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# CONSIDERATIONS ABOUT HYPERFOCUS AND METHODOLOGICAL ADAPTATION FOR AUTISTIC STUDENTS

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## ABSTRACT

This article aims to make considerations about Autism Spectrum Disorder (ASD), and methodological adaptations for autistic students, focusing on David Ausubel's Theory of Meaningful Learning and its relationship with hyperfocus as a pedagogical tool. The methodology used is the bibliographic review, based on recent national studies on inclusive education, neurodiversity and pedagogical practices. The results indicate that hyperfocus and meaningful learning can be effective ways to enhance the teaching of autistic students, especially when considering their specificities, proving to be essential to ensure an inclusive and equitable education.

**Keywords:** Meaningful learning. Methodological adaptation. Hyperfocus. Inclusive education. Autism.

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## INTRODUCTION

Autism Spectrum Disorder (ASD) is a neurobiological condition characterized by differences in social interaction, communication, and repetitive behavioral patterns (AMERICAN PSYCHIATRIC ASSOCIATION, 2013). It is estimated that 1 in 160 children has Autism Spectrum Disorder (ASD) (WHO, 2021). According to more recent studies, the prevalence of ASD has been increasing globally, which can be attributed to greater awareness and improvements in diagnostic criteria (MAZZONE et al., 2021). In this sense, it is estimated that for every 5 classes (each class has 30 students) of regular education there may be 1 autistic student. Therefore, it is necessary for the teacher to understand the needs and specificities of each autistic student, according to the individualities of their level of support, as well as to know possibilities of methodological adaptation to promote the learning of this student, since they are rights guaranteed in the Federal Constitution in its Art. 205, in relation to education as a right of all, as well as in Article 206, item I, which establishes equal conditions of access and permanence in school.

In addition, there are rights provided for in Article 1, paragraph 2, of Law No. 12,764/12, which establishes the National Policy for the Protection of the Rights of Persons with ASD, designating access to education with the appropriate adaptations that contemplate their needs. In this educational context, these particularities require methodological adaptations that consider not only the difficulties of students, but also their potentialities, such as hyperfocus and restricted interests (DUPUIS, 2022).

David Ausubel's Theory of Meaningful Learning (1968) argues that the construction of knowledge occurs effectively when new information is anchored in knowledge Previous. In this way, the hyperfocus of autistic students can be understood as a preexisting cognitive structure, which can facilitate the understanding of new concepts, as long as the pedagogical methodology is adapted to their needs.

The condition does not define or limit the general capacity of the person with autism, as there are specific abilities evidenced in people with autism spectrum; among them: the ability to pay attention to specific details that are easily missed by neurotypical people, exceptional memory, hyperfocus, and keen analytical capacity that facilitates the identification of patterns and the efficient processing of complex information (ADAMS, 2020; BARON-COHEN, 2006, 2012; BARON-COHEN et al., 2009). In view of this, this study seeks to review the academic

literature to make considerations about methodological adaptations for autistic students, considering Meaningful Learning as a key strategy and hyperfocus as a pedagogical tool.

## METHODOLOGY

This study was conducted through a literature review, with the objective of investigating methodological adaptations for autistic students, with emphasis on hyperfocus as a pedagogical tool considering David Ausubel's Theory of Meaningful Learning. Scientific articles, books and published legislation were selected, addressing topics such as inclusive education, neurodiversity, adaptive methodologies and teaching strategies for students with ASD. National and international sources were consulted on Google Scholar and SciELO Brazil following the following keywords: Meaningful learning, methodological adaptation, hyperfocus, inclusive education, autism.

The collected materials were analyzed qualitatively, seeking to identify effective methodological approaches in the teaching of autistic students, especially those that use hyperfocus as a learning facilitator. The relationship between the Theory of Meaningful Learning and the pedagogical practices focused on ASD was explored to support the considerations. The analyzed data were organized and discussed in the light of theoretical references, allowing us to understand how hyperfocus can be integrated into the teaching-learning process of autistic students, providing subsidies for more effective pedagogical practices aligned with their needs and potentialities.

## DEVELOPMENT

The Theory of Meaningful Learning and its Relationship with Hyperfocus David Ausubel (1968) states that learning occurs when new knowledge is incorporated into existing concepts, becoming meaningful to the student. This process can be enhanced in the teaching of autistic students, since many of them have intense interests and specialized skills in certain areas (GEURTS, 2009).

