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DEVELOPMENT OF DIDACTICS IN CRITICAL THINKING OF TEACHING-LEARNING PROCESSES

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ABSTRACT
The research raises the need to evaluate the level of critical thinking and the use of didactics in the teaching-learning processes with primary school students in an educational institution in Barrancabermeja in Colombia during the year 2020. The study corresponds to the qualitative approach and phenomenological hermeneutic design, which sought to explore, describe and understand the phenomenon based on the experiences of the participants to discover common elements of these experiences. For the development of the research we worked with individuals who agreed to participate in the context of the pandemic and that the researchers had access to, a semi-structured interview and a checklist were used with a sample of 10 students and 3 teachers from the educational institution; the items were directed to the achievement of the domains referred to in the categories investigated. It is concluded that the level of thinking of primary school students is still developing, as it is still difficult for them to clearly argue their ideas from reason; likewise, teachers are aware that they must carry out more in-depth analyses of the texts or content studied, so that students can find hidden or implicit meanings that generate concerns and develop real and contextualized thinking skills.

Keywords: didactics, critical thinking, teaching-learning.

1. INTRODUCTION

Society is constantly changing, that is why education cannot be left behind and must be carrying out the same process in order to ensure that students develop skills to think, discern, argue and act critically in various situations and contexts. The school must have the vision set on the formation of free and responsible citizens who with their critical thinking avoid any mechanism of manipulation and deception (Ennis, 2011 & Vargas, 2013) [1]. Studies on how critical thinking skills can be generated from didactics are growing every day. In this order of ideas, the works of [2], [3], [4], [5], [6], [7], [8], [9] among others no less important are significant and valuable.

very young age they In the formation of human beings, it is essential that the development of critical thinking skills is promoted from a very young age; Therefore, it is appropriate to start this process in elementary school, so that students can face the difficult contexts in which they live with arguments; in order to learn to analyze, understand, argue and propose alternative solutions or make decisions from reason to help them get ahead; this, without letting others take advantage of the situation, lie to them, make decisions for them or, failing that, manipulate them. In the same way, the development of critical thinking skills charges the human being with personal but reasonable judgments, which help them to improve their present and future, as active members that contribute to the transformation of society. Children think inductively and deductively long before they start their language; from a are interested in knowing the why of things, which is why they are considered to be natural

philosophers. This desire to question themselves diminishes when they grow up; however, curiosity remains [10].

In this way, this study aimed to evaluate the level of critical thinking and the use of didactics in the teaching-learning processes with elementary school students. When reviewing the literature, it was appreciated that there are few doctoral studies at the national level on the development of critical thinking skills in students at this level.

1.1 Didactics and the transformation of educational processes

Didactics is a discipline that emerged in the 15th century to address teaching-learning situations in the teacher-student relationship in order to solve the difficulties that arise in school and provide comprehensive training (Álvarez, 1998) [11]. It is due to the technological advances that have arisen over the years that didactics has been transforming or nurturing; which means that through the new technologies the information is presented in a different way, allowing the interactivity of the actors with the knowledge or the mixing of sounds and images; where currently teachers and students design their own content or learning resources, which empowers students with more solid and significant knowledge in the exercise of an active role in society (Comenio, 1965) [12]. In the same way, and taking into account the changing world that we live in, educational institutions headed by teachers make use of various methodological tools that enhance the development of competencies in students, which makes it necessary to obtain really significant knowledge that promotes comprehensive training, and that this in turn takes into account the needs of the labor market (Mansilla and Beltrán, 2013) [13].

Likewise, didactics is a discipline that belongs to the field of education, it is fundamentally in charge of debating the conceptions or ideas that refer to the training processes promoted in the educational system; It seeks, through reflection and collaborative contributions, to give meaning and modify the teaching practice with the ultimate aim of finding educational and pedagogical significance to the work so that it is of quality; questions such as what is the meaning of education ?, or what is educated for? [14].

Didactics is not taught, in general it corresponds to various strategies (broad and coherent) that the teacher uses to guide and accompany the teaching processes; the teacher must have a lot of charisma to generate motivation and promote learning in his students, take into account the context in which he develops in order to carry them out and that the participants respond satisfactorily [14]. It should be mentioned here that didactics goes beyond the application of techniques and methodologies to carry out the didactic act as Gallego and Salvador (2012) [13] affirm that any didactic programming includes essential elements such as objectives, contents, methodology (didactic strategies), didactic resources, and evaluation.

