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# CRITICAL THINKING AS A FUNDAMENTAL TOOL IN CONTEMPORARY HIGHER EDUCATION: CONCEPTUALIZATION, CHARACTERISTICS, IMPORTANCE AND DIMENSIONS

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**Abstract**

This study, framed within the interpretive paradigm and a qualitative approach, conducts a documentary review and hermeneutic analysis in three movements (preunderstanding, interpretive analysis, and critical synthesis). Sources were selected for theoretical relevance and didactic pertinence; units of analysis included definitions of critical thinking (CT), lists of skills and dispositions, tensions between generality and specificity, and curricular proposals. The analysis prioritized conceptual consistency and pedagogical utility, recording traceable paraphrases and quotations.

Findings show that CT is a cognitive and ethical process that organizes, evaluates, and relates information to guide warranted judgments. Its formative purpose requires evidence, cross-checking of sources, systematic observation, and, where appropriate, scientific method. CT yields personal benefits (autonomy, coherence between values and decisions), professional outcomes (strategic vision, innovation), and social gains (verification against misinformation). Core traits include objectivity, rigorous observation, analysis, sustained inquiry, and continuous reflection as an intellectual habit.

Structurally, CT integrates three interdependent dimensions: skills (interpretation, analysis, evaluation, inference, explanation, and self-regulation), dispositions (perseverance, humility, empathy, curiosity, and autonomy), and knowledge (general information, disciplinary expertise, and experience). This triad enables responsible decision-making, problem solving,



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and informed public participation, and it guides integral, effective criteria for teaching and assessment.

**Keywords:** Critical thinking; Hermeneutic analysis; Dispositions, skills, knowledge.

## 1. Introduction

In contemporary educational systems, critical thinking (CT) is recognized as an essential formative axis for interpreting information, evaluating arguments, and making decisions in uncertain scenarios. Although early approaches prioritized cognitive skills, the literature has consolidated a broader view that integrates dispositions and knowledge, understanding CT as a purposeful and self-regulated judgment that combines intellectual skills and attitudes.

Recent literature agrees that critical thinking operates as a transversal scaffold for higher education training and professional performance, as it promotes stronger interpretations, more informed decisions, and more responsible social participation. In contexts marked by ethical controversies such as debates on marriage equality or voluntary termination of pregnancy this competency enables the dispassionate examination of arguments, the comparison of sources, and the evaluation of evidence, replacing uncritical acceptance of statements with informed deliberation [1]. It is, therefore, a practice that combines cognitive rigor with practical prudence.

The formative purpose of critical thinking transcends mere opinion and is anchored in validation mechanisms such as systematic observation, empirical experience, triangulation of sources, and, where appropriate, the scientific method. This transition from mere belief to justification requires subjecting claims to procedures of contrast and verifiability, resulting in more objective and ethically supported judgments [2]. At the same time, it calls for the adoption of a meticulous intellectual attitude, capable of identifying arguments, recognizing biases, assessing the reliability of sources, and analyzing data in an orderly manner.

In its formative and social dimension, critical thinking enables advantages that go beyond academic performance. Various findings indicate that it strengthens intellectual autonomy and coherence between values and decisions, favors decision-making in complex scenarios, and enhances creativity as a search for original solutions to difficult problems [3]-[4]. At the institutional level, it is associated with the capacity to question processes, propose improvements, and contribute to innovation and strategic development reasons why organizations value its systematic cultivation [5]. In parallel, and in the face of the proliferation of misinformation, its practice constitutes a civic antidote: it fosters data verification, cross-checking of sources, and detection of bias, promoting a responsible consumption of information [6].

Understanding the complexity of critical thinking requires recognizing its multifaceted nature. First, it encompasses cognitive skills interpretation, analysis, evaluation, inference, explanation, and self-regulation widely accepted as its core structure [7]. Second, it incorporates dispositions or attitudes that support the deliberate use of such skills—



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perseverance, humility, empathy, curiosity, and autonomy without which the cognitive component remains underutilized [8]. Finally, it relies on a body of knowledge general information, disciplinary expertise, and experience that provides the content and context necessary for critical judgment to make sense [9]-[10]. This triad of skills, dispositions, and knowledge interacts dynamically: skills process information, dispositions motivate its impartial application, and knowledge nourishes reasoning with relevant content [11].

In summary, critical thinking emerges as an integrative process that combines analytical procedures, intellectual attitudes, and situated content to guide well-founded judgments and responsible decisions. Its systematic promotion in higher education and professional settings constitutes both a pedagogical priority and a social necessity, given its contribution to informed public deliberation, innovation, and the construction of fairer and more democratic communities [12]-[6].

