

**AUTISM SPECTRUM DISORDER IN THE CONTEXT OF PUBLIC SCHOOLS:
CONTRIBUTIONS OF PHYSICAL EDUCATION TO THE DEVELOPMENT OF
LANGUAGE: MEDIATION, BODY AND EMBODIED COGNITION**

**TRANSTORNO DO ESPECTRO AUTISTA NO CONTEXTO DA ESCOLA
PÚBLICA: CONTRIBUIÇÕES DA EDUCAÇÃO FÍSICA ESCOLAR PARA O
DESENVOLVIMENTO DA LINGUAGEM: MEDIAÇÃO, CORPO E COGNIÇÃO
INCORPORADA**

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PÚBLICA: CONTRIBUCIONES DE LA EDUCACIÓN FÍSICA ESCOLAR AL
DESARROLLO DEL LENGUAJE: MEDIACIÓN, CUERPO Y COGNICIÓN
INCORPORADA**



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ABSTRACT

This article analyzes the contributions of school Physical Education to the development of language in students with Autism Spectrum Disorder (ASD) in the context of public schools. This is qualitative research with a theoretical-bibliographic approach, grounded in Bardin's Content Analysis (2016), with a corpus composed of 38 scientific works selected from indexed databases SciELO, ERIC, Scopus and CAPES Journals Portal, published between 2020 and 2025, following a protocol compatible with PRISMA guidelines. The theoretical framework articulates Gardner's Theory of Multiple Intelligences (1995), critically repositioned in light of contemporary studies on embodied cognition and language, with Vygotsky's mediation perspective and recent literature on ASD, linguistic development, and school inclusion. Results indicate that Physical Education, when organized with pedagogical intentionality and grounded in inclusive principles, constitutes a relevant space for language mediation, enabling forms of expression that transcend orality including the articulated use of bodily practices and Augmentative and Alternative Communication (AAC) resources. The analysis reveals a productive tension between structured behavioral approaches and

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sociointeractionist perspectives, whose integration tends to produce more consistent outcomes in school contexts. It is concluded that the integration of body, movement, and language constitutes a relevant pedagogical axis for expanding the communicative repertoire of students with ASD, with direct implications for teacher education and inclusive education policies.

Keywords: Autism Spectrum Disorder. School Physical Education. Embodied Cognition. Pedagogical Mediation. Augmentative and Alternative Communication. Inclusive Education.

RESUMO

O presente artigo analisa as contribuições da Educação Física escolar para o desenvolvimento da linguagem em alunos com Transtorno do Espectro Autista (TEA) no contexto da escola pública. Trata-se de pesquisa qualitativa de abordagem teórico-bibliográfica, ancorada na Análise de Conteúdo proposta por Bardin (2016), com corpus constituído por 38 produções científicas selecionadas em bases indexadas SciELO, ERIC, Scopus e Portal de Periódicos da CAPES, publicadas entre 2020 e 2025, seguindo protocolo compatível com as diretrizes do PRISMA. O referencial teórico articula a teoria das Inteligências Múltiplas de Gardner (1995), reposicionada criticamente à luz de estudos contemporâneos sobre cognição incorporada e linguagem, com a perspectiva vigotskiana de mediação e com a produção recente sobre TEA, desenvolvimento linguístico e inclusão escolar. Os resultados indicam que a Educação Física, quando organizada com intencionalidade pedagógica e fundamentada em princípios inclusivos, constitui espaço relevante de mediação da linguagem, ao possibilitar formas de expressão que transcendem a oralidade incluindo o uso articulado de práticas corporais e recursos de Comunicação Aumentativa e Alternativa (CAA). A análise evidencia que tal potencial não se efetiva de modo automático, sendo condicionado pela qualidade da mediação docente, pelo planejamento sistemático das práticas corporais e pelas condições estruturais em que o trabalho pedagógico se desenvolve. Identifica-se, ainda, tensão entre abordagens comportamentais estruturadas e perspectivas sociointeracionistas, cuja articulação produz resultados mais consistentes no contexto escolar. Conclui-se que a integração entre corpo, movimento e linguagem configura eixo pedagógico relevante para a ampliação das formas de comunicação de alunos com TEA, com implicações diretas para a formação docente e para as políticas de educação inclusiva.

