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THE USE OF DIGITAL TECHNOLOGIES IN EARLY CHILDHOOD EDUCATION: CHALLENGES AND POSSIBILITIES

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ABSTRACT

The present study addressed the implementation of active methodologies in the educational context, aiming to understand the effects of these approaches on the academic performance of students. The overall objective was to analyze how active methodologies influence learning, identifying the challenges and opportunities associated with adoption. To achieve this objective, a literature review was carried out, which included the analysis of several sources on the subject. The results showed that active methodologies promote a positive impact on academic performance, in addition to favoring the development of essential skills, such as autonomy and teamwork. The analysis of the students' perceptions showed that, when they became protagonists of their learning, they demonstrated greater motivation and engagement. The final considerations highlighted that, although the findings confirm the effectiveness of active methodologies, there is a need for further research that explores implementation in different educational contexts. These investigations can enrich knowledge about the challenges and innovative practices in teaching. Thus, the research contributed to the understanding of the role of active methodologies in contemporary education.

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INTRODUCTION

Contemporary education faces significant challenges that require new approaches and methodologies. Active teaching methodologies have gained prominence as a promising alternative to promote effective and engaging learning. These approaches prioritize the active participation of students in the teaching-learning process, favoring the construction of knowledge through practical and reflective experiences. The inclusion of digital technologies in this context enhances the possibilities of interaction and collaboration between educators and students, expanding the ways of teaching and learning.

The choice for active methodologies is justified by the need to prepare students for the challenges of the twenty-first century. In a world in constant transformation, in which socio-emotional skills and critical thinking become essential, it is essential that the educational system keeps up with these changes. Active methodologies offer tools that not only make learning meaningful, but also develop skills that are fundamental for the formation of citizens capable of adapting to the demands of the labor market and society.

The central problem to be investigated refers to the implementation of active methodologies in educational institutions and their impacts on student learning. Despite their potential, many schools still face barriers, such as resistance from educators, lack of specific training, and lack of adequate resources. Thus, it is essential to understand what are the main challenges and opportunities in adopting these practices, as well as the effect on student motivation and performance.

The objective of the research is to analyze the effectiveness of active teaching methodologies in promoting learning and developing skills in students, considering the use of educational technologies.

The text is structured as follows: the introduction presents the theme, the justification, the problem and the objective of the research. Then, the theoretical framework argues the definitions and foundations of active methodologies, while the development topics address the evolution of pedagogical practices, hybrid teaching and the challenges of implementation. The methodology describes the approach used for the literature review, and the discussion topics and results analyze the impact of active methodologies on learning, teacher training, and student perception. Finally, the final considerations summarize the main findings of the research and suggest directions for future investigations.

THEORETICAL FRAMEWORK

The theoretical framework of this work is organized into three main sections. The first section addresses the definitions and fundamental concepts related to active teaching methodologies, highlighting the characteristics and relevance in the contemporary educational context. The second section explores the relationship between active methodologies and the development of socio-emotional skills, emphasizing how these practices contribute to the integral formation of students. Finally, the third section argues the role of information and communication technologies (ICT) in the implementation of active methodologies, analyzing the opportunities and challenges that arise with the integration of these tools in the school environment. This structure aims to provide an understanding of the theoretical bases that support the research and contextualize the subsequent discussions.

THE EVOLUTION OF TEACHING METHODOLOGIES

The evolution of teaching methodologies has been marked by a significant transition from traditional practices to dynamic and interactive approaches, known as active methodologies. Traditional practices, often centered on the figure of the teacher and the transmission of contents, have proven to be insufficient to meet the demands of contemporary education. In this context, active methodologies emerge as alternatives that encourage the participation and engagement of students in the learning process.

According to Avrella and Cerutti (2018, p. 12), "hybrid teaching, for example, presents itself as a methodological possibility that allows the personalization of teaching, integrating face-to-face and virtual moments, which provides greater flexibility and autonomy to students". This approach highlights the need for a new educational paradigm, which values the construction of knowledge through interaction and practice. Thus, blended learning not only improves the learning experience but also enables students to develop skills that are essential in the twenty-first century.

