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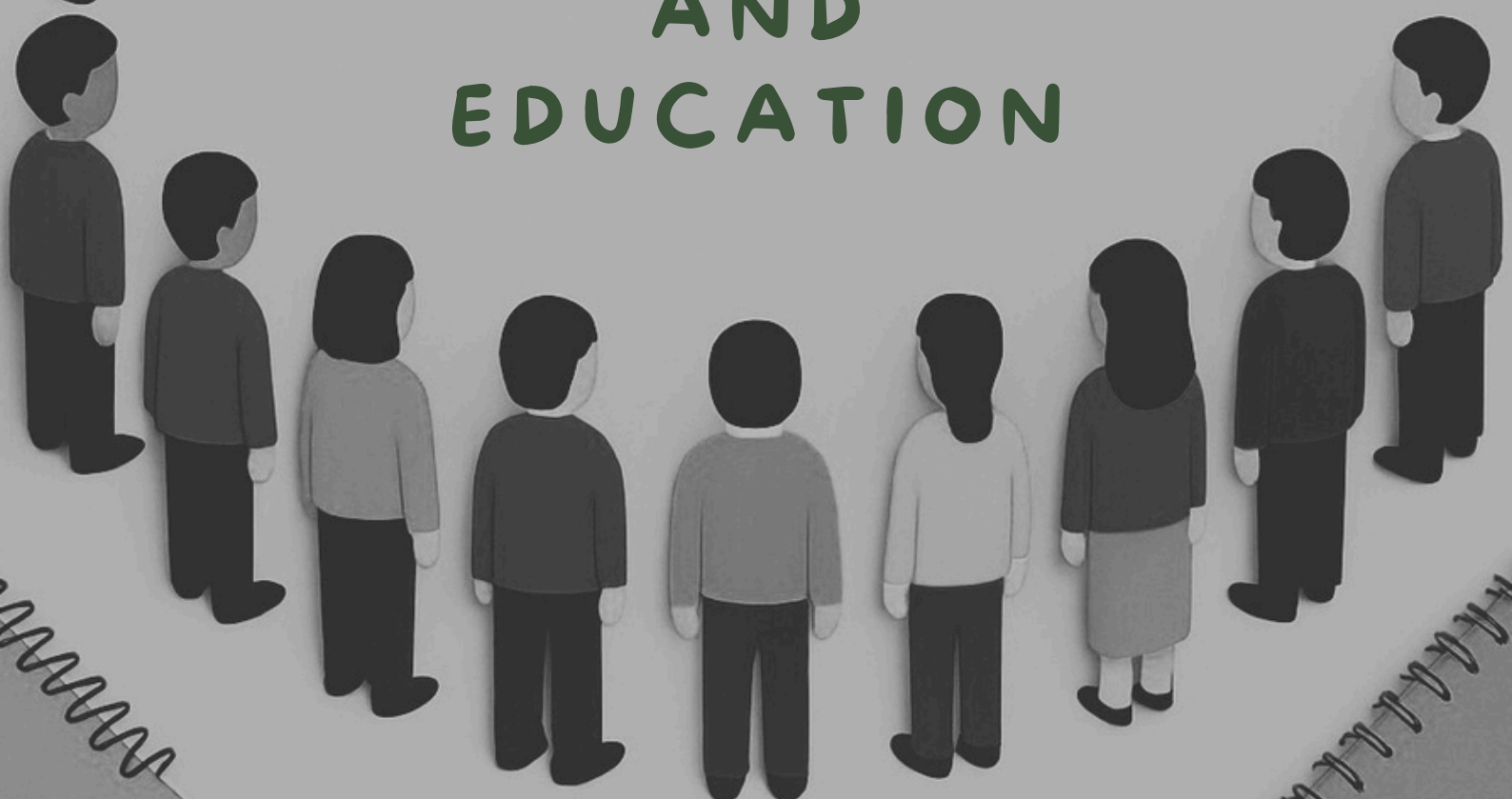
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<h1 style="text-align:center">SUMMARY</h1>

CONTINUOUS TEACHER EDUCATION AND COMMITMENT TO CHILDHOOD: BETWEEN PUBLIC POLICIES AND TRANSFORMATIVE PRACTICES

Roberly de Oliveira Alves Machado[1], Quesia Vieira da Silva Souto[2], Nilza Araujo Rodrigues[3] and Jean Carlos Batista Pereira da Silva[4]

ABSTRACT

This article discusses continuous teacher education in Early Childhood Education, understanding it as a political-pedagogical practice fundamental to the construction of a democratic, inclusive, and equitable education. Drawing on critical references such as Nóvoa, Imbernón, Tardif, Oliveira-Formosinho, and Freire, the text highlights the need to conceive teacher education not as mere technical training, but as a collective, reflective, and situated process that values listening, experience, and the ethical dimension of teaching work. It emphasizes the importance of the teacher as a historical subject, capable of re-signifying their practice in response to the demands of childhood, the contradictions of educational policies, and the contemporary challenges of public schooling. The article argues that continuous teacher education should be understood as a space of resistance, dialogue, and care, promoting the articulation between theory and practice, pedagogical innovation, and professional appreciation. Thus, it reaffirms the centrality of teacher education as a structuring axis of educational quality and as a condition for Early Childhood Education to fulfill its social, inclusive, and transformative role.

Keywords: Teacher education; Early Childhood Education; Inclusion; Educational policies; Pedagogical practice.

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INTRODUCTION

Continuous teacher education in Early Childhood Education has become one of the fundamental pillars for ensuring educational quality and recognizing teaching as an ethical, political, and social practice. In light of constant transformations in the educational field and the multiple demands placed on childhood educators, it becomes urgent to rethink formative pathways, especially in view of the structural weaknesses of Brazilian public policies. In this context, continuing education should be understood not as a bureaucratic requirement, but as a professional right and an essential condition for qualified pedagogical practice committed to children's rights.

This article proposes a critical reflection on continuous education as a structuring element of transformative pedagogical practices, articulating public policies, teaching knowledge, and experiences situated in the school daily life. The objective is to highlight how collective, permanent, and contextualized formative processes contribute to strengthening educators' professional identity and to building a more inclusive, ethical, and sensitive education to the singularities of childhood. It starts from the assumption that there is no transformation of the school without effective appreciation of teachers — and that to be formed is also a gesture of listening, resistance, and belonging.

The analysis is anchored in a consistent theoretical base, including authors such as Nóvoa (1992; 2009), who advocates for relational and situated education; Imbernón (2000; 2010), who emphasizes the need for formative trajectories built with teachers from their real contexts; Tardif (2002; 2014), who understands teaching knowledge as social and plural constructions anchored in experience and practice; Oliveira-Formosinho (2009), who emphasizes sensitive listening and education linked to school daily life; and Freire (1996), whose critical pedagogy views education as a liberating and transformative practice.

Considering these contributions, this study examines the interface between public policies aimed at Early Childhood Education and the persistent challenges of teacher education, such as structural precariousness, discontinuity of formative programs, and low professional appreciation. At the same time, it highlights the potential present in school daily life, where collaborative formative practices that value experiential knowledge (Tardif, 2014), listening to childhoods (Sarmento, 2003), and integration between theory and practice (Zeichner, 2008; Schön, 2000) can foster new ways of being and acting in teaching.

Thus, the article seeks to contribute to the debate on the role of continuous teacher education in promoting a school that cares for those who educate, recognizing the teacher as a historical, ethical, and affective subject, indispensable in weaving a democratic, plural, and socially committed education.

Continuous teacher education, in this sense, cannot be conceived in a fragmented way or disconnected from the concrete conditions of work. It is essential to recognize that educational spaces only gain meaning when they engage in dialogue with everyday practices, with the challenges faced in the classroom, and with the sociocultural contexts of the children. This means affirming that truly

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transformative education goes beyond the mere transmission of content and methodologies; it involves creating conditions for teachers to reflect on their own practice, share experiences, collectively build pedagogical alternatives, and strengthen their identity as political subjects within the school environment.

Another fundamental aspect is the understanding that continuing education should be seen as a permanent process of human development, not merely professional development. The Early Childhood Education teacher deals with sensitive dimensions of life, such as care, affection, and attentive listening to childhoods. Therefore, investing in their education also means investing in their emotional well-being, in their ability to engage with diversity, and in their creative potential to re-signify pedagogical routines. At this point, it becomes urgent to break away from vertical and technicist models that barely consider teachers' voices, and to embrace dialogical practices that respect the rhythms, knowledge, and singularities of each educator.

Finally, conceiving continuous teacher education as a right also implies recognizing its political dimension. The strengthening of public policies that guarantee time, space, and dignified conditions for education is an essential element so that formative processes are not episodic or limited to short-term projects. On the contrary, they must be established as state policy, aimed at valuing teaching and consolidating a democratic and inclusive early childhood education. From this perspective, continuous education is also an act of resistance against the logic of teacher devaluation, constituting an ethical commitment to childhood and to the future of education.

THEORETICAL FRAMEWORK

Teaching in Early Childhood Education constitutes a territory of high complexity and constant reinvention, in which the act of teaching goes beyond mere content transmission and assumes a relational, ethical, and political dimension. In this field, the educator is called upon to develop attentive listening, pedagogical sensitivity, and a commitment to inclusive practices that respect children's singularities and promote their holistic development. Teaching in early childhood requires intentionality and affection, but also solid and continuous education.

For Nóvoa (1995), teacher education should be understood as a relational and permanent process, in which professional identity is built through encounters with others, reflection on practice, and collective dialogue. From this perspective, continuing education cannot be reduced to an institutional or technical requirement; it is, above all, a right of the educator and an essential condition for teaching quality, the appreciation of childhood, and the construction of a democratic school.

Authors such as Imbernón (2010) reinforce the need for situated education, that is, rooted in the daily life of the school, in the concrete experiences of teachers, and in the real demands that emerge from pedagogical practice. Education that articulates theory and practice, listening and action, contributes to

the teacher perceiving themselves as a reflective subject, capable of transforming their pedagogical approach and responding ethically and critically to educational challenges.

In the same vein, Tardif (2002) argues that teaching knowledge is socially constructed, resulting from the interaction between academic education, professional experience, and the historical and cultural contexts in which teachers operate. Teaching, therefore, is not limited to mastering techniques or content, but is rooted in experience, school culture, and the formative trajectories of each educator. Investing in continuing education, therefore, means recognizing the teacher as a producer of knowledge, as an active subject in building a fairer, more inclusive, and childhood-sensitive education.

This reflection, supported by a consolidated theoretical base, leads the reader to understand that continuous teacher education is not only a structuring axis of educational quality but also an ethical commitment to childhood and to children's right to meaningful education. By problematizing the limits of public policies and valuing pedagogical practices rooted in daily life, this article proposes a critical and proactive analysis. In this way, it encourages the reader to follow the subsequent sections, in which the contradictions, possibilities, and formative pathways that nourish the construction of transformative educational practices in the context of Early Childhood Education will be explored in greater depth.

CONTINUOUS EDUCATION: FAR BEYOND OCCASIONAL TRAINING

Teacher education, especially in the context of Early Childhood Education, has often been conceived in a fragmented and episodic manner, limited to sporadic events that are poorly connected to the everyday reality of schools and the concrete demands of those involved in the educational process. This reductionist approach, grounded in a technicist and instrumental perspective, is the subject of strong criticism in the specialized literature.

According to Imbernón (2000), this pragmatic and superficial model of teacher education reveals a limited conception that must be overcome in favor of a broader and more integrative vision. He argues that education should not be understood as a "patch" applied to specific gaps, but rather as a permanent, dynamic, collective, and situated process — a continuous path of professional development built through interaction with context and peers.

In this direction, Nóvoa (1995) emphasizes that teacher education is essentially relational: "no one educates themselves alone, no one educates themselves for themselves." Professional learning emerges in encounters with others, in attentive listening, in shared reflection, and in critical dialogue about pedagogical practices. This collective nature of education strengthens the construction of teaching knowledge that goes beyond the mere reproduction of techniques and bureaucratic assumptions, opening space for an ethical, reflective, and socially committed practice.

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Furthermore, authors such as Tardif (2014) highlight the importance of teaching knowledge structured through lived experience, permeated by specific cultural, historical, and institutional contexts, emphasizing the need for public policies that recognize the complexity of teaching and ensure real conditions for continuing education. This implies guaranteeing teachers adequate time, conducive environments, pedagogical resources, and institutional spaces for study, reflection, and reconstruction of professional knowledge, thus promoting the social quality of education — a concept that emphasizes equity, justice, and the recognition of diversity within the school environment (Saviani, 2008).

Therefore, investing in continuous and qualified teacher education in Early Childhood Education is not a luxury or mere bureaucratic formality, but an essential condition for building an educational project that recognizes children's singularities, values pedagogical work, and strengthens the school's social function as a space for emancipation and transformation.

As Nóvoa (1992) points out, teacher professionalization requires formative pathways that promote educators' intellectual and ethical autonomy, valuing their practice as a legitimate source of knowledge. Additionally, Imbernón (2010) argues that continuing education should be conceived as part of a permanent, collective, and situated process, capable of articulating experiential knowledge with scientific knowledge, contributing to more critical, inclusive, and humanizing pedagogical practices.

TEACHING KNOWLEDGE: THE CONSTRUCTION OF PROFESSIONAL IDENTITY

According to Tardif (2002), teaching knowledge is a plural and multifaceted phenomenon, constituted by the dynamic articulation of different sources of knowledge: the knowledge acquired during academic training, the experiences accumulated in professional practice, and the personal experiences that permeate the teacher's trajectory. These forms of knowledge, far from being neutral or static, are in constant negotiation and transformation, as the teacher continuously dialogues with what was learned during initial training, with the demands and challenges of school daily life, and with the processes of reflection and re-elaboration that emerge from everyday pedagogical practice. Tardif (2002) defines teaching knowledge as social constructions, arising from practice, experience, and education.

This complexity of teaching knowledge becomes even more significant in the realm of Early Childhood Education, where professional practice requires a sensitive and multidimensional perspective. Here, the teacher must develop refined listening skills, attentive to the singularities of children, and deeply understand their cognitive, emotional, and social development processes. Sarmento (2003) advocates for listening to childhood and recognizing its singularities.

Moreover, it is necessary to master multiple languages — verbal, bodily, artistic, and playful — that constitute the child's universe, as well as to build affective bonds that sustain trust and welcoming, which are fundamental elements for learning and the child's well-being.

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Wallon (2007) points to the interdependence between affection and cognition. Gatti (2009) highlights the importance of valuing the experiential knowledge acquired by teachers in their context. Continuing education, therefore, assumes a central and strategic role in valuing and legitimizing this knowledge built in situ by teachers. It must recognize the richness of situated knowledge, produced in daily interactions with children, families, and the school community, and promote spaces for collective reflection that strengthen educators' professional identity.

According to Zeichner (1999), teacher education that values the real work context contributes to the development of pedagogical autonomy, allowing the teacher to become an active subject in their own learning process and a transformative agent of their practice. This process of constructing professional identity implies a continuous movement between the personal and the professional, the theoretical and the practical, the individual and the collective. As Haddad (2003) emphasizes, a teacher's identity is not defined solely by technical knowledge, but by the ability to integrate knowledge, values, and affections into an educational practice that respects diversity and promotes inclusion.