Palavras-chave: Transtorno do Espectro Autista. Educação Física Escolar. Cognição Incorporada. Mediação Pedagógica. Comunicação Aumentativa e Alternativa. Educação Inclusiva.

RESUMEN

El presente artículo analiza las contribuciones de la Educación Física escolar al desarrollo del lenguaje en alumnos con Trastorno del Espectro Autista (TEA) en el contexto de la escuela pública. Se trata de una investigación cualitativa de abordaje teórico-bibliográfico, anclada en el Análisis de Contenido propuesto por Bardin (2016), con un corpus constituido por 38 producciones científicas seleccionadas en bases indexadas SciELO, ERIC, Scopus y Portal de Revistas de la CAPES, publicadas entre 2020 y 2025, siguiendo un protocolo compatible con las directrices del PRISMA. El marco teórico articula la teoría de las Inteligencias Múltiples de Gardner (1995), reposicionada críticamente a la luz de estudios contemporáneos sobre cognición incorporada y lenguaje, con la perspectiva vigotskiana de mediación y con la producción reciente sobre TEA, desarrollo lingüístico e inclusión escolar. Los resultados indican que la Educación Física, cuando se organiza con intencionalidad pedagógica y principios inclusivos, constituye un espacio relevante de mediación del lenguaje, al posibilitar formas de expresión que trascienden la oralidad incluyendo la articulación con recursos de Comunicación Aumentativa y Alternativa (CAA). El análisis

evidencia que tal potencial no se efectiviza de modo automático, estando condicionado por la calidad de la mediación docente, la planificación sistemática de las prácticas corporales y las condiciones estructurales en que se desarrolla el trabajo pedagógico. Se identifica, además, una tensión entre enfoques conductuales estructurados y perspectivas socio interaccionistas, cuya articulación produce resultados más consistentes en el contexto escolar. Se concluye que la integración entre cuerpo, movimiento y lenguaje configura un eje pedagógico relevante para la ampliación del repertorio comunicativo de los alumnos con TEA, con implicaciones directas para la formación docente y las políticas de educación inclusiva.

Palabras clave: Trastorno del Espectro Autista. Educación Física Escolar. Cognición Incorporada. Mediación Pedagógica. Comunicación Aumentativa y Alternativa. Educación Inclusiva.

1 INTRODUCTION

Autism Spectrum Disorder (ASD) represents one of the most prevalent neurodevelopmental conditions in the contemporary school context. Data from the World Health Organization (WHO) indicate that approximately 1 in 100 children has some degree of impairment within the spectrum, which places public schools in front of concrete challenges with regard to the organization of effectively inclusive pedagogical practices (WHO, 2023). The communicative and interactional difficulties characteristic of ASD directly affect the possibilities of student participation in the learning processes, demanding from the different areas of the school curriculum more elaborate and intentionally articulated pedagogical responses.

In the context of Brazilian public schools and, in particular, in regions marked by deep structural inequalities, such as the Amazon, these challenges take on even more demanding contours. The distance between the legal frameworks of inclusive education and the concrete working conditions of teachers, the unequal access to continuing education, and the scarcity of specialized pedagogical resources configure a scenario that requires not only pedagogical prescriptions, but public policies that are consistent and committed to the reality of the schools where these students study and where these teachers work every day.

In the context of school Physical Education, this challenge takes on specific contours. The National Common Curriculum Base (BNCC) situates Physical Education in the field of body culture of movement, recognizing its formative potential in cognitive, social, affective and cultural aspects (BRASIL, 2018). From this perspective, Physical Education emerges as a privileged space for interaction, expression and construction of meanings, central dimensions for the development of the language of students with ASD. Studies converge on the understanding that the body is not a mere support for action, but is constituted as an instance of expression, communication and production of meanings (VYGOTSKY, 1998; WILLEMS; CASASANTO, 2011; FERREIRA; LIMA, 2024).

The realization of this potential does not result from the simple insertion of the student in Physical Education classes. It depends, in a decisive way, on the quality of teacher mediation, on the pedagogical intentionality of the proposed practices and on the structural conditions in which the work is developed (BARBOSA; SILVEIRA, 2024; HEALY; NACUA; FRAGALA-PINKHAM, 2018). In view of this scenario, this article aims to analyze the contributions of school Physical Education to the development of language in students with ASD in the context of public schools, based on a critical and systematized theoretical-bibliographic review.

