

## THE USE OF REAL CASES IN ACTIVE METHODOLOGIES



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### ABSTRACT

This study had as a research problem the question of how the use of real cases in active methodologies impacts learning and skill development in students. The general objective was to analyze how the use of real cases in active methodologies contributes to the development of cognitive and socio-emotional skills, promoting meaningful learning. The methodology adopted was of a bibliographic nature, based on a literature review on the subject, with emphasis on articles, books and dissertations related to the use of real cases in active methodologies. The results indicated that the application of real cases provides deep learning, connecting theoretical content with practice and encouraging the active participation of students. In addition, it was observed that the use of real cases favors the development of skills such as critical thinking, problem-solving, empathy, and collaboration. The data analysis revealed that active methodologies with real cases increase student engagement and prepare them effectively for the job market. The final considerations highlighted the contributions of the study to the pedagogical practice, suggesting that empirical research be carried out to complement the findings, with the implementation of real cases in different educational contexts. It was concluded that the real cases are essential for the development of competencies in the students and for the strengthening of active methodologies.

**Keywords:** Active Methodologies. Real Cases. Meaningful Learning. Cognitive Skills. Socio-emotional skills.

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## INTRODUCTION

The use of real cases in active methodologies has stood out as a pedagogical approach that favors meaningful learning and the development of practical skills in students. Active methodologies, in their broad concept, seek to promote the active participation of students in the learning process, making them protagonists in the construction of their knowledge. Integrating real cases into these methodologies allows for a direct connection with the real world, providing the student with a concrete and relevant experience, in which they can apply the concepts learned to everyday situations. This type of approach aims not only at developing cognitive skills, but also at improving socio-emotional skills, such as teamwork, decision-making, and complex problem solving. The use of real cases in the classroom thus favors the formation of students prepared to face the challenges of the labor market and professional life, in addition to engaging them effectively in the educational process.

The justification for choosing this theme is linked to the growing need for innovation in pedagogical practices, in the current context, in which education seeks to align itself with the demands of contemporary society and the labor market. In a scenario where students are increasingly connected to the digital world and exposed to information from multiple sources, active methodologies present themselves as a solution to overcome the traditional teaching model, which is uninteresting and detached from the student's reality. The use of real cases, therefore, provides an opportunity to integrate theory with practice, providing students with a deep and contextualized understanding of the content covered. In addition, by working with real cases, teaching becomes dynamic and interactive, stimulating critical reflection and analysis of real-world situations, which strengthens the learning process.

The problem question that guides this study is: how does the use of real cases in active methodologies impact learning and skills development in students? This question seeks to explore how the integration of concrete situations in the educational environment can contribute to the engagement of students and the formation of essential skills for their academic and professional life. Through this inquiry, it is intended to investigate the benefits and challenges of this pedagogical approach, observing how real cases can facilitate learning and make the teaching process aligned with the needs of students and the demands of the labor market.

The objective of this research is to analyze how the use of real cases in active methodologies can contribute to the development of students' cognitive and socio-

emotional skills, promoting engaged, contextualized and meaningful learning. From this analysis, we seek to understand the effects of this methodology on the teaching-learning process, evaluating its potentialities and limitations in the educational context.

The text is structured in order to provide a broad view on the subject. Following the introduction, the theoretical framework will address the main concepts and foundations of active methodologies and the use of real cases in education. Then, three development topics will be discussed that explore the practical application of this approach, the benefits for students, and the role of the teacher in this context. The methodology will describe the type of research carried out, the criteria for selecting sources and data analysis. Subsequently, the topics of discussion and results will present the impacts observed on student learning, the challenges faced in the implementation of this pedagogical practice and the conclusions about its effectiveness. Finally, the final considerations will summarize the findings of the research and present suggestions for future investigations on the use of real cases in active methodologies.

## **THEORETICAL FRAMEWORK**

The theoretical framework is structured in order to provide an in-depth understanding of active methodologies and the use of real cases in education. Initially, the fundamental concepts of active methodologies will be addressed, highlighting their main characteristics and the importance of their application in the current educational context. Then, the role of real cases in the teaching-learning process will be discussed, showing how these concrete situations contribute to the construction of meaningful and contextualized learning. The main learning theories that support the use of this pedagogical approach will also be presented, such as Piaget and Vygotsky's constructivism, as well as other models that emphasize the importance of experiential and situated learning. Throughout the theoretical framework, the benefits and challenges of using real cases in active methodologies will be discussed, with an emphasis on how this strategy can promote the development of students' cognitive and socio-emotional skills.