Teachers for the development of their work make use of curricular planning to organize all learning in a way that aims to train human beings in competencies and for life, that is, that the student can function easily in any field of daily life, and being part of the productive sector of the country; In this way, didactics considers that the teacher, in his role as an intellectual and as a professional, is responsible for choosing and graduating the teaching contents, as well as devising the pertinent methodological proposals to achieve learning [15]. Didactics cannot be thought of as an individual task, but as a collective construction that

helps to understand the difficulties of the work [14], where teachers support and collaboratively share experiences or knowledge around the application of teaching strategies in each context should also allow constant reflection so that these dynamics within the classroom can be rethought and transformed.

Thus, it requires teachers who with innovative didactics can help their students in strengthening skills to achieve the transformation of the different environments in which they move and therefore a change of mentality in society; It is spoken then, of teachers who make use of new teaching practices, who promote research, teachers who seek the integral development of students, and that from creativity thoughts and skills are promoted that make them competent from being, doing , learning and living together. Likewise, leading teachers, mediators and guides of motivating and interactive pedagogical processes where the child is a builder of their own skills, abilities and knowledge to establish new relationships and interactions with other contents and with their context (Vygotsky, 1981) [16].

The entire didactic act must strengthen competences, generate knowledge from science or technology, be experiential and flexible, with innovative methodological strategies or at the forefront for the development of the being, where the student in collaboration with his teacher also contributes in knowledge, time and readiness for advancement in classroom work; a curricular planning that breaks with the rigid and traditional teaching models, that agrees with the challenges of today's society; Well, what is wanted is for students to learn but also to enjoy the learning process and be happy while they build possible and impossible worlds that fill their existence with meaning; for the sake of training for life, but in harmony with social needs (Vygotsky, 2001) [17].

1.2 Critical thinking.

A nivel de bases teóricas el estudio se apoya en el pensamiento crítico que tiene sus orígenes en la filosofía griega cuando pensadores como Sócrates, Platón y Aristóteles a través de sus preguntas buscaban entender por qué o definir situaciones de su entorno haciendo uso de la razón. El término proviene del griego *Kritike* que significa el "arte del juicio" y para Platón sólo la mente entrenada está preparada para ver debajo de las apariencias de la vida; para Sócrates, la vida no examinada no vale ser vivida; y para Aristóteles, el obrar debe ser juzgado según lo verdadero [10]. Por lo anterior, dicho pensamiento debe ser orientado bajo el conocimiento y la coherencia para que se desarrolle y a futuro no sea distorsionado, desinformado o parcializado y se haga uso del juicio propio en la aceptación o rechazo de alguna información; éste puede fomentarse en cualquier materia y en cualquier grado de escolaridad [18].

Campos [10], for his part, defines critical thinking as thinking clearly and from reason, which favors the development of reflective and independent thinking, which enables every human being to make reliable judgments about the credibility of a statement. Or if an action in his opinion is convenient or not. This disciplined mental process makes use of strategies and reasoning that human beings use to evaluate arguments, make decisions, make judgments and learn new things. Therefore, critical thinking is an intellectual activity that allows the development of mental abilities to conceptualize, analyze situations and information, organize ideas, identify, defend arguments, observe and draw conclusions; that allow them to reflect and communicate in search of their improvement and that of the environment where they operate (Paul & Elder, 2005; Priestley 1996) [19].

For Torres *et al,* [19] critical thinking refers to the intellectual skills that the subject uses to analyze, interpret, verify, compare whether something is reliable or not, and solve problems using communication but always putting in I express their position or point of view in front of it. Thus, developing this thinking ability is of great importance because it helps human beings to think, understand and act responsibly and effectively on what is known; thinking critically, makes the subject express something from their previous knowledge and the analysis of lived experiences that are put into practice, to be able to discern and make correct decisions where attitudes of resilience are acquired in the face of adversity, which makes possible to project themselves as active and change leaders in their communities.