In Early Childhood Education, this identity is particularly delicate and fundamental, as teachers are responsible for establishing the foundations for children's holistic development, contributing to the formation of critical, creative, and socially engaged individuals. In summary, understanding teaching knowledge as a plural set, built and rebuilt across multiple dimensions of professional and personal experience, reinforces the need for continuing education that goes beyond technical updates, promoting the strengthening of identity and pedagogical autonomy among Early Childhood Education teachers.

According to Tardif (2002), teaching knowledge is heterogeneous and results from the interaction between initial training, practical experiences, and professional socialization processes. In this sense, continuing education must consider the teacher as a subject of knowledge, promoting critical reflection processes on their practice, as emphasized by Imbernón (2010) and Nóvoa (1992). This is fundamental for educators to respond competently, sensitively, and ethically to the daily challenges of educational practice and to contribute to the social quality of education, especially in the context of childhood, which requires pedagogical action committed to children's rights and attentive to their singularities (Oliveira-Formosinho, 2009).

SITUATED AND COLLABORATIVE EDUCATION: BETWEEN THEORY AND THE SCHOOL GROUND

The proposal of situated education emerges as a fundamental paradigm for the qualification of teaching, especially in the context of Early Childhood Education, where the complexity of demands requires contextualized and sensitive responses. Oliveira-Formosinho (2009) highlights the school's daily life — the so-called "school ground" — as a unique space for learning and knowledge production.

Although permeated by tensions, challenges, and contradictions, the school's daily life constitutes a powerful space for meaningful learning, where teachers, when dealing with concrete situations, develop pedagogical strategies, face real obstacles, and construct knowledge that emerges from practice and interaction with children. This knowledge, according to Tardif (2002), is constituted through experience and must be recognized as legitimate and fundamental for professional development. In this context, teacher education must overcome traditional models that separate theory from practice, proposing an integrated and dialogical perspective, as advocated by Zeichner (2008) and Imbernón (2010), in which academic knowledge and experiential knowledge mutually nourish each other in the reflective exercise of teaching.

Contrary to education disconnected from school reality, situated education proposes a dialogical and inseparable articulation between theory and practice, recognizing that theoretical knowledge gains life and meaning when connected to the "school ground," to concrete interactions, human relationships, and the everyday processes of teaching and learning. Schön (2000) proposes the notion of the "reflective practitioner" to describe this teacher who thinks about their practice, reworks strategies, and transforms the context through the action–reflection–action cycle. From this perspective, the teacher becomes a researcher of their own actions, as also defended by Alarcão (2010), who sees reflection as an essential component of critical and transformative educational practice.

For this education to effectively contribute to improving pedagogical practice, the school must be conceived and experienced as a true learning community. This concept expands the understanding of the school institution beyond an administrative space, positioning it as a collective, dialogical, and collaborative environment in which all actors — teachers, children, administrators, families, and other community members — actively participate in the construction of knowledge and shared professional development. This perspective aligns with the studies of Vygotsky (1998), who emphasize the social and interactive role in the learning process, reinforcing that human and professional development occurs through mediation between individuals and their sociocultural environment.

Furthermore, collaborative education enhances the development of collective competencies, promoting the exchange of knowledge and the co-construction of solutions to the everyday challenges of the school. As Imbernón (2000) points out, education cannot be conceived as a one-time event, but as a continuous, participatory, and contextualized process that values the experiences and knowledge of all involved. In this way, an institutional culture of critical reflection, innovation, and social commitment is fostered — indispensable for Early Childhood Education to fulfill its formative, inclusive, and emancipatory role.

In summary, situated and collaborative education represents an essential path for qualifying teaching in Early Childhood Education, promoting a fruitful encounter between theory and practice,

individual and collective, school and community. This approach strengthens teachers' autonomy and professional identity, while also contributing to the construction of a quality education that is sensitive to children's specificities and to the social challenges of the context in which the school is embedded.

PUBLIC POLICIES AND THE CONTRADICTIONS OF EDUCATION IN EARLY CHILDHOOD

In recent years, significant advances have been observed in the regulation of Early Childhood Education, expressed in official documents such as the National Curriculum Guidelines for Early Childhood Education (DCNEI) and the Common National Curriculum Base (BNCC). These policies indicate a formal commitment to the qualification of teaching work and the appreciation of early childhood as a fundamental stage of human development.

However, the implementation of these advances faces structural challenges that continue to compromise the quality and continuity of teacher education in this segment. Among the main obstacles is the systematic absence of guaranteed time for professionals to dedicate themselves to study, reflection, and the development of their pedagogical practices. As Gatti (2009) warns, continuing education cannot be limited to isolated actions disconnected from school reality; it is essential that the educational system ensures objective conditions — such as time, space, and institutional support — so that teachers can engage in meaningful formative processes.

This limitation compromises not only professional growth but also the possibility of education that addresses the specificities of working with young children, whose complexity demands specialized knowledge, sensitivity, and an ethical stance that respects the child's holistic development in its multiple dimensions. According to Oliveira-Formosinho (2002), work in Early Childhood Education requires education that integrates theory and practice, affection and knowledge, recognizing the teacher as a childhood professional, capable of acting with pedagogical intentionality and sensitive listening.

Another critical point concerns the fragmentation of continuing education policies, which often appear disjointed from each other and disconnected from local realities and the concrete needs of teachers and children. According to Ponte (2014), the lack of dialogue between decision-making bodies and those who work directly in schools generates formative programs that are disconnected from school daily life, compromising their relevance and effectiveness.

Moreover, public policies that do not incorporate the active participation of educators in their design and implementation tend to reproduce homogeneous and rigid models, insensitive to the cultural, social, and territorial diversity that permeates Early Childhood Education in Brazil. As Silva (2016) emphasizes, recognizing and valuing teachers' narratives — their experiences, knowledge, and challenges — is essential for education to be contextualized, ethical, and politically committed.

This means promoting formative processes that transcend mere content transmission, incorporating ethical, political, and cultural dimensions of pedagogical practice and fostering inclusive and meaningful practices for each school reality. For Oliveira-Formosinho (2009), teacher education must value the complexity of professional teaching, recognizing the educator as an ethical, cultural, and political subject. This perspective breaks with technicist models, advocating for formative practices that are in tune with the social context and contribute to a democratic and equitable education. Freire (1996), in turn, emphasizes that teaching requires awareness of the world and commitment to social transformation, highlighting that educational practice must be liberating and dialogical.

In this scenario, it becomes urgent to rethink public policies for teacher education, ensuring not only resources and time but also spaces for listening and effective participation of educators. It is necessary for these formative processes to be built collectively, respecting the singularities of local contexts and promoting teachers' pedagogical autonomy as agents of social transformation. Imbernón (2010) argues that continuing education must be articulated with practice and school daily life, built with teachers, and not merely for them, in order to promote real and lasting changes in education.

Furthermore, Nóvoa (1992) reinforces that it is necessary to break with hierarchical and prescriptive models, investing in a formative culture based on collaboration, listening, and the appreciation of teaching experiences. Therefore, the contradictions present in public policies for education in Early Childhood reflect a tension between normative advances and the concrete working conditions of teachers. Overcoming these contradictions requires a political and institutional commitment that values teaching as a complex profession, recognizes the central role of continuous education, and strengthens the dialogue between policies and school practices, ensuring a quality, inclusive, and democratic education for all children.

EDUCATION AS A POLITICAL GESTURE OF RESISTANCE AND TRANSFORMATION

Continuous teacher education, when conceived as a collective, critical, and situated project, goes beyond the boundaries of technical training and asserts itself as a political gesture of resistance and ethical commitment to education. From this perspective, to educate oneself is to take a stand against neoliberal logics that instrumentalize educational work, reducing it to performance indicators and standardized goals. According to Freire (1996), teaching is a profoundly political act, which involves choices, values, and a critical stance toward reality. Education, in this view, becomes a space of insurgency against the emptying of pedagogical meaning, against the dehumanization of school practices, and against the fragmentation of teaching knowledge.

Rather than being limited to the accumulation of content-based knowledge, continuing education should promote the educator's reconnection with the deeper meaning of their practice, awakening their

pedagogical intentionality and ethical sensitivity. Tardif (2002) argues that teaching knowledge is constructed in practice and through reflection on it, requiring formative processes that value lived experience and the affective, cultural, and social dimensions of teaching. Thus, education becomes a real possibility for revitalizing the teaching profession, allowing the teacher to reaffirm their freedom to create, to experiment, and to transform the school routine into a space of listening, affection, and invention.

This political dimension of education transforms the very subject who teaches, re-signifying their practices and their ways of being in the world. Nóvoa (2009) argues that teacher education must be anchored in the recognition of the teacher as the author of their professional trajectory, emphasizing that "there is no change in education without valuing teachers." The formative process, in this sense, becomes a path of personal and collective reinvention, in which the teacher becomes an agent of change, capable of breaking with oppressive structures, promoting inclusive practices, and building a more democratic, welcoming, and plural school.

To educate oneself, therefore, is also a gesture of courage. It is to resist the invisibilization of childhood, exclusionary practices, and the uncritical reproduction of pedagogical models. As Oliveira-Formosinho (2009) highlights, teacher education must promote participatory, ethical, and transformative professionalism, connected to local realities and to the knowledge produced in and by the school. By assuming this critical stance, the educator commits not only to their own professional development but also to the construction of an emancipatory educational project, in which children are recognized as subjects of rights and teachers as protagonists of the formative process.

In this context, it becomes essential that education be integrated into the school's daily life and respect the uniqueness of educational territories. Situated education, as proposed by Imbernón (2011), values collaborative processes, peer dialogue, and the articulation between theory and practice, recognizing that the school must be understood as a space for knowledge production and permanent professional development. This approach breaks with the vertical and decontextualized logic of traditional education, betting on practices that strengthen teacher autonomy and pedagogical co-authorship.

Therefore, it is urgent to understand that education is not an end in itself, but a constant movement of reflection, belonging, and transformation. It is an ethical-political process that occurs through mutual listening, the sharing of experiences, and the collective construction of meaning. As Rinaldi (2005) affirms, inspired by the Reggio Emilia approach, education is a form of "collective and permanent research," which brings different forms of knowledge into dialogue, recognizing the complexity and beauty of the act of educating. In this horizon, the teacher ceases to be merely an executor of policies and becomes a historical subject, a producer of knowledge, and a defender of a more humane, inclusive, and just school.

THOSE WHO CARE FOR CHILDHOOD MUST ALSO BE CARED FOR

Planning with affection, as discussed in this reflection, requires the presence of a sensitive, reflective, and intentional educator — a professional who not only performs tasks but is genuinely engaged with the complexity and beauty of childhood. However, for such an educator to exist in their fullness, it is essential that they also be cared for: cared for in their education, cared for in their listening, cared for in the time reserved for growth, reflection, and renewal. Perrenoud (2000) emphasizes that teaching requires ethical and reflective commitment, and that the educator must be cared for in order to act fully.

Continuous education, therefore, must constitute a welcoming space, capable of strengthening the teacher's identity, broadening their horizons, and allowing the construction of new meanings for teaching. To educate oneself is not simply to incorporate new methods or techniques, but a profound process of self-knowledge and reconnection with the essence of educating — an ethical and poetic act that reaffirms the commitment to childhood as a sacred time of rights, potential, and humanity. Nóvoa (1995) highlights that teacher education must be a continuous and relational process, which strengthens professional identity and enables an ethical, sensitive, and committed pedagogical practice with the dignity of both child and teacher.

This commitment only becomes possible through public policies that ensure resources, conditions, and recognition; through schools that promote a solid, collaborative, and sensitive formative culture; and through teachers who persist in the constant pursuit of learning, including — and especially — from their own practices. According to Tardif (2014), effective educational policies must guarantee structural conditions and institutional support so that continuing education is meaningful and contextualized, enabling professional development aligned with the real demands of the school and the community.

Thus, it is reaffirmed with conviction that there is no quality early childhood education without qualified teacher education. And there is no quality education without attentive listening, dedicated time, and, above all, genuine affection. It is essential that the educational community remain committed to promoting education that is as human, delicate, and powerful as the childhood it seeks to protect, respect, and promote. As Vygotsky (1998) states, human development occurs through social interaction and cultural mediation, which reinforces the need for educational environments grounded in affection, listening, and time respected for the learning and holistic development of both child and educator.

It is necessary to recognize that the educator also feels, dreams, tires, and reinvents themselves. They are not an instrument of the system, but a subject of affections, history, and culture. Caring for the educator is, therefore, caring for education itself. It is ensuring listening spaces where they can share their concerns and strengths, their doubts and discoveries. Teacher appreciation begins with the recognition of their humanity, the legitimization of their voice, and trust in their ability to create possible worlds

alongside children. Freire (1996) emphasizes that the educator is a historical and cultural subject, whose practice is immersed in human and social relationships, and that their appreciation involves recognizing their affective, cultural, and political dimension, fundamental for a liberating education.

On this path, education should not be imposed as a bureaucratic or procedural requirement, but cultivated as fertile ground where the teacher can nourish themselves with knowledge, encounters, and meaningful experiences. To educate oneself, in this sense, is a gesture of belonging: to the profession, to the collective, and to hope. As Nóvoa (2009) reminds us, to educate oneself is "to exist as a teacher." It is to find oneself in the other, in the group, in the collective history that precedes us and projects us beyond routine practices.

Moreover, caring for those who educate inevitably involves school management and the institutional networks that support pedagogical work. These are the entities that can — and must — create real working conditions, respect teachers' time, and invest in moments of study, collective listening, and reflection. When the school is organized as a continuous learning community, it enhances the development of its professionals and directly reflects this in the quality of children's educational experience.

Thus, school management plays an important role in creating an environment conducive to teacher development, being essential to improving the quality of education. According to Hopkins (2001), effective school leadership promotes a culture of continuous learning, respecting teachers' time and valuing collective moments of study and reflection to strengthen commitment to teaching. Silva and Rodrigues (2019) highlight that institutional networks offer support among schools, expanding education opportunities and encouraging knowledge exchange.

Therefore, when the school is organized as a learning community, it supports the growth of professionals and improves the quality of education for children, as emphasized by Fullan (2007), who highlights the importance of collaboration for educational transformation. Finally, planning with affection is not a solitary gesture, but an exercise in communion. It is necessary for the school, as a living institution, to also commit to this affective and formative pact. The educator can only offer listening, time, and genuine presence if they are also listened to, if they have time, if they can be whole. Caring for those who care is, then, more than an ethical imperative: it is an act of justice, resistance, and hope in a present that is built, every day, with tenderness and struggle.

In this sense, Nóvoa (2009) argues that teachers must be considered subjects of rights and desires, recognizing that their professional development is deeply linked to the institutional and human conditions that surround them. Thus, the idea is reinforced that there is no quality early childhood education without quality teacher education. And there is no quality education without attentive listening, dedicated time,

and, above all, genuine affection. May we, as an educational community, continue fighting for education that is as human, delicate, and powerful as the childhood we wish to protect, respect, and promote.

RESULTS AND DISCUSSION

NORMATIVE ADVANCES AND STRUCTURAL LIMITS OF CONTINUING EDUCATION

The results of the analysis indicate that continuous teacher education in Early Childhood Education has been reaffirmed in normative documents such as the National Curriculum Guidelines for Early Childhood Education (BRASIL, 2010) and the Common National Curriculum Base (BRASIL, 2017), which highlight the importance of the teacher as a mediator of meaningful learning. However, while these documents represent progress by recognizing the specificity of teaching in early childhood, structural gaps are evident that hinder the materialization of a solid and permanent educational policy.

