



## TEACHING MATHEMATICS - A CONTRIBUTING FACTOR TO THE DEVELOPMENT OF THINKING SKILLS

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Article history:		Abstract:
<b>Received:</b>	1 <sup>st</sup> May 2021	Teaching tasks are not limited to imparting knowledge to students. In the process of teaching it is necessary to take care of the development of students' thinking. It is very important to develop mathematical thinking in students. Mathematical thinking is thinking as a process that characterizes a person's activity and self-development, and self-development takes place in action-action. Mathematical thinking is perfect when it has critical and creative thinking. The development of critical and creative thinking in students helps to independently explore the real way of life, to become a full member of society, because both critical and creative thinking is important for solving problematic situations.
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Teaching tasks are not limited to imparting knowledge to students. The teaching process requires care to develop students' thinking. According to the national curriculum, one of the main goals of teaching mathematics in a secondary school is, among other things, to "develop thinking skills for students and to impart to students the knowledge needed to solve life tasks and to develop the ability to use this knowledge."

To live in these difficult conditions, you need to think. Teaching thinking is a pretty old idea. Back in ancient Greece, young greeks studied mathematics to practice thinking. Recall the words of the great french philosopher and mathematician René Decartes: "I think, therefore I exist."

Learning something is the result of thinking correctly. When thinking is activated, a person learns thoughtfully and becomes more intelligent. In other cases, the student is passive and therefore has difficulty learning anything. Therefore, it is very important to develop mathematical thinking in students. Mathematical thinking is thinking as a process that characterizes a person's activity and self-development, and self-development takes place in activity-action. When the teacher activates the student's mathematical thinking, the student does not memorize the learned material, but comprehends it. Thoughtful learning allows the student to increase his / her activity in the learning process. The student becomes interactive. Mathematical thinking is an integral part of thinking in general. Mathematical thinking is perfect when it involves critical and creative thinking.

One of the goals of education, no matter what the level of education, is to promote the development of general thinking skills, especially critical and creative thinking skills. Because, "critical and creative thinking is a combination of knowledge, skills and attitudes that allow a person to see the subject, the event from a new angle, not limited to the statement of facts, look for the causes of the event and determine possible answers. A person with this kind of thinking can orient himself in the flow of new information; distinguish the essential, the interesting, the original, search for and create something new. Has a developed imagination and the ability to interpret a variety of different things. (national curriculum).

What is critical thinking? One definition of critical thinking is "critical thinking is the reasoning of one's own and others' opinions." Often, critical thinking is mistaken for criticism. Critical thinking, however, does not mean being bad, cynical, purposefully seeking only the negative. Critical thinking is not unreasonable praise and criticism, it is a well-reasoned evaluation of opinions or evidence, „argumentation is crucial for critical reasoning, which does not characterize all types of thinking in general. Critical thinking is "reasoned" reasoning. To develop critical thinking, we need to teach students what argument is and what argumentative reasoning means. The student should go beyond just memorizing the material. In particular, he must be able to understand, use, analyze, synthesize and, finally, evaluate this knowledge together with the accumulation of knowledge (retention of information). Learning something is the result of thinking correctly.

The question is: What contributes most to the development of critical thinking skills? What to do? Obviously we need to improve teaching. But in what way? Critical thinking is not a simple process and most people do not master it perfectly. Studies have shown that the majority of students fail to properly demonstrate general reasoning and reasoning skills. They find it difficult to clearly substantiate their own opinion. Critical thinking is not a natural

human characteristic. Even if people have a natural tendency to think critically, it would still be difficult to master it properly, because it is a "high-level thinking skill."

Critical thinking consists of other easily and easily mastered skills. For example, in order to solve a math problem, we need skills that will help us understand the text of the task. Such is the ability to understand words. If this low-level skill the student does not have thoroughly developed, critical thinking cannot be composed. The ability to use arguments is important for critical thinking. Arguments are a collection of evidence about different ideas. Therefore, in order to develop critical thinking skills in students in the lesson, we must ask them to present evidence. The following questions will help us: How do we know? Can you explain why you did this first (eg when solving an example). Questions like these require the student to substantiate his or her point of view. This is the basis of critical thinking. Frequent use of such questions will help critical thinking become part of the teaching.

If we, the teachers, want to build the learning process on the development of critical thinking in students, then we must use activities that help each student formulate their own ideas, views and assessments independently of others. Critical thinking begins with posing a problem and realizing it. John Dewey noted that a child begins to think only if we allow him to deal with specific problems and he has to find a way out of a difficult situation. Critical thinking is difficult, but not impossible. Some people master it quite well. What is needed for this? It is known that you can not get better without practice. This is directly related to the teaching of critical thinking. Critical thinking is not taught by imitation alone. Part of the teachers often make a mistake when they think that mastering critical thinking skills is possible by studying theory. Students will never acquire critical thinking skills unless they begin to think for themselves. Practice is most important, however, it is then more effective if it is filled with theory.

What is creative thinking? What is meant by the concept of creativity, what does it mean for a person? There is no uniform definition of the term creativity among psychologists. The statement about creativity that all of them share is as follows: creativity is considered to be the opposite of stereotyped thinking. Creative thinking is the ability to see things in a new way and to solve problems in an original way. Creative thinking is a complex thinking skill that allows you to find non-standard answers when solving a problem. Creative thinking is about doing or seeing something new. It is a thinking through which a person can see something unusual in the events of a seemingly ordinary and understandable world.

How can we encourage students to develop creative skills while teaching mathematics? What should we do about it? When teaching, it is important to find a component that evokes emotional participation in the subject matter. We need to find a "hook" on which to "interest" the student, which will help us to activate the student's imagination. That is, we must first determine what is important for the students? What causes emotional involvement in it ?. If we do not find anything that will lead to our own emotional involvement in teaching the subject, we will not be able to ensure the emotional involvement of the students. Activate engagement. This will lead to the activation of students' imaginative skills.

"Activating the imagination is not a nicely packaged learning process. It is the essence of teaching. It is he who gives the meaning to the content we want to convey. (Kieran Egan) (Critical and creative education, Imaginary Education, Kieran Egan, p. 236)

XXI - st century people need to be critical and creative, among other things. These skills develop over time. The national curriculum, among other requirements, requires the teacher to raise critical-minded and creative students. When teaching critical and creative thinking to a student, we must use active teaching methods. Active learning differs from traditional teaching in that it involves maximum involvement of students in the learning process and their activity. The teacher is a facilitator during active teaching. It gives students the material they need to think about. Teacher involvement is minimal but well-planned to properly guide student activities. Specific strategies for active learning include: problem-based learning, project, Socratic teaching, group work, collaborative learning, and so on.

Ability to think critically and creatively, this is a purposeful move to discover new things and an in-depth understanding of one's own experiences. Therefore, the development of this skill is of great importance in students.

Finally, why is it necessary to develop critical and creative skills in students? The answer is clear, without these skills our student will be unprepared for life. The development of critical and creative thinking in students helps to independently explore the real way of life, to become a full member of society.

### USED LITERATURE:

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