This study adopts a qualitative approach with a design based on documentary review and hermeneutic analysis, focused on specialized literature on critical thinking in higher education. A systematic search and selection process based on relevance and quality of sources was applied, and the analysis was conducted through thematic coding and conceptual triangulation.

## 2. Methodology

This reflection is framed within the interpretive paradigm, which prioritizes understanding the meaning of educational practices and discourses from the perspectives of the actors and the contexts in which they emerge [13]. In line with this, the qualitative approach guides a comprehensive and non-hypothetico-deductive perspective, aimed at interpreting constructs [14]-[15] rather than measuring their prevalence. The hermeneutic method structured the process in three stages: (1) pre-understanding (panoramic reading of key sources on CT and education), (2) interpretive analysis (identification of categories: conceptualization, skills, dispositions, generality/specificity, didactic mediations, and assessment), and (3) critical synthesis (triangulation of categories to develop an integrated argument).

The main strategy was a documentary review of academic texts available in the conversation library (articles, book chapters, and open-access books). Sources were selected based on two criteria: (a) theoretical relevance (definitions, consensuses, classifications, and disciplinary debates) and (b) didactic pertinence (guidelines for the design of tasks, guiding questions, scenarios, and CT assessment). The units of analysis were passages that defined CT, listed skills and dispositions, explained tensions between general and specific aspects, and proposed curricular pathways.

The analysis was conducted with attention to the conceptual consistency among sources and the pedagogical utility of their recommendations. Direct quotations and paraphrases were documented with APA-style references and citations to the files of the reviewed documents, following the syntax required by this interface. This combination ensures that claims about CT are supported with explicit and traceable bibliographic evidence.



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## 3. Results

Critical thinking constitutes a fundamental cognitive process aimed at organizing, evaluating, and relating concepts, ideas, and knowledge in a coherent and systematic manner. From an epistemological perspective, this mode of thinking enables individuals to approach the most appropriate position on a given topic or situation objectively, overcoming personal biases and prejudices. The very notion of critical thinking has etymological roots in the Latin term *pensare*, meaning "to think," and the Greek term *krinein*, which can be translated as "to separate" or "to discern." This dual semantic heritage alludes to the capacity to differentiate, judge, and examine reality in order to understand it rationally.

In academic and scientific contexts, critical thinking is understood as a rational and reflective process aimed at the objective analysis of phenomena, seeking to distinguish value judgments from observable facts. This form of reasoning stands in contrast to the uncritical acceptance of statements socially assumed to be absolute truths or those that provoke ethical and moral controversies such as marriage equality or voluntary termination of pregnancy promoting their examination based on evidence rather than prejudice. In this sense, critical thinking emerges as an essential tool for achieving a deeper, well-reasoned, and substantiated understanding of reality [1]-[12].

### 3.1. Purpose of Critical Thinking

Critical thinking is conceived as an intellectual commitment aimed at analyzing reality objectively and in a well-founded manner. To achieve this purpose, individuals must rely on mechanisms for validating knowledge, such as systematic observation, empirical experience, source triangulation, and, in contexts requiring greater rigor, the application of the scientific method. This process goes beyond issuing mere opinions and focuses on formulating objective, ethically sound, and verifiable statements [2].

The practice of critical thinking requires gathering relevant evidence, cross-checking information from reliable sources, and adopting an impartial stance that minimizes the influence of subjective or emotional biases. In this way, it becomes an ethical exercise that avoids the extremes of paralyzing skepticism and uncritical acceptance of statements [1].

From the perspective of pedagogy and the philosophy of mind, the development of this competency requires adopting the attitude of a meticulous thinker, willing to:

- Identify arguments that support or refute a topic.
- Recognize and question prejudices, whether one's own or others'.
- Critically evaluate the reliability and relevance of the sources consulted.
- Subject data and positions to a systematic process of analysis.



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This exercise of rational structuring not only enables a deeper understanding of phenomena but also helps construct a solid personal criterion to guide decision-making in everyday, academic, and professional settings [2]-[1].

### 3.2. Advantages of Cultivating Critical Thinking

Critical thinking is not an innate skill but requires encouragement and practice in contexts that promote reflection and deep analysis. Interaction with diverse cultural environments, reading literary and scientific works, consuming auteur cinema, and engaging in dialogue with heterogeneous perspectives are strategies that broaden the intellectual horizon and strengthen this competency [16].