Hyperfocus, a common characteristic in people on the autism spectrum, is described as a state of intense and prolonged attention on a specific topic (DUPUIS, 2022). Studies indicate that this ability can be used in education to facilitate the understanding and retention of information when curricular content is presented in a way that is connected to these interests (MELO; LIONE, 2023).

Specific skills and interests are part of the profiles of students with ASD. Therefore, they need curricular adaptations that value this individual particularity. When this happens, there can be high levels of interest, retention, and engagement from these individuals. This aligns with the concept of Meaningful Learning, in which the student integrates new information into structures already established cognitive skills, making learning more effective and lasting. As hyperfocus is constituted by an unrestricted interest in a certain subject, the individual seeks several sources of information to obtain sufficient knowledge that can keep him in absolute and excessive concentration, which Dupuis (2022) apud Isomura (2015) calls "locked-in", a subject of interest due to the resulting difficulty in getting his attention. According to Nascimento, Prommerchenkel, and Santos (2023, p. 8), "this characteristic can be transformed into a powerful teaching tool, as the teacher recognizes and aligns the student's interests and abilities with the curricular objectives."

The adaptation of activities aimed at integrating the student's specific interest enabled a deeper understanding of how to align the curriculum with the individual needs of students (PROMMERCHENKEL; SANTOS, 2023, p. 6). Therefore, in inclusive education, the guiding process of this research, the importance of Ausubel's Theory is perceived, as it "proposes another look at school relations, resignifying the meanings of abnormality, bringing the construction of the new, emphasizing cognitive competence and previously contextualized knowledge." (Araújo, Araújo & Silva, 2020).

Considering the understanding of this theory, it is believed that the previous knowledge of autistic students, and their relational process with hyperfocus or "locked-in" Dupuis (2022) apud Isomura (2015), have the potential to achieve considerable results in the learning process of these students.

students, and will show the challenge faced by teachers and special education professionals in the search for educational inclusion.

**Methodological Adaptation for Autistic Students**

Inclusive education in Brazil is regulated by legislation such as the Brazilian Inclusion Law (Law No. 13,146/2015) and the Berenice Piana Law (Law No. 12,764/2012), which guarantee the right to methodological adaptations for students with ASD (BRASIL, 2015). In the context of the Federal Institutes, the Napnes have an essential role in mediating this process, offering technical and pedagogical support to teachers (DALL'ALBA; GUERREIRO, 2016).

The theories proposed by Vygotsky point out that, by providing adequate stimuli to individuals with disabilities, the environment becomes favorable for the development of their skills (VYGOTSKY, 1987; 1994; VYGOTSKY et al., 2010).

**Among the most effective strategies for methodological adaptation, the following stand out:**

Use of visual and structured materials: Graphic organizers, concept maps and structured tables facilitate the anchoring of information (MOREIRA, 2010). These resources help transform learning into a structured and predictable process, reducing the anxiety of autistic students and increasing their ability to retain information (GRANDIN, 2014).

Personalization of activities: Hyperfocus can be leveraged to make learning more meaningful, as the student already has a repertoire of knowledge that can be expanded with new related information (MURPHY et al., 2020).

Flexibility in assessment: Assessments can be adapted to less verbal and more practical formats, reducing cognitive overload (MURPHY et al., 2020). For some autistic students, allowing visual or oral responses instead of just written ones can make a significant difference in demonstrating their knowledge (FORTUNATO; NAVARRO, 2013).

There needs to be a change in the way education is conducted, valuing diversity and respecting the singularities of each individual, instead of being based on normality (ALMEIDA; MAZONI; CONCEIÇÃO, 2024, p. 5).

## FINAL CONSIDERATIONS

The considerations on the subject show that the Theory of Meaningful Learning is a promising theoretical framework for methodological adaptation in the teaching of autistic students. Hyperfocus, when recognized as prior knowledge, considering Ausubel's theory, can enhance learning, as long as teachers are open and prepared to use pedagogical strategies and flexible and personalized methodological adaptations.

The integration between teachers and emerging technologies presents itself as an effective path to educational inclusion. Future studies can deepen the relationship between hyperfocus and academic performance, as well as explore new technological tools for methodological adaptation.