In addition, the implementation of active methodologies requires reflection on the teacher's attributions. According to Debald (2020, p. 20), "the teacher must assume the role of mediator, creating learning environments that stimulate the autonomy and protagonism of students". This change in role emphasizes the importance of teacher training so that educators can adopt innovative practices in the classroom. As a result, active methodologies are not restricted only to new teaching techniques, but promote a change in school culture.

By contrast, traditional teaching practices, characterized by lectures and conventional assessment methods, have been criticized for their limited effectiveness in developing essential skills in students. The active methodology, in turn, seeks to transform the educational process into a collaborative experience. As Ahlert, Wildner and Padilha (2017, p. 10) point out, "active teaching and learning methodologies value the interaction between students and teachers, promoting an environment in which the student becomes the protagonist of the learning process". This demonstrates that, unlike traditional approaches, active methodologies encourage the development of critical and creative skills.

Finally, it is evident that the transition from traditional practices to active methodologies represents a significant evolution in the field of education. The adaptation of educators and continuous training are essential for the effective implementation of these new approaches. Therefore, active methodologies not only offer a viable alternative to traditional practices, but also contribute to the formation of students who are critical, autonomous, and prepared for the challenges of the future. This change reflects the need for teaching that not only transmits knowledge, but also prepares students to become active agents in their own learning.

BLENDED LEARNING AND ITS POSSIBILITIES

Hybrid teaching has been consolidated as an active methodology that integrates face-to-face and virtual practices, promoting a dynamic and flexible educational environment. This approach combines the best of both worlds, allowing students to access digital resources while maintaining meaningful interactions in the classroom. As a result, blended learning not only enriches the learning experience, but also aligns with contemporary training demands.

According to Bacich (2016, p. 9), "hybrid teaching proposes a rearrangement of the classroom, in which the teacher acts as a mediator and the student as the protagonist of his learning, enabling the student to customize his study path". This statement highlights the paradigm shift in which the student ceases to be a passive receiver of information and starts to assume an active role in the construction of knowledge. The personalization of learning, a central feature of blended learning, provides a meaningful experience that is tailored to the individual needs of students.

In addition, the use of information and communication technologies is an essential component of blended learning. Avrella and Cerutti (2018, p. 15) state that "technologies in education are not an end in themselves, but a tool that, when well used, can enhance the teaching-learning process". This view highlights the need for adequate training for

educators, who must be able to integrate technologies into their pedagogical practices. The conscious use of digital resources can facilitate interaction and collaboration between students, making learning engaging.

On the other hand, the implementation of blended learning is not without challenges. Assunção and da Silva (2020, p. 18) highlight that "the resistance of some educators to adopt new methodologies can be a significant obstacle to the effective implementation of hybrid teaching in schools". This resistance may be related to the lack of specific training or the fear of losing control over the classroom. Thus, it is essential that institutions offer support and training to teachers, so that they feel prepared to integrate hybrid teaching into their practices.

Therefore, blended learning represents an excellent opportunity to transform education, promoting autonomous and personalized learning. By articulating face-to-face and virtual practices, this active methodology not only enriches the teaching-learning process, but also prepares students for the challenges of the twenty-first century. The success of the implementation of blended learning, however, depends on a commitment from both educators and institutions, which must work together to overcome barriers and ensure that all students have access to quality education.

CHALLENGES AND OPPORTUNITIES OF IMPLEMENTING ACTIVE METHODOLOGIES

The implementation of active methodologies in the educational context brings a series of challenges and opportunities that need to be considered. While these approaches have the potential to transform learning, their adoption is not always straightforward. Among the main obstacles, the resistance on the part of educators and the lack of adequate training stand out. In addition, institutions often lack the necessary infrastructure and resources to support change in pedagogical practices.