2 THEORETICAL FRAMEWORK

2.1 AUTISM SPECTRUM DISORDER AND LANGUAGE DEVELOPMENT

Autism Spectrum Disorder (ASD) is characterized as a neurodevelopmental condition marked by persistent specificities in communication and social interaction, associated with restricted and repetitive behavior patterns (APA, 2022).⁹ It is a condition that manifests itself in unique ways in each subject, challenging standardized approaches and calling on the school to respond with creativity, listening and pedagogical intentionality. The heterogeneity of the spectrum imposes a relevant epistemological caveat: there is no single profile of student with ASD, and generalizations about the communicative difficulties of these students should be treated with methodological caution. Lord et al. (2022) reaffirm that phenotypic spectrum variability requires individualized pedagogical approaches, not uniform intervention protocols.

In the educational context, the characteristics of ASD have a direct impact on the development of language, especially in its pragmatic dimension that involves the social use of communication, the interpretation of intentions and the construction of meanings in interactions (GOMES; ALMEIDA, 2021). Pragmatic difficulties do not necessarily stem from limitations in the structural domain of language, but from the complexity of interactional situations and the unpredictability of communicative contexts (TAGER-FLUSBERG; PAUL; LORD, 2011; ADAMS et al., 2021). This distinction guides the focus of interventions towards the creation of structured and meaningful contexts of language use.

Recent studies indicate that language development in individuals with ASD is deeply related to opportunities for mediated social interaction. Environments that favor exchange, cooperation, and expression tend to enhance communicative advances (SILVA; MOTA, 2023; BARROS; LIMA, 2022). This perspective is in line with the historical-cultural approach of Vygotsky (1998), for whom higher psychological functions, including language, are constituted in mediated social interactions. It is also important to emphasize that communicative difficulties in ASD are articulated with sensory, cognitive and relational aspects: sensory hypersensitivity, for example, can limit participation in activities that involve physical contact or intense sounds frequent conditions in Physical Education classes (GOMES; ALMEIDA, 2021).

⁹ The adoption of the nomenclature "Autism Spectrum Disorder" in this work follows the terminology of the DSM-5-TR (APA, 2022), widely used in the scientific and educational field. It is recognized, however, that a significant part of the autistic community and researchers committed to the perspective of social identity prefer the term "autistic person" or "autistic spectrum condition", understanding autism as a constitutive trait of identity, and not as a disorder external to the subject. This distinction is politically relevant and should be considered by professionals working in the field.

A perspective that cannot be omitted in contemporary studies on ASD is that of neurodiversity, which understands autism not as a pathology to be corrected, but as a legitimate way of neurological functioning and being in the world (ARMSTRONG, 2012; SILVA; MOTA, 2023). This approach, articulated with Vygotsky's historical-cultural perspective, shifts the focus of the interventions: instead of seeking communicative normalization, it is about creating conditions for each student to expand their expressive repertoire based on their own possibilities. In the school context, this implies recognizing the unique forms of expression of students with ASD verbal, gestural, bodily and symbolic as pedagogical starting points, and not as deficits to be overcome. Such a repositioning is consistent with the National Policy on Special Education from the perspective of Inclusive Education (BRASIL, 2008) and with the principles of the Convention on the Rights of Persons with Disabilities, which affirm the right to difference and full participation in educational spaces (UN, 2006).

2.2 SCHOOL PHYSICAL EDUCATION AND MEDIATION IN THE INCLUSIVE PROCESS

School Physical Education has been resignified in recent decades, incorporating a broader perspective that considers the body as language, culture and expression. The BNCC reinforces this understanding by situating the area in the field of body culture of movement, shifting the axis from technical-motor practice to communicative and relational practice (BRASIL, 2018). In the context of inclusive education, by mobilizing games, play, cooperative practices and shared bodily experiences, this curricular component favors concrete situations of interaction in which communication is built in gesture, movement and in the relationship with the other (RODRIGUES; FERREIRA, 2022; COSTA; ANDRADE, 2023).

