Using the Critical Thinking Methods for Developing Self- Assessment in Elementary School

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Abstract

Keywords:
self-assessment; critical thinking; focus group; teaching, capacity.

The purpose of critical thinking is to enable a complex view of the world. Choices are part of the natural course of life. In order to ensure the best choices, it is necessary to procure the best information. The act of thinking is not difficult, people naturally use thinking without having to exert a great amount of effort or engage in deep intellectual work. Ease of thinking can manifest in very young children with little mental skills. The development of critical thinking is achieved through the instructive-educational process. Self-evaluation is an essential ability of the student in the training and development specific to the early school age, being fundamental for effective learning, professional training, and continuous learning from people's lives. Evaluation is an integral part of the educational process, thus forming the essential relationship between teaching-learning-evaluation. The teaching staff can form and develop the student's critical thinking and self-evaluation capacity through the instructive-educational process. Using the right methods and techniques, critical thinking will be developed during the educational process, thus participating in the development of students' self-evaluation. For this purpose, as a research methodology, we conducted a focus group with the teaching staff of the classes involved in the research, totaling four persons. We analyzed the methods and techniques used in the educational activities, their impact on the students' thinking, and how these methods are beneficial in developing critical thinking and self-evaluation.

Zusammenfasung

Schlüsselworte:
Selbsteinschätzung; kritisches Denken; Fokusgruppe; Unterricht; Kapazität.

Der Zweck des kritischen Denkens besteht darin, eine komplexe Sicht auf die Welt zu ermöglichen. Entscheidungen gehören zum natürlichen Verlauf des Lebens. Um die besten Entscheidungen zu gewährleisten, ist es notwendig, die besten Informationen zu beschaffen. Der Akt des Denkens ist nicht schwierig, Menschen nutzen das Denken auf natürliche Weise, ohne große Anstrengungen unternehmen oder sich tief intellektueller Arbeit widmen zu müssen. Leichtes Denken kann sich bei sehr kleinen Kindern mit geringen geistigen Fähigkeiten manifestieren. Die Entwicklung kritischen Denkens wird durch den lehrreich-pädagogischen Prozess erreicht. Die Selbsteinschätzung ist eine wesentliche Fähigkeit des Schülers in der Ausbildung und Entwicklung im frühen Schulalter und von grundlegender Bedeutung für effektives Lernen, berufliche Ausbildung und kontinuierliches Lernen aus dem Leben der Menschen. Evaluation ist integraler Bestandteil des Bildungsprozesses und bildet somit die wesentliche Beziehung zwischen Lehren, Lernen und Evaluation. Das Lehrpersonal kann durch den lehrreich-pädagogischen Prozess das kritische Denken und die Selbstbewertungsfähigkeit des Schülers formen und entwickeln. Mit den richtigen Methoden und Techniken wird während des Bildungsprozesses kritisches Denken entwickelt und so zur Entwicklung der Selbsteinschätzung der Schüler beigetragen. Zu diesem Zweck führten wir als Forschungsmethodik eine Fokusgruppe mit dem Lehrpersonal der an der Forschung beteiligten Klassen, insgesamt vier Personen, durch. Wir analysierten die in den Bildungsaktivitäten verwendeten Methoden und Techniken, ihre Auswirkungen auf das Denken der Schüler und wie diese Methoden bei der Entwicklung von kritischem Denken und Selbsteinschätzung hilfreich sind.