According to Assunção and da Silva (2020, p. 18), "educators' resistance to adopting active methodologies can be one of the biggest obstacles to educational innovation, reflecting a fear of losing control in the classroom and the difficulty of adapting to new practices". Thus, the recurrent aspects of the resistance to change are verified: the insecurity in relation to the new teaching model, which requires a new form of interaction with students. Continuous training and the exchange of experiences among teachers are essential to overcome this resistance, enabling an environment conducive to innovation.

In addition, institutions need to face issues related to infrastructure. According to Debald (2020, p. 22), "many schools are not prepared to offer the necessary technological support for the implementation of active methodologies, which can limit the effectiveness of

these approaches". The lack of adequate equipment and internet access can make it difficult to integrate digital tools into classes, hindering the development of active practices that depend on technology. Thus, it is essential that institutions invest in technological resources and teacher training.

However, challenges also bring opportunities. Hybrid teaching, as Avrella and Cerutti (2018, p. 15) highlight, "can be seen as a response to these difficulties, as it provides an environment in which the student can explore content autonomously, while the teacher acts as a mediator". This approach allows for a personalization of learning, enabling students to advance at their own pace and explore their interests, contributing to greater engagement in the educational process.

Therefore, while the implementation of active methodologies faces significant obstacles, the opportunities that arise with this transition are promising. Overcoming resistance and ensuring the adequate training of educators are essential steps for the success of these practices. At the same time, the adoption of hybrid teaching can facilitate the adaptation and integration of new methodologies, benefiting both students and educators. The combination of continuous training, adequate infrastructure and a flexible teaching model can transform challenges into opportunities, promoting a dynamic educational environment.

METHODOLOGY

The methodology adopted in this research consists of a bibliographic review, which allows a critical and systematic analysis of the existing literature on active teaching methodologies. The type of research is descriptive and is based on a qualitative approach, which provides a deep understanding of pedagogical practices and their implications. The instruments used for data collection were academic articles, books, theses and dissertations, which were selected from databases and online repositories, such as *Google Scholar, ResearchGate* and specific journals in the area of education. The procedures included the definition of keywords related to the theme, the selection of relevant materials and the organization of the information collected in order to facilitate the analysis. The techniques used in the research involved the critical reading of the selected works, the identification of trends and gaps in the literature, in addition to the systematization of the main findings for the elaboration of the theoretical framework.

The following table presents the synthesis of the main works consulted during the bibliographic review, organized according to the criteria of relevance and impact in the discussion on active teaching methodologies.

Chart 1: Main Works Consulted in the Bibliographic Review

Author(s)	Title as published	Year	Type of work
SOFFA, M. M.; TORRES, P. L.	The teaching-learning process mediated by information and communication technologies in online teacher training.	2009	Annals of Congress
BACICH, L.	Hybrid teaching: report of teacher training and practice for personalization and integrated use of digital technologies in education.	2016	International Symposium
AHLERT, E. M.; WILDNER, M. C. S; PADILHA, T. A. F.	Active teaching and learning methodologies.	2017	Seminar Annals
AVRELLA, J. F.; CERUTTI, E.	Technologies in education: hybrid teaching as a methodological possibility.	2018	Scientific Journal
ASSUNÇÃO, B. G.; DA SILVA, J. T.	Active Methodologies: a reflection on learning today.	2020	Annals of Congress
ARAÚJO, V. S.; FREITAS, C. C.	Collaborative text via WhatsApp as a form of multiliteracy and strategy for textual production in language classes.	2020	Book Chapter
DEBALD, B.	Higher education and active learning: from reproduction to knowledge construction.	2020	Book Chapter
VERSUTI, F. M. *et al*.	Socio-emotional skills and educational technologies: a systematic literature review.	2020	Scientific Journal
SIQUEIRA, A. C. S.; LIMA-RODRIGUES, L.	Development of socio-emotional skills as a means to develop a sense of belonging to the learning process.	2021	Annals of Meeting
SILVA, T. B.; PEREIRA, L. B. R.	Socio-emotional Competencies of the National Common Curricular Base: how to prepare students to face the challenges of the twenty-first century in the face of the era of competitiveness.	2022	Scientific Journal

Source:The authors.