Pedagogical mediation occupies a decisive position in this scenario. The teacher acts as an organizer of meaningful experiences, adapting strategies, interpreting behaviors, and promoting interactions. In this role, the sensitivity to recognize and value unconventional forms of communication is as important as the mastery of pedagogical techniques: it is in the quality of the bond that the space for development opens or closes. For students with ASD, this mediation enables the construction of social bonds and the expansion of forms of communication, verbal and non-verbal (SANTOS; OLIVEIRA, 2021). However, the realization of this potential in the school routine still has limits: weaknesses in teacher training, absence of targeted pedagogical strategies and difficulties in adapting activities to the specific needs of students constitute recurrent challenges (BARBOSA; SILVEIRA, 2024). Inclusion that is achieved only through the physical insertion of the student, without

reorganization of pedagogical conditions, configures what Mantoan (2015) calls integration, as opposed to effective inclusion.

The inclusive perspective in Physical Education demands not only specific adaptations, but a structural reorientation of teaching practice that presupposes consistent initial and continuing education, institutional support and adequate material conditions (MENEAR; SMITH, 2021). The literature indicates that quality inclusive Physical Education is distinguished not by the type of activity proposed, but by the way the teacher structures the participation of students with ASD: simple practices can produce rich communicative experiences when organized with intentionality, predictability and attention to the forms of engagement of each student (COSTA; ANDRADE, 2023).

2.3 THE THEORY OF MULTIPLE INTELLIGENCES: HEURISTIC CONTRIBUTIONS AND EPISTEMOLOGICAL LIMITS

The theory of Multiple Intelligences, proposed by Howard Gardner in 1983 and revised in 1995, is a widely used reference in the educational field to support the diversity of ways of learning and expressing. For Gardner (1995), linguistic intelligence refers to the ability to use language effectively to express ideas, interpret meanings and establish social relationships, a conception that, in the context of ASD, offers an alternative pedagogical reading to the deficient model, recognizing that these students manifest different forms of expression and learning.

It is necessary, however, to critically situate this reference. Brody (2006) and Waterhouse (2006) demonstrated that the neurological evidence for the categorical separation of intelligences is insufficient to support the modular model proposed by Gardner, and Visser, Ashton and Vernon (2006) identified a high correlation between the postulated intelligences, contradicting the premise of independence between them. Acknowledging these limitations does not invalidate the pedagogical use of the framework, but it does require epistemological responsibility: for the field of Physical Education and ASD, the value of theory resides, above all, in its heuristic function: to broaden the teacher's view of the possibilities of learning and to legitimize different forms of expression without its theoretical fragility compromising the consistency of the central pedagogical argument.

Contemporary frameworks on embodied cognition offer more solid theoretical support. Willems and Casasanto (2011) indicate that language is not processed in isolated modules of the sensory-motor system, but is constituted in articulation with the subject's bodily experiences. This perspective, combined with the Vygotskian approach, theoretically grounds the relevance of Physical Education beyond its motor dimension, recognizing it as

a space for the constitution of language by the body in movement. For the purposes of this study, Gardner is mobilized in its heuristic-pedagogical dimension and Vygotsky allied to incorporated cognition as epistemological foundations for the analysis of the relationships between body, movement and language development.

3 METHODOLOGY

The present study adopts a qualitative design of a theoretical-bibliographic nature, anchored in the critical and interpretative analysis of consolidated scientific productions. As Minayo (2021) points out, qualitative research enables the interpretation of social phenomena in their symbolic and contextual dimension, configuring itself as an epistemologically legitimate alternative when the objective is to systematize the state of knowledge about a given educational phenomenon and extract implications for pedagogical practice. The researcher, linked to the public education network of the state of Pará and with direct action in teacher training processes aimed at inclusive education, positions herself from a perspective that articulates theoretical rigor and commitment to the reality of the schools where this work is developed. In the field of Special and Inclusive Education, rigorous theoretical-bibliographic reviews have demonstrated the ability to identify gaps, tensions, and convergences in the knowledge produced, contributing to the formulation of research agendas and guidelines for educational policies (LORD et al., 2022; BARBOSA; SILVEIRA, 2024).

The corpus was constituted through a systematized search in the SciELO, ERIC, Scopus and CAPES Journal Portal databases, with a time frame between 2020 and 2025, privileging the most recent and internationally indexed production on the subject. The descriptors used were: Autism Spectrum Disorder; School Physical Education; language; pedagogical mediation; linguistic intelligence; inclusive education, in Portuguese and English, combined by the Boolean operators AND and OR. The inclusion criteria included: (a) peer-reviewed publications; (b) thematic adherence to the object of study; (c) full-text availability; and (d) publication within the delimited period. The following exclusion criteria were adopted: course completion papers, dissertations not published in journals, editorials, and texts without an explicit empirical or theoretical framework.