Among the main challenges is the absence of institutionalized time for study and collective reflection, a factor repeatedly criticized by Gatti (2009), who denounces the fragmentation of educational policies into episodic actions disconnected from school reality. This discontinuity weakens professional development processes and compromises the consolidation of a formative culture within institutions. Tardif (2014) supports this critique by emphasizing that teaching knowledge cannot be reduced to techniques or external prescriptions, as it is constructed through practice, interaction, and experience. Therefore, when education does not engage with these elements, it tends to lose relevance for teachers.

Another relevant finding is the observation that formative experiences situated in the school's daily life and built collaboratively have a greater impact on teacher identity and the quality of pedagogical practices. Oliveira-Formosinho (2009) highlights that the "school ground" is the prime space for knowledge production and professional development, as it is where the real tensions of pedagogical work emerge. It is in this space that the teacher mobilizes listening to children, confronts contradictions, and develops creative responses, which requires formative processes that are not external but integrated into the school's daily life.

The perspective of the reflective teacher, advocated by Schön (2000), reinforces this understanding by considering that teaching practice must be constantly reworked through the logic of action–reflection–action. Zeichner (2008) complements this by arguing that teacher education must overcome the gap between theory and practice, articulating academic knowledge and experiential knowledge. When this movement occurs in collective spaces, education takes on the character of shared research, strengthening not only individuals but also the school institution as a learning community (Vygotsky, 1998).

In this sense, experiences involving study groups, pedagogical workshops, interdisciplinary projects, and peer exchanges prove more effective than isolated courses. Imbernón (2010) emphasizes

that education built "with teachers and not just for teachers" enhances teacher autonomy, promotes the appreciation of experiential knowledge, and reinforces professional identity. Thus, the findings indicate that the quality of continuing education lies not only in the availability of courses, but in their ability to engage with contexts, individuals, and the concrete challenges of everyday life.

CONTINUING EDUCATION AS A POLITICAL AND ETHICAL GESTURE

The findings also reveal that education should not be understood as a bureaucratic requirement, but as a political and ethical gesture of resistance and transformation. By investing in their own development, the teacher reaffirms their position as a historical subject and producer of knowledge, countering the logic of standardization and instrumentalization of educational work. Freire (1996) had already warned that teaching is a political act and that educational practice only makes sense when linked to a project of humanization and emancipation.

From this perspective, continuing education enables the teacher to reconnect with the intentionality of their practice, recovering their autonomy and critical capacity. Nóvoa (2009) reinforces that there is no educational change without teacher appreciation, with education being a space for identity affirmation and professional authorship. At the same time, Tardif (2002) argues that teaching knowledge is only consolidated when legitimized through practice and shared reflection, which gives education a role in revitalizing the teaching profession.

At this point, the contribution of Rinaldi (2005), inspired by the Reggio Emilia approach, stands out in understanding education as "collective and permanent research," in which dialogue between subjects and knowledge produces not only understanding but also belonging and meaning. This political dimension of education transforms the very subject who teaches and expands the school's potential as a democratic and plural space.

THE INSUFFICIENCY OF EDUCATION IN ADDRESSING THE SPECIFICITIES OF SPECIAL EDUCATION

One of the recurring challenges pointed out by Early Childhood Education teachers refers to the scarce support in continuing education aimed at practice with children who are the target audience of Special Education. This lack of specific preparation generates insecurity among teachers and often directly impacts the school's daily life, especially in situations where children exhibit challenging behaviors, such as nervous breakdowns, aggression, or difficulties in socialization — episodes that may involve hitting classmates, biting, or causing general agitation in the classroom.

According to Mantoan (2003), school inclusion only becomes effective when accompanied by concrete conditions for the teacher, including pedagogical support, appropriate resources, and permanent

education that prepares them to deal with diversity. However, what is observed, as highlighted by Glat and Pletsch (2010), is that the education offered is still insufficient, fragmented, and often distant from the real demands that emerge in working with children with disabilities or developmental disorders.

This scenario reinforces the need to understand continuing education as a right and as a space for the collective construction of knowledge, where teachers can share experiences, reflect on practices, and develop joint strategies to deal with crisis situations or disruptions in the school environment. For Nóvoa (1992), no one educates themselves alone: teacher professionalism is built in encounters with others and in reflection on practice. Thus, investing in situated and collaborative education is essential for educators to act with greater confidence and sensitivity in the face of each child's specificities.

Furthermore, it is necessary to consider that episodes of agitation and aggression should not be seen as "isolated problems," but as manifestations of communication and expression by the child, which require the teacher's attentive gaze and inclusive pedagogical strategies. Oliveira-Formosinho (2009) emphasizes that sensitive listening to childhood is a powerful path to understanding these manifestations, while Vygotsky (1998) reinforces that human development occurs through social interaction and cultural mediation. Therefore, education that integrates theory and practice, and that equips the teacher to understand the context of these behaviors, is essential for building more welcoming, democratic, and inclusive educational environments.

THOSE WHO CARE FOR CHILDHOOD MUST ALSO BE CARED FOR

A transversal aspect that emerged from the analysis is the need to care for those who educate. Planning with affection, as discussed by Perrenoud (2000), requires that the teacher also have spaces for listening, welcoming, and renewal. Education, in this sense, is not limited to the technical field, but involves emotional, cultural, and human dimensions, recognizing the educator as a subject of affection and history. Nóvoa (1995) had already emphasized that educating oneself is also a process of identity strengthening, in which the teacher finds themselves in dialogue with others and with the collective.

The literature shows that when educators lack time, resources, and institutional support, education risks becoming a mere bureaucratic ritual. On the other hand, when the school is organized as a learning community (FULLAN, 2007), supported by institutional networks that offer support and promote exchanges (SILVA; RODRIGUES, 2019), the formative process gains depth and results in more inclusive and creative pedagogical practices. Caring for the educator, therefore, is caring for childhood itself, since the quality of early childhood education is directly linked to the well-being and professional development of its teachers.

A transversal aspect that emerged from the analysis is the need to care for those who educate. Planning with affection, as discussed by Perrenoud (2000), requires that the teacher have not only

technical competencies, but also spaces for listening, welcoming, and renewal, where they can reflect on their practice, share experiences, and re-signify the meaning of their profession. Education, in this view, is not limited to courses and methodologies, but involves emotional, cultural, and human dimensions, recognizing the educator as a subject of affection, history, and identity. In this sense, Nóvoa (1995) emphasizes that teacher education is also a process of identity strengthening, in which the teacher finds themselves in dialogue with others, affirming themselves as a political and collective subject.

The literature shows that when educators lack time, resources, and institutional support, education risks being reduced to a bureaucratic ritual, emptied of meaning and disconnected from everyday reality. Conversely, when the school is organized as a learning community (Fullan, 2007), supported by institutional networks that encourage collaborative work and knowledge exchange (Silva; Rodrigues, 2019), the formative process gains depth and produces real impacts on pedagogical practice. This dialogical conception of education also aligns with Freire (1996), who understands education as a liberating practice and defends the need for the educator to be permanently cared for and recognized so that they can care for others.

Caring for the educator, therefore, is also caring for childhood itself, since the quality of Early Childhood Education is intrinsically linked to the well-being, appreciation, and professional development of its teachers. Oliveira-Formosinho (2009) adds that sensitive listening is not only intended for children, but equally for educators, because only in environments of mutual trust and recognition is it possible to sustain innovative and inclusive pedagogical practices.

Thus, investing in policies and institutional practices that prioritize care for those who teach is an ethical, social, and political imperative, capable of strengthening the teaching profession and, consequently, ensuring a childhood respected in its dignity and potential.

CRITICAL SYNTHESIS

In summary, the results and discussions show that continuous teacher education in Early Childhood Education:

1. **Has advanced normatively**, but still faces structural limitations, such as lack of time and discontinuity of policies (GATTI, 2009; TARDIF, 2014).

2. **Shows greater potential when situated and collaborative**, rooted in school daily life and built collectively (IMBERNÓN, 2010; OLIVEIRA-FORMOSINHO, 2009; ZEICHNER, 2008).

3. **Constitutes a political gesture**, reaffirming teaching as an ethical and emancipatory practice (FREIRE, 1996; NÓVOA, 2009; RINALDI, 2005).

4. **Depends on care for the educator**, recognizing that there is no well-cared-for childhood without valued teachers (PERRENOUD, 2000; FULLAN, 2007).

Therefore, continuous teacher education in Early Childhood Education will only reach its full potential when it is recognized as a professional right, cultivated as collective research, and supported by public policies that value teaching as a social and cultural practice. To educate oneself, in this horizon, is a gesture of resistance, belonging, and hope — an essential movement for building a democratic, sensitive, and childhood-committed school.

CONCLUSION

The reflection developed throughout this article demonstrates that continuous teacher education in Early Childhood Education cannot be understood as a mere bureaucratic requirement or episodic action, but rather as a professional right, an ethical condition, and a political necessity for the consolidation of a democratic and quality education. Recognizing the teacher as a historical, affective subject and a producer of knowledge means acknowledging that there is no transformation of the school without the effective appreciation of teaching. Education, in this horizon, goes beyond the technical field and assumes an emancipatory character, promoting the strengthening of professional identity, the collective construction of knowledge, and the sensitive listening to the singularities of childhood.

The analysis showed that, although there are significant normative advances — such as those provided in the DCNEI and BNCC — structural weaknesses persist that compromise the effectiveness of continuing education, such as the discontinuity of public policies, insufficient institutional support, and the lack of time dedicated to study and collective reflection. These gaps reveal a contradiction between the discourse of teacher appreciation and the real conditions of professional practice, resulting in fragmented formative practices with low impact on the quality of early childhood education.

On the other hand, the results indicate that situated, collaborative, and dialogical formative experiences have greater transformative potential, as they articulate theory and practice, value teaching knowledge, and respond to the real demands of school daily life. Education, when conceived as "collective and permanent research" (Rinaldi, 2005), contributes to the construction of learning communities, to overcoming professional isolation, and to strengthening bonds of belonging among educators. This perspective is anchored in authors such as Nóvoa (2009), Imbernón (2010), Tardif (2014), and Oliveira-Formosinho (2009), who advocate for education rooted in dialogue, experience, and listening to childhoods.

In light of this, it is concluded that educating oneself is also a political and resistance gesture. In the context of the precarization and devaluation of teaching, investing in permanent formative processes means reaffirming the centrality of the teacher in the weaving of an inclusive, plural, and socially

committed school. As Freire (1996) points out, educational practice is only liberating when it promotes critical awareness and transforms realities; in this sense, continuing education is an inseparable part of an emancipatory education project.

Thus, this study advocates for the urgency of public policies that guarantee time, material conditions, and institutional support so that continuous teacher education can be carried out in a consistent and transformative way. More than preparing for teaching techniques, it is about offering spaces for listening, dialogue, and collective knowledge production, in which teachers can recognize themselves, strengthen themselves, and reinvent themselves. After all, caring for those who educate is caring for childhood itself, and only valued, reflective, and supported educators will be able to build pedagogical practices that are sensitive to children's singularities and capable of sustaining early childhood education that is, at once, ethical, affective, and socially just.

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INCLUSIVE PEDAGOGICAL STRATEGIES IN MEDICAL EDUCATION: ACTIVE METHODOLOGIES AND THEIR ADAPTATIONS FOR NEURODIVERGENT PEOPLE

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ABSTRACT

This article discusses inclusive pedagogical strategies in medical education, focusing on adaptations of active learning methodologies for neurodivergent students, such as those with ADHD, ASD, and dyslexia. These learners process information differently, requiring personalized approaches that respect their specific needs without compromising educational quality. The discussion is grounded in the Brazilian Inclusion Law (Law No. 13.146/2015), highlighting the importance of curriculum flexibility, diversified assessment methods, and accessibility resources. The aim is to create an accessible, welcoming, and equitable academic environment, placing the student at the center of the learning process and fostering their full participation in medical training.

Keywords: Neurodivergence; Active learning methodologies; Inclusion; Medical education; Curriculum flexibility.

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INTRODUCTION

The way we currently understand neurodiversity has undergone significant changes, conceptualizing and valuing the different ways in which these individuals think, learn, and perceive the world. This concept has gained prominence in higher education, particularly in medical programs in Brazil. Historically, this academic field has been grounded in very rigorous standards, dense curricula, extensive workloads, and standardized assessment methods. While this structure works for many, it can become a barrier for neurodivergent students. Given this perspective, the following question arises: What pedagogical strategies can be adapted in medical education based on active methodologies for neurodivergent students?

Neurodiversity can be understood as a social movement formed by individuals and groups advocating for the creation and effective implementation of public policies aimed at the educational inclusion of people with different types of disabilities. More than an academic concept, it is a struggle for rights, seeking to ensure that the educational environment recognizes and values multiple forms of neurological functioning. As highlighted by Araújo, Silva, and Zanon (2023), this movement proposes viewing cognitive and behavioral differences not as limitations to be corrected, but as legitimate expressions of human diversity, which should be embraced and respected in pedagogical practices and educational policies.

Neurodivergence refers to individuals with specific conditions characterized as neurodevelopmental disorders that can affect various areas, particularly learning. Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorder (ASD), and dyslexia, among others, are examples of common disorders present today in academia across various programs, especially in health-related fields. These students learn differently from the majority of their peers. This does not mean they learn "less," but rather that they learn in their own way, as they process information uniquely. Therefore, the main challenge for educators is not to try to "correct" them, but to provide an academic environment that values diverse ways of learning.

In light of this reality in medical education, this article aims to analyze and propose pedagogical strategies and curricular adaptations that promote the effective inclusion of neurodivergent students in medical programs, aligning with public policy guidelines for educational inclusion and the specific needs of these students. Based on active methodologies—considered innovative in the field of medical education—and with the purpose of placing the student at the center of the learning process, these approaches allow educational experiences to be personalized, facilitating adaptation for the inclusion of neurodivergent students.

Among these strategies, some stand out for their potential to promote inclusion and accessibility: Problem-Based Learning (PBL), flipped classroom, and gamification, among others. Thus, the

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bibliographic review methodology applied to the study of curricular adaptations for neurodivergent students in medical education involves the collection, analysis, and critical synthesis of academic publications, official documents, and recent research related to the topic. This approach makes it possible to identify key concepts, innovative pedagogical practices, and the challenges faced in including these students in medical programs.

Therefore, curriculum flexibility represents an opportunity to adjust not only content and resources but also assessment methods and deadlines. This may include oral exams instead of exclusively written ones, the use of portfolios, practical assignments, or extra time for completing tasks. It is important to emphasize that flexibility does not mean "making things too easy" or "lowering quality"; rather, it means offering different pathways so that everyone has fair conditions to demonstrate their competence.

THEORETICAL FRAMEWORK
CONCEPT OF NEURODIVERSITY

The term neurodiversity refers to the multiplicity of human brains and minds, distinguishing multiple ways of feeling, perceiving, learning, and interacting with the world. Among the main conditions present in the neurodivergent community are ADHD, ASD, dyslexia, dyscalculia, among others. These conditions should not be viewed merely as deficits, but rather as differences, with unique strengths and challenges.

In Brazil, the inclusion of neurodivergent students in Basic Education is supported by a robust set of laws and guidelines that guarantee their educational rights and seek to ensure equal opportunities. The Federal Constitution of 1988 is the primary legal framework, establishing that education is a right for all and a shared duty between the State and the family, prohibiting any form of discrimination in access to education.

