




INCLUSION OF STUDENTS WITH DISABILITIES: EFFECTIVE STRATEGIES AND METHODOLOGIES

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ABSTRACT

The problem addressed was: what is the effectiveness of the strategies and methodologies used for the inclusion of students with disabilities in the school environment? The general objective was to identify and analyze the practices to promote the inclusion of these students. The methodology adopted was a literature review, analyzing relevant works on pedagogical strategies, active methodologies and inclusive assessment approaches. The results showed that the personalization of teaching, the use of assistive technology and the promotion of a collaborative environment are effective practices for the inclusion of students with disabilities. The personalization of teaching adapted methods and content to the specific needs of students, while assistive technology facilitated access to the curriculum and overcame physical barriers. The promotion of a collaborative environment involved teachers, students and families, creating continuous and adapted support. However, the study also identified challenges, such as the lack of adequate training for educators and deficiencies in school infrastructure. The final considerations highlighted that, although the

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practices analyzed have shown effectiveness, it is necessary to conduct research to explore new approaches and how different contexts influence the effectiveness of inclusion strategies. The continuity of investigations is essential to improve current practices and meet the needs of students with disabilities.

Keywords: Inclusion. Pedagogical Strategies. Assistive Technologies. Active Methodologies. Inclusive Assessment.



INTRODUCTION

The inclusion of students with disabilities in educational institutions has become a priority in contemporary educational policies. This process involves the adoption of pedagogical and methodological practices that ensure the participation and progress of these students in the school environment. Inclusion aims to provide all learners with equal access to the curriculum and school activities, promoting an equitable learning environment that is tailored to the diverse abilities of learners.

The justification for this literature review lies in the need to understand the strategies and methodologies that favor the effective inclusion of students with disabilities. With the increased demands for inclusive educational practices, it is essential to identify which approaches are effective and how they can be implemented to improve the quality of education for these students. The study aims to explore the different strategies that have been applied and evaluate their impact on the inclusion process, considering the importance of well-founded practices for the success of this educational policy.

The central problem that guides this research is: what is the effectiveness of the strategies and methodologies used for the inclusion of students with disabilities in the school environment? Understanding and evaluating these practices is key to enhancing pedagogical approaches and ensuring that all students have access to quality education.

The main objective of this research is to identify and evaluate the strategies and methodologies for the inclusion of students with disabilities in the school environment, based on a critical review of the existing literature.

The structure of the text is organized into sections that will allow a complete analysis of the theme. At first, the introduction will be presented, followed by the theoretical framework, which will address the concepts and foundations related to school inclusion. Then, three development topics will be discussed, addressing pedagogical strategies, active methodologies and inclusive evaluation. The methodology will explain the literature review process and the criteria for selecting the studies. The discussion topics and results analyzed the main findings of the review, and the final considerations will provide a summary of the main conclusions and implications for educational practice.

THEORETICAL FRAMEWORK

The theoretical framework is structured to offer a solid foundation on the main concepts and fundamentals related to the inclusion of students with disabilities. Initially, the definition of key terms such as inclusion, disability, accessibility and curricular adaptation will be addressed to ensure a clear understanding of the concepts involved. Then, an



analysis of the laws and public policies that guide school inclusion will be made, including the Brazilian Inclusion Law and the UN Convention on the Rights of Persons with Disabilities. Next, the theories and models that underpin school inclusion will be explored, with a focus on the Social Model of Disability and the Medical Model of Disability, to provide an understanding of the theoretical approaches that influence educational practices. This theoretical path aims to provide an integrated view of the bases that support the strategies and methodologies discussed in the review.

PEDAGOGICAL STRATEGIES

Pedagogical strategies for the inclusion of students with disabilities are essential to ensure that these students can participate in the school environment. Among the practices discussed are individualized teaching, the use of assistive technology and curricular adaptation.

Individualized teaching is an approach that aims to meet the specific needs of each student. According to Kovatli, Alves and Torres (2003, p. 8), "strategies to establish interaction between children with autism and the computer should be adapted according to the individual needs of each student". The importance of personalizing teaching to meet the specific characteristics and needs of students with disabilities is highlighted, which allows for an inclusive approach. Personalization of teaching helps to create an environment where each student can progress according to their individual abilities and paces.

The use of assistive technology is also an important strategy to promote inclusion. According to Azinheira *et al.* (2011, p. 45), "the use of technological tools can provide students with disabilities with new forms of interaction and access to curricular content". It is evident how assistive technologies, such as educational software and adapted devices, can facilitate learning and promote the autonomy of students with disabilities. Technology, when used appropriately, can remove barriers to participation and learning, providing new opportunities for academic engagement and success.