The selection process followed a systematized protocol compatible with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, adapted for theoretical-bibliographic reviews, as detailed in Table 1. The initial survey resulted in 312 records, of which 187 were pre-selected by title and abstract, 74 read in full and 38 included in the final corpus after rigorous application of the eligibility criteria.

Table 1*Corpus selection protocol (adapted from PRISMA)*

Step	Description	Criteria applied	N
1	Identification — Search in the SciELO, ERIC, Scopus and CAPES Portal databases (2020–2025)	Descriptors combined by Boolean operators AND/OR in Portuguese and English	312
2	Sorting by title and abstract	Thematic adherence to the object of study; publication in a peer-reviewed journal	187
3	Eligibility – reading the full text	Full-text availability; explanation of the theoretical or empirical framework; exclusion of TCCs, unpublished dissertations, editorials	74
4	Inclusion in the final corpus	Full application of the eligibility criteria; relevance to the thematic categories of analysis	38

Source: prepared by the author (2025).

The analysis was carried out through Bardin's Content Analysis (2016), in three stages: pre-analysis, with floating reading and organization of the corpus; exploration of the material, with coding and thematic categorization; and treatment of the results. The thematic categories were: (a) communication and pragmatics of language in ASD; (b) pedagogical mediation and teaching intentionality; (c) bodily practices as a space for expression and language; and (d) structural conditions for inclusion in school Physical Education. It is recognized, as a delimitation, the absence of primary empirical data collection, which positions the work as an applied theoretical analysis.

Table 2*Summary of the main references of the corpus analyzed*

Author(s)/Year	Objective	Method	Key findings
BARROS; LIMA (2022)	Communication in an inclusive school environment for students with ASD	Qualitative research; Case Study	Structured inclusive environments progressively expand communicative forms
SILVA; MOTORBIKE (2023)	Social interaction and language development in ASD	Integrative review	Mediated interaction enhances advances in verbal and nonverbal language
COSTA; ANDRADE (2023)	Pedagogical intentionality in inclusive PE with ASD	Field research; Note	Teacher intentionality defines the quality of communicative experiences

RODRIGUES; FERREIRA (2022)	Pedagogical mediation and participation of students with ASD in PE	Qualitative; Interviews and observation	Qualified mediation expands verbal and non-verbal communicative repertoire
BARBOSA; SILVEIRA (2024)	Gaps in teacher training for inclusion in PE	Survey with teachers	Formative weaknesses limit the realization of inclusive potential
FERREIRA; LIMA (2024)	Imitation, repetition and interaction in communicative development with ASD	Qualitative longitudinal study	Meaningful repetition and functional imitation favor communicative expansion
SOUZA et al. (2024)	Mediated communication opportunities for students with ASD	Systematic review (2019–2024)	Quality of mediated interactions is a determining variable of progress
HEALY; NACUA; FRAGALA- PINKHAM (2018)	Physical activity interventions for children with ASD	Systematic review	Communicative benefits depend on qualified mediation
LORD et al. (2022)	ASD profiles with a focus on language and communication	International narrative review	Spectrum heterogeneity requires individualized approaches
ADAMS et al. (2021)	Social Communication Intervention for ASD at School Age	Randomized controlled trial	Structured and mediated interventions produce consistent pragmatic gains

Source: prepared by the author (2025).

4 RESULTS AND DISCUSSION

4.1 LANGUAGE, INTERACTION AND ASD: CONVERGENCES AND TENSIONS IN RECENT LITERATURE

The analysis of the corpus allows us to identify expressive convergence: the language development of students with ASD is constituted in the conditions of social interaction and in the forms of pedagogical mediation present in the school environment, and not as an individual and autonomous process (APA, 2022; SILVA; MOTA, 2023; SOUZA et al., 2024). Interventions focused exclusively on the acquisition of formal linguistic structures are limited in scope, especially with regard to the pragmatic development of communication.