This constitutional principle serves as the foundation for inclusive educational policies aimed at building schools that embrace human diversity, recognize different ways of learning, and provide appropriate support so that each student can fully develop their potential. Thus, legislation acts not only as a legal norm but as a social commitment to equity and respect for differences, including the specific needs of neurodivergent students.

The National Education Guidelines and Framework Law (LDB) – Law No. 9.394/96, considered the main Brazilian educational legislation, reaffirms the importance of education that is truly inclusive. More than a principle, it establishes as a duty that educational systems guarantee all students—including those with special educational needs—not only the right to enter school but also to remain there and

succeed in their educational journey. This is a legal and ethical commitment to equity, which seeks to provide real learning opportunities, valuing diversity and respecting the particularities of each student.

> Education, the right of all and the duty of the State and the family, shall be promoted and encouraged [...] aiming at the full development of the person, their preparation for the exercise of citizenship, and their qualification for work. (BRAZIL, 1988, art. 205).

In this sense, it is essential that public policies and pedagogical practices work together to promote inclusive school environments capable of recognizing and valuing multiple ways of learning and contributing to society, ensuring that each individual has a real opportunity to reach their maximum potential.

ACADEMIC INCLUSION POLICIES IN THE BRAZILIAN CONTEXT

Discussing inclusion in the Brazilian educational context is, above all, addressing a commitment to equality and the appreciation of diversity. It means understanding that each student brings their unique way of learning and relating to knowledge and that, above all, educational institutions must open new spaces for the inclusion of all.

This commitment is enshrined in the Federal Constitution of 1988, which guarantees education as a right for all and a duty of the State and the family. Over time, other laws have emerged to strengthen and detail this idea. The National Education Guidelines and Framework Law (LDB – Law No. 9.394/1996), considered the cornerstone of Brazilian education, determines that educational systems must go beyond mere enrollment and create real conditions for all students—including those with special educational needs or neurodivergence—to have opportunities to learn with dignity, develop their skills, and achieve success.

The Brazilian Inclusion Law for Persons with Disabilities (Law No. 13.146/2015) expands this vision, emphasizing that inclusion is not limited to placing the student in the classroom. It involves modifying the educational environment to make it accessible, welcoming, and respectful. It means ensuring the existence of resources, modifications, specialized support, and assistive technologies that enable the student to fully participate in academic life.

More recently, Law No. 14.254/2021 focused specifically on students facing dyslexia, ADHD, and other specific learning disorders, highlighting the importance of early diagnosis and continuous support.

These guidelines demonstrate significant progress: the understanding that inclusion is not an act of kindness or an isolated program, but an essential human right. They form the legal basis for educational institutions to implement more humanized practices, adaptable curricula, and pedagogical approaches that consider the pace and particularities of each student.

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Ultimately, Brazilian legislation invites us to view inclusion not as a bureaucratic obligation but as an ethical and social choice necessary to train citizens and professionals who are more empathetic, aware, and prepared to live in a diverse world.

CURRICULAR ADAPTATIONS

Curricular adaptations serve as crucial strategies to ensure the effective inclusion of neurodivergent students in medical programs, taking into account their unique needs within a traditionally rigid and demanding academic environment. These adaptations involve deliberate and thoughtful modifications to content, teaching methods, assessments, and educational resources, aiming to create equitable conditions so that all students can acquire knowledge and demonstrate their understanding fairly.

In the context of medical education, curricular modifications may include, for example, extending deadlines for submitting assignments and taking exams, employing various assessment formats such as oral exams, portfolios, and practical evaluations, along with the adoption of assistive technologies that aid in organizing, understanding, and communicating material. Additionally, diversifying teaching methodologies—such as Problem-Based Learning (PBL), flipped classrooms, and gamification—allows students to engage with knowledge in a more active, meaningful, and personalized way.

Furthermore, the development of Individualized Pedagogical Plans (IPPs) is a practice that ensures adaptations are carefully planned and implemented, considering the profile and specific needs of each neurodivergent student, with the involvement of educators, specialists, and the students themselves. This promotes monitoring, psychopedagogical support, and the establishment of an educational environment that is welcoming and sensitive, respecting differences.

Curricular adaptations do not imply lowering expectations or the quality of education; rather, they acknowledge neurological diversity and advocate for educational equity, providing varied pathways for each student to reach their full potential. When effectively implemented, these strategies increase academic retention, promote holistic development, and prepare medical professionals for successful engagement in a pluralistic and diverse society.

EDUCATIONAL STRATEGIES FOR ACTIVE METHODOLOGIES

Active methodologies are pedagogical strategies aimed at promoting students' active participation in knowledge acquisition, enabling them to develop critical thinking, autonomy, and practical application of the content addressed in class. This contrasts with the traditional teaching model, in which the teacher was the sole agent responsible for transmitting knowledge and the student a passive recipient.

Active methodologies have increasingly stood out as one of the main tools for innovation and effectiveness in higher education, especially in medical training, where there is a greater demand due to the complexity of the content addressed in class. This requires practical and critical skills that place students at the center of the learning process.

In medical education, these methodologies have contributed to the training of professionals who are better prepared for the job market, capable of dealing with the complex challenges of clinical practice, and reinforcing skills such as teamwork and decision-making in new and unforeseen situations.

Based on active learning and grounded in constructivist principles, the use of methodologies that can be made inclusive—such as flipped classroom, problem-based learning (PBL), and gamification—emerges as an effective strategy for promoting the inclusion of neurodivergent students. These methodologies can be structured to respect the specificities of these students, ensuring a more accessible, personalized, and engaging environment. Thus, certain strategies can be applied to ensure inclusion occurs efficiently and integratively, fostering equitable learning. Below are some of these methodologies and possible adaptations for this purpose:

Problem-Based Learning (PBL)
- Small and heterogeneous groups: Reduce group size to minimize sensory overload and facilitate communication, benefiting students with ASD and/or ADHD.
- Flexible time for problem analysis: Allow more time for neurodivergent students to understand and reflect on the cases presented.
- Support from a trained facilitator: Include teachers or facilitators capable of identifying specific needs and mediating conflicts or communication difficulties.
- Adapted and diversified support materials: Provide complementary resources (schematics, videos, simplified texts) for different learning styles.
- Structured feedback and positive reinforcement: Offer clear and consistent feedback on participation and performance, aiding organization and motivation.

Flipped Classroom
- Provide content previews in different formats—videos, podcasts, texts, and infographics—so students can access them at their own pace and preference.
- Students who need more processing time can review the material as often as necessary before or during in-person classes.
- During class, offer moments for personalized support or small-group assistance.

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- Provide clear and organized guidelines to accompany the preparatory materials, facilitating focus and study planning.
- Use of assistive technologies: Integrate digital tools that help with organization, reading, and concentration.

Gamification

- Challenges adjusted to each student's pace: Allow students to complete engaging activities at their own speed, reducing pressure and anxiety.
- Immediate rewards and feedback: Encourage engagement through points, badges, and positive messages that value small achievements.
- Variety of games and formats: Include quizzes, simulations, "clinical missions," and interactive games that cater to different cognitive profiles and interests.
- Safe and collaborative environment: Encourage participation without excessive competitiveness, focusing on learning and teamwork.
- Ensure that game elements are integrated with the content and competencies established, maintaining academic rigor.

Complementary Strategies

- Develop Individualized Pedagogical Plans (IPPs) to map specific needs and guide adaptations in active methodologies.
- Train teachers to understand and apply inclusive practices within these methodologies, recognizing neurodivergent profiles.
- Adjust physical space and activity pace to minimize excessive stimuli and enhance student comfort.
- Incorporate tools that facilitate organization, communication, reading, and concentration.
- Complement and adapt traditional assessments with oral exams, portfolios, presentations, and practical activities, avoiding overloading students with purely objective tests

METHODOLOGY

This article is a systematic literature review aimed at mapping and integrating the knowledge developed on curricular adaptations in the context of medical education, focusing on neurodivergent students (such as individuals with ASD, ADHD, dyslexia, and other neurological conditions).

> [...] it is a type of research that uses literature on a given topic as its data source. This type of investigation provides a summary of the evidence related to a specific intervention strategy through the application of explicit and systematic methods for searching, critically appraising, and synthesizing the selected information. (SAMPAIO & MANCINI, 2006, p. 84)

To ensure this research had a robust and reliable foundation, it was essential to decide in advance which types of materials would be included and which would be excluded from the evaluation. Therefore, relevant scientific publications were selected, such as articles, theses, and dissertations, as well as official documents, guidelines, and legislation that specifically addressed issues related to curricular adaptation, neurodiversity, and medical education.

To ensure that the information aligned with contemporary reality, priority was given to works published in the last ten years. It was also determined that publications in Portuguese and English would be accepted, which broadened the scope of the research and allowed for the inclusion of diverse perspectives, both international and national.

The searches were conducted in databases recognized in the academic environment, such as PubMed, SciELO, Google Scholar, and Web of Science, ensuring that the selected sources were reliable and of high quality.

Conversely, all works that did not directly address the issue of curricular adaptation in medical education for neurodivergent students were excluded, as well as opinion articles or those that had not undergone peer review. This rigorous selection aimed to ensure that the analyzed content was well-founded, relevant, and contributed significantly to the development of the discussion proposed in this study.

RESULTS AND DISCUSSION

The literature indicates that inclusive strategies improve not only academic performance but also the institutional climate. The greatest challenge lies in teacher training and in pedagogical practices that are traditionally centralized. It is recommended that institutions promote teacher training, create inclusion committees, and conduct ongoing evaluations of the implemented adaptations. The limitations of this study include the need to involve a larger number of institutions and to expand longitudinal monitoring of the impacts.

The reviewed publications present various suggestions and forms of curricular adaptations, but they consistently emphasize flexibility in assessment methods. The introduction of assistive technologies and the adoption of active methodologies such as PBL, flipped classroom, and gamification have shown greater effectiveness in meeting the needs of neurodivergent students.

It is important to highlight the implementation of an Individualized Pedagogical Plan (IPP), which facilitates knowledge acquisition according to each student's specificities. This personalized approach has a positive impact on retention, motivation, and academic performance.

Regarding teacher training and support for this demand, the studies emphasized the need for continuous professional development as a guarantee of new, consciously inclusive practices. Raising awareness and preparing teachers for these practices can transform the institutional environment, ensuring that adaptations are effective and integrated into the academic curriculum while respecting the uniqueness of these students.

The findings of the analysis show that integrating neurodivergent students into medical education requires a diversified strategy that combines innovative teaching methods, interdisciplinary support, and inclusive policies. Active approaches, by placing the student at the center of the learning process, foster engagement and personalized learning, benefiting not only neurodivergent students but the entire academic community by creating more dynamic and collaborative environments.

The development of Individualized Pedagogical Plans (IPPs) emerges as an essential strategy to systematically identify and address personal needs, demonstrating that true inclusion must involve adapting academic pathways without compromising the quality or rigor of education. However, this process is highly dependent on teacher training and institutional commitment.

The challenges faced underscore the need for investments in infrastructure, training, and cultural change so that neurodiversity is genuinely valued as an asset that enriches medical education. It is crucial for institutions to create safe and welcoming environments where differences are not only accepted but valued as sources of innovation and empathy in healthcare.

Finally, this analysis suggests that future research should explore in greater detail the evidence on the impact of curricular adaptations on mental health, academic performance, and employability of neurodivergent students, contributing to the continuous evolution of inclusive educational practices in medical education.

FINAL CONSIDERATIONS

Curricular adaptation for neurodivergent students is essential to promoting medical education that is more equitable, diverse, and committed to inclusion. Institutions that adopt this approach help shape future professionals who are more receptive to differences and prepared to address human diversity, reinforcing the social role of Medicine.

Measures such as creating Individualized Pedagogical Plans (IPPs), focusing on continuous teacher training, and applying active methodologies tailored to students' specificities have proven fundamental for building learning environments that are more dynamic, welcoming, and effective.

However, the success of these initiatives is directly linked to institutional commitment, the existence of solid public policies, and collective efforts to foster cultural change in medical schools.

Therefore, the inclusion of neurodivergent students not only breaks barriers regarding access and retention but also enriches medical education with a variety of perspectives and ways of thinking. By valuing these differences, educational institutions help train professionals who are more empathetic, critical, and prepared to work in a diverse society, transforming medical education into an environment of equity, respect, and innovation.

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THE PEDAGOGUE AS A FACILITATOR OF SCHOOL INCLUSION IN HIGH SCHOOL

Carlos Alexandre Caxito dos Santos[1]

ABSTRACT

When working in high school, the pedagogue assumes an essential role in promoting school inclusion, serving as a link between the various agents of the educational process and the specific needs of students with diverse educational requirements. Their function goes beyond pedagogical planning, encompassing the mediation of inclusive practices, the sensitization of the teaching staff, and the creation of a welcoming and equitable school environment. In the context of high school, where the challenges of adolescence are compounded by curricular demands, the pedagogue's work becomes even more strategic, requiring active listening, collaborative planning, and actions that ensure the permanence and full development of all students. The objective of this study is to analyze the role of the pedagogue as a facilitator of school inclusion in high school, highlighting their actions, challenges, and contributions to the realization of inclusive education. The methodology adopted is bibliographic review, based on works that discuss pedagogical practice, inclusion policies, and school routines. It is concluded that the pedagogue, when well-prepared and proactive, can transform the school reality, making high school more accessible and meaningful for all students.

Keywords: Pedagogue; Inclusion; High School; Education; Accessibility.

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INTRODUCTION

The role of the pedagogue in high school demands sensitivity, active listening, and a keen awareness of the students' individualities. In an educational stage marked by academic demands and personal transformations, the pedagogue becomes a fundamental figure in articulating actions that promote access, retention, and success for students with disabilities or specific educational needs. Their role extends beyond pedagogical organization, encompassing support in building relationships and promoting more humane and inclusive pedagogical practices.

According to Carvalho, Mira, and Santos (2018), inclusion within the school environment requires collective and coordinated work, wherein the pedagogue assumes the role of facilitator among school professionals, families, and the students themselves. Their presence contributes to the development of a more humanized school management, one that values differences as integral components of the educational process. The pedagogue's sensitive listening and ability to foster constructive dialogue encourage a school culture committed to the principles of inclusion.

Pereira et al. (2022) argues that the challenges of school inclusion in high school are exacerbated by the rigid structure of the curriculum, the lack of specific teacher training, and the scarcity of resources. In this context, the pedagogue can act as a bridge between students' needs and the school's pedagogical approach, suggesting curricular adaptations, promoting professional development initiatives for teachers, and encouraging the use of diverse methodologies that accommodate different learning styles.

Ramos (2023) emphasizes that effective strategies for inclusion depend on the engagement and competence of the professionals involved, with the pedagogue being an essential agent in ensuring that such strategies become part of everyday practice. Their work may include monitoring students' learning processes, mediating conflicts, and coordinating with support services, always aiming to build a school environment that respects and embraces all forms of being and learning.

Garcia, Diniz, and Martins (2016) observe that inclusion in high school still faces resistance, often driven by teacher overload and a lack of understanding of what inclusive education truly entails. In this scenario, the pedagogue acts as a trainer, encouraging critical reflection among the teaching staff and supporting pedagogical practices that break away from exclusionary models. Their active presence strengthens the school's commitment to quality education for all.

