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Inclusive Education and Behavior in Autism Spectrum Disorder: Challenges and Intervention Strategies for Promoting School Development

Inclusive Education and Behavior in Autism Spectrum Disorder: Challenges and Intervention Strategies for Promoting School Development

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SUMMARY

Inclusive education aims to provide an accessible learning environment for all, including students with Autism Spectrum Disorder (ASD). This study investigates the main challenges faced by schools in the inclusion of students with ASD and presents pedagogical and behavioral intervention strategies that promote their academic and social development. Among the challenges identified, difficulties in communication, socialization, and adaptation to school routines stand out. Inclusive pedagogical practices, such as the use of Augmentative and Alternative Communication (AAC) and structured teaching, have proven to be effective in overcoming these barriers. In addition, the support of a multidisciplinary team, composed of psychologists, speech therapists, and occupational therapists, is essential to ensure that students with ASD receive the necessary support for their full academic and emotional development. This study reinforces the importance of ongoing teacher training and collaboration between schools, families, and health professionals in the inclusion process.

Keywords:Autism Spectrum Disorder. Pedagogical intervention. Alternative and Augmentative Communication. Structured teaching.

ABSTRACT

Inclusive education aims to provide an accessible learning environment for all, including students with Autism Spectrum Disorder (ASD). This study investigates the main challenges faced by schools in the inclusion of students with ASD and presents pedagogical and behavioral intervention strategies that promote their academic and social development. Among the challenges identified, difficulties in communication, socialization, and adaptation to school routines stand out. Including pedagogical practices, such as the use of Augmenta-

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Keywords:Autism Spectrum Disorder. Pedagogical intervention. Alternative and Augmentative Communication. Structured teaching.

1. INTRODUCTION

Inclusive Education has been increasingly discussed and implemented in schools, with the aim of ensuring that all students, regardless of their physical, intellectual or behavioral characteristics, have access to quality education. In this context, the inclusion of students with Autism Spectrum Disorder (ASD) presents specific challenges, since these individuals may have behavioral and developmental characteristics that directly impact the learning process. Difficulties in communication, social interaction and repetitive behavior, often associated with ASD, require teaching strategies and pedagogical interventions that favor their effective participation in the school environment.

The objective of this study is to analyze the main challenges faced in the school inclusion of students with ASD and to investigate intervention strategies that contribute to the academic and social development of these students. To this end, inclusive pedagogical practices, the role of the multidisciplinary team and the development of resources that assist in the teaching-learning process will be explored.

The rationale for conducting this study lies in the growing demand for effective inclusive practices, given the increased identification of children with ASD in schools. Better understanding the barriers faced by these students and the resources available to overcome them is essential to promoting more equitable and inclusive education. In addition, this work seeks to contribute to the debate on how schools can adapt to the specific needs of each student, promoting their full academic and social development.

The question that guides this research is: What are the main challenges faced by schools in the process of including students with ASD, and what pedagogical intervention strategies can be used to promote their academic development?

The problematization that emerges from this question involves the need to identify not only the obstacles present in the school environment, but also the methods that have proven effective in overcoming these difficulties. Throughout this work, we will investigate how educational practices can be adapted to meet the specific demands of ASD, promoting an inclusive and welcoming learning environment for all students.

2. THEORETICAL FRAMEWORK

2.1 Inclusive Education and the Challenges of Including Students with Autism Spectrum Disorder (ASD)

Inclusive education is a pedagogical approach that aims to ensure access and retention of all students in the regular education system, regardless of their physical, intellectual or behavioral characteristics. This concept recognizes diversity as an enriching element of the school environment, where each student, with their peculiarities, contributes to the construction of a more democratic learning space. The concept of inclusion goes beyond the mere physical insertion of the student in the classroom, seeking their active participation and the development of their potential.