1.3 The teaching-learning process

The learning process from its evolution began with the behaviorist theory, where the role of the teacher was of transmitter of knowledge and that of the student of mere receiver; Later, with constructivism, the possibility was opened for the student to learn by doing, that is, to have a leading role in the teaching-learning process; and the teacher here would be a guide or mediator so that the student, together with him and his classmates, could cooperatively transform his knowledge [20]. It is therefore that the teaching process is related to techniques or activities that the teacher performs so that students acquire learning and achieve their educational goals; Teaching refers to actions, strategies or activities carried out by the teacher to transmit knowledge, which are directly linked to the ideology, qualities and behavior of students, and their willingness to learn; this makes multiple interactions possible: the knowledge they receive from their teachers; that is, knowledge of different disciplines that mix with their pre-knowledge, the reality and experiences of the immediate environment (family, friends, groups of interest, etc); thus promoting the professional and personal development of each individual (González, 2012 & Álvarez de Zayas, 1999) [21].

Thus, for Loubon & Franco (2010) [21], the learning process is directly related to the modes or ways that students use to internalize or learn, which includes adaptation and therefore behavior modification according to their experiences inside and outside of the school context. The teaching-learning process is born and develops internally and socially, for which it represents an interaction oriented and based on certain intentions, on self-reflection and critical thinking of the actors involved in the process; This starts in any environment; at school it is carried out with the teaching process, pedagogical strategies are used aimed at seeking learning, personality formation and originate background social changes (Freire, 1997) [1].

For learning to take place in a satisfactory way, it is necessary for the teacher to take into account the students' pre-knowledge, that is, all that accumulation of concepts or knowledge that children already have and that they have acquired in their experience as a result of social relationships or experiences with others; Likewise, the teacher must make use of varied, active and attractive teaching strategies, which are motivating and allow the assimilation of learning, where the methods are flexible, dynamic and allow interactivity, so that the child builds their own concepts , their own learning (Ausubel, 1978) [22]. Thus, the teacher through the orientation of the activities must make use of strategies and procedures that make them learn, and help to establish critical thoughts and positions; Likewise, it is relevant that during this process the student feels motivated to learn, which improves their self-esteem so that they do it with pleasure, optimism and enjoy the process (Castellanos, 2007 and Gonzales, 2008) [1].

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2. Methods.

The research was framed in the qualitative approach, with a phenomenological hermeneutical design, since it made use of the experiences expressed by the participants aimed at finding the essence to understand their lives in the educational context [23]. The study was non-experimental, the population was made up of 2,621 students and 92 teachers; being the sample of three teachers and 10 third grade students of elementary school of the Diego Hernández de Gallegos educational institution in Barrancabermeja, Santander, Colombia. It should be noted that according to [23], in a qualitative study the number of participants is not important, because what is intended is to investigate in depth the phenomenon studied and more so because it is this phenomenological hermeneutical study. In this way, for the development of the research the type of non-probabilistic sample was used, because all the elements of the population did not have the same possibility of being chosen, since it depended on the criteria of the researcher; Likewise, convenience sampling was used, since we worked with individuals who were available and who could be easily accessed for the development of the study[24]. Regarding data collection techniques, observation and semi-structured interviews were used. Data processing and analysis was supported by the Atlas Ti version 8 program.

Results

This section outlines the main findings found in the study. The following table shows the codes of the categories, subcategories and attributes taken into account to analyze the data of this research and the results of the study.

Table 1. Codes used to identify the categories, subcategories and attributes

Category Codes	Subcategory Codes	Attribute Codes
Didactics	Planning	Contents, Teaching techniques, Pedagogical resources
	Facilitation	Start, Developing, Closing
	Evaluation	Aplica técnicas de evaluación Desarrolla instrumentos de evaluación
Critical thinking	Literal level	Observar/nombrar Identificar detalles y entender significados Ordenar/Secuenciar información
	Inferential level	Analyse and understand implicit meanings Infer or deduct, Solve problems or situations.
	Critical level	Evaluate / Reflect, Argue, propose solutions.
Teaching learning process	Teaching	Conceptions about teaching-learning Teaching methods and techniques Contents Teaching strategies Evaluation
	Learning	Learning styles Problem resolution Argumentation / Self-assessment

Source: Own elaboration (2021).

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Didactic Category

When analyzing this category, it was found that teachers apply it constantly in their daily work, where they use real life situations to awaken critical thinking in students, and they also worry about validating the "truths" that exist in reality , apply the questions, through the use of the question technique to activate reasoning ability. Now, in terms of planning, facilitation and evaluation, it was established that teachers contemplate within their lesson plans, strategies such as commented reading, audiovisual material (multimedia) and similar resources to develop the topics studied. Likewise, the socialization of products represents a widely used strategy, as it demonstrates the achievements and understanding of the contents by the participants. Likewise, evaluation is present through simulation of tests, asking random or directed questions, exhibitions, making posters or dramatizations. As shown in figure 1.