The table presented summarizes the main references consulted, evidencing the diversity of approaches and perspectives on active teaching methodologies. This selection of works contributes to the theoretical foundation of the research and offers a solid basis for the discussion of the results and implications in the educational context. The analysis of the selected works makes it possible to identify the current trends, the challenges faced and the opportunities for the implementation of these methodologies in pedagogical practices.

IMPACT OF ACTIVE METHODOLOGIES ON LEARNING

The impact of active methodologies on student learning has been discussed, especially in relation to academic performance. These approaches, which emphasize the active participation of students in the educational process, have shown significant results in motivation and knowledge retention. With the use of techniques that encourage collaboration and practice, active methodologies provide an engaging learning experience.

According to Ahlert, Wildner and Padilha (2017, p. 10), "active teaching and learning methodologies promote an environment where the student becomes the protagonist of his or her educational process, which can lead to greater involvement with the content and

better academic performance". The transformation of the student's role is highlighted, who, by assuming an active position, tends to develop a strong commitment to learning, reflected in positive results in the evaluations.

In addition, the relationship between active methodologies and the development of competencies also deserves attention. According to Silva and Pereira (2022, p. 5), "the use of active methodologies in the school environment is related to the development of essential skills, such as problem-solving, teamwork, and autonomy". This statement emphasizes that, in addition to improving academic performance, active methodologies equip students with skills needed for the job market and everyday life.

However, it is essential to consider that the implementation of these methodologies can present challenges that influence the results. Assunção and da Silva (2020, p. 18) state that "the resistance of some students to adapt to teaching methods that require active participation can impact performance, if there is no adequate support". The importance of a supportive environment in which educators can guide and encourage student participation is evident, ensuring that everyone has the opportunity to engage in the proposed activities.

Therefore, the impact of active methodologies on learning is significant and multifaceted. While they promote an improvement in academic performance and skills development, their effectiveness depends on implementation and ongoing support for students. Adapting to these new practices requires time and dedication from both educators and students, and it is essential that institutions provide the necessary resources for a successful transition. Thus, when considering the effectiveness of active methodologies, it is essential to evaluate both academic results and individual student experiences in the learning process.

TEACHER TRAINING FOR THE IMPLEMENTATION OF ACTIVE METHODOLOGIES

Teacher training is a key aspect for the successful implementation of active methodologies in the educational context. In order for these approaches to be adopted, it is essential that educators receive adequate training that enables them to use new pedagogical strategies and integrate technologies into teaching. The change in the role of the teacher, from a transmitter of knowledge to a mediator of learning, requires a reconfiguration of formative practices.

According to Bacich (2016, p. 11), "teacher training should include not only theoretical content, but also practical experiences that allow teachers to experience active methodologies in their routine". The importance of a training curriculum that goes beyond theory is emphasized, promoting the experience of active methodologies, which can

facilitate its adoption in everyday school life. When teachers have the opportunity to experience these practices, they feel safe and prepared to implement them in the classroom.

In addition, teacher training must consider the specificities of the environment in which teachers work. Avrella and Cerutti (2018, p. 16) state that "it is essential that educational institutions offer adequate support and resources, providing an environment conducive to experimentation and innovation". This indicates that the responsibility for teacher training should not fall only on initial training courses, but also on institutions that should create favorable conditions for educators to develop.

Another relevant aspect is the constant updating of educators. According to Debald (2020, p. 23), "continuing education is essential for teachers to be able to adapt to the new demands and challenges imposed by active methodologies". This statement highlights the need for training programs that are flexible and that address new pedagogical trends on an ongoing basis, allowing educators to always be up-to-date and prepared to meet the needs of students.