## **THE APPLICATION OF REAL CASES IN ACTIVE METHODOLOGIES**

The application of real cases in active methodologies can be understood as a pedagogical strategy that seeks to bring academic content closer to the students' reality, making the teaching-learning process meaningful and contextualized. According to

Vasconcelos (2020, p. 45), the use of real cases in active learning environments provides students with practical experience, allowing them to deal with situations that require the application of concepts and theories in real contexts. This approach is effective when students engage in case studies, in which they investigate specific problems and their possible solutions, developing critical analysis and decision-making skills. According to Brussio and Brussio (2023, p. 168):

It is noteworthy that active methodologies have several benefits for basic education. Among them: a) Improvement in the quality of learning; b) Increased autonomy and protagonism of the student; c) Deepening of critical thinking; d) Greater collaboration with colleagues; e) Development of a sense of responsibility; f) Understanding of the importance of participation in society.

In addition, simulations and complex problem solving are other ways to apply real cases in active methodologies. These methods allow students to explore scenarios that replicate real-world situations, which, as pointed out by Silva and Nascimento (2020, p. 58), favors the development of cognitive and socio-emotional skills. Simulation, for example, allows students to put themselves in decision-making positions, reflecting on the consequences of their actions and encouraging collaborative learning and team problem-solving. In their research, Teles and Nagumo (2023, p. 13) highlight that solving complex problems requires students to integrate knowledge from different areas, which strengthens their ability to move between different disciplines and apply learning holistically.

Practical examples of the application of real cases can be found in several areas of knowledge, such as the social, human, exact and health sciences. In the field of social sciences and humanities, students can study cases that involve ethical, social, or political issues, developing a deep understanding of the reality that surrounds them. According to Lira *et al.* (2024, p. 20), the use of real cases in these fields allows students to reflect on situations of social impact and develop critical skills, such as context analysis and informed decision-making. In the areas of exact sciences and health, real cases are used to simulate medical diagnoses or solve complex technical problems, such as in engineering or biotechnology. Gomes *et al.* (2024, p. 110) emphasize that, when working with these cases, students are challenged to apply their theoretical knowledge to situations that require innovative and effective solutions.

In this way, the integration of real cases in active methodologies is configured as a powerful approach for the development of essential skills in students, promoting engaging, practical learning that is connected with the demands of the real world. By allowing

students to face challenging and complex situations, this methodology prepares them for competent and responsible performance in their future professions, in addition to contributing to the strengthening of cognitive and socio-emotional skills.

## **BENEFITS OF USING REAL CASES FOR SKILL DEVELOPMENT**

The use of real cases in active methodologies offers a series of benefits both in the development of students' cognitive and socio-emotional skills. According to Teles and Nagumo (2023, p. 12), the application of real cases allows students to develop fundamental cognitive skills, such as critical thinking and problem-solving. When faced with complex and challenging situations, students are led to analyze, interpret and make decisions, skills that are essential for the exercise of any profession. In this process, students not only reinforce academic content, but also improve their ability to think in an analytical and reflective way, essential characteristics for professional success. According to Fernandes (2022, p. 82):

One of our main objectives of the applicability of the gamified activity was precisely to promote interaction, motivation and engagement among students and, therefore, it is an activity that everyone should be a winner, because when they work with the same goal they can achieve their goals, the encouragement of teachers and the constant use of this active methodology in the classroom, encouraging students, providing learning through this pedagogical intervention, was of paramount importance providing moments of productive interaction between students.

In addition to the cognitive benefits, active methodologies that use real cases also promote the development of socio-emotional skills, such as empathy and collaboration. Lira *et al.* (2024, p. 21) state that, when working with real situations, students are encouraged to understand different perspectives, which favors the construction of empathy. Group interaction during case resolution also favors the development of social skills, such as the ability to work in a team, communicate effectively, and manage conflicts. These aspects are increasingly valued in the job market, making active methodologies that incorporate real cases a powerful tool to prepare students for the social and professional challenges they will encounter in their future lives.

