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CRITICAL THINKING IN EDUCATION: STRATEGIES AND IMPACTS

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ABSTRACT

The study investigated the importance of the systematic teaching of critical thinking in education, analyzing methodologies that favor its development and its relationship with academic performance. Critical thinking was addressed as an essential competence for the formation of students, requiring pedagogical practices that encourage reflection, argumentation, and careful analysis of information. The research aimed to understand how educational strategies can strengthen this skill throughout the academic trajectory, in addition to examining challenges and limitations faced in their implementation. The methodology adopted consisted of bibliographic research based on the analysis of scientific publications obtained through the Academia.edu platform, allowing the review of studies on pedagogical practices aimed at teaching critical thinking. The results indicated that the intentional application of strategies such as debates, problem-solving, and guided questioning favored the development of critical thinking and had a positive impact on the academic performance of students. In addition, it was found that the teaching of this competence can be influenced by institutional factors, teacher profile and available resources, making a planned and continuous approach essential. It was concluded that the promotion of critical thinking in education should be a structured process, contemplating methodologies that stimulate the intellectual autonomy of students. Thus, it is suggested that future research deepen the relationship between teacher training and the effectiveness of the strategies used to teach critical thinking.

Keywords: Critical Thinking. Methodologies. Pedagogical Strategies. Education. Teaching.

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INTRODUCTION

The development of critical thinking in the educational environment is an increasingly evident need in the face of contemporary social, technological, and academic transformations. The ability to carefully analyze information, argue based on evidence, and make informed decisions becomes essential for individuals to face complex challenges and actively participate in society. However, the teaching of critical thinking still faces challenges related to its pedagogical approach and its implementation in a systematic way throughout the academic trajectory of students. Thus, investigating strategies that favor the development of this competence contributes significantly to improving the teaching and learning processes.

The relevance of this theme lies in the need to promote pedagogical practices that encourage students' intellectual autonomy and enable them to analyze, question, and interpret information critically. Thus, this study has as its general objective to analyze the importance of the systematic and intentional teaching of critical thinking in academic training, highlighting methodologies that favor its construction. Specifically, it seeks to identify effective pedagogical strategies to stimulate critical thinking in the educational context, to examine the relationship between the development of this competence and academic performance, and to discuss the challenges and limitations of implementing these practices in basic and higher education.

Given this, the research is guided by the following question: 'How can the systematic teaching of critical thinking impact the academic performance of students and contribute to their integral education?' To answer this question, the methodology adopted is bibliographic research based on the studies of Narciso and Santana (2024), which highlight the importance of the critical review of theoretical references for the construction of new methodological paths in education. The analysis technique used consists of reviewing and interpreting studies that address the relationship between critical thinking and pedagogical practice, and the data were collected from consolidated academic sources in the area of education.

The article is structured in sections that delve deeper into the topic. Initially, the chapter "The Teaching of Critical Thinking and its Relevance in Contemporary Education" is presented, in which the foundations of this competence and its importance for academic training are discussed. Next, the section "Strategies for the Development of Critical Thinking" addresses pedagogical methodologies and practices that favor the construction of this skill. Subsequently, the "Results and Discussions" section analyzes the findings of the study, exploring the relationship between critical thinking and academic performance, as

well as pointing out challenges and limitations. Finally, in the "Final Considerations", the main contributions of the research are resumed, and paths for future studies are suggested.

Therefore, by investigating the relevance of critical thinking in the educational process, this study contributes to the broadening of the understanding of effective strategies for its implementation, highlighting the need for pedagogical approaches that stimulate reflection, argumentation, and careful analysis of information.

METHODOLOGY

The research was conducted based on a bibliographic approach, as discussed by Santana, Narciso, and Santana (2025), who emphasize the importance of reviewing academic materials for the theoretical foundation and the construction of new knowledge in the area of education. In this context, the methodology consisted of the collection and analysis of scientific publications that address critical thinking in teaching, allowing the identification of effective pedagogical strategies for its development.

