TEACHING TECHNIQUES AND METHODS TO DEVELOP CRITICAL THINKING IN ELEMENTARY SCHOOL

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Abstract: *The term "critical thinking" is often used to describe skills compatible with teaching-learning, but also applicable at work, in the family, and the circle of friends. Both attitudes and capacities are needed to carry out the critical thinking training process. Skills are those required in interacting with people and processing information correctly to achieve credibility of data and maintain clarity in communication. Critical thinking takes place in the context of solving problems and interacting with the people around them, so critical thinkers must adapt to both contexts. This type of thinking must be formed and developed from childhood. For this purpose, the teaching staff plays an important role, because it directs the development of students' thinking. Through the instructional-educational process, the teaching staff offers students the chance to develop this thinking. The learning methods and techniques applied by the teacher will direct the development process. We analyzed different methods and techniques through which critical thinking is developed, we described how to integrate and deploy them in the educational process.*

Keywords: *critical thinking; teaching; interactive methods; abilities; problem-solving.*

Introduction

The process of critical thinking is based on the establishment of opinions and actions. The formation of opinions is based on information received, analyzed based on previously accumulated knowledge, and the acceptance of a conclusion, which forms the basis of the decision. Critical thinking advances in several directions, but R. Ennis presents a general structure of the critical thinking process (Ennis, R., 1993).

Richard Paul believes that critical thinking involves the use of basic intellectual skills that can be used to achieve self-centered or fairness-

centered results. As basic intellectual skills develop, the individual may learn to spot the mistakes of one's thinking or may gain experience in making the opponent's thinking be seen from a negative posture (Elder, L., & Paul, R. 2005). Critical thinkers with "strong sense" tend to be correct. They use thinking responsibly and ethically, strive to understand and appreciate the point of view of others, are willing to listen to discussions with which they do not necessarily agree, and when faced with a superior argument change their perspective. (Paul, R. W., 1992) Critical thinkers strive to develop essential characteristics of the mind. These are interconnected intellectual habits that lead to self-discipline: intellectual integrity, intellectual autonomy, intellectual empathy, intellectual courage, fairness, perseverance, and intellectual modesty.

Characteristics of critical thinkers
Critical thinkers evaluate information according to certain criteria and use a logical procedure. Finally, he will develop a supporting point, using his knowledge of supporting his opinion in a discussion. Uses appropriate manner and rhetorical strategies.

The school is the institution that provides formal education and that considers not only the accumulation of some competencies but also their quality, focusing on the quality of thinking. Thus, to progress in the level of thinking, students must encounter increasingly complex (age-specific) problems that require flexibility, perseverance, and communication with others. It is critical thinking that helps this progress (Roman, A. F., 2019).

Sandra Love and Rebecca Stobaugh present some qualities and characteristics of critical thinkers (Love, S., Stobaugh, R., 2018):

- Shows an open mind to new ideas.

- Get involved in deciphering and solving problems.

- Analyzes, rationalizes, and evaluates information.

- Collaborates with the people around him, and works well in a team.

- Reflect on the information received.

- Apply the acquired knowledge in everyday life.

- Thinks critically and creatively.
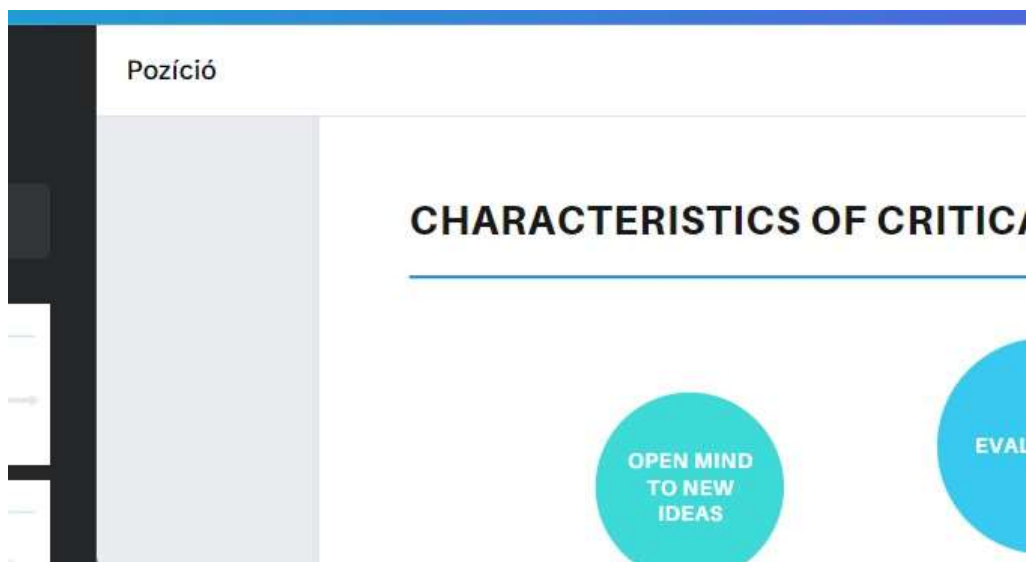
- Communication is clear and concrete.