Among the main advantages for personal growth is openness to new ideas and the ability to question assumptions taken for granted, generating a transformative process that promotes intellectual autonomy. Likewise, critical thinking prepares individuals for ethical decision-making in complex situations, leading to clearer and more well-founded judgments [4]-[3].

In academic and professional contexts, critical thinking represents added value, making individuals more reflective, analytical, and less susceptible to manipulation. Institutions and organizations value those who possess this competency, as they are capable of examining processes, proposing solutions, and contributing to the strategic development of projects and programs [5].

### 3.3. Main Characteristics of Critical Thinking

Critical thinking is configured as a complex and systematic cognitive process that goes beyond the mere accumulation of information, seeking instead to understand and evaluate reality in a reasoned way. According to specialized literature, this competency is characterized by several traits that give it depth and rigor.

First, objectivity stands out, understood as the conscious effort to reach conclusions based on truthful, verifiable information free from distortions caused by personal judgments or unfounded beliefs [17]. This objectivity does not imply absolute neutrality but rather a critical exercise of self-reflection that makes it possible to recognize one’s own biases and minimize them in the process of analysis [18].

Rigorous observation constitutes the starting point of critical thinking, as it allows the identification of phenomena, problems, or situations worthy of examination. This initial stage is not limited to perceiving facts but requires selective and systematic attention that facilitates the formulation of relevant, guiding questions [19].

Next, analytical capacity enables the breakdown of problems into their constituent elements, the identification of causes and consequences, and the establishment of logical relationships that lead to coherent explanations. This analytical skill promotes a deeper understanding of phenomena and the construction of consistent interpretative frameworks [20].



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Intellectual inquiry is another indispensable characteristic, as it drives the constant search for information and the questioning of assumptions. This exploratory drive strengthens critical judgment by broadening the knowledge horizon and favoring the integration of diverse perspectives [18].

Finally, continuous reflection gives critical thinking a dynamic and dialectical nature, in which conclusions are subjected to review, reconsideration, and grounding in solid evidence. This ongoing evaluation exercise prevents dogmatic stances and fosters openness to new interpretations [17].

Taken together, these characteristics show that critical thinking is not an occasional activity but an intellectual habit that demands discipline, willingness to learn, and open-mindedness. Its systematic cultivation in higher education is considered essential for forming citizens capable of acting autonomously, responsibly, and ethically in increasingly complex and changing environments [19]-[18].

### 3.4. Usefulness and Scope of Critical Thinking

Critical thinking is a highly valuable competency whose impact extends to multiple dimensions of human life. On a personal level, it strengthens the individual's integral development by improving self-management, self-regulation, and intellectual growth. People who exercise this skill tend to experience greater satisfaction, as they maintain coherence between their values and their decisions, contributing to a sense of integrity and well-being [18].

From the perspective of creativity, critical thinking acts as a catalyst for innovative ideas. The interaction between curiosity, analysis, and reflection fosters the generation of original solutions and novel approaches to complex problems. Thus, it not only examines reality as it is presented but also projects alternatives and possible transformations, fostering innovation in academic and professional environments [21].

Another of its fundamental functions lies in improving decision-making criteria. Subjecting a situation to rigorous analysis whether it concerns purchasing a product, changing jobs, or choosing a career path reduces the margin of error and increases the likelihood of making well-founded and effective decisions. In work environments, this competency is associated with strategic vision, the ability to anticipate consequences, and effective leadership attributes highly valued in positions of high responsibility [22].

Likewise, critical thinking stands as an essential resource in the fight against misinformation. In today's digital age, characterized by the proliferation of fake news and biased content, this attitude makes it possible to verify data, cross-check sources, and distinguish between legitimate and misleading information. This practice protects individuals from media manipulation and promotes more conscious and responsible information consumption [6].

From the perspective of productivity, critical thinking drives process optimization, the identification of recurring errors, and the implementation of more efficient methods for



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resource use. In conflict resolution, this competency helps to understand the positions of the parties involved, facilitating the construction of equitable solutions that benefit all actors [18].

Finally, it is important to emphasize that critical thinking is not an innate capacity but a competency that must be cultivated through learning experiences, exposure to diverse perspectives, rigorous analysis, and ongoing reflection. Its practice seeks objectivity, promotes curiosity, and demands evidence to support the judgments made. In this way, it transcends the individual level and becomes an instrument of social transformation, essential for confronting information overload and ideological polarization. Consequently, its development contributes to responsible decision-making and the consolidation of fairer, more democratic, and more participatory societies [6]-[21].