As the guiding question of this study, we seek to answer: In what ways can the pedagogue act as a facilitator of school inclusion in high school, contributing to the development of more humane and accessible educational practices?

This study is justified by the need to reflect on the pedagogue's role in realizing a truly inclusive school, especially in high school—a stage marked by intense academic and personal transformations. In a context where exclusionary practices and learning barriers still persist, understanding how the pedagogue

can intervene in a coordinated and proactive manner becomes essential to ensuring the right to quality education for all students.

The general objective of this study is to analyze the pedagogue's role as a facilitator of school inclusion in high school. The specific objectives are: to understand the pedagogue's role within the school context; to investigate the foundations of school inclusion in high school; to identify the main challenges and possibilities of inclusive practice; to analyze the pedagogue's role as mediator and facilitator of educational processes; and to propose strategies and perspectives for building a more inclusive school.

The methodology adopted is qualitative in nature, based on bibliographic review. The research was conducted through consultation of publications available on Google Scholar and the SciELO database, using the keywords "Pedagogue," "School Inclusion," "High School," "Inclusive Education," and "Accessibility." Articles, books, and journals published between 2015 and 2025 were selected, addressing school inclusion and the pedagogue's role in high school either directly or indirectly.

DEVELOPMENT

THE ROLE OF THE PEDAGOGUE IN THE SCHOOL CONTEXT

The pedagogue occupies a central position within the school environment, not only as the individual responsible for pedagogical organization but also as an active agent in constructing an educational project that respects differences and values the student's holistic development. Their presence transcends technical functions: they are a professional who listens, observes, guides, and mediates, directly contributing to the creation of a more humane, democratic, and transformative learning space. Within the school context, their work is articulated with teachers, administrators, students, and families, serving as a crucial link for the implementation of educational policies and more equitable and inclusive pedagogical practices.

According to Alvarez and Rigo (2018), the pedagogue operates across various dimensions of school life, coordinating pedagogical actions that involve planning, teacher training, monitoring the teaching-learning process, and interventions aimed at educational difficulties. This professional navigates between theory and practice, seeking solutions that strengthen the educational process and fostering dialogue between the institution's political-pedagogical project and the concrete needs of the school community. Their role extends beyond the classroom, encompassing management, training, and pedagogical guidance.

Branco (2018) asserts that the presence of the pedagogue is essential for the school to fulfill its social function, as they act as a facilitator among the different segments of the institution. Their work enables critical reflection on pedagogical practices and contributes to the construction of an education that acknowledges diversity and confronts inequalities. The pedagogue is the professional who identifies gaps

in the educational process and proposes strategies for overcoming them, mediating conflicts and fostering a more collaborative learning environment.

Almeida and Azevedo (2015) emphasize that the pedagogue must adopt an investigative stance, capable of interpreting the educational reality critically and proactively. This entails rethinking their own practice, breaking away from traditional models, and proposing innovative pedagogical actions that respond to contemporary educational demands. In this sense, the pedagogue is not merely a task executor but a reflective subject who transforms their context through listening, observation, and conscious intervention.

Leifeld et al. (2016) further highlight the importance of the social pedagogue in today's educational landscape, noting that their work must consider the cultural, social, and emotional aspects of those involved in the educational process. Pedagogical work should align with the principles of inclusion, participation, and the promotion of citizenship. The school, as a space for coexistence and human development, requires professionals who understand the challenges of contemporary society and act with empathy, sensitivity, and ethical commitment.

Thus, the presence of the pedagogue goes far beyond school bureaucracy. They are an essential agent in constructing meaningful education—one that welcomes, listens, and transforms. Their role demands sensitivity, technical knowledge, and a commitment to the student's holistic formation. In educational contexts marked by inequality, their work becomes even more urgent, as they have the potential to forge pathways toward a more inclusive, democratic, and socially committed school.

FOUNDATIONS OF SCHOOL INCLUSION IN HIGH SCHOOL

School inclusion in high school represents both a necessary and challenging advancement in the educational field, particularly because this stage is marked by cognitive, emotional, and social complexities. The foundations of inclusion at this level go beyond mere access to school; they require intentional actions that ensure the permanence, active participation, and meaningful learning of all students, especially those with disabilities or specific educational needs. It involves recognizing diversity as a constitutive element of the school environment and structuring practices that respect individual differences, promoting equity and mutual respect.

According to Mantoan, Prieto, and Arantes (2023), inclusion cannot be reduced to compensatory measures or the mere placement of students with disabilities in regular classrooms. It entails a profound shift in the conception of teaching and learning, requiring the abandonment of exclusionary practices still present in schools. The authors argue that building an inclusive school demands an institutional culture committed to human rights, the appreciation of difference, and the transformation of pedagogical practices.

Garcia, Diniz, and Martins (2016) point out that the challenges of school inclusion in high school are closely tied to the structure of the educational system itself, which often fails to provide adequate support for teachers working with diverse student populations. The rigidity of the curriculum, the emphasis on standardized assessments, and the lack of ongoing professional development hinder the implementation of inclusive pedagogy. However, the authors emphasize that collective engagement from the school staff and support from professionals such as pedagogues can significantly contribute to changing the reality of inclusion.

Silva and Carvalho (2017) note that many teachers still experience insecurity regarding inclusion, particularly because they do not feel adequately prepared to address diverse needs in the classroom. This scenario underscores the importance of teacher training focused on the principles of inclusion, offering not only theoretical knowledge but also practical tools for everyday teaching. Strengthening support networks and fostering a collaborative culture among school professionals are also identified as viable pathways to expanding inclusion in high school.

Mendes and Vilaronga (2023) highlight the importance of collaborative teaching as an effective strategy to support school inclusion. According to the authors, when there is coordination between general education and special education, learning opportunities are expanded for all students. Collaborative teaching encourages the exchange of knowledge among professionals and contributes to more flexible, creative, and diversity-oriented pedagogical practices. In this process, the role of the pedagogue as a facilitator and mediator is fundamental to integrating actions and strengthening collective work.

Therefore, school inclusion in high school must be understood as an ethical and pedagogical commitment that permeates all dimensions of the school. It requires not only structural changes but, above all, a shift in perspective regarding the individuals who make up the educational space. Recognizing the value of each student, investing in continuous professional development, adopting collaborative strategies, and promoting dialogue among professionals are actions that underpin a truly inclusive and transformative school.

CHALLENGES AND POSSIBILITIES OF INCLUSIVE PRACTICE

Inclusive practice in high school presents a set of challenges that intertwine with the possibilities of transforming the school into a more just, pluralistic, and welcoming space. This stage of student development demands pedagogical responses that address not only curricular requirements but also the social, emotional, and cognitive aspects of a diverse youth population. Inclusion, in this context, must be conceived as an integral part of everyday school life, rather than as a parallel or occasional adaptation.

According to Pilat and Alves (2022), one of the main obstacles to the realization of inclusion lies in resistance to methodological changes. Traditional lecture-based classes, focused on rigid and minimally

dialogical content, hinder the participation of students with specific educational needs. The authors emphasize the importance of the pedagogue in mediating and implementing active methodologies that foster meaningful learning through collaboration, listening, and the appreciation of students' experiences. When these methodologies are integrated into high school, new possibilities for engagement and development emerge for all.

De Fátima Andrade, Borges, and Carlotto (2022) affirm that the pedagogue plays a crucial role in coordinating inclusive practices, acting as a bridge between teachers, students, and families. A recurring challenge identified by the authors is the lack of ongoing professional development specifically geared toward inclusion. Many professionals are still unfamiliar with accessible strategies and adaptable pedagogical resources, which compromises the effectiveness of inclusive actions. By promoting training and dialogue among the various sectors of the school, the pedagogue directly contributes to overcoming these obstacles.

Duarte (2023) observes that inclusive pedagogical management must go beyond bureaucratic procedures and act with intentionality, developing internal policies that value diversity. This involves collective planning, close monitoring of the learning process, and investment in actions that respect students' individualities. The researcher points out that the pedagogue, when adopting a managerial and proactive stance, strengthens the school's commitment to democratic and accessible education.

Teacher insecurity in the face of diversity is also a challenge highlighted by Souza and Kochhann (2016). The lack of preparation to work with students with disabilities, learning disorders, or complex emotional issues generates discomfort and even withdrawal among educators. In this context, the pedagogue can serve as both technical and emotional support, offering guidance, materials, and practices that help teachers develop a more sensitive and flexible approach to classroom heterogeneity.

Pilat and Alves (2022) suggest that the use of active methodologies can be a concrete possibility for overcoming some of the difficulties experienced in the classroom. These methodologies promote student protagonism, encourage collaborative work, and value multiple forms of expression. As a result, learning opportunities are expanded for students with different styles and paces, creating a more inclusive environment. The pedagogue, by proposing and monitoring these methodologies, acts as a transformative agent of school practices.

According to De Fátima Andrade, Borges, and Carlotto (2022), another significant challenge is the lack of dialogue among the various professionals within the school. Often, inclusion is treated as the sole responsibility of the resource room or a specific professional, which fragments the process and weakens connections. Building an inclusive culture requires valuing teamwork and understanding that everyone shares responsibility for student learning.

It is in the face of these challenges that numerous possibilities also arise. When the pedagogue embraces their role as facilitator with commitment and sensitivity, they can create spaces for listening, training, and support. They have the capacity to mobilize the school to become more aware of its social role and better prepared to ensure learning for all. Inclusive practice in high school, though complex, is feasible when built through dialogue, empathy, and the courage to break away from exclusionary models.

A THE PEDAGOGUE'S ROLE AS MEDIATOR AND FACILITATOR

Mediation and facilitation are central aspects of the pedagogue's work within an inclusive perspective, especially in high school, where the challenges of diversity become even more complex. This professional not only organizes the pedagogical process but also serves as a link between the human, pedagogical, and institutional dimensions of the school. Their sensitive listening, attentive observation of individualities, and ability to foster dialogue are essential qualities for ensuring that inclusion moves beyond rhetoric and becomes a concrete reality in everyday school life. Through this committed engagement, pathways are paved toward a more democratic, just, and welcoming school.

According to Carvalho, Mira, and Santos (2018), the pedagogue plays a strategic role in building a humanized school management that values diversity and encourages pedagogical practices that respect students' individual characteristics. This involves breaking away from rigid and exclusionary structures, investing in processes of listening, cooperation, and shared responsibility. When the pedagogue coordinates the various sectors of the school around an inclusive political-pedagogical project, they act as a facilitator of processes aimed at promoting equity and combating the inequalities present in the school environment.

Pereira et al. (2022) state that the pedagogue's role as a facilitator also involves identifying barriers that hinder students' learning and participation. These barriers may be physical, attitudinal, communicational, or curricular, and require diverse and coordinated strategies to be overcome. In this regard, the pedagogue must have a deep understanding of the school context, engage in dialogue with teachers, listen to families, and, above all, respect students' agency in the educational process.

Ramos (2023) emphasizes that one of the most significant roles of the pedagogue in school inclusion is the promotion of formative practices within the institution. By proposing spaces for ongoing professional development—such as discussion circles, pedagogical workshops, and study groups—the pedagogue mobilizes teachers to reflect on their practices and embrace new ways of teaching. This formative action contributes to the development of a more sensitive perspective toward differences and strengthens teachers' autonomy in facing the challenges of inclusive classrooms.

The pedagogue's mediation also involves monitoring students' learning and development processes, as noted by Garcia, Diniz, and Martins (2016). When the pedagogue closely follows the

progress of students with disabilities or specific needs, they can intervene more effectively, guiding teachers on curricular adaptations, accessible methodologies, and support strategies that respect each student's potential and learning pace. This reinforces the ethical dimension of pedagogical work, centered on valuing the individual and ensuring the right to quality education.

Duarte (2023) highlights that when the pedagogue also assumes managerial functions, they are better positioned to coordinate institutional policies aimed at inclusion. Their role extends beyond the classroom and reaches decision-making spaces within the school, such as councils, planning meetings, and the development of the political-pedagogical project. By actively participating in these spaces, the pedagogue helps ensure that inclusion is embedded in the school's institutional culture and not limited to isolated or occasional actions.

Souza and Kochhann (2016) argue that it is essential for the pedagogue to have both initial and ongoing training that encompasses the foundations of inclusive education. Only with theoretical knowledge and practical sensitivity can they mediate the diverse interests and needs that permeate the school environment. Such training also enables the pedagogue to serve as a reference for other school professionals, guiding them confidently, fostering meaningful exchanges, and encouraging transformative collective actions.

Ramos (2023) contends that, beyond mediating between teachers and students, the pedagogue should also coordinate external partnerships, involving health services, social assistance, and specialized institutions. These intersectoral collaborations expand the possibilities for meeting students' needs and strengthen the comprehensive support network. By fostering dialogue between the school and other sectors of society, the pedagogue ensures that inclusion is approached in a broad, integrated, and continuous manner.

According to Pereira et al. (2022), the pedagogue's role also includes caring for the institutional climate. Creating a welcoming, respectful, and safe environment for all students is an essential part of inclusion. This requires active listening, conflict mediation, and the strengthening of affective bonds within the school. As someone in constant contact with the various members of the school community, the pedagogue is a central figure in this process of humanizing relationships.

Garcia, Diniz, and Martins (2016) observe that high school, due to its disciplinary organization and content-focused approach, remains a space that resists inclusion. In this context, the pedagogue must act as a bridge between curricular demands and students' needs, proposing strategies that make teaching more flexible and respectful of different learning styles. Their mediation thus becomes an essential tool for integrating students into school life without compromising their individuality.

Carvalho, Mira, and Santos (2018) reinforce that the pedagogue's work must be guided by an ethical and political perspective. This means adopting an active stance against injustices, questioning

exclusionary practices, and advocating for more dignified and equitable teaching and learning conditions. A pedagogue who understands their role as a social change agent can mobilize the school to rethink its values, practices, and objectives.

Souza and Kochhann (2016) also point out that the success of the pedagogue's work depends on the recognition of their role by other school professionals. At times, their function is underestimated or viewed merely as technical or bureaucratic. For mediation and facilitation to be effective, the school must understand the importance of pedagogical work in promoting inclusion and provide spaces for listening and participation for this professional.

Ramos (2023) believes that the pedagogue can become a multiplier of inclusive practices within the school. Their continuous presence, attentive observation, and ability to engage with all sectors of the institution make them a privileged agent for implementing lasting changes. This requires institutional investment, professional recognition, and, above all, a genuine commitment to inclusion as an educational principle.

Duarte (2023) reminds us that the pedagogue's mediation must also extend to families, strengthening the bonds between home and school. Often, families feel disconnected from school life or misunderstood in their concerns. By establishing respectful and welcoming communication, the pedagogue builds bridges that foster trust and family engagement in the student's educational process.

According to Pereira et al. (2022), the pedagogue must develop socio-emotional skills to support their mediating practice. Being patient, knowing how to listen, communicating clearly, and handling conflicts respectfully are fundamental attributes for those who aim to coordinate diverse interests and promote a healthy and inclusive learning environment. These skills are not merely innate but can and should be cultivated throughout one's career.

The pedagogue's role as mediator and facilitator of school inclusion is a complex practice that demands preparation, sensitivity, and a deep commitment to social justice. They are the ones who connect the various segments of the school, fostering dialogue and creating pathways for diversity to be respected and embraced as an essential part of the educational process. When their work is recognized and supported, inclusion becomes more feasible, more tangible, and more humane.