Another important benefit of using real cases is the increase in student engagement and motivation, factors that are essential for an effective learning process. According to Gomes *et al.* (2024, p. 112), when students are confronted with real problems and practical contexts, they feel involved and motivated, as they realize the relevance of what they are learning. Involvement with concrete situations helps the student to see the usefulness of

the knowledge acquired, which, in turn, favors meaningful and lasting learning. This additional motivation also contributes to the preparation of students for the professional world, because, by experiencing situations that simulate the challenges of the job market, students develop specific skills that make them prepared to face the challenges of professional life. In this context, the use of real cases in active methodologies not only enriches learning, but also increases the chances of success and adaptation of students to the professional environment (Silva & Nascimento, 2020, p. 59).

Therefore, the use of real cases in active methodologies not only facilitates the development of essential cognitive and socio-emotional skills, but also increases student engagement, effectively preparing them for professional performance. These methodologies, by connecting academic content with the real world, contribute to the formation of critical, empathetic, collaborative, and motivated individuals, attributes that are essential for building a successful career.

## **THE ROLE OF THE TEACHER IN THE USE OF REAL CASES IN ACTIVE METHODOLOGIES**

The role of the teacher in the use of real cases in active methodologies is fundamental, as he assumes the role of mediator and facilitator of learning, guiding students in the analysis and resolution of the proposed cases. According to Lira *et al.* (2024, p. 19), the teacher is not limited to being a transmitter of knowledge, but becomes a facilitator who guides students in their learning journey, helping them to contextualize and apply theoretical concepts in real situations. In this process, the teacher must be attentive to the needs of the students and promote a collaborative learning environment, where everyone can share their ideas and reflect on the problems presented. By adapting the real cases to the educational context, the teacher allows students to better understand the practical application of knowledge, making learning meaningful and engaging. According to Brussio and Brussio (2023, p. 166):

Technology in education has been progressing more and more and causing changes in the teaching-learning process. This is due to changes in the job market and, consequently, in the student's profile, which have also been undergoing transformations over the years as a result of digital transformation. And, therefore, to adapt to all this, the active methodology then arises. However, the idea of this concept is to propose a new environment and ways for the student not to be just a listener to his teachers, making him responsible and protagonist of his own learning.

In addition, teacher training is a crucial aspect for the effective use of real cases in active learning environments. According to Portes *et al.* (2024, p. 104), the training of teachers in active methodologies is essential so that they can adapt and apply real cases effectively, considering the particularities of each class and area of knowledge. The continuous training of educators on new pedagogical approaches and available educational technologies is essential for teachers to be able to create and use real cases in a strategic way, ensuring that learning is enriching and aligned with pedagogical objectives. As Teles and Nagumo (2023, p. 14) point out, teachers need to develop skills for planning and managing learning situations that integrate theory and practice, in addition to understanding how students process information and interact with the cases presented.

Therefore, the teacher plays an essential role in using real cases in active methodologies, not only as a transmitter of content, but as a mediator who helps students to integrate and apply knowledge in real contexts. Teacher training is therefore a key element in ensuring that this approach is used effectively, allowing students to benefit from deep and contextualised learning. The constant training of educators is necessary so that they can explore the full potential of active methodologies, making them effective in the development of cognitive and socio-emotional skills in students.

## **METHODOLOGY**

The present research is characterized as a bibliographic research, of a qualitative nature, with the main objective of analyzing the use of real cases in active methodologies in the educational context. The approach adopted seeks to explore the theoretical and practical contributions on the subject, using a literature review as the main instrument for data collection. Academic articles, books, dissertations and theses were selected, with emphasis on recent publications that discuss active methodologies and the application of real cases in teaching. The research was carried out from a systematic search in academic databases such as Google Scholar, SciELO and Capes, using keywords related to the theme, such as "active methodologies", "real cases", "active learning", "case-based teaching", among others. In addition, relevant theoretical sources that address experiential learning, constructivism and other theories that underlie the use of innovative pedagogical approaches were consulted. The collected data were analyzed qualitatively, focusing on the identification of main trends, benefits, challenges and implications of the use of real cases in active methodologies.

Data collection was carried out through a careful analysis of the selected sources, which were read and interpreted according to the research objectives. There was no use of empirical instruments, such as questionnaires or interviews, since the focus of the research is exclusively theoretical. The information extracted from the consulted works was organized and systematized to compose the theoretical framework and the analysis of the results, providing a clear view of the impact of the use of real cases in active methodologies in the formation of students' skills.