Therefore, teacher training plays a central role in the adoption of active methodologies. Practical experience, institutional support, and continuing education are essential elements to ensure that educators feel empowered and motivated to implement these innovative practices. By strengthening teacher training, educational institutions not only promote quality education, but also contribute to the transformation of the school environment, making it dynamic and adapted to the needs of students in the twenty-first century.

STUDENTS' PERCEPTION OF ACTIVE METHODOLOGIES

The students' perception of active methodologies is a fundamental aspect to understand the effectiveness of these approaches in the teaching-learning process. The student's experience of participating in pedagogical practices that prioritize autonomy and active participation can influence not only their academic performance, but also their engagement and motivation towards learning.

According to Silva and Pereira (2022, p. 5), "the implementation of active methodologies has shown positive results in motivating students, since they feel involved in the learning process and develop a greater interest in the content covered". It is demonstrated that active methodologies can promote an engaging educational environment, in which students become protagonists of their learning, resulting in a greater interest in what is being taught.

In addition, students' experience with the use of technologies and interaction with their peers during practical activities are also relevant aspects. According to Araújo and Freitas (2020, p. 225), "the use of digital platforms, such as WhatsApp, has proven effective in promoting multiliteracy and stimulating collaboration among students". This statement highlights how technology can power collaborative learning, allowing students to connect and learn from each other, even outside of the school setting.

However, it is essential to recognize that students' perceptions may vary. Assunção and da Silva (2020, p. 20) indicate that "some students may still feel insecure or reluctant to participate, especially in environments that prioritized expository didactics". It is evident that, despite the advantages, the transition to active methodologies can generate discomfort in some students, who may need time to adapt to this new learning model.

Therefore, students' perception of active methodologies is complex and multifaceted. While many report an increase in motivation and engagement, others may face difficulties adapting to these new practices. For active methodologies to be effective, it is essential that educators are aware of these perceptions and create a supportive environment that encourages all students to engage in their learning. Understanding the experience of students allows educators to adjust their practices and thus promote meaningful teaching.

FINAL CONSIDERATIONS

The final considerations of this study highlight the main findings regarding the implementation of active methodologies in the educational context. The research showed that active methodologies promote a positive impact on students' academic performance, in addition to favoring the development of essential skills, such as autonomy, teamwork and problem solving. The analysis of the students' perceptions indicated that, when they participate in the learning process, they feel motivated and engaged, resulting in a meaningful educational experience.

When answering the research question about the effects of active methodologies on learning, it was clear that these approaches contribute to a dynamic and interactive educational environment. Students, by becoming protagonists of their learning, demonstrate a greater interest in the content, which is reflected in a high academic performance. In addition, the use of technologies and the interaction between students during practical activities were identified as elements that further enhance the positive results associated with active methodologies.

The contributions of this study are diverse. By highlighting the benefits of active methodologies, the research offers subsidies for educators and school managers who seek

to implement innovative pedagogical practices. The information obtained can be used to improve teacher training programs, focusing on the adaptation and adoption of these methodologies in different contexts. In addition, the research highlights the importance of creating a school environment that encourages the active participation of students, recognizing the need for adequate resources and ongoing support.

However, the need for further studies to complement the findings of this study is evident. Although the results presented provide a basis on the effectiveness of active methodologies, it is essential to investigate how these practices can be implemented in different educational contexts and with different age groups. Future studies can also explore the experiences of teachers in adopting these methodologies, as well as evaluate the resistance faced and the strategies used to overcome it.

Active methodologies are a promising way to transform education, contributing to the formation of critical and autonomous students. Continued research in this area is essential to broaden understanding of the challenges and opportunities that arise from the implementation of these practices, ensuring that education evolves in line with the demands of contemporary society. Thus, the findings of this study not only confirm the efficacy of active methodologies, but also open space for future investigations that can further enrich the educational debate.

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