Fig. Nb. 1. Characteristics of critical thinkers

Critical thinking also consists of interacting with other people, which is done within the framework of solving a problem. The skills of critical thinkers are characterized by a set of strategies and techniques that form order in the process of critical thinking. The order is not rigid or sequential, because critical thinking is not characterized as such, it is inert in the use of strategies and techniques, thus they may be used in different sequences, ending with the same result (Torkos, H., Roman, A.F., 2019).

Critical thinkers try to better understand what others are saying. I acquire different skills, for example: identifying conclusions, assumptions, premises, and logically structuring information to reach a conclusion (Cottrell, S., 2005). In inference-based activity, critical thinkers actively induce claims and arguments through questions such as: Why? What do you want to say? Can you give me an example? What does this entail? And so on At this stage, the thoughtful critic analyzes the credibility of the source the speaker used. It will pay attention to the objectivity of the quality of the source and the information.

Methods and Techniques that develop critical thinking in School
Analyzing the concept of critical thinking, the following basic components are highlighted: the cognitive process, the ability to

support one's opinion through arguments, deepening and reflecting on information, evaluating information, and solving problem situations.

Each individual acquires at birth a set of skills that will be developed over the course of life, through education. The child learns to express what he feels and believes, and along the way of education, he must be guided to develop his skills and way of thinking. Critical thinking is a finality of thinking as a natural way of interacting with ideas and information. Cognitive development and learning interact through the practical assimilation of information (Cucoș, C., 2014).

Children, through thinking, build mental structures generated by correlating actions with accumulated knowledge. They look for the meaning of every event that happens in the world around them. The teaching staff has the role of creating educational events that the student will analyze and explore (Roman, A. F., 2020). We will present some techniques by which critical thinking can be developed.
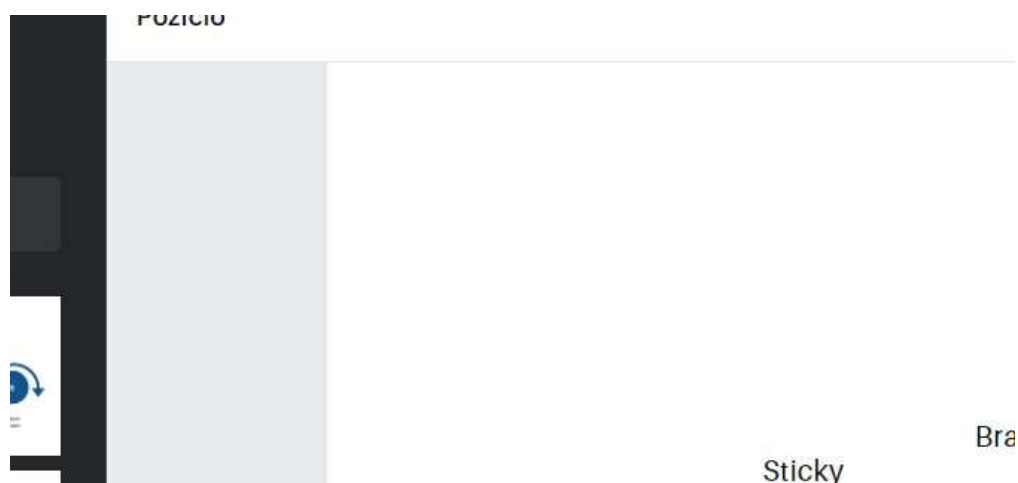
Fig. Nb. 2. Critical thinking development techniques

Throw a question is an interactive evaluation/self-evaluation method by which students are determined to communicate what they have learned, through a game of throwing a ball from one child to another. The method can be used in assessment lessons, in the stages of updating knowledge, or in providing feedback.

Sticky notes. By expressing the knowledge on the notes, it is possible to observe how the students interpret and think about the received information. The teacher expresses a mathematical exercise and the students have to solve the exercise on a sticky note, using only words and pictures. Notes are posted on the board and everyone's different

way of thinking is observed. This method is very similar to brainstorming, which is another method suitable for developing critical thinking (Love, S., Stobaugh, R., 2018).