The roots of inclusive education are linked to social movements that, throughout the 20th century, fought for the rights of people with disabilities. The Salamanca Declaration, adopted in 1994, was an international landmark that reinforced the importance of educational inclusion as a human right. From this perspective, schools began to be seen as environments that must adapt to the needs of students, and not the other way around. Educational inclusion, in this context, demands pedagogical, physical, and attitudinal transformations to ensure that all students, regardless of their conditions, have a meaningful learning experience (Rodrigues and Cruz, 2020).

In Brazil, legislation has played a crucial role in promoting inclusive education. The 1988 Federal Constitution already established the right to education for all, including people with disabilities.

Subsequently, the Brazilian Inclusion Law (Law 13.146/2015) and the National Policy on Special Education from the Perspective of Inclusive Education (2008) consolidated the country's commitment to providing equitable education. These regulations require schools to adopt inclusive practices, promote curricular adaptations and ensure physical and communicational accessibility, aiming at the full participation of students with disabilities (Araujo and Filho, 2016).

The inclusion of students with Autism Spectrum Disorder (ASD) in regular schools is one of the great challenges of inclusive education. These students, due to their specific characteristics, require

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appropriate pedagogical and social interventions so that they can progress in their academic and social development. Adapting the curriculum and teaching methodologies is essential so that these students can fully benefit from the school environment. In this sense, schools need to be prepared to welcome and support the development of these students effectively (Rodrigues and Cruz, 2020).

Inclusive education is, therefore, an ongoing process of school transformation that aims to ensure that every student has access to quality education, regardless of their circumstances. For this to be possible, the commitment of all stakeholders involved in the educational process is required: teachers, administrators, students and families. Effective inclusion requires not only physical and curricular adaptation, but also a change in mindset that values diversity as a fundamental aspect of the learning process (Schimidt, 2016).

Autism Spectrum Disorder (ASD) is a neuropsychiatric condition characterized by difficulties in communication and social interaction, in addition to the presence of repetitive behaviors and restricted interests. According to the DSM-5 (Diagnostic and Statistical Manual of Mental Disorders), ASD encompasses a wide range of symptoms and severities, which results in the designation "spectrum". This variability makes diagnosis and intervention a complex process, as the needs of individuals with ASD can vary considerably (Schimidt, 2016).

When it comes to communication, people with ASD may have difficulties ranging from mild difficulties, such as understanding subtle social cues, to a complete absence of speech. Individuals often have difficulty initiating or maintaining conversations and may use language in unconventional ways, such as repeating words or phrases (echolalia). These challenges directly interfere with social interaction, which can result in isolation, difficulties in forming bonds and understanding social norms, which impacts the process of school inclusion (Schirmer, 2020).

Another important aspect of ASD is the presence of repetitive behaviors and restricted interests. Students with autism often demonstrate ritualized or repetitive behaviors, such as lining up objects, rocking their bodies, or following rigid routines. In addition, they may develop intense interests in specific topics, which can affect their ability to engage in other activities. Although these behaviors can be challenging, they can also be used as a starting point for educational strategies that integrate the student's interests into the teaching-learning process (Araujo and Filho, 2016).

The variation within the autism spectrum means that the levels of support needed by each student are also very different. While some individuals are able to attend regular school with few adaptations, others require ongoing specialized support. This difference is described in the severity levels of ASD in the DSM-5, which classifies cases according to the amount of support needed in the areas of communication and behavior. Thus, educational planning must be individualized, taking into account the particularities of each student (Schirmer, 2020).

Therefore, it is essential that educators and school staff are aware of the variations within the autism spectrum and prepared to provide appropriate support. Early diagnosis and educational interventions tailored to the student's needs are essential to promote their academic and social development. An inclusive approach to students with ASD requires a deep understanding of these characteristics so that pedagogical strategies can be applied effectively.

The inclusion of students with ASD in the regular education system presents significant challenges, especially regarding the learning process. Difficulties in communication and social interaction often translate into obstacles in the school environment, where the dynamics between teachers, peers and academic activities require skills that many autistic students may have difficulty developing. Understanding and respecting the learning pace and individual characteristics of these students are essential for effective inclusion (Togashi and Walter, 2016).