1. Introduction

The term "critical thinking" is used in specific research papers to describe reasonable, reflective thinking that focuses on tasks, relationships with people, and beliefs. Critical thinking is a process used in approaching content, which can represent different life situations: learning activities in school, situations, and problems in everyday life. It is necessary for the teacher to evaluate critical thinking in teaching-learning activities because it is an essential component in this process. At the same time, the involvement of critical thinking in the context of daily activities must also be evaluated, being essential in formulating opinions, judging decisions, and communicating with other people. The involvement of critical thinking in personal life is the essential element for the development of this thinking in school. However, it is

not certified that if critical thinking is invoked in school activities, then this thinking will also be active in daily activities, therefore it is indispensable to develop critical thinking in the context of life outside educational institutions. The desire for active involvement of the student in his own learning process determines the need to integrate effective evaluative practices to motivate the student's interest in his own training. The responsibility for assessment must be shared between teacher and student, giving the student the opportunity to self-observe their own performance (Glava et al, 2023). The relationship between the student and the teaching staff must be mutual, based on trust and development. The relationship requires cooperation in the instructive-educational process, through information on performances.

2. The cognitive development of an elementary school student

At the age of 6-7, the child meets a new stage of life, namely school. Early school age represents the third childhood, where the student will form a role in contemporary society through the contents covered and the knowledge acquired. This special event, entering school, will influence all his activity, both mental and physical. During this school period, the period of the primary cycle, the student will acquire a set of knowledge, skills, and attitudes that are vital for his personal and professional course (Crețu, 2009).

During the early school years, the student goes through different stages, according to age (6-10 years). The changes produced by the start of school will affect the emotional and mental balance of the student, requiring support from the adults present in the child's life. The parent and the teaching staff must ensure the good progress of the young schoolchild by:

▪ Establishing a schedule, so that he benefits from age-appropriate food and rest.
▪ Ensuring affection and emotional support during school activities. The safety felt by the student present at school can lead to a higher level of attention and concentration.
▪ Integrating into the collective and relating to people of the same age. This component must be supported by both the teacher and the parent who guides the child's actions.
▪ Adapting to school activities and responsibilities.

At this stage of childhood, thinking becomes operational. In his studies, J. Piaget expresses the fact that "the period between 7 and 8 years and 11 and 12 years is that of the completion of concrete operations"

(Piaget & Inhelder, 1976, p.81). The child's adaptation to the student posture is determined by these concrete operations conditioned by certain characteristics of thinking. We will present in the following lines some of these characteristics specific to the thinking of young schoolchildren.

Operational thinking determines the overcoming of some limits in thinking by subordinating perception. In contrast to the preschool period, students' communication, involvement, and responses become more coherent, based on accumulated or experienced information. The student faces reality, so he is able to take into account the events that surround him and not just the needs and desires, causing cognitive decentering. Osterrieth indicated that the school pushes the student towards the intelligible and rational, being aware of the phenomena around him, by separating the self (Osterrieth, 1976).

The operations of thought at this age are concrete. Their success depends on concrete and visible data. At the beginning of school, the teaching staff uses different visual supports to ensure the understanding of the content. Thus, the student gets to think about problem situations, even if the objects are not in the visual field. But at this stage abstract situations are difficult to understand (Bocoș et al, 2016). At the age of 7-8, he perceives quantity with the help of specific didactic materials, at 9-10 years, he will come to understand the weight, and the volume of objects in the interval of 11-12 years. At the same time, at this age the student begins to acquire rational thinking, to believe the information, it is not enough to hear it, he needs to perceive the reality himself. During the stage of early schooling, the student travels a way of thinking from empirical notions to scientific notions, being guided by the teaching staff through the educational process (Zlate, 2000).

3. Critical thinker's particularities

Acquiring critical thinking is necessary for various aspects of life: conversations, debates, career choices, personal life choices, maintaining relationships, etc. Critical thinking provides us with correct judgment, facilitates higher-level study, helps in decision-making, and offers the chance for permanent development.
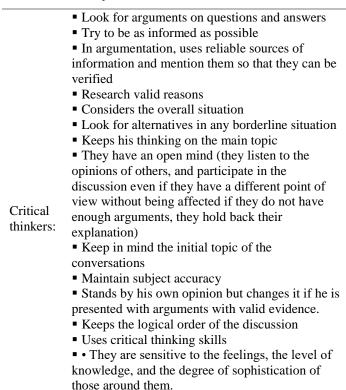
The skills required for sound argumentation are based on accumulated knowledge and the credibility of the source of information (Stan, 2020). Through the information provided, the credibility of the information is also judged, because observations made between people are a source of information. Thus, a

solid foundation includes both prior conclusions and background knowledge.