### 3.5 Dimensions of Critical Thinking

In its early theoretical approaches, the study of critical thinking focused almost exclusively on the development of cognitive skills, considered the essential core of this competency. These skills include processes such as analysis, synthesis, inference, and evaluation, which allow individuals to break down problems, establish logical relationships, and build well-founded conclusions. However, subsequent research has broadened this conception by recognizing that dispositions such as open-mindedness, intellectual curiosity, and willingness to question are equally relevant components for understanding the phenomenon as a whole. The interaction between cognitive skills and dispositions constitutes what some authors call the behavioral component of critical thinking, as it reflects the way it manifests in specific contexts of personal, academic, and professional life [23]-[12].

On a complementary level, Villarini (2003) proposes the incorporation of a third element: knowledge. This acts as the indispensable substrate upon which skills and dispositions are applied, providing the content that gives meaning to critical exercise. From this perspective, thinking critically not only implies having the cognitive capacity and the proper attitude but also possessing a body of information, data, and experiences that feed analysis and guide judgment.

Thus, critical thinking is now conceived as an integrative process that articulates three dimensions—skills, dispositions, and knowledge—that interact dynamically. This holistic vision makes it possible to understand critical thinking in all its complexity, establish more rigorous criteria for its teaching, and design assessment strategies that consider both cognitive mastery and the individual's attitudes and informational background [24]-[23].

#### 3.5.1. Critical Thinking Skills

Skills constitute the cognitive component of critical thinking and represent the basis on which the processes of analysis, interpretation, and evaluation of information are developed. The Delphi Report, prepared by the American Philosophical Association, identified six core competencies that structure this process: interpretation, analysis, evaluation, inference, explanation, and self-regulation [7]. These competencies enable individuals to process data



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systematically, construct well-founded judgments, and guide their actions toward logically and coherently solving problems.

Although there is consensus that these skills form the cognitive core of critical thinking, the literature has noted variations in their classification and scope. The lack of conceptual uniformity led to synthesis efforts by international panels of experts, who confirmed the six competencies proposed by Facione as the most widely accepted reference framework [12]. Nevertheless, later authors have suggested adaptations to facilitate their implementation in different educational contexts. For example, Mahmood (2017) proposes that skills can be grouped around four main axes: analysis, inference, evaluation, and decision-making, thus simplifying their application in teacher training and research contexts.

Complementarily, Saiz and Rivas (2008) argue that the development of these skills should promote the transfer of acquired competencies to real situations, so that critical thinking is not limited to theoretical exercises. In line with this vision, Thomas and Lok (2015) suggest organizing the skills into three operational sets: reasoning, evaluation, and self-regulation, allowing for a more precise approach for research and educational assessment purposes.

Finally, following Carracedo (2002), it is possible to understand these competencies as part of three key thought processes: problem-solving, decision-making, and reasoning. This articulation integrates the different cognitive dimensions, favoring the translation of critical thinking into concrete actions and justified judgments, strengthening both autonomous learning and well-grounded professional practice.

### 3.5.2. Critical Thinking Dispositions

Dispositions represent the affective and attitudinal dimension of critical thinking, as they express the individual's willingness to apply their cognitive skills in real contexts. This component integrates a set of subdimensions that guide the person's intellectual and ethical behavior. These include:

- **Intellectual perseverance**, understood as sustained commitment to learning and willingness to face ambiguity and problem complexity.
- **Intellectual humility**, which implies recognizing the limits of one's knowledge, accepting mistakes, and being open to correction.
- **Intellectual empathy**, which fosters respectful dialogue, understanding of divergent perspectives, and recognition of cognitive diversity.
- **Intellectual curiosity**, which drives constant search, critical selection, and adaptation of new knowledge.
- **Intellectual autonomy**, which promotes responsibility in making judgments and evaluating beliefs impartially and on a sound basis.



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Together, these dispositions lead to the development of open, reflective, and ethically oriented critical thinking that favors the construction of fairer and more well-founded judgments [8].

The contributions of Facione (1990) and Paul (1991) emphasize that dispositions are just as important as skills in considering someone a true critical thinker. In general terms, dispositions can be understood as the degree to which a person is willing to exercise a thinking skill when the situation demands it. Authors such as Valenzuela & Nieto (2008), Saiz & Rivas (2008), and Rear (2017) add that critical thinking should be conceived not only as a cognitive competency but also as a deliberate attitude, in which the individual consciously decides whether to apply such reasoning in a specific context [23]-[25]-[26].