Among the main challenges faced by students with ASD are difficulties with attention and focus. Many individuals on the spectrum have difficulty concentrating on tasks for long periods of time, which can harm academic performance. Furthermore, resistance to change and insistence on rigid routines can make it difficult to adapt to school dynamics, where flexibility and the ability to move between different activities and subjects are often necessary.

Another significant challenge is the lack of training for teachers and school staff to work with students with ASD. Many educators report feeling unprepared to deal with the specific demands of these students, such as managing challenging behaviors or adapting the curriculum effectively. Lack of knowledge about ASD can lead to misunderstandings and the application of inappropriate teaching practices that do not meet the needs of these students and often exacerbate existing challenges.



(Togashi and Walter, 2016).

The barriers encountered in the inclusion of students with ASD are not limited to the pedagogical aspect. School infrastructure can also be an obstacle, since many environments are not adapted for students with sensory sensitivities, such as bright lights or excessive noise, which are common in traditional schools. These factors can create a stressful and unwelcoming environment for autistic students, making their integration and learning even more difficult (Schirmer, 2020).

Therefore, for the inclusion of students with ASD to be successful, a joint effort is required that involves ongoing teacher training, pedagogical and physical adaptations in the school environment, and emotional and behavioral support. Collaboration between school, family, and health professionals is essential to create an inclusive environment and promote the academic and social development of these students.

2.2 Inclusive Pedagogical Practices in the Context of ASD

Inclusive pedagogical practices play a crucial role in the teaching-learning process of students with Autism Spectrum Disorder (ASD). Given the cognitive, behavioral, and communicative particularities of these students, it is necessary for educators to adopt approaches and methodologies adapted to their needs. One of the most effective strategies is interest-based education, which uses the student's specific interests as a starting point for learning. In the case of students with ASD, who often show fascination with restricted topics, exploring these interests can increase engagement and promote meaningful learning.

Interest-based education recognizes that autistic students, when exposed to content that interests them, demonstrate greater ability to concentrate and retain information. For example, if a student with ASD demonstrates a particular interest in dinosaurs, the teacher can incorporate this topic into reading, math, or science activities. This approach not only facilitates learning, but also helps establish social connections between the student and their peers, since personal interests can be transformed into opportunities for interaction (Oliveira, 2023).

Another fundamental methodology in teaching students with ASD is the use of Augmentative and Alternative Communication (AAC). This practice is especially useful for students who have significant difficulties in verbal communication, allowing them to express themselves in other ways, such as through symbols, images or technological devices. AAC can include the use of communication boards with images that represent objects, actions or feelings, allowing the student to communicate more effectively and reducing the frustrations associated with the inability to verbalize their needs (Madureira *et al.*, 2022).

Structured learning (TEACCH) is another approach widely used with students with ASD. Designed to provide a clear and predictable structure to the learning environment, this methodology organizes the physical space, time, and activities so that students know exactly what to expect and what is expected of them. Predictability is especially important for autistic individuals, who may have difficulty coping with change and uncertainty. The application of structured learning may include the use of visual schedules, which help organize the day's activities and transition between tasks, promoting greater autonomy and safety in the school environment (Uribe et al., 2024).

The role of the school's physical environment is also a crucial factor in the success of inclusive pedagogical practices. Adapting the school space must take into account the sensory sensitivities that many students with ASD have. Excessive noise, bright lights, or disorganized spaces can cause stress and interfere with learning. Thus, creating calm environments, with specific relaxation areas, can be an effective strategy to help students regulate their emotions and improve academic performance (Oliveira, 2023).

Furthermore, curricular adaptations are essential to promote inclusive learning for students with ASD. Making the curriculum flexible, allowing students to progress at their own pace and according to their capabilities, is a fundamental practice. This may include simplifying instructions, breaking tasks into smaller steps, or using visual and concrete materials to help students understand concepts. Performance assessment can also be adapted, focusing not only on academic content but also on the development of social and communication skills (Madureira et al., 2022).