The skills representative of inference depends on the three times of inference that are presented in the table: deduction, induction, and judgment of values. Skills include both formulating inferences and judging them.

Stephen Norris and Robert Ennis name a series of abilities found in critical thinkers (Norris & Ennis, 1989).

Table 1. Capabilities characteristic of critical thinkers

Critical thinkers:	▪ Look for arguments on questions and answers ▪ Try to be as informed as possible ▪ In argumentation, uses reliable sources of information and mention them so that they can be verified ▪ Research valid reasons ▪ Considers the overall situation ▪ Look for alternatives in any borderline situation ▪ Keeps his thinking on the main topic ▪ They have an open mind (they listen to the opinions of others, and participate in the discussion even if they have a different point of view without being affected if they do not have enough arguments, they hold back their explanation) ▪ Keep in mind the initial topic of the conversations ▪ Maintain subject accuracy ▪ Stands by his own opinion but changes it if he is presented with arguments with valid evidence. ▪ Keeps the logical order of the discussion ▪ Uses critical thinking skills ▪ • They are sensitive to the feelings, the level of knowledge, and the degree of sophistication of those around them.

4. Methods that develop the critical thinking

4.1. Brainstorming

Also referred to as " a storm in the brain", it is an interactive method of developing ideas from group discussions, where each participant comes up with an idea. The result of these discussions results in the choice of the best solution to resolve the debated situation. The way to get these ideas is to stimulate thinking in a non-judgmental atmosphere, with participants freed from any constraints and communicating without fear (Love & Stobaugh, 2018).

4.2. Thinking hats

The method of thinking hats also called the six hats, came to life through the proposal of Edward de Bono. It is aimed at discussion to solve problem situations. This method takes into account: the

awareness of the distinct ways of thinking that exist in different groups of people, the observation of problems from several points of view, and the different ways of approaching and solving problems.

The Thinking Hats method is an interactive one that develops both students' creativity and critical thinking, by the fact that they are placed in the situation of asking questions, formulating a justified answer, and accepting or debating the opinions of the other hats (Bocoș, 2013). The five hats are classified by color each one having a different role.

Table 2. Thinking hats method

Hat's color	The way of thinking	Characteristics of thinking- questions specific to the hat
White	Objective	It is based on information. It presents the situation as it is, really, has no opinion (is neutral), and captures the evidence and concrete facts. Questions asked: What information is available? What is their basis? How can I get more information?
Red	Affective	It focuses on feelings, emotions, and premonitions. She is perceptive, and impulsive, and can react with revolt or anger due to affective states. Questions asked: How did this situation come about? Why are these happening now? What bothers you most about this situation? How do you feel when you get involved in such a subject?
Black	Negative	Seek to highlight mistakes. He is pessimistic, he insists on the weak points, the possibility of errors, and the present risks. Questions: Why risk it? What are the errors shown? Why accept an unsafe idea?
Yellow	Pozitive/ Optimistic	It considers the possibilities of a solution, highlights the advantages and strengths, the opportunities offered, and offers the hope of a solution. Questions: What are the advantages of the presented situation? What is the starting road? What is the most effective solution?
Green	Creative	Look for new, developed, inventive ideas. What needs to be accomplished? What measures should be taken into account? How do we solve this problem? What would be the solutions?
Blue	Thoughts about the thinking	It focuses on the conclusion, on the finality, represents the responsibility, and tries to control the whole debate, for good communication and carrying out the activity. How can we summarize the views presented? What is the chance of success? What are the elements we need to focus on?