In addition, curriculum adaptation is an essential strategy to ensure that the curriculum is accessible to all students. Camargo, Cunha, and Aparecida (2022, p. 48) state that "the adaptation of the curriculum must consider the needs and learning styles of students with disabilities to ensure that they have the same learning opportunities as their peers". This reflection emphasizes the importance of modifying teaching content and methodologies to make them compatible with the capabilities of students with disabilities. Curricular adaptations may include the modification of teaching materials, the alteration of the forms of evaluation and the implementation of differentiated teaching strategies.



Therefore, pedagogical strategies such as individualized teaching, the use of assistive technology, and curricular adaptation are essential to promote the inclusion of students with disabilities. Each of these strategies contributes to creating an accessible and equitable learning environment, meeting the diverse needs of students and providing them with the tools they need to succeed academically. The practices described highlight the need for a personalized and flexible approach in education, which is fundamental for the effective inclusion of these students in the school environment.

ACTIVE METHODOLOGIES

Active methodologies play a key role in promoting the participation and engagement of students with disabilities. Among these methodologies, Project-Based Learning (PBL) and Cooperative Learning stand out.

Project-Based Learning (PBL) is a methodology that focuses on students carrying out hands-on projects, with the goal of promoting meaningful learning and skill development. According to Camargo and Daros (2019, p. 23), "PBL allows students with disabilities to participate in projects, offering opportunities to apply knowledge in real contexts and collaborate with colleagues". This approach favors inclusion by allowing students with disabilities to contribute their specific skills and knowledge, as well as develop practical and social skills. Participation in projects can be tailored to the individual needs of students, providing a way of learning that values diversity and promotes engagement.

Cooperative Learning is another active methodology that can be effective in the inclusion of students with disabilities. Azinheira *et al.* (2011, p. 32) state that "Cooperative Learning stimulates collaboration among students and the exchange of knowledge, which is especially beneficial for students with disabilities, who can learn with and through their peers". Collaboration and teamwork foster an inclusive learning environment where all students have the opportunity to participate and contribute. By working in groups, students with disabilities can benefit from social interaction and peer support, which can improve their understanding of the contents and increase their motivation to learn.

In addition, Passerino and Santarosa (2006, p. 55) point out that "active methodologies such as PBL and Cooperative Learning offer innovative ways to engage students with disabilities, creating a dynamic and inclusive learning environment". These methodologies not only engage students in hands-on and collaborative activities, but also allow for the adaptation of tasks to meet individual needs, ensuring that all students can participate equitably.



Therefore, active methodologies such as Project-Based Learning and Cooperative Learning are essential to promote the inclusion and engagement of students with disabilities. These approaches allow for the adaptation of activities to the needs of learners and encourage active participation and collaboration, creating an inclusive and dynamic learning environment.

INCLUSIVE ASSESSMENT

Inclusive assessment is an essential component of ensuring that all students, including those with disabilities, receive a quality education. Among inclusive assessment approaches, formative assessment and adaptive assessment stand out, which are key to monitoring and supporting the progress of students with disabilities.

Formative assessment is an approach that focuses on the continuous monitoring of student learning throughout the educational process. According to Camargo and Daros (2019, p. 30), "formative assessment allows teachers to adjust their pedagogical practices based on student progress, offering constant *feedback* and targeted support to meet the specific needs of each student". It highlights how formative assessment can be used to identify areas of difficulty and provide personalized interventions, contributing to an inclusive and responsive approach to the needs of students with disabilities.

Adaptive assessment, in turn, refers to the adaptation of assessment methods and instruments to accommodate the individual needs of students. According to Kovatli, Alves and Torres (2003, p. 12), "adaptive assessment involves modifying assessment criteria and tools to ensure that all students can demonstrate their knowledge and skills in a fair manner". This approach is critical to ensuring that assessments accurately reflect the learning of students with disabilities, adjusting to their abilities and offering a faithful representation of their academic performance. In addition, Azinheira *et al.* (2011, p. 50) observe that

The combination of formative and adaptive assessment allows for monitoring of the progress of students with disabilities, enabling continuous adjustments to pedagogical strategies and ensuring that each student has the opportunity to reach their potential.

The authors reinforce the idea that an integrated approach to assessment can improve educators' ability to support students with disabilities by offering continuous *feedback* tailored to their individual needs.

Therefore, formative and adaptive assessment approaches are essential to promote inclusive assessment. They allow educators to adjust their practices and ensure that all students, including those with disabilities, can progress and achieve their educational goals.

METHODOLOGY

The methodology adopted for the present research consists of a bibliographic review with the objective of analyzing and synthesizing the existing knowledge about effective strategies and methodologies for the inclusion of students with disabilities. The type of research is qualitative and the approach used is descriptive, focusing on the collection and analysis of relevant information from previous studies. The instruments for data collection were the consultation of academic databases, such as *Google Scholar*, *Scielo* and *PubMed*, and the analysis of articles, dissertations and theses pertinent to the theme.