PATHWAYS TO AN INCLUSIVE SCHOOL: STRATEGIES AND PERSPECTIVES

Building an inclusive school in the context of high school requires more than goodwill: it demands planning, sensitivity, ethical commitment, and concrete actions involving the entire school community. This stage of education, marked by intense cognitive, emotional, and social transformations, presents specific challenges for embracing diversity. Reflecting on pathways to inclusion at this level of education

also entails examining the role of pedagogical practices, school management, and professional training in promoting an education that respects differences and values each individual.

According to Duarte (2023), when the pedagogue acts with awareness of their managerial role, they can lead significant processes of change within the school. Their role is not limited to coordinating pedagogical actions but includes creating spaces for listening, dialogue, and participation. They contribute directly to the development of a political-pedagogical project that values diversity and proposes effective strategies for inclusion. The participatory management model advocated by the author is a promising pathway for transforming school culture and making it more welcoming and accessible.

Souza and Kochhann (2016) argue that the pedagogue's training must address inclusion issues from the earliest years of undergraduate education. It is essential that this professional understands that inclusion is not limited to the physical presence of students with disabilities in the classroom, but is expressed through the quality of interactions, respect for individualities, and the promotion of meaningful learning for all. The absence of solid training in this area undermines the school's ability to confront the challenges posed by diversity.

Ramos (2023) highlights the importance of effective strategies that are embedded in the school's daily routine. The author identifies curricular adaptations, the use of accessible pedagogical resources, the flexibility of assessment methods, and the implementation of active methodologies as fundamental. Such strategies foster the participation of students with diverse profiles and learning styles, promoting a more inclusive and stimulating environment for all.

Pereira et al. (2022) point out that one of the main obstacles to implementing inclusion in high school is institutional resistance and the rigidity of school practices. According to the authors, a restructuring of the current pedagogical model is necessary, based on democratic and inclusive values. This requires courage to rethink the curriculum, reorganize school time and space, and invest in the ongoing training of teachers and administrators.

Ramos (2023) emphasizes that sensitizing the school staff is one of the first steps toward consolidating an inclusive proposal. Educators must understand that inclusion is not the isolated responsibility of a specific professional, but a collective commitment that spans all areas of knowledge. Creating opportunities for training, discussion circles, and reflective practices helps build broader awareness of the school's role in ensuring rights.

Duarte (2023) underscores that intersectoral work is also a powerful strategy for strengthening inclusion. Dialogue with health services, social assistance, and specialized institutions enables the school to better understand students' needs and act in a coordinated manner. This integration expands the support network and contributes to the students' overall well-being, reinforcing their school retention and development.

According to Souza and Kochhann (2016), it is essential for the school to invest in a culture of welcome that values everyone's sense of belonging. This is reflected not only in pedagogical practices but also in everyday attitudes, discourse, and interpersonal relationships. The physical environment must also be designed according to accessibility principles, ensuring that all individuals can move and express themselves with autonomy and dignity.

Ramos (2023) stresses that pedagogical planning must be collective and student-centered. Involving teachers, coordinators, families, and students in planning school activities contributes to the development of proposals that are more aligned with the realities of each class. Active listening and respect for diversity should guide this process, promoting shared responsibility for all students' learning.

Pereira et al. (2022) warn that inclusion requires consistency and must not be viewed as a temporary project. It is a continuous process of school transformation that demands constant evaluation, adjustments, and sensitive listening. In this context, the pedagogue acts as a mobilizer, supporting teachers and ensuring that inclusion is genuinely practiced, not merely discussed.

According to Duarte (2023), the pedagogue can also serve as an advocate for public inclusion policies, raising awareness within the school community and seeking to strengthen institutional partnerships. By participating in spaces of democratic management, school councils, and educational forums, this professional reinforces the school's commitment to human rights and equitable access to knowledge.

Moving toward an inclusive high school means recognizing that education must welcome, listen to, and respect all forms of existence. The challenges are real, but so too are the possibilities for change when there is sensitivity, commitment, and collective action. The pedagogue, as a facilitator of these processes, plays an indispensable role in constructing pathways that lead to equity, justice, and the appreciation of diversity in everyday school life.

FINAL CONSIDERATIONS

In conclusion, the pedagogue plays an indispensable role in the realization of school inclusion in high school, acting as a mediator between the various educational demands and the individuals involved in the teaching-learning process. Their presence in the school goes beyond pedagogical organization; they are an agent who fosters dialogue, active listening, and coordination among teachers, students, families, and school management. In a context marked by academic and social challenges, the pedagogue contributes to transforming the school environment into a more welcoming, equitable, and sensitive space that embraces differences.

School inclusion requires coordinated, intentional, and humanized actions. In this scenario, the pedagogue becomes a point of convergence between the needs of students with disabilities or other

specific educational demands and the pedagogical strategies adopted by the school. Their attentive perspective and ability to navigate planning, guidance, and management make them a key figure in overcoming exclusionary practices that are often still normalized in the daily life of high school education.

Promoting inclusion necessarily involves cultural and institutional change. The pedagogue contributes to this transformation by facilitating moments of professional development, reflection, and dialogue with the teaching staff, by building bridges between theory and practice, and by assisting in the development of a political-pedagogical project that incorporates the principles of equity and respect for individual differences. They also act as a coordinator of internal and external support networks, strengthening intersectoral collaboration and expanding the possibilities for student support.

Listening to families, supporting teachers, and monitoring students are practices that give concrete form to the pedagogue's inclusive role. In high school—a decisive stage for young people's personal and academic development—this role becomes even more necessary. The pedagogue must possess the sensitivity to address emotional, social, and educational issues that directly impact students' learning and well-being, creating viable pathways for their continued presence and holistic development within the school.

Through ethical and committed actions, the pedagogue reinforces students' sense of belonging to the school environment and contributes to the construction of an inclusive culture that transcends discourse and materializes in relationships, pedagogical practices, and institutional policies. When inclusion is embraced as a guiding principle rather than a mere obligation, the school becomes more humanized, and the pedagogue's role is revealed as even more powerful and transformative.

Thus, it can be affirmed that the pedagogue, when well-trained and actively engaged, becomes an agent of change, capable of transforming realities and promoting truly inclusive education. Their work in high school is fundamental to ensuring that all students have access, continuity, and real conditions for learning and participation. Inclusion, in this sense, is not an isolated challenge but a collective construction, in which the pedagogue acts as a bridge, guide, and inspiration for a more democratic and pluralistic school.

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COMPLEXITY AND INCLUSION OF STUDENTS WITH INTELLECTUAL DISABILITIES: POSSIBLE PATHS FOR A SCHOOL THAT EMBRACES DIFFERENCE

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ABSTRACT

This article conducts a narrative literature review with the aim of analyzing how complexity theory can contribute to the construction of inclusive pedagogical practices directed toward students with intellectual disabilities. Grounded in authors such as Edgar Morin and Maria Teresa Eglér Mantoan, the study articulates theoretical and normative aspects of inclusive education with the principles of complexity, highlighting the need to overcome the fragmented school model. The analysis of ten academic works published between 2001 and 2025 reveals both convergences and tensions in the field, indicating that inclusion requires breaking with established patterns and adopting an epistemological stance open to uncertainty and diversity. It is concluded that complexity does not provide ready-made answers, but invites schools to constant reinvention, promoting belonging and the appreciation of particularities.

Keywords: Inclusive Education; Complexity; Intellectual Disability; School; Singularity.

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INTRODUCTION

The presence of students with intellectual disabilities in schools has highlighted tensions between the legal commitments assumed by the Brazilian State and the actual pedagogical practices in classrooms. Documents such as the Salamanca Statement (1994), the LDB (BRASIL, 1996), and the PNE 2014–2024 (BRASIL, 2014) express a normative plan pointing toward an inclusive school. However, the implementation of these principles still faces structural, cultural, and epistemological challenges that affect daily educational practices. This tension reveals not only a structural problem but also an epistemological one, requiring a profound review of how the subject, learning, and the role of the school are understood.

Over the past decades, the dominant conception of inclusion has been based on the requirement that the student adapt to school parameters, reinforcing integrative models that, although couched in inclusive language, maintain intact the logics of normalization and exclusion (MANTOAN, 2003). In contrast, the perspective of inclusion as an ethical, political, and pedagogical ideal presupposes the reconstruction of the school as a space for recognizing difference and human plurality (MANTOAN, 2015). This conception, however, demands more than pedagogical strategies: it requires a review of the structures of thought that sustain the organization of knowledge, didactics, and school relationships.

This article aims to analyze, in light of complexity theory, the possibilities and limits of school inclusion for students with intellectual disabilities, identifying possible paths for building a school more open to difference. To this end, a narrative literature review will be conducted, focusing on investigations that intersect the normative, conceptual, and didactic foundations of inclusion with the principles of complexity. The analysis covers works published between 2001 and 2025, with an emphasis on Brazilian authors contributing to this debate.

Although recent investigations have advanced in understanding the normative, conceptual, and didactic dimensions of school inclusion, most studies privilege theoretical and qualitative approaches, focusing on urban contexts and neglecting the regional and social diversity that characterizes Brazil. Furthermore, teacher training, critical evaluation of public policies, and the role of digital technologies in inclusion remain underexplored or superficially addressed in the literature.

Contradictions also arise when official discourses are confronted with everyday practices, signaling a gap between what is recommended and what actually occurs. Inclusion is still mostly understood as the student's adaptation to the system, when, in fact, it should be an ethical and structural transformation of the school system itself. Faced with these shortcomings, open questions remain: How can we conceive of inclusion that respects singularities without reinforcing exclusionary models? What methodological strategies can capture the complexity of the experiences of students with intellectual

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disabilities in diverse contexts? These questions guide the present review and point to the relevance of the theoretical framework of complexity, which will be explored below.

By choosing complexity as a reference, this article proposes to reconnect knowledge, embrace uncertainty, and think of the school beyond standardization, recognizing that difference is not an exception but a condition of human existence. By breaking with simplifying divisions, this approach allows us to understand the inclusion of individuals with intellectual disabilities as a process traversed by bodily, affective, cognitive, and social factors that do not fit into fixed categories.

It is a paradigm that embraces the unpredictable as a feature of educational reality and proposes reconnecting what reductionist tradition has separated. Complex thought, as proposed by Edgar Morin (2001), allows us to understand education as a living, autopoietic, and contradictory system, in which inclusion is not reduced to technical adaptations but is expressed as an ethical, epistemological, and pedagogical reinvention.

The structure of the article is organized into four parts: first, the theoretical framework centered on Edgar Morin and Maria Teresa Eglér Mantoan; second, the methodological procedures of the review; third, a discussion of the main findings of the literature; and finally, the concluding remarks.

THEORETICAL FRAMEWORK

The discussion on school inclusion finds its theoretical foundations in authors such as Edgar Morin (2021; 2022) and Maria Teresa Eglér Mantoan (2003; 2015), who broke away from traditional models of knowledge and education. Initially, inclusion was defined as a technical response to integrate students with disabilities into the regular school system, emerging in a context marked by social demands for civil rights and educational equality. At the time, concerns involved overcoming segregation and ensuring access, within a scenario influenced by sociological and pedagogical traditions that prioritized standardization and fragmentation of knowledge. Morin proposes the "reconnection of knowledge" and the appreciation of uncertainty as central elements for dealing with the complexity of life (MORIN, 2021; 2022). The concept of "reconnection of knowledge," central to Morin's work, refers to overcoming disciplinary fragmentation, proposing an articulation among different fields of knowledge to understand the complexity of educational phenomena. Meanwhile, Mantoan emphasizes inclusion as an ethical commitment, rejecting the mere adaptation of the student to the school (MANTOAN, 2003).

There are different definitions of inclusion, but the one that underpins this research understands inclusion as structural transformation rather than mere adaptive integration. It is necessary to distinguish inclusion from integration, as the latter maintains the logic of disguised exclusion. While integration presupposes that the student adapts to the already established school system, inclusion requires the school itself to transform in order to embrace singularities. Thus, integration maintains the logic of

normalization, whereas inclusion questions and reinvents this logic. Historically, integration emerged as an advance over segregation, as it allowed students with disabilities to enter regular schools, but under the condition of compliance with pre-established norms. Inclusion, consolidated from the Salamanca Statement (1994) and subsequent Brazilian legislation, breaks with this requirement, advocating that the school must reorganize itself in curricular, didactic, and cultural terms. This change implies understanding diversity as a constitutive element of the school community and not as an exception to be tolerated.

From this perspective, Morin's complex thought provides an essential interpretative key, as it challenges reductionist models and invites the reconnection of knowledge, articulating cognitive, social, and affective dimensions that sustain truly inclusive practice. Although widely recognized, the inclusive definition continues to be revised, mainly due to the difficulty of operationalizing it in practice. The founding authors strongly influence current studies but acknowledge that limitations and challenges remain.

In contemporary approaches, the literature privileges interpretations based on complexity theory and the ethics of inclusion, as evidenced by Santos (2009), who highlights the need to overcome the fragmentation of knowledge to restore integral education. The most frequent studies focus on regular schools, especially regarding students with intellectual disabilities, and explore strategies to broaden equality. However, most research tends to focus on the same institutional contexts, reinforcing the idea of inclusion as access or adaptation, with little questioning of its limitations. There is partial consensus on the importance of a plural school, but the tensions and conflicts inherent in the process are little explored. Authors recognize that their contributions help advance the debate but admit that crucial aspects, such as cultural and pedagogical resistance, remain neglected. This reveals a uniformity of perspectives that may restrict understanding of the phenomenon's complexity.

Authors such as Carvalho and Bach Junior (2025) offer strong criticism of the still predominant welfare-oriented approach, proposing that inclusion be regarded as a central and structuring axis of the educational project, not as a punctual response to specific legislation. These scholars, alongside other critical authors, incorporate decolonial and ethical perspectives to highlight the hierarchies and exclusions that persist in schools. They warn of the need for pedagogical practices that consider the tensions, conflicts, and possibilities of the school environment, promoting curricular justice and ethical neutrality. Their disagreement with traditional approaches lies in rejecting normative and fragmented models, proposing a paradigmatic shift that values coexistence of differences without hierarchies (CARVALHO; BACH JUNIOR, 2025). These emerging perspectives address contemporary social contexts and incorporate cultural and technological changes, revealing gaps that earlier studies did not address.

This research aligns with studies that articulate Morin's complexity theory (2021; 2022) and the ethical commitment advocated by Mantoan (2003; 2015), as well as current critiques presented by

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Carvalho and Bach Junior (2025) and Santos (2009). By revisiting these approaches, the work deepens the analysis of inclusion as a continuous and collective process, going beyond welfare-oriented practices. It is especially influenced by the view of the school as a living organism in constant transformation, seeking to challenge the limitations of current practices and highlight the concrete challenges of everyday school life. Thus, it contributes to broadening understanding of how inclusion can be effectively incorporated into pedagogical practices and educational policies.

Significant gaps persist in understanding inclusion, especially regarding the cultural and pedagogical dynamics that hinder its full realization. The literature often assumes homogeneity of the subject and the school context, disregarding internal diversity and the multiplicity of student experiences. Central debates remain open, particularly on reconciling the complexity of difference with curricular and institutional demands. This research aims to shed light on these issues by adopting a perspective that values pluralism and the emergence of singular practices. Incorporating complexity theory as a theoretical axis reinforces the relevance of the study by positioning inclusion as an unfinished, ethical, and political process that requires continuous reflection and constant transformation, overcoming merely normative or technical responses.