4.3. P.M.I. Method

This method complicates the observation of a problem situation from several points of view: points in Plus, points in Minus, and Points of Interest (Love & Stobaugh, 2018).When students are encouraged to notice the strengths, weaknesses, and interesting points of an unforeseen situation, critical thinking is set in motion, providing the opportunity to not look at the situation with disdain before analyzing it.

5. Focus- group

The focus group interview was carried out in the initial stage of the research to establish the real state of classroom use of methods for the development of critical thinking, their effect on student thinking, student involvement in these activities, but also the level of use of techniques of self-evaluation by the teachers involved in the research. The information procured helped to determine the problem. This activity is effective because the group consists of a smaller number of respondents, giving a deeper insight into the topic being discussed.

The focus group interview was conducted together with the four teachers, and coordinators of the four classes involved in the research. These teachers work at the level of the development cycle, from the area of the municipality of Arad. The main purpose of the interview was to identify the level of use of methods and techniques for developing critical thinking. As a result of the data analysis, it was found that these methods are sometimes used in different learning activities.

The first question of the interview was: "What do you consider to be the didactic methods that develop critical thinking?". This question was asked in order to identify which are the predominant methods for developing this type of thinking. The teachers' answers were: brainstorming, the thinking hat method, the clusters, the star method, the coat of arms, the double-entry journal, the RAI method.

The second question was: "How often do you use these methods in the teaching-educational process?". Through this question I wanted to find out how involved these methods are in the students' learning process. Unfortunately, the teachers' answers were that they are used quite rarely and only in some of the subjects provided in the framework plan.

Considering the answers to the second question, I asked the following question: "What is the impediment to the more frequent use of these methods, in all subjects?". The opinion of the respondents was that the school curriculum is very busy, forcing teachers to accelerate the level of teaching by giving up on reinforcement activities. At the same time, these methods require time for organization and deployment, and the teaching time is limited and requires the completion of the compulsory subject.

The next question was: "When using these methods, what is the level of student participation and engagement?". Through this question, we wanted to follow the children's interest in interactive activities, in groups, and their involvement when requested. The respondents stated that the students are very excited about such activities, show interest, are eager to express their opinion, and learn to respect their colleague's opinions. The teaching staff stated that both extroverted and introverted students are in demand. Activities that involve dividing into groups can be demanding for introverted students who need to actively participate for the smooth running of the team activity. By using these methods, students are asked to think, give opinions, but also accept those around them. The respondents' answers made us aware of the importance of involving these methods in the teaching-learning process.

Because the formation and development of critical thinking is based on asking the right questions, the next question was: "What kind of questions do you use to keep students' attention?". Most of the answers stated that most of the time the questions asked are about checking knowledge, comprehension of the text read or the message transmitted, and questions for checking attention. Unfortunately, open questions, questions for expressing opinions, and argumentative ones are not so often used during the instructive-educational process. Asking the right questions is essential to developing critical thinking. Through questions, the student must: be challenged to find the right answer and asked to express opinions about a situation, a character, a behavior, etc.

Another question was: "How do students react when they are in problem situations, both in real life and in situations created for educational purposes?". The main purpose of this question is to determine the level of critical thinking of the students from the perspective of the teaching staff. The respondents stated in the first stage that most problem situations are social ones, more specifically the relationship between students (conflicts during the break, conflicts during playtime), and problem situations created for educational purposes are fewer. Respondents say that, in problem situations, students are usually irritable,

they often resort to inappropriate language and behavior to "solve" the conflict, and they bring the problem to the teaching staff asking for help to solve it. Afterward, we discussed the importance of creating problem statements for educational purposes. The idea of exposing the student to an imaginary problem to be solved will help him approach appropriate thinking and behavior in real-life problem situations.

In conclusion, I asked the following question: "In conclusion, what would be the main ideas that you want to highlight at the end of these activities?". The answers were as follows:

▪ Critical thinking needs to be developed in students

▪ More attention is needed from teachers to develop this type of thinking in students

▪ These methods must be involved more in the instructive-educational process

▪ Students should be guided to express their opinion and solve problem situations through communication

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