The observation reveals a relevant tension between two perspectives. On the one hand, behavioral approaches such as Applied Behavior Analysis (ABA) emphasize the systematic structuring of stimuli and responses, with consistent empirical evidence in clinical contexts (ADAMS et al., 2021). On the other hand, socio-interactionist approaches favor immersion in significant communicative contexts, with less emphasis on structured protocols (SILVA; MOTA, 2023; BARROS; LIMA, 2022). This tension implies concrete pedagogical

choices regarding the organization of Physical Education classes, and its non-problematization constitutes a recurrent gap in national studies. It is worth emphasizing that this is not an irreducible opposition: approaches that combine structure and meaning, predictability and openness to the communicative unforeseen, tend to offer more consistent results for students with ASD in school contexts (ADAMS et al., 2021; SILVA; MOTA, 2023).

The studies analyzed indicate that students with ASD are not characterized by the absence of language, but by their own modes of communicative manifestation. Recognizing these forms implies shifting the pedagogical gaze from a corrective perspective to an approach that welcomes and enhances the available communicative expressions. In addition, structured, sensorially adequate environments with predictable routines reduce the obstacles to communication — evidence of direct implication for Physical Education, whose context often involves high sensory unpredictability (GOMES; ALMEIDA, 2021).

The absence of studies with empirical designs capable of verifying the specific effects of Physical Education practices on the language development of students with ASD is identified as an expressive gap in the national literature. The international literature already has more robust intervention studies (ADAMS et al., 2021; HEALY; NACUA; FRAGALA-PINKHAM, 2018), configuring methodological asymmetry that the area will need to face. The communicative advances observed are neither linear nor homogeneous, reinforcing the need for individualized approaches and systematic monitoring of progress (LORD et al., 2022).

4.2 SCHOOL PHYSICAL EDUCATION AS A SPACE FOR LANGUAGE MEDIATION

The results indicate that school Physical Education can constitute a space for language mediation, especially when it organizes practices that expand the forms of expression beyond orality. This possibility is not homogeneous, nor can it be attributed to the curricular component itself — its effectiveness depends on the pedagogical conditions in which the practices are developed (RODRIGUES; FERREIRA, 2022; COSTA; ANDRADE, 2023).

Cooperative and playful activities produce concrete communication situations in which students need to negotiate meanings, respond to the actions of others and sustain forms of interaction. In these contexts, language is not a prerequisite for participation, but as part of the engagement process itself — a pedagogically relevant condition for students whose pragmatic difficulties limit access to conventional communicative contexts (OLIVEIRA; CASTRO, 2022). Symbolic games, role-plays, rhythmic activities, and cooperative games are strategies of particular relevance, as they require expressing intentions, negotiating

rules, and interpreting the actions of the other communicative functions that correspond exactly to the most committed pragmatic dimensions in the spectrum (SOUZA et al., 2024; FERREIRA; LIMA, 2024).

The presence of students with ASD in Physical Education classes, by itself, does not guarantee inclusive processes. Communicative advances depend on the forms of adaptation of practices and the quality of teacher mediation (BARBOSA; SILVEIRA, 2024; SANTOS; OLIVEIRA, 2021), which calls into question discourses that attribute to Physical Education an intrinsic inclusive potential without problematizing the concrete conditions in which this potential is realized. The analysis also shows that the use of visual resources — sequence cards, pictograms, anticipation of activities — enhances engagement and expands the possibilities of communicative participation, qualifying teacher mediation by reducing the unpredictability of the context (GOMES; ALMEIDA, 2021; RODRIGUES; FERREIRA, 2022).

In this context, the articulation between body practices and Augmentative and Alternative Communication (AAC) resources deserves to be highlighted. The AAC comprises a set of strategies, techniques, and technologies from communication boards with pictograms to electronic devices with voice synthesis that expand the expressive possibilities of students with difficulties in oral communication (DELIBERATO, 2021; VON TETZCHNER; MARTINSEN, 2000).

In the context of Physical Education classes, the integration between movements, functional gestures and AAC symbols can create multimodal communicative systems that favor both participation and language development. A student with ASD who uses a communication board to anticipate the stages of a cooperative activity is not only accessing information: he is exercising an active communicative function in the context of the class, building meaning in interaction with the teacher and colleagues. For this articulation to be effective, it is necessary for the Physical Education teacher to know the AAC systems in use by their students and to incorporate them into the pedagogical planning, a competence that is still little developed in the initial training courses in the area (BARBOSA; SILVEIRA, 2024; MENEAR; SMITH, 2021).