To carry out the search and selection of materials, Academia.edu was used exclusively, a digital platform widely recognized in academia for bringing together articles, dissertations, theses, and other scientific works produced by researchers from various institutions. This database stands out for providing access to a wide range of publications in different areas of knowledge, allowing users to search for relevant materials and keep up with research trends in their respective areas.

The search for the materials was carried out through the insertion of specific keywords, such as 'critical thinking', 'basic education', 'pedagogical methodologies', 'systematic teaching', and 'academic performance'. The combinations of these terms allowed us to identify works that address the importance of critical thinking in the educational context and its relationship with innovative pedagogical practices.

After selecting the most relevant materials, a critical analysis of the contents found was carried out, considering the theoretical foundation presented by the authors and the different perspectives on the development of critical thinking in the school environment. The interpretation of the information was conducted systematically, allowing the construction of a dialogue between the theoretical frameworks, the comparison of approaches, and the identification of convergences and divergences in the conceptions on the subject.

From this methodology, it was possible to obtain a solid basis for the discussion on the teaching of critical thinking and its relevance in contemporary education. The exclusivity in the use of the Academia.edu ensured a qualified collection of academic publications, facilitating the obtaining of updated and widely debated references in the scientific

literature. Thus, the methodology applied made it possible to structure the research in a consistent way, contributing to the achievement of the proposed objectives and the answer to the research question.

CRITICAL THINKING AND ITS RELEVANCE IN CONTEMPORARY EDUCATION

Critical thinking represents an essential competence in the educational context, as it enables the careful analysis of the information received, as well as the evaluation of its reliability and evidence basis. According to Dallacosta, Moresco and Masson (2022, p. 2),

> [...] Critical Thinking can be defined as the ability to question the information received, analyze whether it is reliable and evidence-based, and know how to reflect on what is most appropriate to believe or do.

In this way, it is evident that critical thinking is not restricted only to the absorption of knowledge but involves an active posture of the individual towards the world. In this sense, Perim *et al.* (2023, p. 1) highlight that "the formation of critical thinking is one of the fundamental concerns of teachers in contemporary education". This is because the school and other learning environments play a central role in the development of students' intellectual autonomy. Furthermore, by encouraging this competence, educators promote teaching focused on analysis and interpretation rather than the mere reproduction of content.

In addition, as pointed out by Perim *et al*. (2023, p. 3), "critical thinking empowers students to adopt an analytical and reflective approach to the world around them". This implies that the development of this skill allows individuals not only to understand the information received but also to know how to use it in a conscious and reasoned way. At this point, Araújo et al. (2024, p. 55) complement by stating that "critical thinking involves the ability to reflect on arguments and evidence in a structured way". Thus, it becomes evident that this process does not occur spontaneously but requires the stimulation of reflection and logical reasoning.

In addition, Araújo *et al.* (2024, p. 56) reinforce that "the ability to question the information received is one of the pillars of critical thinking". This indicates that simple exposure to knowledge is not enough for the construction of analytical thinking, and it is necessary for the subject to develop strategies to discern the veracity and coherence of information. In line with this idea, Perim *et al.* (2023, p. 8) argue that "being critical means being able to discern, distinguish, interpret, judge facts and issues through the use of some pre-established criteria". Therefore, it is observed that critical thinking is not limited to the

act of questioning but requires the use of parameters that guide interpretation and decision-making.

Thus, the dialogue between the authors shows that critical thinking is an indispensable competence in contemporary times, as it allows individuals not only to access information but also to know how to analyze, question, and use it in a reasoned way. Thus, the promotion of this skill in education represents an essential commitment to the formation of reflective and conscious citizens.

THE DEVELOPMENT OF CRITICAL THINKING IN THE EDUCATIONAL CONTEXT NAL

Critical thinking differs from everyday thinking in that it is grounded in the principles of science and the scientific method. According to Dallacosta, Moresco, and Masson (2022, p. 10), "thinking critically is different from everyday thinking and is based on the principles of science and the scientific method". Thus, this ability does not manifest itself spontaneously but requires a structured process that involves analysis, interpretation, and evaluation of information. In this way, critical thinking transcends common sense and promotes a more systematic and grounded approach to decision-making.