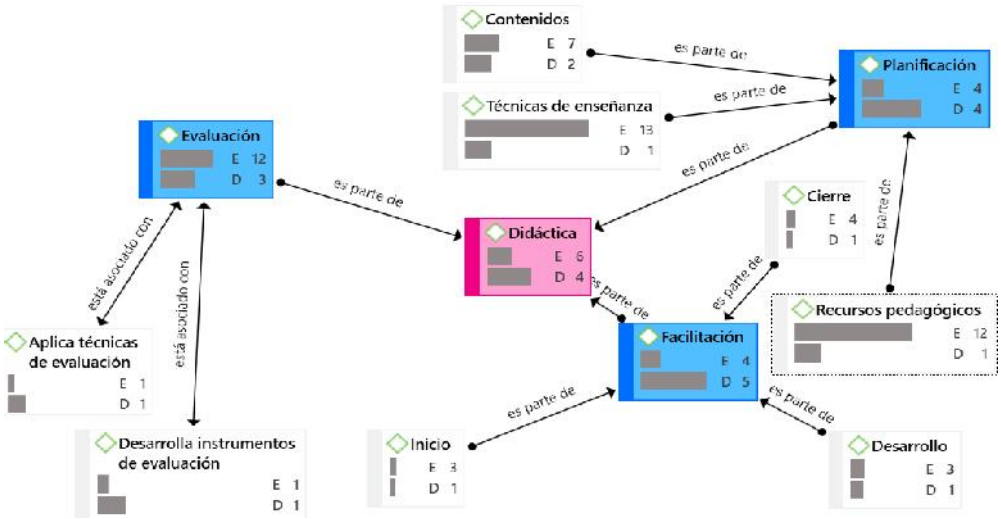

Figure 1. Semantic network of the Didactics category. Source: Own elaboration (2021).

Critical Thinking Category

For their part, in this category, teachers have solid concepts or notions about this type of thinking, since they define it as a process by which anyone presents arguments, ideas or opinions with the purpose of refuting the positions of others. They apply it as a strategy to question the phenomena that occur around them and also serves as a turning point to create in students the ability to reason beyond the literal, and take them to deeper levels of cognition and metacognition. Regarding the levels of critical thinking; Teachers have pointed out that students are mostly at the literal level because they are able to find main ideas, recognizing data, facts or details, which allow them to understand the characteristics of events; Other students are at the inferential level because they are already able to identify or select implicit information, recognize concepts, draw simple conclusions or reconstruct meanings, and others make use of the critical level when they are fully aware of the change that has taken place, being able to evaluate, recognize the tangible and hidden intentions, to issue their own judgments with arguments. It is therefore necessary for teachers to carry out deeper analyzes of the texts or contents studied that allow them to develop all levels of understanding and therefore their thinking.

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Consequently, the knowledge verification-evaluation process should be strengthened; Thus, it is perceived that in some cases the assimilation, understanding and effective application of the learning is not verified accurately. Therefore, training for the critical use of learning must continue to be strengthened; that is, to assess the events that occur in reality, realizing the difference between the initial and final states at their occurrence and the ways in which man can intervene in them.