### 3.5.3. Knowledge in Critical Thinking

Knowledge constitutes one of the fundamental pillars of critical thinking, as it provides the content upon which cognitive skills and intellectual dispositions unfold. From an epistemological perspective, knowledge maintains a close relationship with the act of thinking: it is acquired through reflective processes, and in turn, thinking requires prior information and knowledge to develop and improve [10]. In the same direction, Halpern (2013) asserts that critical thinking cannot be conceived in isolation but requires a level of knowledge and intellectual maturity that enables individuals to analyze, interpret, and make well-founded and coherent judgments.

Within this dimension, the specialized literature distinguishes three key categories that articulate the role of knowledge in the exercise of critical thinking:

1. **General information and basic data**, which constitute the necessary input to carry out valid and well-supported evaluations.

2. **Specific knowledge**, linked to both disciplinary content and the context in which the analysis is carried out, allowing critical skills to be applied in a situated and relevant manner.

3. **Experience**, understood as the integration of formal learning with personal and professional experiences, enriching the ability to reason, make decisions, and anticipate consequences [11].

These three elements interact dynamically: skills allow information to be processed and organized, dispositions motivate its ethical and responsible application, and knowledge provides the content that gives meaning to critical reasoning. In this way, critical thinking is configured as an integral process in which information, reflection, and action are closely interconnected to generate sound conclusions and well-founded decisions [9]-[10].

**Concept Map: Dimensions of Critical Thinking**



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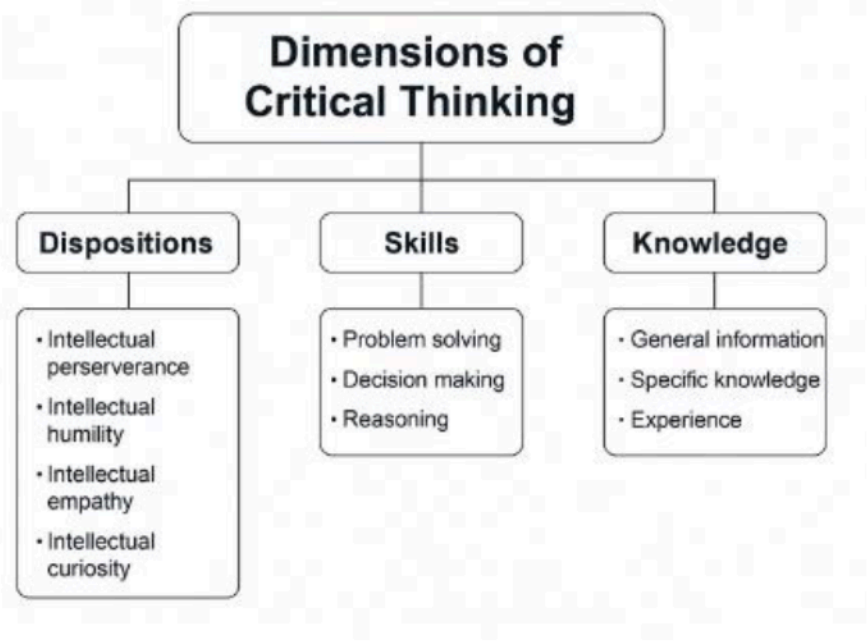


Source the authors

## 4. Discussion

The analysis of the results makes it possible to affirm that critical thinking is consolidated as a transversal competency of a complex nature, whose relevance is manifested at the personal, academic, and social levels. This research confirms that critical thinking is not merely a set of cognitive skills aimed at analyzing and evaluating information, but an integral process that articulates interdependent dimensions skills, dispositions, and knowledge that interact dynamically and complementarily [12]-[24].

From an epistemological perspective, critical thinking offers a way to overcome the limitations of merely subjective judgments and unfounded beliefs by providing conceptual tools that facilitate access to well-founded conclusions. As Halpern (2013) points out, this competency cannot be conceived in isolation but demands a degree of knowledge and intellectual maturity that allows for rigorous analysis and interpretation of reality. In this sense, the study by Medina and Silva (2018) is consistent in highlighting that knowledge is both a product and an input of thinking: it is acquired through the act of thinking, but in turn, it feeds and gives it content.