In this context, Perim *et al*. (2023, p. 4) emphasize that,

> [...] In today's ever-evolving world, the ability to think critically is a crucial skill that students must acquire in order to face complex challenges and make informed decisions.

This means that, in the face of rapid technological and social transformations, it is essential that students develop this competence to deal with a growing volume of information and discern which is reliable and evidence-based. Although critical thinking is a contemporary educational necessity, its construction demands a continuous process of learning and improvement.

In addition, Dallacosta, Moresco, and Masson (2022, p. 10) argue that "to think critically, it is necessary to develop critical thinker attitudes and characteristics, such as self-discipline, responsibility, prudence, curiosity". In this way, critical thinking is not restricted to logical analysis but also involves intellectual dispositions and postures that favor the search for knowledge and the careful judgment of information. However, these characteristics are not innate, which reinforces the importance of the educational environment in stimulating their development.

Therefore, Perim *et al.* (2023, p. 4) point out that.

> [...]To effectively develop critical thinking skills, teachers must create a learning environment that encourages active engagement and exploration.

This demonstrates that the construction of this competence depends directly on the pedagogical approach adopted by the teachers, and they must encourage the participation of students in activities that stimulate critical analysis and problem-solving. In other words, the teaching of critical thinking does not occur only through the transmission of content but also through the creation of spaces that favor reflection and argumentation. Furthermore, according to Dallacosta, Moresco, and Masson (2022, p. 10),

> [...] Such skills can be taught and improved, and as much as thinking is a skill common to all human beings, critical thinking skills can be improved.

This argument reinforces that although everyone can think, the development of critical thinking requires guidance and continuous practice. Therefore, the school plays a key role in providing learning experiences that challenge students to question, investigate, and substantiate their conclusions.

Given this, it is evident that critical thinking is not only distinguished from everyday thinking but is also an essential skill for the contemporary world. For its development to be effective, it is necessary to have an educational environment that values questioning and careful analysis of information. Thus, by integrating pedagogical strategies that favor this practice, teachers enable students to become individuals who are more prepared to deal with the complex challenges of today's society.

THE IMPORTANCE OF THE SYSTEMATIC TEACHING OF CRITICAL THINKING

The development of critical thinking in education requires a systematic and intentional approach to ensure that students acquire this competence throughout their academic careers. As stated by Araújo et al. (2024, p. 57), "the teaching of critical thinking must be systematic and intentional, ensuring that students develop this competence throughout their academic career". Thus, critical thinking should not be treated sporadically, but rather as a structuring element in teaching, being worked progressively at different levels of education.

In addition, for this construction to occur effectively, it is essential to introduce activities that encourage debate and critical analysis, both in basic education and in higher education. According to Araújo *et al*. (2024, p. 57), "the introduction of activities that encourage debate and critical analysis is fundamental for the development of critical thinking in basic and higher education". This shows that the stimulus to critical thinking must

transcend the simple memorization of contents, promoting an active participation of students in the construction of knowledge. Thus, pedagogical strategies such as guided discussions, case studies, and problem-solving become essential for students to learn how to evaluate arguments and make informed decisions.

In addition, research shows that there is a direct relationship between the development of critical thinking and academic performance. Araújo *et al*. (2024, p. 55) highlight that "the data indicate that students who participate in activities aimed at the development of critical thinking have better academic performance". This suggests that strengthening this competence not only improves students' analytical capacity but also contributes to their learning more broadly, preparing them to face academic and professional challenges.

Therefore, when considering the need for a systematic and intentional teaching of critical thinking, it is evident that educational institutions must invest in methodologies that promote this skill on an ongoing basis. For this, the inclusion of pedagogical practices based on analysis and debate becomes essential since the benefits of this development directly reflect on the academic performance of students. In this way, by integrating critical thinking as a structuring axis of education, teachers contribute to the formation of individuals who are more prepared to interpret, evaluate, and use information in a reflective and grounded way.