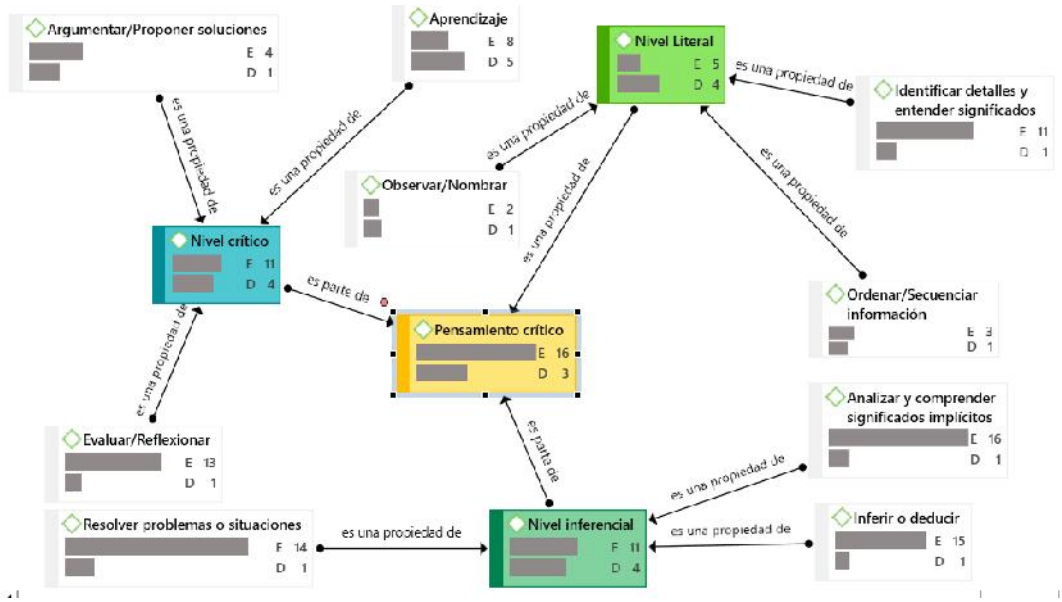

Figure 2. Semantic network of the category: Critical thinking. Source: Own elaboration (2020).

Teaching-learning process category

When analyzing the teaching-learning process category, it can be observed that teachers conceive it as a space for interaction of different actors such as the student and the teacher with different factors such as resources, didactic and evaluative strategies, in order to build their own knowledge to give them a higher level of significance. Now, when studying the teaching methods and techniques used by the teachers, they agreed on the use of exposition, debate or play activities, group work and other means of interaction; This translates into a concern of teachers to energize classes, fostering motivation in students. Likewise, teachers try to consider the different learning styles when designing teaching strategies, where a certain emphasis is perceived on the visual, a little on the kinesthetic, leaving the auditory relegated, an aspect that should be given greater relevance.

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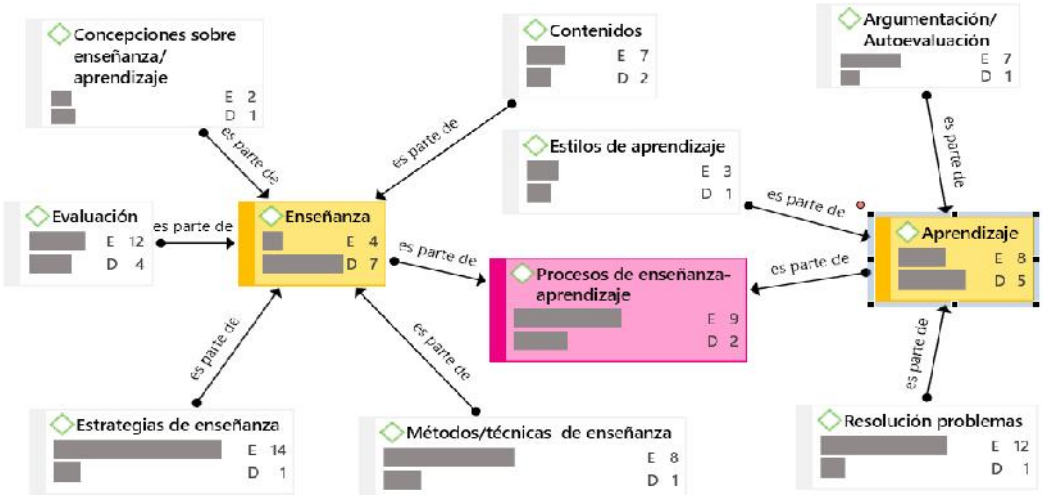

Figure 3. Semantic network of the category: Teaching-Learning Process. Source: Own elaboration (2021).

Finally, all the study categories are presented in the following word cloud, and the interpretation that arises based on the number of occurrences of the words or phrases existing within the teachers' discourse in the applied instruments is outlined.

Figure 4: Word cloud of the consolidated categories.Source: Own elaboration (2021).

In light of the constructs presented in the semantic networks and the word cloud, it can be established that teachers are committed to the exercise of their profession, making adequate use of didactic tools. In addition, they are concerned about staying up-to-date in order to provide quality content within the framework of innovative instructional resources, despite the existing limitations in educational institutions. Likewise, they take into account the importance of critical thinking as the axis of student training, both from the individual and collective perspective; Thus, they will be able to make decisions, issue judgments, assessments or opinions on the different issues that surround them. Likewise, the combination of traditional strategies with innovative ones present a range of possibilities to

continue working on forming integral human beings, with an ethical sense, values and principles, oriented to the common good by virtue of responding to social needs their classes. They try to integrate traditional and current methodologies that are.