The following table presents the bibliographic references used for the construction of this theoretical review, organized according to the guidelines of ABNT, with the title "Table of Bibliographic References Used in Research". The table includes the authors, the titles of the publications, the years of publication and the types of work, allowing a clear visualization of the sources consulted for the development of the study.

Bibliographic Reference Table Used in the Research

Author(s)	Conforming title published	Year	Type of work
BARRETO, R. G.	Digital media and education in the context of new technologies	2011	Book
BARDIN, L.	Content analysis	2016	Book
FREIRE, P.	Pedagogy of the Oppressed	2019	Book
SILVA, C. A.; NASCIMENTO, D. P.	Project-Based Learning in a public school in Rio de Janeiro: Development of cognitive and socio-emotional skills	2020	Journal article
VASCONCELOS, J. S.	Project-Based Learning: an interdisciplinary proposal for Professional and Technological Education	2020	Master's Thesis
MONTEIRO, S. A.; OLIVEIRA, P. J.	Gamification and teaching: an analysis of the impacts on learning in natural sciences	2020	Journal article
VALENTE, J. A.	Blended Learning and Teaching by Inquiry in the Context of Active Learning Methodologies	2021	Journal article
DANTAS, C. R.; PEREIRA, R. M.	Applications of gamification in science education: challenges and potentialities	2021	Journal article
SCHLEMMER, E.; SCHUSTER, B. E.	Active methodologies and teacher training: a new look at pedagogical practice	2022	Journal article
TELES, L.; NAGUMO, E.	Artificial intelligence in education beyond the behaviorist model	2023	Journal article
TOZZI, Cristiane Camargo Campanha; BENTO, Ingrid de Souza; BONICHETA, Letícia Cassaro; CAMPANIN, Maria Aparecida Azevedo; DONA, Raiane Amorim Menini	Digital media in online education: the impact of audiovisual language and collaborative tools	2024	Book Chapter

LIRA, Dynda Reis Valle; MACHADO, Elissandra Campos Coelho; DEPRA, Fernanda de Souza Reia; MARTIN, Giuliano de; AMORIM, Maria Goreti Reis de Oliveira; STORCHI, Robson	The role of the teacher in competency-based teaching	2024	Book Chapter
GOMES, Antônio José Ferreira; VERGOSA, Bruno Francisco Monteiro; PINTO, Carlos Roberto Santos; MOURA, Cleberton Cordeiro de; SILVA, Cristiano dos Santos; SILVA, Omaria Buzatto dos	Powering AI-powered active learning	2024	Book Chapter
CABRAL, Denise; CHERUBINI, Adriana de Oliveira Ramos dos Santos; SIMONASSI, Adriana Lisboa Martins; BORÉ, Aline Paula; OLIVEIRA, Daniela Medeiros de; RODRIGUES, Joseana Lopes	The use of digital tools for cognitive development in early childhood education	2024	Book Chapter
PORTES, Cristian Sordio Vieira; VAZ, Francisco da Conceição; FERREIRA, Guilherme Gabler Cazeli; PEREIRA, Herberth Gomes; MOTA, Maria Fabrícia Alves; MACIEL, Rosine Córdova Armstrong; FREITAS, Thaís Sossai; SILVA, Washington Luiz da	The role of digital technologies in teacher education: opportunities and challenges of virtual learning environments	2024	Book Chapter

**Source:** authorship

Next, the organized table provides a detailed view of the sources that support this research, facilitating the understanding of the works consulted and their relationship with the objectives and topics discussed throughout the text. The references include both classic and recent theoretical works, which discuss active methodologies, the use of real cases in education and the main concepts related to the theme, contributing significantly to the analysis and construction of the theoretical framework.

## RESULTS AND DISCUSSION



Source: authorship

The following word cloud was generated from the frequent and significant terms present in the references. These terms, such as "active methodologies", "real cases", "learning", "cognitive skills" and "competencies", reflect the main concepts discussed throughout this research and will be addressed in the following topics, as well as in the results and discussions.