Several examples of good educational practices have demonstrated success in the inclusion of students with ASD. Collaborative teaching programs, where teachers specialized in inclusive education work in partnership with regular teachers, have shown effectiveness in adapting methodologies and providing support.

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individualized to students. In addition, ongoing teacher training and the development of a multidisciplinary team are essential to ensure that education professionals are able to deal with the specific demands of ASD (Uribe *et al.*, 2024).

The integration of assistive technologies also stands out as a good practice in the inclusive context. Devices such as tablets, communication applications and educational software can be used to facilitate interaction, learning and active participation of students with ASD. These tools can be adapted according to the skills and needs of each student, providing a more accessible and personalized learning experience (Madureira *et al.*, 2022).

Another good practice involves working together with the family. Collaboration between the school and those responsible for the student with ASD is crucial for developing consistent and effective strategies, both at home and at school. When there is constant dialogue between educators and family members, it is possible to better adapt pedagogical practices to the student's needs and share valuable information about their progress and challenges (Uribe *et al.*, 2024).

Therefore, inclusive pedagogical practices aimed at students with ASD require careful planning, adapted to the individual characteristics of each student. The combination of specific methodologies, such as structured teaching and AAC, with adaptations in the school environment and curriculum, forms the basis of an inclusive educational process. These practices, when implemented appropriately and supported by teacher training and family involvement, can promote a more welcoming and effective learning environment for students with ASD.

2.3 Interventions and Multidisciplinary Support

Support for students with Autism Spectrum Disorder (ASD) in the school context requires the integrated action of a multidisciplinary team composed of professionals from different areas, such as psychologists, occupational therapists, speech therapists, among others. These specialists play a fundamental role in the integral development of students, offering specific interventions that address the various difficulties faced by students with ASD. Collaboration between these professionals and the pedagogical team is essential to ensure that the educational process is adapted to individual needs, promoting effective inclusion and student well-being (Loureiro et al., 2016).

School psychologists, for example, are responsible for assessing and monitoring the emotional and behavioral development of students with ASD. They help identify challenging behaviors, such as anxiety attacks, aggression, or social isolation, which can interfere with learning. In addition, psychologists offer emotional support, helping students deal with stressful situations and promoting the development of social and emotional skills, which are essential for their integration into the school environment (Cachioni, 2019).

The work of occupational therapists is equally important, as these professionals work to improve the motor, sensory, and cognitive skills of students with ASD. Many individuals on the spectrum have sensory difficulties, which can negatively impact their ability to concentrate and interact in the school environment. Occupational therapy helps develop strategies to deal with these issues, such as using tactile materials or creating routines that promote organization and focus during activities.

Speech-language pathologists, in turn, play a vital role in developing the communication skills of students with ASD. One of the main characteristics of the autistic spectrum is the difficulty in communicating effectively, whether due to limitations in speech or in interpreting non-verbal signals. The speech-language pathologist works directly with the student to improve their language skills, either through traditional therapies or the use of Augmentative and Alternative Communication (AAC) systems, allowing

that the student expresses himself in a clearer and more understandable way (Loureiro et al., 2016).

Among the most effective behavioral intervention strategies in the treatment of students with ASD is Applied Behavior Analysis (ABA). ABA is a scientific approach based on the principles of human behavior and aims to modify challenging behaviors and promote adaptive skills. In practice, this involves systematic observation of student behavior, setting specific goals, and implementing positive reinforcement strategies to encourage desirable behaviors. This intervention has been widely recognized for its effectiveness in improving the social, communicative, and academic skills of autistic children (Cachioni, 2019).

Another widely used method is the Early Intervention Denver Model (ESDM), an approach

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Developmental therapy that combines aspects of ABA with interactive and playful teaching practices. ESDM is especially effective for young children with ASD, promoting learning in a natural and stimulating environment. This approach focuses on building social skills and improving communication through meaningful interactions and everyday activities, favoring the overall development of the child in an individualized way.