International evidence reinforces that the challenges of inclusion are not limited to the Brazilian context. A case study conducted in Portugal with a student with intellectual disabilities indicated that the effectiveness of inclusion depends not only on material resources but above all on the school's ability to reorganize its practices and promote a culture of acceptance (ALVES; GOMES, 2021). This finding converges with the perspective of complexity by showing that inclusion is a dynamic and collective process, traversed by pedagogical, cultural, and relational factors.

METHOD

This study employs a narrative literature review as its main strategy, aiming to understand how complexity theory can contribute to rethinking school inclusion for students with intellectual disabilities. The research is qualitative in nature, as it prioritizes an interpretative and integrative analysis of academic works rather than data quantification. This strategy proves suitable due to its methodological flexibility, allowing the articulation of different theoretical frameworks and a critical examination of a field still in expansion, especially when dealing with themes involving ethical, political, and cultural dimensions in education.

The bibliographic search was conducted between April and June 2025 through searches in renowned databases such as SciELO, Google Scholar, the CAPES Journal Portal, and institutional repositories of Brazilian public universities. For the search, descriptors in Portuguese were used — "teoria da complexidade" (complexity theory), "inclusão escolar" (school inclusion), "deficiência

intellectual" (intellectual disability), "educação inclusiva" (inclusive education), "religação dos saberes" (reconnection of knowledge), and "escola inclusiva" (inclusive school) — combined with synonyms and close variations, and Boolean connectors to optimize results.

The time frame adopted covers publications from 2001 to 2025, encompassing both classic reference works, such as those by Edgar Morin (2001; 2021; 2022) and Mantoan (2003; 2015), and recent studies that update the debate in light of contemporary transformations. The digital context of the selected databases is relevant, as it concentrates recent Brazilian academic production and offers broad access to texts in Portuguese, favoring linguistic and cultural adequacy of the analyzed material.

As inclusion criteria, works were considered that explicitly align with the theoretical frameworks of complexity theory and inclusive education, specifically address intellectual disability in a school context, and are available in full text in Portuguese. Duplicated texts, those lacking clear theoretical grounding or consistent problematization, as well as theses and dissertations, were excluded. Theses and dissertations were excluded due to the diversity of formats and evaluation criteria, prioritizing articles published in peer-reviewed scientific journals. The narrative review proved appropriate for allowing greater interpretative flexibility, essential for analyzing a field marked by multiple theoretical and practical dimensions.

After the initial screening, followed by careful analytical reading, fourteen main works were selected to form the study's basis. The choice is justified by the relevance and theoretical representativeness of the selected works for the topic in question. Although the number is small, it is justified by the incipient nature of the field and the methodological option for a narrative review, which prioritizes interpretative depth rather than numerical exhaustiveness.

Data analysis followed an interpretative path, guided by the identification of convergences, tensions, and theoretical gaps, with special attention to how each author articulates complexity theory within the inclusive discourse. There was no need to use specific software for analysis, given the qualitative and interpretative nature of the review. The theoretical foundation for the analysis relied on classic and contemporary authors in the field of literature review methodology and thematic analysis.

ANALYSIS OF RESULTS

The analysis of the selected material highlights a set of studies committed to criticizing the current educational model and seeking theoretical and practical alternatives aimed at including students with intellectual disabilities. Within this group, authors stand out who problematize the structural conditions of schools, the limitations of public policies, and the persistence of a restrictive pedagogical perception.

In this sense, empirical research has shown the gap between legal guidelines and everyday school life. França and Silva (2022), when investigating the perceptions of families and teachers of students with

intellectual disabilities in public schools in Minas Gerais, identified that the main difficulties are related to the lack of adequate teacher training, the overload of teachers' responsibilities, and the shortage of support resources. These findings reinforce criticism of the bureaucratic logic that tends to hold the student responsible for adapting, instead of proposing structural transformations in the school.

Most of the works adopt a qualitative approach and are based on epistemological frameworks such as complexity theory (MORIN, 2021; 2022) and the critical perspective of inclusive education (MANTOAN, 2003; 2015). In addition, they incorporate analyses situating inclusion within the context of Brazilian public policies, considering their legal developments and contradictions (BRASIL, 1996; 2014). Santos' (2009) study stands out by proposing educational principles aimed at reconnecting knowledge and overcoming the fragmentation that isolates subjects and school knowledge, while Carvalho and Bach Junior (2025) update the discussion by positioning inclusion as a central axis rather than a mere remediation policy.

A recurring pattern in the analysis is the criticism of the logic that levels and structures school life based on bureaucratic rationality. This logic views difference as an obstacle and imposes on the student the adaptation to a pre-established norm. In contrast, the authors converge on the need to reorganize the school based on a pedagogy of listening, collaboration, and indeterminacy—elements that, according to Morin (2022), constitute the foundation of complex thought.

Another common point in the studies is the understanding that the inclusion of students with intellectual disabilities cannot be delegated only to specialists or support professionals, but must be configured as a collective responsibility. To this end, it is essential to cultivate a school culture founded on the ethics of coexistence and the appreciation of singularities. Mantoan (2015) emphasizes that an inclusive school becomes effective when it breaks with the idea that everyone must learn in the same way, recognizing that teaching consists of an inventive exercise in the face of difference.

The analyzed works reveal a strong articulation between theory and practice, going beyond diagnoses to propose principles and pathways for transforming educational practices. Santos (2009), for example, advocates adopting a transdisciplinary education that integrates fragmented knowledge, while Carvalho and Bach Junior (2025) reaffirm inclusion as the central axis of school policies and practices.

TENSIONS AND GAPS IN ACADEMIC PRODUCTION

Despite theoretical advances and the sophistication of analyses, tensions persist that deserve attention. One of them concerns the fragility of public policies, often formulated in spheres distant from school reality. Although Brazilian legislation has advanced in normative terms, its implementation faces cultural resistance, lack of adequate teacher training, and rigid school structures.

Another difficulty pointed out is translating the principles of complexity into concrete pedagogical practices. Although there is consensus on the need to overcome linear and disciplinary thinking, few studies delve into how this overcoming occurs in the daily classroom with students with intellectual disabilities. This gap indicates the need to expand research investigating complex and inclusive pedagogical experiences, considering the mediations, conflicts, and strategies of the real school environment.

Furthermore, there is a scarcity of research that articulates complexity theory with other critical frameworks, such as the historical and cultural perspective of special education or decolonial studies. This absence points to a fertile field for future investigations that broaden the theoretical repertoire and deepen the understanding of inclusion as a historical and interactive process.

DISCUSSION – PSYCHOMOTRICITY AS AN AXIS OF COMPLEX INCLUSION

The analysis of the selected works reaffirms the relevance of complexity theory as a theoretical framework capable of reconfiguring the challenges of school inclusion for students with intellectual disabilities. According to Morin (2021; 2022), exclusion does not result merely from isolated pedagogical practices but stems from a simplifying educational structure that resists uncertainty. In this model, the school, by operating with rigid categories and inflexible norms, rejects what escapes predictability, denying difference as an essential characteristic of human experience.

This functioning directly opposes the goal of inclusion, which demands openness to the unpredictable and willingness to engage with varied forms of learning and interaction. For Mantoan (2003; 2015), there is no inclusive school without an ethical transformation of everyday school life, based on coexistence and acceptance.

By adopting the principles of complexity, it becomes possible to break with the classificatory logic that segments school relationships into divisions such as normal/abnormal and capable/incapable. Santos (2009) points out that this fragmentation harms not only knowledge construction but also the formation of bonds, impacting the affective, institutional, and epistemological spheres of the school. The reconnection of knowledge, as proposed by Morin, also involves the reconnection of subjects, framing inclusion as a collective process based on listening, mediation, and constant invention.

Complex thought proposes abandoning ready-made solutions and universal methods in favor of pedagogical practice attentive to each student's singularity. Thus, inclusion ceases to be a technique or concession and becomes a decision grounded in knowledge and politics, recognizing the teacher as an agent who articulates diverse knowledge, navigates zones of uncertainty, and develops new educational practices.

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From this perspective, some pedagogical possibilities can be envisioned. For example, in a history class that includes students with intellectual disabilities, the teacher might lead a collective investigation on prehistory, integrating different languages, experimentation, videos, drawings, motor activities, and discussion circles. Students with varied cognitive profiles would participate according to their forms of expression, and planning would be flexible, open to surprises and mistakes. The content remains central but is reinvented in an interdisciplinary and collaborative dynamic, enabling a truly inclusive teaching-learning process rather than a merely adapted one. The example of a history class is included not as a universal model but as a practical illustration of how the principles of complexity can be incorporated into real teaching situations.

These principles also appear in real practices of teachers seeking inclusive pedagogical alternatives. Brito and Flores (2023), in a qualitative study with elementary school teachers, observed that curriculum flexibility and the use of diversified strategies were fundamental to enabling the participation of students with intellectual disabilities. The authors emphasize that such practices require an inventive and reflective stance from teachers, in line with the principles of complex thought.

The studies analyzed stress that this transformation requires more than curricular changes or well-intentioned legislation; it demands a profound shift in teacher attitudes, a type of training that embraces complexity and fosters more human pedagogical bonds. It is not about idealizing practices or ignoring institutional limitations but recognizing that every cultural change begins with the reinvention of school routines.

At this point, complexity theory demonstrates its value by rejecting the comfort of neutrality and ready-made solutions. It invites educators to navigate unstable territories where error and contradiction are integral parts of the educational process. This approach does not weaken the school; on the contrary, it points to its reinvention as a space for collective learning, mutual recognition, and shared knowledge production.

This investigation reinforces the importance of complexity theory as a basis for rethinking school inclusion, highlighting the need for a profound ethical and pedagogical change that goes beyond superficial adaptations. By showing how flexible and collective practices can rebuild bonds and educational processes, the research contributes to broadening the understanding of inclusion as a dynamic phenomenon involving the entire school community in building a more welcoming and diverse environment.

Another relevant aspect is considering the voices of the students themselves. In a study with children transferred from special schools to regular education, students' perceptions revealed feelings of greater belonging and recognition in mainstream schools, but also experiences of covert exclusion (Maturana & Mendes, 2017). This subjective perspective shows that inclusion cannot be reduced to

technical parameters, as it involves affective and relational dimensions that only a complex perspective can grasp.

THE PSYCHOPEDAGOGY OF THE BODY: PSYCHOMOTRICITY AS A PATH TO COMPLEX INCLUSION

The complexity of the educational process for students with intellectual disabilities requires an approach that goes beyond curricular adaptations and cognitive support. Psychomotricity, as an interdisciplinary field that integrates motor, affective, cognitive, and social aspects, constitutes a pathway to promote the overall development and school inclusion of these students. In an educational model based on the reconnection of knowledge, as proposed by Morin (2001), psychomotricity acts as a bridge between body and mind, fostering learning that is not limited to content but includes gesture, rhythm, nonverbal communication, and awareness of one's own body in space.

Studies indicate that psychomotor stimulation in children with intellectual disabilities can significantly enhance socialization, autonomy, and school performance (MOREIRA; ANTUNES; FREITAS, 2022; ANJOS et al., 2017). This occurs because motor development is deeply linked to the ability to pay attention, concentrate, organize space and time, and regulate emotions—skills that are often compromised in this population. Thus, pedagogical practices that integrate playful activities, motor circuits, symbolic games, and body expression not only increase learning potential but also respect students' singularity.

Beyond its therapeutic function, psychomotricity, when incorporated into everyday school life as an integral component, contributes to rethinking inclusion as a living experience of participation. This perspective requires educators to adopt a broader view, capable of understanding that the teaching and learning process does not occur only through written or verbal language but also through gesture, balance, imitation, and rhythm. Following this logic, the body is part of the subject in its entirety. A school that truly embraces difference must therefore consider that psychomotor practices are not "complementary" but essential for promoting genuinely inclusive education.

FINAL REMARKS

Thinking about school inclusion of students with intellectual disabilities from the perspective of complexity theory goes beyond a conceptual change; it is an exercise in destabilizing the certainties that sustain the modern school. This study sought to show that exclusion, often naturalized under narratives of limitation or adaptation, in fact masks a simplifying mindset that organizes knowledge, curricula, and school relationships based on conventional norms. Complexity emerges as an ethical and epistemic

perspective for an education that recognizes the subject in their full affective, cognitive, motor, social, and institutional dimensions.

The main contribution of this article lies in articulating the principles of complexity and their interaction with the reconnection of knowledge, uncertainty, and the foundations of inclusive education. By bringing together authors such as Morin, Mantoan, and Santos, it was possible to construct a critical reading of the school model, revealing the structural fragmentation that prevents the acceptance of difference. More than proposing universal solutions, complexity theory invites the reinvention of practices that escape technical rigidity and are built through listening, relationships, and openness to the unexpected.

It became clear that inclusion requires the reinvention of the school itself. This implies, for example, rethinking classroom time and space, making assessment methods more flexible, valuing the body and non-normative forms of expression, and embracing diversity as a structuring principle rather than an exception to be managed. The example developed in this study of an interactive class is just one among many possibilities. What matters, from a complex perspective, is not the model itself but the willingness to continuously reconstruct it based on the group's needs and the singularities of the subjects.

The analyzed works revealed significant advances in criticizing the current schooling model and in formulating inclusive proposals. However, they also highlighted relevant gaps, such as the scarcity of empirical research that articulates complexity and concrete pedagogical practices in public schools. This is a promising field for future investigations, especially to understand how educators, in real contexts, face the tensions of inclusion.

A school that truly embraces difference is not sustained by protocols or regulations but by bonds, listening, and pedagogical courage. It is in this uncertain, contradictory, and imperfect movement that inclusive education ceases to be an ideal and becomes reality. Complexity does not offer shortcuts but possible paths. It is about accepting uncertainty as a condition of knowledge and difference as a basic principle of educational experience. And it is along these paths that, ethically, we must proceed. Among the possible paths for a school more open to difference, the following stand out: adoption of flexible pedagogical practices that integrate multiple languages and ways of learning; valuing psychomotricity as an essential dimension of the educational process; teacher training focused on the ethics of coexistence and the reconnection of knowledge; critical review of public policies to overcome welfare-oriented approaches; strengthening a school culture based on listening, collaboration, and acceptance of diversity.

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PLAY, INQUIRE, AND BELONG: DIVERSITY AS A POTENTIAL IN ACTIVE METHODOLOGIES IN EARLY CHILDHOOD EDUCATION

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ABSTRACT

This article analyzes play as a universal language in Early Childhood Education, linking it to inquiry and belonging as foundations for inclusive and meaningful pedagogical practices. The study aims to understand play as a mediator of children's cognitive, social, and emotional development, present practices that integrate playfulness, inquiry, and diversity, and reflect on active listening strategies that value children's uniqueness. It is justified by the need to recognize childhood in its plurality, ensuring educational experiences that promote protagonism, inclusion, and social belonging. The research question addresses how pedagogical practices can integrate play, inquiry, and diversity to foster integral development. Methodologically, this is a bibliographic study based on authors such as Vygotsky (2007), Kishimoto (2011), Freire (1996), Kolb (1984), Oliveira Formosinho (2000), Nóvoa (2009), and Imbernón (2006), as well as the BNCC guidelines (2017). The results highlight the relevance of practices that combine playfulness, inquiry, and belonging as strategies to enhance meaningful learning and promote a creative, inclusive, and diversity-sensitive Early Childhood Education.