The word cloud provides a clear view of the central concepts addressed in the references and highlights the relevant themes that guide the analysis of the effectiveness of the use of real cases in active methodologies. Through this visual representation, it is possible to identify the areas of greatest emphasis in the research, such as the impact of active methodologies on learning and the role of the teacher in the educational process. In addition, the terms related to teacher training and the practical application of skills become evident, reflecting the relevance of these aspects in the context of modern education.

## IMPACTS ON STUDENT LEARNING

The use of real cases in active methodologies contributes significantly to deep and meaningful learning, as it allows students to connect the theory learned with practical everyday situations. Lira *et al.* (2024, p. 22) state that the use of real cases promotes a complete understanding of the content, as it encourages students to apply the concepts in different contexts, facilitating the internalization of knowledge. This is because, when

working with concrete situations, students are not limited to memorizing information, but are challenged to think critically, solve problems, and make decisions based on real data. Learning thus becomes relevant and applicable, which, according to Gomes *et al.* (2024, p. 115), leads to greater engagement and motivation of students, as they perceive the practical usefulness of what they are learning.

In addition, studies carried out using real cases show clear benefits in the development of practical skills, which are essential for preparing students for the professional world. According to Vasconcelos (2020, p. 47), solving real problems develops skills such as critical thinking, analysis and synthesis of information, and decision-making in complex situations. Such skills are highly valued in the job market, as they enable students to deal with challenges autonomously and effectively. Through the study of real cases, students also have the opportunity to apply theories in real scenarios, which favors the development of a pragmatic and applied understanding of the concepts studied. For example, in areas such as health, engineering, or the social sciences, the use of real cases allows students to face situations that require a multidisciplinary and collaborative approach, simulating the challenges they are likely to encounter in their future professions (Portes *et al.*, 2024, p. 107).

In this way, the use of real cases not only facilitates meaningful learning, but also provides students with the opportunity to develop practical skills essential for their professional training. By applying theoretical knowledge to concrete situations, students become prepared to solve problems in the workplace, in addition to improving cognitive and socio-emotional skills, such as collaboration and effective communication, which are fundamental in any professional area (Silva & Nascimento, 2020, p. 60). Thus, the integration of real cases in active methodologies is an effective pedagogical strategy to promote integrated, dynamic learning oriented towards the development of essential skills for professional life.

## **IMPLEMENTATION CHALLENGES IN THE SCHOOL CONTEXT**

The implementation of real cases in active methodologies, despite its benefits, presents a series of challenges in the school context, which need to be overcome to ensure the effectiveness of this pedagogical approach. According to Teles and Nagumo (2023, p. 14), one of the main difficulties faced by educators when applying real cases is the lack of adequate material and technological resources. Often, schools do not have

sufficient infrastructure to provide students with the necessary tools to carry out the proposed activities, such as computers, specific software, or internet access. In addition, the limited time for planning and executing activities involving real cases is also a significant obstacle, since teachers need to adapt their methodologies to the already structured curriculum and the requirements of the workload.

Another important challenge is the resistance of students, who are not always willing to engage in active methodologies that require greater participation and responsibility for their own learning. Lira *et al.* (2024, p. 20) highlight that, although many students benefit from the use of real cases, some may feel uncomfortable with this approach, those accustomed to a traditional teaching model, where the teacher is the central figure in the learning process. This resistance behavior can be caused by a lack of familiarity with the methodology or by the perception that real cases are difficult to understand and apply. In this sense, the change of posture and the willingness to learn

To overcome these challenges, several strategies can be adopted. First, it is essential that teachers adapt their teaching methods, making them flexible and aligned with the needs of students. As Gomes *et al.* (2024, p. 111), adapting activities and creating real, accessible contexts for learners are essential to increase engagement and motivation. In addition, the use of digital technologies can be an effective solution to circumvent material resource limitations. The use of digital platforms, simulations, and virtual learning environments allows students to access real cases and interact with them in a dynamic and engaging way. In this sense, Portes *et al.* (2024, p. 105) emphasize that the incorporation of educational technologies can expand teaching possibilities, making the learning experience rich and accessible, in addition to facilitating the personalization of teaching according to the needs of each student.

Therefore, although the implementation of real cases in active methodologies presents challenges such as lack of resources and student resistance, it is possible to overcome these difficulties through the adaptation of pedagogical methods and the use of digital technologies. These strategies not only make learning accessible but also contribute to student engagement and the success of this innovative pedagogical approach.