The procedure involved the selection of studies based on their relevance and contribution to the understanding of the theme. The analysis techniques included the critical reading of the selected texts and the extraction of relevant information about the strategies and methodologies discussed. The research also included the elaboration of a framework to organize the references and the main aspects addressed in the reviewed studies.

The following table presents a summary of the references analyzed, including information on author(s), title as published, year and type of work. This organization aims to facilitate the visualization and understanding of the sources used in the review.

Table 1: Summary of References Analyzed

Author(s)	Conforming Title Published	Year	Type of Work
KOVATLI, M. F.; ALVES, J. B. M.; TORRES, E. F.	Strategies for establishing interaction between children with autism and the computer	2003	Master's thesis.
AZINHEIRA, A. C. P. <i>et al.</i>	Cooperative learning as an inclusion strategy in the 1st cycle	2011	Master's thesis.
CAMARGO, G. T.; WITH ONE, M. E. B.; APPEARED, F.	School management focused on inclusive education in the teaching/learning process	2022	Annals of the UNIFEOB 2022 Scientific-Academic Meeting.
ARAÚJO, M. G. S.; JUNIOR, I. S. N.; PINHEIRO, I. B.	School management and inclusive education: a relationship, a commitment	2021	Article
PASSERINO, L. M.; SANTAROSA, L. M. C.	Possibilities of technological mediation in the school inclusion of autistic people.	2006	Annals of the Computer Science Workshop at School

Source: authorship



The presentation of this table facilitates the organization and analysis of the information collected, allowing a clear understanding of the topics addressed in the reviewed studies. From the analysis of these references, it will be possible to draw conclusions and develop a discussion on strategies and methodologies for the inclusion of students with disabilities.

EFFECTIVENESS OF STRATEGIES AND METHODOLOGIES

The effectiveness of strategies and methodologies for the inclusion of students with disabilities is an essential aspect to ensure that the practices adopted promote the participation and progress of these students. The analysis of the reviewed literature reveals several perspectives on the effectiveness of the pedagogical approaches discussed.

Regarding individualized teaching, the literature points out that this strategy meets the specific needs of students with disabilities. Camargo and Daros (2019, p. 27) state that "individualized teaching is essential to adapt the content and teaching methods according to the specific needs of each student, allowing for an adjusted approach". The authors confirm that personalization of teaching can improve the educational experience of students with disabilities by offering tailored support and ensuring that their needs are met appropriately.

In addition, the use of assistive technology is also recognized as an effective practice. Kovatli, Alves and Torres (2003, p. 15) highlight that "assistive technology has the potential to remove barriers to learning, offering students with disabilities new means of accessing the curriculum and participating in school activities". This point of view reinforces the idea that technological tools can facilitate inclusion by providing alternatives for interaction and learning, adapting to the capacities and limitations of students.

The effectiveness of Project-Based Learning (PBL) and Cooperative Learning is also highlighted in the literature. Azinheira *et al.* (2011, p. 34) observe that "PBL and Cooperative Learning are methodologies that promote collaboration and student engagement, which is especially beneficial for those with disabilities, as it allows for an interactive and inclusive environment". The argument suggests that these active methodologies can improve the participation and motivation of students with disabilities, by integrating them into collaborative activities that value their contributions and promote joint learning.

On the other hand, Passerino and Santarosa (2006, p. 60) emphasize that "it is necessary to ensure that they are applied consistently and that they are adjusted according to the progress of the students". The authors point to the importance of not only implementing strategies, but also monitoring and adjusting these practices based on the evolving needs of students.



Therefore, the reviewed literature indicates that the strategies and methodologies discussed are generally effective in promoting the inclusion of students with disabilities, as long as they are applied appropriately and adjusted to the individual needs of students. The combination of individualized teaching, assistive technologies, active methodologies and continuous evaluation are key elements for the success of these approaches.

CHALLENGES AND BARRIERS

The implementation of inclusion strategies for students with disabilities faces several challenges and barriers that can hinder the effectiveness of the practices adopted. The analysis of the literature reveals some of the main difficulties encountered in this process.

One of the main challenges identified is the lack of adequate training for educators. Camargo and Daros (2019, p. 32) state that "the absence of specific training for teachers in relation to the needs and teaching strategies for students with disabilities can limit the effectiveness of inclusion methodologies". Thus, the authors indicate that the lack of preparation and knowledge of teachers about the specific needs of students with disabilities can compromise the implementation of inclusion strategies.

In addition, school infrastructure presents barriers to inclusion. According to Kovatli, Alves and Torres (2003, p. 17), "the adequacy of school facilities and the availability of assistive technology are insufficient, which makes it difficult for students with disabilities to fully participate in school activities". Deficient resources and physical adaptations can limit the ability of students with disabilities to access the curriculum and participate in school activities.