The results also reaffirm that critical thinking is a process with a strong ethical component. The emphasis on objectivity, impartiality, and the willingness to test one's own beliefs turns it into a practice aimed at building responsible judgments. Greene and Yu (2016) emphasize that this competency allows for distinguishing facts from value judgments, which is essential for analyzing issues involving ethical and moral dilemas such as marriage equality or voluntary termination of pregnancy on an argumentative basis supported by evidence rather than prejudice.



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A relevant aspect of the discussion is the observation that critical thinking is shaped as an intellectual habit that requires deliberate practice and exposure to challenging contexts. As stated by the United Nations Children's Fund (2024), its development is enhanced by contact with diverse cultural environments, reading highly complex texts, and engaging in dialogue with heterogeneous perspectives. These experiences create the conditions for exercising curiosity, rigorous observation, and sustained reflection, elements highlighted by authors such as Alvarado (2014) and Robles (2019) as distinctive traits of critical competency.

In terms of its benefits, the findings reinforce the idea that critical thinking positively impacts personal development, as it promotes intellectual autonomy and coherence between values and decisions. Kahneman (2012) argues that reflective reasoning helps reduce cognitive biases, while Gillihan (2018) highlights its role in responsible decision-making. This combination of analysis and self-regulation enables individuals to act with greater confidence in complex contexts and anticipate the consequences of their actions.

Likewise, in academic and professional settings, critical thinking becomes a competitive differentiator. The ability to question procedures, propose alternatives, and improve processes adds value in educational and work environments, fostering innovation and institutional development [5]. This finding aligns with Jara (2012), who identifies this competency as a catalyst for creativity and the production of new knowledge.

The discussion also underscores the social dimension of critical thinking, particularly its function in countering misinformation and manipulated narratives. Rozo and Calvache (2023) argue that data verification and cross-checking of sources are essential mechanisms for discerning accurate information in a digital environment saturated with fake news. This social function makes critical thinking a tool of citizenship, essential for strengthening democracy and promoting informed public deliberation.

Regarding its structural dimensions, the results confirm the validity of the tripartite model that integrates skills, dispositions, and knowledge. The six cognitive competencies identified by the Delphi Report—interpretation, analysis, evaluation, inference, explanation, and self-regulation remain a solid reference for its teaching [7], while the proposals of authors such as Mahmood (2017) and Thomas and Lok (2015) make it possible to organize these skills into more operational sets for measurement and pedagogical application. Similarly, the dispositions described by Paul and Elder (2003) which include perseverance, humility, empathy, and intellectual curiosity complement the cognitive component by ensuring that individuals are motivated to employ their skills deliberately.

Finally, knowledge is presented as the axis that provides meaningful content to the critical process. Its inclusion in the analytical model is essential, since without a valid body of information, the exercise of skills and dispositions becomes empty and meaningless [10]. The interaction of these three elements produces a robust critical thinking process, capable of generating sound inferences, guiding ethical action, and contributing to social transformation.



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## Conclusions

The study allows us to conclude that critical thinking is a complex and multidimensional competency, whose relevance transcends academic and professional domains to influence personal life and the construction of fairer and more democratic societies. Its structure is confirmed to consist of three interrelated dimensions—skills, dispositions, and knowledge—that operate in an integrated manner to enable deep, objective, and ethically grounded reasoning [23]-[24].

First, cognitive skills constitute the functional core of critical thinking, as they allow for processing information, breaking down problems, and formulating logically supported judgments. However, the mere possession of these skills does not guarantee truly critical thinking if they are not accompanied by intellectual dispositions such as perseverance, humility, and curiosity, which drive individuals to apply their competencies in real-world contexts [7]-[8].

Likewise, knowledge is confirmed as an irreplaceable pillar, as it provides the content upon which skills and dispositions are exercised. General information, specific knowledge, and personal and professional experience form the substrate that gives meaning to critical analysis and turns it into an effective tool for decision-making and problem-solving [11]-[9].

From a pedagogical perspective, it is concluded that the development of critical thinking requires teaching strategies that combine the strengthening of cognitive competencies with the promotion of favorable attitudes and the construction of relevant knowledge. This comprehensive approach ensures that learning is not limited to the transmission of content but fosters the ability to discern, question, and propose innovative solutions [25]-[21]-[27]-[28].

Finally, in a global context characterized by information overload and ideological polarization, critical thinking emerges as an essential tool for data verification, prevention of manipulation, and the construction of autonomous and responsible judgment. Its systematic cultivation contributes to forming citizens capable of participating in public life with sound arguments, thus promoting the strengthening of democratic values and the development of more equitable and inclusive communities [6]-[1]-[29].

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