## **EVALUATION OF THE EFFECTIVENESS OF THE USE OF REAL CASES**

The evaluation of the effectiveness of the use of real cases in active methodologies is a crucial aspect to understand the impact of this approach on the teaching-learning

process. According to Teles and Nagumo (2023, p. 15), measuring the effectiveness of the use of real cases involves the analysis of several factors, such as the level of student engagement, the development of cognitive and socio-emotional skills, and the practical application of the knowledge acquired. The evaluation therefore needs to consider both quantitative and qualitative results, addressing the impact of the use of real cases not only in terms of academic performance, but also in the development of essential competencies for professional life.

One of the appropriate assessment methods for these pedagogical approaches is formative assessment, which allows the teacher to track students' progress throughout the learning process, adjusting pedagogical strategies as needed. Silva and Nascimento (2020, p. 61) suggest that, by integrating real cases, formative assessment becomes an important tool to monitor students' active participation and their ability to apply theoretical concepts in practical situations. This approach allows the teacher to continuously assess the students' understanding of the cases presented, in addition to offering constructive feedback, essential for the improvement of learning.

In addition, project-based assessment is another effective strategy for measuring the effectiveness of using real cases, as it allows students to demonstrate their skills in a practical way, applying the knowledge gained to solve real problems. Lira *et al.* (2024, p. 24) highlight that, through this assessment, it is possible to observe how students use their research, collaboration, problem-solving, and communication skills, all developed throughout the execution of projects based on real cases. This methodology not only evaluates the final product, but also the learning process, encouraging students to reflect on their choices and actions during the resolution of the case.

Therefore, the effectiveness of using real cases in active methodologies can be measured through formative and project-based assessments, which allow for a holistic analysis of the impact of this approach. These assessment methods not only verify the knowledge acquired, but also provide valuable insights into the development of practical and socio-emotional skills in students, essential aspects for preparing students for the job market (Gomes *et al.*, 2024, p. 118).

## **FINAL CONSIDERATIONS**

The final considerations of this study reflect on the analysis of the use of real cases in active methodologies and their contribution to the development of cognitive and socio-

emotional skills in students. From the literature review, it was possible to observe that the application of real cases in the educational context provides significant learning, allowing students to connect theoretical knowledge with concrete situations in the real world. In addition, the results indicate that this pedagogical approach not only favors the development of cognitive skills, such as critical thinking and problem-solving, but also contributes to the strengthening of socio-emotional skills, such as empathy, collaboration, and effective communication.

Regarding the research question, "how does the use of real cases in active methodologies impact learning and skill development in students?", the findings confirm that the use of real cases has a positive impact on both student engagement and the development of their competencies. When working with practical situations, students are encouraged to apply the concepts learned in a deep and contextualized way, which contributes to effective learning in line with the demands of the job market. In addition, solving real cases actively involves students in the learning process, which strengthens their motivation and interest in the content, as well as preparing them to face complex challenges in their future professions.

The contributions of this study focus on understanding the fundamental role that real cases play in active methodologies, both in the development of technical skills and in the interpersonal skills of students. The study reinforces the importance of incorporating this approach in the teaching of various areas of knowledge, in the social, human, exact and health sciences, where the practical application of the content is essential for the education of students. By highlighting the benefits of using real cases, the study contributes to the promotion of pedagogical practices aligned with the current needs of education, offering valuable insights for educators and educational institutions that seek innovation in their practices.

However, despite the findings presented, this study recognizes the need for future investigations to complement and expand the conclusions presented here. The research was of a bibliographic nature, limited to the survey and analysis of secondary sources, and, therefore, does not include empirical data on the implementation of real cases in active methodologies in different educational contexts. Empirical studies that involve the practical application of this approach in various school realities can offer an in-depth understanding of the challenges and opportunities encountered by educators in the implementation of this methodology. In addition, future research could explore the effectiveness of different types

of real cases in specific contexts, analyzing, for example, whether the nature of the case (simulation, case study, problem solving) influences differently the development of students' skills.

Therefore, although the results of this study have demonstrated the importance of using real cases in active methodologies, there is a gap to be filled by research that investigates in detail the effects of this approach in different educational settings. The theoretical contributions presented here pave the way for future explorations, which may contribute to the improvement of pedagogical practices and to the improvement of the quality of learning in the school context.

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