Brainstorming recognized as the "storm of ideas", or "storm in the brain", motivates the critical spirit by highlighting one's ideas regarding a theme proposed for development. Within the method, the student has the opportunity to freely express ideas, solutions, and opinions, suppressing students' inhibition and increasing the free assault of ideas. This interactive method stimulates self-evaluation by allowing each student to express his opinion in the way he considers it correct, ideas that will then be processed and used to solve the proposed problem (Bocos, M., 2013).

Debate. Philosopher Karl Popper, who specializes in the formation and development of critical thinking, promoted the idea of debates. This program proposed by Popper, is carried out in different countries of the world and is carried out by the International Association of Education through Debate, which is a real success for students interested in debates (Salăvăstru, D., 2009).

The debate is based on the competition between two teams, with a confrontation on a chosen and studied topic. The topic will be chosen so that the topic can be supported with both pro and con arguments. The two teams will be called affirmers and deniers. The number of students in a team is determined, and each team will have the same amount of time to present their arguments. The debate will be judged, and at the end, the winning team is designated.

Methods and instruments used in research
The main method used in the research was observation, and the instrument was the observation sheet. Each instrument, has at least 5 items observed:

- Problem-solving skills, more specifically how students' approach and solve problems independently, also, looking for evidence of critical thinking skills such as analyzing information, making logical connections, and evaluating different solutions.

- Questioning techniques, or the types of questions asked by both the teacher and the students.

- Classroom discussions and interactions, observing if students actively engage in conversations, expressing their thoughts and

opinions, if they are encouraged to question and challenge ideas, because this can indicate the development of critical thinking and self-evaluation skills.

- Reflection activities, where I have observed the opportunities where pupils are given time to reflect on their own learning. This can be through activities like journaling, self-assessments, or reflective prompts. Also, whether students are encouraged to evaluate their own strengths, weaknesses, and progress.

- Decision-making, by observing situations where pupils need to make choices or decisions, if they are encouraged to consider different options, weigh pros and cons, and justify their choices and also observing instances where critical thinking is used to evaluate alternatives and make informed decisions.

Research questions

The present research is based on the following main questions:

- Which are the best methods and techniques to use in primary school in order to develop critical thinking?

- At what extent do these methods and their use impact the development of self-evaluation skills in primary school pupils?

Research findings

The importance of critical thinking in the development of self-evaluation

The involvement of children in the evaluation process, through self-evaluation, is a natural extension of the student-centered approach to learning characteristic of primary education. Reflection and assessment can encourage an understanding of objectives, improve intrinsic and extrinsic motivation, and provide a realistic assessment of learning gaps (Towler, L., Broadfoot, P., 1992). Once started, the process is likely to lead to a positive influence on learning style. teaching and management in creating a more truly democratic partnership between teachers and children. It should lead to improved continuity between stages of education. Self-assessment in learning is one of the main goals in achieving education, especially at early school age when the first skills for independence in learning are formed (Elder, A., 2014).

Meanwhile, critical thinking is a way of approaching and solving problems based on sound, logical, and rational arguments. This requires evaluating the information and choosing the right answer. This thinking is an active, coordinated, and complex process, similar to the skills of writing-reading, and speaking-listening, which requires a process of accumulating information that leads to well-reasoned decisions (Roman et al, 2020). So, critical thinking requires information and the evaluation of the information received, in order to form one's own opinion, in support of an opinion it is necessary to appreciate one's own knowledge and skills, to formulate and explain correctly what you think, and at the same time, to ask the right questions in order to accumulate new information.
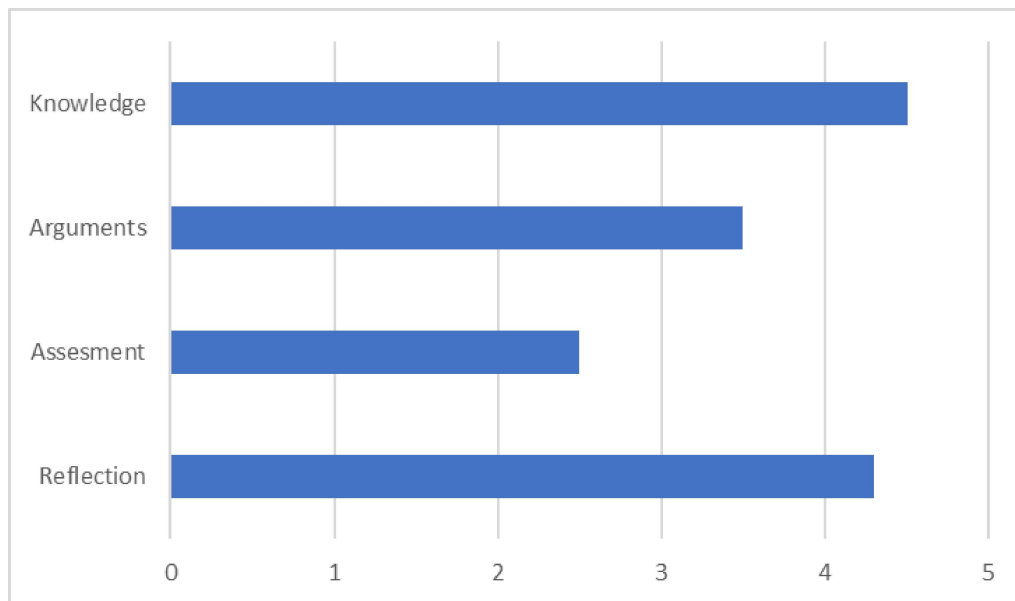