Discussion

In response to the first research objective that is directly related to the Didactics category, it can be mentioned that teachers systematize the contents with the strategies, resources and evaluation techniques, as well as the objectives or competencies to be developed in the students. There is concern about training students in a comprehensive way "for life", because teaching seeks through reflection and collaborative contributions, to give meaning and modify teaching practice with the ultimate aim of finding educational and pedagogical meaning to the work so that it is of quality [14]. Didactic resources are not always available to execute the designed strategies; in the same way, collaborative learning and the use of technological tools should be reinforced; for which Gallego and Salvador (2012) [13], affirm that any didactic programming includes essential elements such as objectives, contents, methodology (didactic strategies), didactic resources, and evaluation.

The foundations of the learning process are well planted, since the teachers are competent professionals within their area of knowledge and are aware of the importance of good planning of adequate, in order to keep the contents current and promote reflection for the integral formation of individuals, however, there are limitations in the didactic resources, therefore, from the strategic levels of educational institutions and regulatory entities should try to provide all the necessary tools so that students have a cutting-edge training that is useful to society.

Regarding the second objective, teachers promote the development of critical thinking skills among students, which enables the acquisition of intellectual skills to interpret facts or events in their context, so that responsibility for ideas, understanding and values is encouraged. like respect for the opinions of others. In this regard [19], state that critical thinking directly refers to the intellectual abilities that the subject uses to analyze, interpret, verify, compare whether or not something is favorable, and solve problems using communication but always showing their position or point of view in front of it.

It is noted that teachers are in line with the theories, only that the initiatives regarding the application of strategies and techniques aimed at promoting free thought and judgments about the events that occur in everyday life should be maintained and reinforced. Likewise, the development of the literal level, which is the basis for fully developing the inferential and critical levels, should be further promoted, for which the question technique in its different modalities will help to consolidate the knowledge acquired with a critical sense, expanding the attitudinal spectrum of the same; Therefore, the student will be able to reflect on the changes that he can introduce in the environment, at the same time that values are sown in him that can be extrapolated not only at the individual level but also at the collective level.

Regarding the third objective, coincidences were found in the fact that the teachers direct learning towards the acquisition and construction of knowledge through "doing", starting from reflection and self-criticism, since these allow students to become aware of your own learning anywhere, anytime. According to González (2012)[21], the teaching process is related to techniques or activities that the teacher carries out so that students acquire learning and achieve their educational goals, so that teachers take into account the learning

theories, the different styles and currents of thought that must be integrated into their planning to guarantee the success of the process.

By properly using the different theories about learning, teachers will be able to attend to the different styles and modalities that this implies. Indeed, it is observed that they carry out their work in a congruent way, only that they must be provided with the appropriate resources and means to strengthen their performance and that these in turn can promote significant learning. In that sense, relevance has been given to the knowledge acquired through criticism and reflection, as well as the need to generate changes in the way people act.

3. Conclusión

The research showed that the level of thinking of elementary school students is developing because it is still difficult for them to clearly argue their ideas from reason; Likewise, teachers are aware that they must carry out more in-depth analyzes of the texts or contents studied so that students find hidden or implicit meanings that generate concerns. It is clear that the level of critical thinking is strengthened when the teaching staff is trained, is a didactic mediator and makes use of motivating strategies so that students through constant reflection develop thinking skills.

Likewise, with the development of pedagogical actions that stimulate the senses, reinforce understanding, where various materials and strategies are designed and applied so that students learn to reason about reality, giving way to creativity and to be active learning entities; Critical thinking can be empowered in students, which must be a process carried out in a conscious way to promote a social awakening and eliminate threads of power, being necessary to promote it in the classroom with real and contextualized situations that motivate them to issue critical arguments.

Didactics is the essential axis of the teaching-learning process, it is composed of planning, facilitation and evaluation; so that, the use of didactic strategies where inference, argumentation, proposition, analysis and understanding of situations or events are used; Recognizing in them their communication purposes and intentions are effective in developing critical thinking skills in students.

Finally, the teaching-learning process must be an interactive space where knowledge with a high level of significance is built; that makes use of exhibitions, debates, play and teamwork, characterized by motivation, interaction, understanding and problem solving; which are adequate didactic strategies for students to acquire significant knowledge and develop critical thinking skills to be applied in real contexts, where they can formulate judgments, solve problems, reflect and argue to propose or solve situations in their environment.

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