## REFERENCES


1. Almeida, P. H. P. S. de, Mazoni, A. R. G., & Conceição, V. M. da. (2024). Aprimorando a participação: Estratégias para apoiar alunos com autismo na educação física escolar. *SciELO Preprints*. https://doi.org/10.1590/SciELOPreprints.8972

2. American Psychiatric Association. (2013). *Manual diagnóstico e estatístico de transtornos mentais: DSM-5* (5th ed.). Artmed.

3. Baron-Cohen, S. (2017). *The pattern seekers: A new theory of human invention*. Allen Lane.

4. Brasil. (1988). *Constituição da República Federativa do Brasil*. Senado Federal. https://www2.senado.leg.br/bdsf/bitstream/handle/id/518231/CF88_Livro_EC91_2016.pdf

5. Brasil. (2012). *Lei nº 12.764, de 27 de dezembro de 2012. Institui a Política Nacional de Proteção dos Direitos da Pessoa com Transtorno do Espectro Autista*. Diário Oficial da República Federativa do Brasil. http://www.planalto.gov.br/ccivil_03/_ato2011-2014/2012/lei/l12764.htm

6. Brasil. (2015). *Lei nº 13.146, de 6 de julho de 2015. Institui a Lei Brasileira de Inclusão da Pessoa com Deficiência*. Diário Oficial da República Federativa do Brasil. http://www.planalto.gov.br/ccivil_03/_ato2015-2018/2015/lei/l13146.htm

7. Dall'Alba, J., & Guerreiro, E. M. B. R. (2016). Inclusão no contexto dos institutos federais de educação: Contribuições do NAPNE do IFAM-CMZL. In *Anais do 7º Congresso Brasileiro de Educação Especial* (pp. 1–10). UFSCar.

8. Dupuis, A., & et al. (2022). Hyperfocus or flow? Attentional strengths in autism spectrum disorder. *Frontiers in Psychiatry*, *13*, Article 886692. https://doi.org/10.3389/fpsyt.2022.886692

9. Fortunato, V. B., & Navarro, J. F. (2013). *Educação inclusiva e autismo: Desafios e possibilidades*. Papirus.

10. Geurts, H. M., Corbett, B., & Solomon, M. (2009). The paradox of cognitive flexibility in autism. *Trends in Cognitive Sciences*, *13*(2), 74–82. https://doi.org/10.1016/j.tics.2008.11.006

11. Grandin, T. (2014). *O cérebro autista: Pensando através do espectro*. Record.

12. Isomura, T., & et al. (2015). Delayed withdrawal of attention from snakes in children with autism. *Frontiers in Psychology*, *6*, Article 241. https://doi.org/10.3389/fpsyg.2015.00241

13. Melo, M. M., & Lione, V. O. F. (2023). O brincar das crianças com o transtorno do espectro autista na educação infantil. *Olhares: Revista do Departamento de Educação da Unifesp*, *11*(1), 1–15.

14. Moreira, M. A. (2010). *O que é afinal aprendizagem significativa*. La Laguna.

15. Murphy, B., Honey, E., Selfridge, J., & Rodd, J. M. (2020). Autistic adults show preserved semantic priming and hyperlexia. *Journal of Autism and Developmental Disorders*, *50*(10), 3413–3424. https://doi.org/10.1007/s10803-020-04400-0

16. Nascimento, T. A. do, Prommerchenkel, V. B., & Santos, M. B. C. S. (2023). Hiperfoco como caminho para o aprendizado e inclusão de alunos com autismo. *Seminário de Educação, Memória e Patrimônio*. https://periodicos.ufes.br/semap/article/view/42478

17. Vygotsky, L. S. (1987). *Thinking and speech*. In R. Rieber & A. Carton (Eds.), *The collected works of L. S. Vygotsky: Vol. I. Problems of general psychology* (pp. 39–285). Plenum Press.

18. Vygotsky, L. S. (1994). *A formação social da mente*. Martins Fontes.

19. Vygotsky, L. S., Luria, A. R., & Leontiev, A. (2010). *Linguagem, desenvolvimento e aprendizagem* (11th ed.). Ícone.

20. Mazzone, L., Postorino, V., & Schema, D. (2021). *Autism: Risk factors and diagnosis*. Springer.