Fig. nb. 3. Criterions needed in critical thinking in order to develop self-assessment skills as observed in the classroom

As showed in the classroom, the best methods used in order to develop critical thinking, are as it follows:
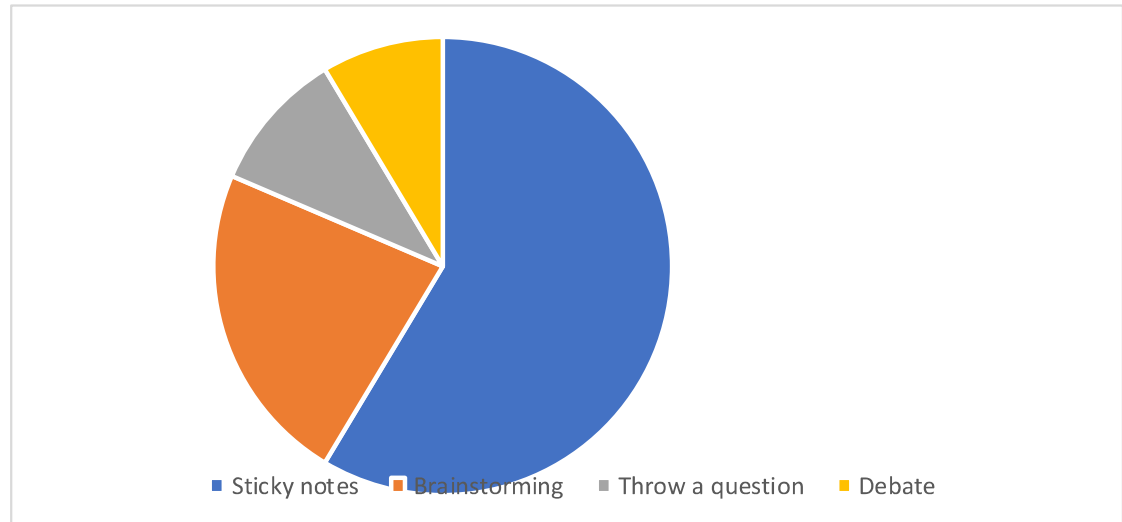
Fig. nb. 4. Critical thinking methods ranked in the classroom

Conclusions

The findings of this research highlight the importance of integrating critical thinking methods into primary school education. By incorporating strategies that promote critical thinking skills, such as problem-solving activities, open-ended questioning, and reflective practices, educators can enhance students' cognitive abilities and foster a lifelong love for learning. The research demonstrates that critical thinking methods play a vital role in the development of self-evaluation skills among primary school students. Through engaging in critical thinking processes, students become more self-aware, reflective, and capable of assessing their own work. This promotes personal growth, metacognitive awareness, and the ability to make informed judgments about their own learning progress. By nurturing critical thinking skills, primary schools empower students to take ownership of their learning. Students become active participants, rather than passive recipients, in the educational process. They develop the ability to set goals, monitor their progress, and make informed decisions, fostering a sense of agency and self-directed learning. The research indicates that critical thinking methods in primary schools have a positive impact beyond the classroom. The skills developed through critical thinking, such as problem-solving, decision-making, and higher-order thinking, are transferable to real-world situations. Students can apply these skills in various contexts, enabling them to become adaptable and successful individuals in the future. While the research demonstrates the positive impact of critical thinking methods

in primary schools, there is a need for further exploration and refinement of instructional practices. Future research could focus on evaluating the long-term effects of these methods on students' academic achievement, problem-solving abilities, and overall cognitive development. Additionally, the effectiveness of specific instructional approaches and the integration of technology in promoting critical thinking could be investigated. (Paul & Nosich, 2020)

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