Collaboration between the school, the family and the professionals of the multidisciplinary team is a determining factor for the success of interventions with students with ASD. Constant communication between these parties allows therapeutic and educational objectives to be aligned, creating a more cohesive and effective environment for the student's development. Families play an important role in implementing strategies at home, while educators ensure that these interventions are applied in the school context in a consistent manner (Loureiro et al., 2016).

This partnership between professionals and family members also provides emotional and psychological support to parents, who often face challenges in dealing with the needs of their children with ASD. By actively participating in decisions and interventions, families feel more confident and prepared to support their children's development, contributing to the creation of a more positive and welcoming learning environment. The exchange of information and collaboration around best practices makes it possible to create a more efficient action plan for each student (Cachioni, 2019).

Furthermore, ongoing training for education professionals is a fundamental part of supporting students with ASD. It is essential that teachers and other members of the school team receive specialized training to understand ASD and appropriate pedagogical approaches. A lack of training can create barriers in the inclusion process, as without the necessary knowledge, educators may have difficulty adapting their practices to the needs of students. Ongoing training, therefore, provides professionals with the necessary tools to act more effectively (Loureiro et al., 2016).

Finally, the success of multidisciplinary interventions and support depends on integrated, long-term planning that takes into account changes in student development over the years. As the needs of children with ASD evolve, it is important for the multidisciplinary team to review and adjust intervention strategies based on observed progress. This ongoing process ensures that the support offered is always aligned with the student's challenges and potential, promoting their academic and social development at all stages of their school journey.

3. MATERIAL AND METHOD

This study adopts a literature review approach with the aim of analyzing and compiling the challenges and intervention strategies for the inclusion of students with Autism Spectrum Disorder (ASD) in the school environment. The literature review is essential to identify and organize the knowledge already produced on the subject, providing a solid basis for the discussion of methods and practices that have proven effective in promoting inclusive education.

The bibliographic research was carried out in sources such as academic articles, books and dissertations published in recognized databases and with publication dates from 2014 to 2024, such as Scielo, Google Scholar and the Virtual Health Library (BVS). The keywords used for the search included "Inclusive Education", "Autism Spectrum Disorder", "Pedagogical Intervention" and "Multidisciplinary Support". Only works published in the last ten years were selected, in order to guarantee the relevance and currentness of the information.

The methodological steps consisted of: (1) identification of the main challenges faced in the process of inclusion of students with ASD; (2) analysis of pedagogical intervention and multidisciplinary support strategies; and (3) discussion on the most effective inclusive pedagogical practices, based on evidence.

cies presented in the studies analyzed. This methodology allowed the construction of a comprehensive view on the topic, essential to support the research conclusions.

4. RESULTS AND DISCUSSION

The results obtained from the literature review point to the importance of an integrated and multidisciplinary approach in the process of including students with ASD. According to Costa and Abreu (2021), the first challenge highlighted is the difficulty of communication of these students, who often have problems expressing their needs or understanding the instructions given by teachers. Strategies

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Strategies such as Alternative and Augmentative Communication (AAC) have proven effective in providing alternative forms of expression, facilitating interaction in the school environment and promoting greater student participation in pedagogical activities.

Another recurring challenge identified in the literature is the difficulty of socializing students with ASD. Social inclusion in the school environment is essential for the emotional and academic development of these students, but many of them face barriers to forming bonds with their peers and participating in group activities. The use of methodologies that favor social interaction, such as interest-based education, has shown positive results by engaging students in collaborative activities focused on topics that spark their interests.

Furthermore, resistance to change and breaking routine is a common characteristic among students with ASD, which can create difficulties in dynamic school environments. Structured teaching, which organizes activities in a predictable and clear way, has been widely used as a solution to minimize the impact of these difficulties. Studies show that the use of visual schedules and the segmentation of tasks into smaller steps help to reduce anxiety and increase the autonomy of students with ASD.

Regarding cognitive and academic development, the literature review highlights the need for curricular adaptations to meet the particularities of these students. Inclusive pedagogical practices must be flexible, allowing students to progress at their own pace, with activities adjusted to their capabilities. The use of visual and technological resources is a key element in curricular adaptations, as it facilitates students' understanding and engagement in the proposed tasks.

