999+111=	888+222=	777+333=
698+752=	743+857=	398+762=

Students work in groups of three. Upon completion of the task, the teacher examines the work of each group and evaluates it objectively, encouraging children to develop healthy competition, quick thinking, accurate calculations and interest in science. In addition, another way of interest is to have different examples and questions, the same solution-answer value, which stimulates students' interest in science and strengthens the memory of the student. The result is more effective than expected in explaining every mathematical detail only when it is connected to everyday life. can find.

The Think Didactic month is a case in point.

1235+3765=	2231+2769=
3456+1544=	1899+3101=
8256 – 3256 =	9874-4874=
9146 – 4146 =	9189-4189=
7865-2865 =	8732-3732=

The solutions of the examples given in the table above have the same value of 5000, which results in an increase in the astonishment and interest of the students. It would be especially helpful if students were given the task of finding such examples. Because at the same time as the task is completed, the child thinks and searches, and even his parents and siblings do not even realize that they have entered a mysterious world like mathematics by helping their child to complete the task. While the goal of teaching is to shape students' interest in science, in order to achieve this, we need to be able to bring the student and his or her family into the mysterious world of science, and remember that this is an important condition of teaching. will be required. In mother tongue science, we can increase children's interest in science by giving them paronyms and giving them tasks to form a new word with one letter. For example, "Who finds the most words?" Let's look at the didactic method.

Ko'p	Ko'l	Ko'z	Ko'ch	Ko'r
son	soy	Sol	sot	sop
kech	kel	Ket	kez	kes
tol	tosh	Top	toq	tor

This type of didactic task increases the richness of the student's vocabulary and qualitatively improves the vocabulary, while we determine the number of sounds in all words that are directly related to the task of mathematics (three sounds in each word. letter participation), to find their numerical equality, it is more effective to achieve our goals by a practical, demonstrative explanation of the formation of a completely new meaningful word with the exchange of sounds at the end of a single word . The change of a letter can lead to the formation of a completely new word that will amaze the learner and increase his interest in science and enthusiasm for learning.

In conclusion, any method can be used to convey it to the student, taking into account the scope of knowledge, age, physiological characteristics, environment of the learner, in accordance with ethical norms, without bothering the learner, but in them practical skills, It would be easier to achieve the desired results only if the skills are organized, the visual aids are used effectively and appropriately, and the work is organized on the basis of a clear and well-planned plan. Good goals can be achieved with confidence, clear and well-thought-out plans, perseverance and patience, and, of course, clear goals.

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