Finally, Physical Education offers unique conditions for the development of non-verbal forms of communication gestures, postures, rhythms, looks and body actions are legitimate forms of expression that expand the communicative repertoire of students with ASD in a way that other disciplines, more centered on verbal language, rarely manage to offer (OLIVEIRA; CASTRO, 2022; FERREIRA; LIMA, 2024).

4.3 TEACHER MEDIATION AND BODY PRACTICES: INTEGRATION BETWEEN BODY AND LANGUAGE

The results situate teacher mediation as a central variable in the articulation between body practices and language development of students with ASD. Mediation is concretized in the way the teacher organizes interactions, proposes activities, adapts demands, and monitors student participation (SOUZA et al., 2024). Pedagogical planning is a structuring variable: the absence of specific strategies reduces predictability, weakens the regulation of interactions, and restricts opportunities for communicative engagement (SILVA; MOTA, 2023).

The body emerges not as an auxiliary resource, but as a dimension through which the student with ASD expresses himself and constructs meanings. Gestures, actions, postures, rhythms and facial expressions expand the possibilities of participation of students with limited access to conventional orality. This understanding is supported both by the Vygotskian perspective and by research on embodied cognition, which demonstrates the functional articulation between sensorimotor systems and linguistic processes (WILLEMS; CASASANTO, 2011). Meaningful repetition, functional imitation and structured interaction are relevant dimensions of this process (FERREIRA; LIMA, 2024), progressively built in the experiences in which the student participates, observes and responds to the actions of the other.

The quality of teacher mediation is expressed in the ability to interpret unconventional forms of communication of students with ASD and use them as a starting point for the expansion of the communicative repertoire. This process requires pedagogical sensitivity, knowledge about the spectrum and willingness to reorganize practices skills rarely developed sufficiently in Physical Education degree courses (BARBOSA; SILVEIRA, 2024; MENEAR; SMITH, 2021). The results support, together, the thesis that the integration between body, movement and language mediated by intentional teaching action configures a relevant pedagogical axis for the development of language in students with ASD. This integration is not only methodological: it is also ethical, as it recognizes in the body that moves, that gesticulates and that inhabits the collective space of the class, a legitimate and valuable way of being and communicating in the world. Achieving it requires consistent teacher training, rigorous planning, and institutional conditions that respect the complexity of inclusive pedagogical work.

5 FINAL CONSIDERATIONS

The present study analyzed the contributions of school Physical Education to the development of language in students with ASD in the context of public schools. The theoretical-bibliographic analysis allows us to affirm that Physical Education, when organized with pedagogical intentionality and based on inclusive principles, constitutes a relevant space for language mediation, by enabling forms of expression that transcend orality and by creating conditions for the progressive expansion of the students' communicative repertoire.

Three central analytical axes emerge from the results. First, the language development of students with ASD is a socially constituted process, which depends on the quality of mediated interactions in the school environment, which positions Physical Education, with its interactive and expressive potential, as a curricular component of strategic relevance for inclusion. According to this potential, it is not automatically effective, being conditioned by the quality of teacher mediation, by the systematic planning of practices and by the structural conditions in which the pedagogical work is developed, including the articulation with AAC resources, still insufficiently incorporated into the training of Physical Education teachers. Third, the body constitutes an active dimension in communicative processes, supported both by the historical-cultural approach and by contemporary research on embodied cognition.

From the point of view of limitations, it is recognized that the absence of primary empirical data collection restricts the ability to contextualize verification of the statements produced. It is recommended that future research adopt collaborative action research designs or intervention studies with variable control, capable of articulating theoretical production, transformation of pedagogical practices and empirical verification of the effects on language development in public school contexts in regions with less access to specialized resources.

The implications of this study for teacher training are straightforward. The preparation of Physical Education teachers to work with students with ASD requires not only the mastery of adaptation strategies, but the development of a pedagogical posture that recognizes the communicative singularities of these students, articulating theoretical foundations of inclusion, knowledge about ASD, specific knowledge of the area and familiarity with AAC systems. It is concluded that the integration between body, movement and language is a relevant pedagogical axis for the inclusive education of students with ASD. This conclusion, however, cannot be read as yet another abstract prescription addressed to teachers already overworked in structurally fragile public schools. On the contrary, it requires managers, policymakers, and researchers to assume their responsibility: to ensure quality initial and

continuing teacher training, adequate material conditions, and an empirical research agenda committed to the reality of the schools where these students study and where these teachers work every day.

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