A critical aspect identified is the insufficient training of teachers regarding inclusive pedagogical practices for students with ASD. The literature reveals that many educators feel unprepared to deal with the specific challenges of this disorder, which negatively impacts the quality of education offered. Ongoing training of professionals is essential for the effective implementation of pedagogical strategies and for building an inclusive and welcoming school environment.

Furthermore, collaboration between schools, families and health professionals is often cited as a determining factor for the success of school inclusion of students with ASD. Constant communication between these agents allows for the alignment of educational and therapeutic strategies, creating a more cohesive environment that is favorable to the integral development of students. The literature highlights that the active involvement of families in school decisions contributes to the adaptation of interventions to the specific needs of each student.

The physical environment of the school also has a significant impact on the inclusion of students with ASD. Sensory sensitivities, such as intolerance to loud noises or bright lights, can make it difficult for autistic students to concentrate and feel good. The literature suggests creating calm and adapted spaces that allow students to regulate their emotions and maintain focus on academic activities. These physical adaptations, when combined with pedagogical interventions, favor the development of these students.

Another important issue addressed is the emotional support offered to students with ASD, who often face high levels of anxiety and frustration in the school environment. The literature highlights the role of psychologists and other mental health professionals in monitoring these students, offering ongoing support to help them deal with emotional and behavioral challenges. This support, together with pedagogical strategies, contributes to the well-being of students and their retention in school.

The review also points out that continuous monitoring of the progress of students with ASD is essential for the success of educational interventions. Regular assessment allows strategies to be adjusted according to the student's needs and progress, ensuring that pedagogical practices are always adapted to their reality. Monitoring by a multidisciplinary team also facilitates the identification of new demands and the planning of more targeted interventions.

Finally, the results indicate that assistive technology plays an increasingly relevant role in the process of school inclusion of students with ASD. Tools such as tablets, educational software and communication applications have proven effective in promoting learning and social interaction. The literature highlights that the use of technology allows for the personalization of teaching, meeting the individual needs of students and promoting a more accessible and inclusive learning experience.

In summary, the results of the literature review confirm the importance of inclusive pedagogical practices, the formation of a multidisciplinary team and collaboration between school and family for the successful inclusion of students with ASD. The implementation of these strategies, combined with ongoing training of educators, is essential to ensure that these students have access to quality education in an environment that respects their particularities and promotes their integral development.

5. FINAL CONSIDERATIONS

This study aimed to analyze the main challenges faced by schools in the inclusion of students with Autism Spectrum Disorder (ASD) and investigate intervention strategies that promote the academic development of these students. Through the literature review, it was possible to identify that, although there are significant advances in the field of inclusive education, there are still many obstacles that need to be overcome.

The most common challenges include difficulties with communication, social interaction and adaptation to the school routine. In addition, the lack of adequate training for teachers and the lack of physical and pedagogical resources aimed at students with ASD are factors that directly impact the effectiveness of inclusion. These aspects highlight the need for more comprehensive preparation of schools and greater awareness on the part of all those involved in the educational process.

Intervention strategies such as the use of Augmentative and Alternative Communication (AAC), structured teaching and interest-based education have proven effective in promoting a more accessible and inclusive learning environment. The importance of multidisciplinary support was also evident, with the active participation of psychologists, speech therapists and occupational therapists in adapting pedagogical practices to the specific needs of each student.

Collaboration between families, schools and health professionals is essential for students with ASD to have full academic and social development. Furthermore, ongoing teacher training, combined with the use of assistive technologies, is emerging as a fundamental strategy to ensure inclusion and the quality of education offered.

It is concluded that inclusive education for students with ASD requires a constant effort of adaptation and innovation on the part of schools, with the aim of ensuring that these students have the same opportunities for learning and development as others. Thus, it is up to educators, managers and other education professionals to transform school practices in favor of true and effective inclusion.

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