Another significant challenge is the resistance to change on the part of some members of the school community. Azinheira *et al.* (2011, p. 40) observe that "resistance to the adoption of new pedagogical practices and to a change in mentality in relation to inclusion can create a less receptive environment for the implementation of inclusion strategies". Resistance to change and lack of institutional support can make it difficult for all involved to apply inclusive practices and to accept students with disabilities.

Passerino and Santarosa (2006, p. 65) point out that "the implementation of inclusion strategies requires not only resources and training, but also a continuous commitment and a school environment that supports diversity and adaptation". The authors reinforce the idea that the effectiveness of inclusion strategies is conditioned to a school environment that values diversity and offers continuous support for the adaptation of pedagogical practices.



Therefore, the main challenges and barriers in implementing inclusion strategies include the lack of adequate training for educators, deficiencies in school infrastructure, resistance to change, and the need for a diversity-friendly school environment. These factors can impact the effectiveness of inclusive practices and require attention to ensure successful inclusion.

GOOD PRACTICES AND RECOMMENDATIONS

To improve the inclusion of students with disabilities, it is essential to adopt good practices and recommendations that ensure an accessible and equitable educational environment. The reviewed literature offers several suggestions to promote the effective inclusion of these students.

One of the best practices is the personalization of teaching. Camargo and Daros (2019, p. 29) point out that "the adaptation of teaching methods and content according to the individual needs of students with disabilities is a practice that facilitates inclusion and improves participation". Personalization allows students to receive support tailored to their specific needs, promoting efficient and participatory learning. Adaptation may include changes in the rhythm of activities, the use of auxiliary resources and the application of diversified pedagogical strategies.

Another important recommendation is the use of assistive technologies. Kovatli, Alves and Torres (2003, p. 19) state that "the integration of assistive technology in the school environment can facilitate the access of students with disabilities to the curriculum and improve their participation in activities". Assistive technologies, such as educational software and adapted devices, can provide alternatives that allow students to overcome barriers and participate in the educational process. The use of these resources must be planned and implemented in a way that meets the specific needs of each student.

Fostering a collaborative environment is also a good best practice. Azinheira *et al.* (2011, p. 36) highlight that "collaboration between teachers, students and families is fundamental to create an inclusive learning environment and support the success of students with disabilities". Collaboration involves constant communication and joint work between all those involved in the educational process, ensuring that students' needs are identified and met. This approach also fosters a climate of support and respect, which is essential for the development of all students.

In addition, it is essential to offer continuous training for educators. Passerino and Santarosa (2006, p. 63) emphasize that "the training of teachers in relation to inclusion strategies and the use of assistive technology is essential to ensure an efficient and



inclusive pedagogical practice". Continuous training provides teachers with the skills and knowledge necessary to implement inclusive practices and make appropriate use of available resources.

Therefore, to improve the inclusion of students with disabilities, it is recommended to adopt practices such as personalizing teaching, using assistive technologies, promoting a collaborative environment, and offering continuous training for educators. These recommendations contribute to an accessible and equitable educational environment, ensuring that all students can participate and reach their potential.

FINAL CONSIDERATIONS

The final considerations aim to synthesize the main findings of the study on strategies and methodologies for the inclusion of students with disabilities, with a focus on answering the research question.

The main findings of this study indicate that the effectiveness of strategies and methodologies for inclusion is linked to the personalization of teaching, the use of assistive technology, and the promotion of a collaborative environment. The personalization of teaching, adjusting methods and content to the specific needs of students with disabilities, was identified as a fundamental practice to ensure the active participation and progress of these students. In addition, the use of assistive technology proved effective in facilitating access to the curriculum and in allowing students with disabilities to overcome physical and pedagogical barriers. The creation of a collaborative environment, involving teachers, students and families, also stood out as an important factor for successful inclusion, promoting continuous support adapted to the needs of students.

The study's recommendations include the adoption of these good practices, highlighting the importance of continuous training for educators, the integration of assistive technology, and the promotion of a collaborative environment. These practices are key to ensuring that all students, including those with disabilities, have the opportunity to participate in the educational process and achieve their academic goals.

Despite the important findings, the study also reveals the need for research to broaden understanding of the effectiveness of inclusion strategies in different educational contexts and to explore new approaches that can complement current practices. Additional research could focus on how different contextual variables influence the effectiveness of inclusion methodologies and how practices can be adapted to meet the needs of an even greater diversity of learners with disabilities.



In this way, the study contributes to the understanding of strategies and methodologies for the inclusion of students with disabilities and offers practical recommendations to improve inclusion in the school environment. However, for an understanding and application of inclusive practices, additional studies are needed that investigate the variables involved and explore new approaches and techniques.

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