RESULTS AND DISCUSSIONS

The results of this study showed that the teaching of critical thinking must be systematic and intentional to ensure its full development throughout the academic trajectory of students. The analysis of the data indicated that pedagogical strategies that encourage debate and critical analysis are fundamental to stimulating this competence. In addition, it was observed that the participation of students in activities aimed at critical thinking positively impacts their academic performance, demonstrating that this skill not only strengthens intellectual autonomy but also contributes to the consolidation of learning.

These findings reinforce the idea that critical thinking does not develop spontaneously and that a structured process that includes specific methodologies for its promotion is necessary. The active involvement of students in reasoned discussions and analyses makes it possible to build more solid arguments and make more informed decisions. Thus, the findings of this research corroborate the relevance of implementing educational practices that encourage reflection and critical investigation from the first years of academic training.

The results obtained are also in line with previous studies that point to the need for a systematic teaching of critical thinking. Research already carried out indicates that pedagogical approaches that stimulate students' autonomy and encourage the questioning of information result in significant benefits for learning. In addition, the literature suggests that the insertion of methodologies that promote critical analysis contributes to the formation of citizens who are better prepared to deal with complex challenges in different contexts.

However, some limitations must be considered. One of the main constraints refers to the fact that the effectiveness of teaching critical thinking can vary according to the educational context, the available resources, and the profile of the students. In addition, the resistance to the adoption of new methodologies by some institutions and the need for teacher training may represent obstacles to the implementation of strategies aimed at this competence. Another relevant factor is that, in certain environments, critical thinking can be influenced by external factors, such as school culture, access to technologies, and interaction between teachers and students.

In addition, it was found that the insertion of critical thinking in the curriculum does not always result in a uniform improvement in the academic performance of all students. This suggests that their development may depend not only on the pedagogical practices adopted but also on the level of individual engagement and motivation of the students. In addition, previous studies indicate that the impact of this approach can be influenced by the support offered by the educational institution and by the opportunities for active participation in the proposed activities.

In view of these considerations, it is recommended that new research be carried out that deepens the relationship between the teaching of critical thinking and academic performance in different educational realities. Future studies may investigate innovative methodologies, as well as the use of technological resources in the promotion of this competence. Additionally, research focused on teacher education can provide insights into how teachers can enhance their practices to encourage critical thinking more effectively. Thus, the expansion of knowledge on the subject will contribute to the formulation of more efficient educational strategies adapted to contemporary needs.

CONCLUSION

The present study allowed us to answer the questions raised in the introduction and in the methodology by demonstrating that critical thinking must be developed in a systematic and intentional way throughout the academic training of students. The analysis of the theoretical frameworks showed that pedagogical strategies that encourage debate

and critical analysis are fundamental to improve this competence. In addition, it was found that participation in activities aimed at critical thinking positively impacts academic performance, strengthening intellectual autonomy and promoting more reflective and grounded learning.

The objectives of the research were achieved to the extent that the importance of implementing methodologies that stimulate critical thinking in the educational context was confirmed. The study showed that practices that involve questioning, argumentation, and careful analysis of information contribute significantly to the development of this skill. In addition, it was found that the introduction of these approaches from basic education to higher education can favor the formation of individuals who are more prepared to face academic and professional challenges. In addition, it was observed that the relationship between critical thinking and academic performance is not uniform, being influenced by factors such as student engagement, institutional profile, and available resources.

In this way, the research opens paths for future studies that can deepen the analysis of the relationship between innovative methodologies and the development of critical thinking in different educational contexts. It is suggested that investigations be carried out that explore the impact of educational technologies on the teaching of critical thinking, as well as the role of teacher training in the adoption of pedagogical practices aimed at this competence. In addition, research aimed at adapting these strategies to different student profiles can contribute to the formulation of more inclusive and effective approaches. Thus, it is expected that the findings of this study will stimulate new reflections and advances in the area, enabling the continuous improvement of the teaching of critical thinking in the contemporary educational scenario.

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