Keywords: Play; Active Methodologies; Early Childhood Education; Diversity; Inclusion; Belonging.

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INTRODUCTION

Play is a universal language that fosters children's cognitive, social, and emotional development (Vygotsky, 2007; Kishimoto, 2011; BNCC, 2017). Active methodologies encourage inquiry, experimentation, and children's protagonism (Freire, 1996; Kolb, 1984), while the appreciation of diversity enriches collective learning, promotes belonging, and strengthens respect for individuality (Oliveira Formosinho, 2000; Nóvoa, 2009; Imbernón, 2006). These foundations guide the reflection on pedagogical practices that integrate playfulness, inquiry, and inclusion.

Active methodologies gain relevance in this context, as they allow children to become protagonists of their own learning, participating meaningfully in the proposed experiences. Strategies that stimulate inquiry, experimentation, and problem-solving foster autonomy and participation, while respecting individual interests and rhythms.

Diversity is regarded as pedagogical potential, since children from different backgrounds, cultures, identities, and abilities enrich collective experiences. Inclusive practices promote belonging, empathy, and the appreciation of individuality, thereby strengthening bonds and meaningful learning.

The present research, conducted through a bibliographic approach, is grounded in both classical and contemporary works in Early Childhood Education, also reflecting on teaching practice. Its objective is to analyze play as a universal language and as a mediator of child development, to present pedagogical practices that integrate playfulness, inquiry, and diversity, and to reflect on active listening strategies that value children's uniqueness. The justification lies in the need to recognize childhood in its plurality, promoting affective, meaningful, and inclusive educational experiences.

In this context, the research problem arises: how can pedagogical practices in Early Childhood Education simultaneously incorporate playfulness, inquiry, and diversity, respecting the uniqueness of each child while fostering integral development and social belonging?

This analysis is organized as follows: Play as a Universal Language, addressing conceptions and playful practices; Belonging and Diversity, reflecting on inclusion and diversity as pedagogical potential; and Pedagogical Practices: Integrating Play, Inquiry, and Belonging, presenting examples of strategies that combine playfulness, inquiry, and the appreciation of children's uniqueness. The chapter is based on consolidated bibliographic references, aligned with practical experience in Early Childhood Education, offering both a theoretical and applied perspective on the subject.

DEVELOPMENT: (THEORETICAL FRAMEWORK)

PLAY AS A UNIVERSAL LANGUAGE IN EARLY CHILDHOOD EDUCATION

Play is recognized as a universal language, essential to the integral development of children in Early Childhood Education. According to Vygotsky (2007), play constitutes a social and cultural activity that enables the child to experiment with different roles, internalize norms and meanings, and promote cognitive development through imagination and symbolization. From this perspective, play is not merely leisure but a privileged space for the construction of knowledge and social interaction, in which the child acts as an active agent of their own learning.

Kishimoto (2011) reinforces this conception by highlighting that play enables the child to experience situations that stimulate creativity, problem-solving, and the ability to negotiate rules with peers, thereby fostering socio-emotional and cognitive skills. The author emphasizes that playfulness is a powerful learning tool, as it integrates affective, social, and intellectual dimensions, while respecting each child's time and rhythm.

The National Common Curricular Base (BNCC, 2017) also acknowledges play as an essential component of Early Childhood Education, suggesting that pedagogical practices should provide experiences involving exploration, imagination, and symbolic expression. The BNCC states that, through play, children can develop language, mathematics, world knowledge, and autonomy, consolidating meaningful learning in contexts of social interaction.

In pedagogical practice, play can be integrated into the educational process in various ways. Examples include pretend play activities, in which children reproduce everyday situations or invent new stories; symbolic games that encourage negotiation and cooperation; the construction of scenarios and objects with diverse materials, stimulating creativity and motor coordination; and guided play that introduces concepts of numbers, shapes, and languages in a playful and contextualized manner. Such practices demonstrate that, when intentionally planned by the educator, play can promote cognitive, social, and emotional development in an integrated way.

Thus, play in Early Childhood Education is understood as a language capable of mediating meaningful experiences, constructing knowledge, and fostering inclusion, expression, and sociability, establishing itself as a central element in the integral development of the child.

INTEGRATION OF PLAYFULNESS INTO DIFFERENT AREAS OF KNOWLEDGE

Play in Early Childhood Education can be structured in ways that articulate different areas of knowledge, thereby fostering meaningful learning in an integrated manner. In the area of language, for instance, pretend play and dramatizations allow the child to explore vocabulary, develop oral narrative, and learn to organize ideas, while also practicing listening, comprehension, and the expression of feelings.

The use of puppets, interactive books, and storytelling circles enhances imagination and strengthens social interaction.

In mathematics, playful activities involving counting, classification, sequencing, and measurement contribute to the construction of mathematical concepts in a concrete way. Adapted board games, block building or recycled materials for creating geometric figures, and playful cooking activities are examples of how play can render abstract ideas more tangible, while respecting each child's pace and stimulating curiosity and logical reasoning.

In the field of science and world knowledge, play encourages experimentation and observation. Activities such as gardening, exploring water, sand, and natural materials, as well as simple experiments in physics or chemistry, allow the child to understand everyday phenomena in practical ways, stimulating inquiry and problem-solving. These experiences also strengthen environmental awareness and respect for natural diversity.

The affective and social aspects are likewise addressed through cooperative play, which fosters empathy, rule negotiation, and collaboration among peers. Group games, collective dramatizations, and joint construction projects strengthen bonds, promote respect for differences, and develop socio-emotional skills essential for life in society.

Ultimately, the integration of playfulness into pedagogical practices highlights that play is not restricted to moments of entertainment but constitutes a powerful language that unites cognition, affectivity, and socialization. Educators who plan intentional and diversified activities can enhance children's integral development, respecting their uniqueness, interests, and learning rhythms, as outlined in the BNCC (2017) and reaffirmed by Vygotsky (2007) and Kishimoto (2011).

BELONGING AND DIVERSITY: CHILDHOOD IN ITS PLURALITY

Contemporary Early Childhood Education recognizes childhood as a period marked by the plurality of experiences, identities, and sociocultural contexts. The concept of belonging emerges as a central element, ensuring that all children—regardless of their ethnic, cultural, religious, or social background, or their developmental conditions—feel welcomed, valued, and respected in the school environment. This perspective involves not only access to the educational space but also the active and meaningful participation of each child in pedagogical experiences.

From an inclusive standpoint, it is essential that pedagogical practices address the needs of Black and Indigenous children, children with disabilities, or any others who may face inequality or exclusion. Oliveira Formosinho (2000) emphasizes that schools must act as mediators of experiences that promote equity, recognizing and valuing differences as part of the construction of both individual and collective

knowledge and identity. Inclusion goes beyond physical presence, requiring adaptation of content, methodologies, and resources so that all children can fully develop their potential.

Nóvoa (2009) reinforces the idea that diversity should be understood as pedagogical potential. The plurality present in classrooms offers unique opportunities for collaborative learning, in which differences become stimuli for creativity, problem-solving, and the development of socio-emotional competencies. Respect for diversity enables the construction of meaningful experiences that strengthen empathy, dialogue, and a sense of community among children and educators.

Imbernón (2006) underscores the importance of continuous and reflective teacher training for the implementation of inclusive practices. Teachers must be able to identify individual needs, adapt pedagogical strategies, and create learning environments that foster the participation of all. This requires attention to language, materials, activities, and spatial organization, ensuring that every child finds forms of expression and participation that respect their uniqueness.

In pedagogical practice, the recognition of diversity and the promotion of belonging can be manifested in various ways: incorporating stories and characters that represent different cultures and identities; adapting activities for children with different motor or cognitive abilities; promoting cooperative games that encourage solidarity and mutual respect; and valuing family and community experiences as part of the curriculum. Such practices consolidate the idea that plurality is a pedagogical asset capable of strengthening collective learning and the integral development of children.

Thus, Early Childhood Education guided by an inclusive perspective and the recognition of diversity not only guarantees rights but also transforms plurality into a pedagogical resource that enriches the experience of all participants, establishing belonging as a central axis of educational practice.

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PEDAGOGICAL PRACTICES: INTEGRATING PLAY, INQUIRY, AND BELONGING

Pedagogical practices in Early Childhood Education acquire greater relevance when they articulate play, inquiry, and belonging, thereby fostering meaningful experiences that encompass the child's integral development. Playfulness, understood as a space for experimentation, symbolization, and creativity, can be associated with the investigation of the surrounding world and with the appreciation of differences, consolidating an inclusive and stimulating environment.

Examples of proposals that combine these dimensions include projects exploring natural and cultural environments, in which children are encouraged to observe, question, and record discoveries in playful ways—through dramatizations, symbolic games, or the construction of models. Such activities allow scientific, social, and mathematical concepts to be incorporated in practical and meaningful ways, respecting individual interests and promoting cognitive autonomy.

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Diversity is intentionally incorporated into pedagogical practices through the inclusion of stories, music, games, and materials that represent different cultures, identities, and abilities. Collaborative activities—such as the creation of thematic murals, dramatizations of tales from various origins, or the design of adapted games—reinforce the sense of belonging, stimulate empathy, and value each child's uniqueness, turning plurality into an enriching pedagogical resource.

Active listening strategies are fundamental for enhancing these practices. The educator must observe, document, and engage in dialogue with children, acknowledging their interests, opinions, and modes of expression, and fostering shared decision-making regarding activities. This attentive stance allows for pedagogical adjustments that respect each child's pace, preferences, and talents, thereby consolidating inclusion and effective participation in the learning process.

Moreover, the integration of play and inquiry supports the development of socio-emotional, cognitive, and motor competencies. Activities such as sensory experiments, exploration of recyclable materials, classification games, storytelling, and collective dramatizations allow children to investigate causes, effects, and relationships in their environment, while simultaneously developing skills of cooperation, problem-solving, and individual expression.

In this way, pedagogical practices that integrate playfulness, inquiry, and belonging promote an inclusive, creative, and reflective Early Childhood Education, in which play is no longer seen merely as leisure but becomes a powerful language of learning, social interaction, and the valuing of each child's uniqueness.

DISCUSSION AND RESULTS

The analysis carried out in this chapter demonstrates that play, when intentionally planned, transcends its recreational function and is consolidated as a fundamental language for the child's integral development. The theoretical frameworks presented—Vygotsky (2007), Kishimoto (2011), and the BNCC (2017)—reinforce that playful pedagogical practices, when combined with active methodologies, foster meaningful experiences that support the construction of cognitive, social, and emotional knowledge.

The results indicate that pedagogical proposals integrating play, inquiry, and belonging generate positive impacts on children's engagement, autonomy, and learning. When diversity is understood as pedagogical potential (Oliveira Formosinho, 2000; Nóvoa, 2009; Imbernón, 2006), the school environment becomes more inclusive, encouraging social bonds, empathy, and the appreciation of uniqueness.

The discussion also shows that teacher training is a crucial element in transforming these concepts into effective practices. Well-prepared educators are able to integrate playfulness and inquiry into

contexts that respect the cultural, social, and individual plurality of children, thereby fostering children's protagonism and strengthening their sense of belonging.

These results, although derived from bibliographic research and practical reflection, point to consistent pathways for Early Childhood Education to assume an increasingly innovative, inclusive, and affective role. They also open space for empirical studies to evaluate how such practices impact child development in different school contexts.

CONCLUSION

The analysis developed in this chapter demonstrates that play, when articulated with inquiry and belonging, constitutes a solid foundation for innovative and inclusive pedagogical practices in Early Childhood Education. This approach is justified by the need to recognize childhood as a period of multiple languages, experiences, and identities, requiring strategies that value playfulness, respect uniqueness, and promote meaningful learning.

The guiding research question—how can pedagogical practices simultaneously encompass playfulness, inquiry, and diversity, ensuring children's integral development and social belonging?— proved pertinent, revealing that the challenge lies in the intentionality of planning and in the reflective training of teachers, who must be able to integrate theory and practice within a plural educational context.

The bibliographic methodology, combined with teaching experience in Early Childhood Education, made it possible to construct a grounded reflection that engages with established theoretical references while also dialoguing with the reality of pedagogical practice. This combination provides the text with academic rigor while maintaining proximity to the daily life of educational institutions.

Although this chapter comes to an end, it opens avenues for future investigations into active methodologies across different school contexts, comparative studies on inclusive practices, and empirical research assessing the impacts of these strategies on children's integral development. Thus, the text invites researchers and educators to deepen the debate on play, inquiry, and belonging as central axes of contemporary Early Childhood Education, strengthening a pedagogical approach that combines affection, diversity, and innovation.

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PIBID OF MATHEMATICS: EXPERIENCE REPORT AT THE STATE CENTER FOR PROFESSIONAL EDUCATION PROFESSOR FRANCISCO DE ASSIS PEDROSA

Sidney Barbosa de Sena[1] and Francisco de Assis Alves da Silva[2]

ABSTRACT

This article describes an experience experienced by students at CEEP Professor Francisco de Assis Pedrosa, a vocational high school institu-tion with PIBID students, in 2023. Based on prior planning, practical clas-ses were developed in the institution's mathematics laboratory under the supervision of the program's teacher. An active methodology (flipped classroom, project-based learning, and problem-solving) was applied, using concrete materials and games. The objective was to replenish mathematical knowledge lost during the pandemic, such as arithmetic, plane geometry, spatial geometry, algebra, and trigonometry, in a practi-cal, creative, and transdisciplinary way. This teaching methodology demonstrated results, increasing grades from 3.3 to 4.4 in procedural as-sessments administered to third-year students in the Rio Grande do Norte school system in 2025.

Keywords: Planning; Practical class; Project; Recomposition; Evaluation.

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PIBID OF MATHEMATICS: EXPERIENCE REPORT AT THE STATE CENTER FOR PROFESSIONAL EDUCATION PROFESSOR FRANCISCO DE ASSIS PEDROSA

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INTRODUCTION

During the development of the Institutional Program for Teaching Initiation Scholarships (PIBID) in Mathematics, efforts were made to develop activities in the laboratory during experimental mathematics classes, using didactic resources such as concrete materials, games, and activities involving active methodologies (flipped classroom, problem-solving, and project-based learning). The theoretical foundation of this report is based on Vasconcellos (2006), Freire (1997), and Campos (2017).This text reports the experiences of activities created and implemented at CEEP Professor Francisco de Assis Pedrosa, a vocational high school institution, in 2023. These activities were applied to students of the 1st year A of Nutrition and 2nd year A of Environmental Studies. For the other classes, a Mathematics Workshop was held, involving all students of the institution, made possible through the partnership with other PIBID participants from the neighboring school, Escola Estadual Professora Aida Ramalho Cortez Pereira, and the Mathematics advisor from the 12th Regional Directorate of Mossoró, who worked with third-year classes on activities carried out on October 9 of the same year. Written observations and graph analyses were practiced to describe the performance of students from the first-year A Nutrition class.

THEORETICAL FRAMEWORK

During the 2023 academic year, activities were designed and implemented in the mathematics laboratory as presented in Table 1 below. Vasconcellos reminds us that:

> "Planning is mentally anticipating an action to be carried out; it is acting according to what was foreseen; it is seeking something incredible, essentially human: the real commanded by the ideal. Thus, we understand that planning only makes sense if the subject places themselves in a perspective of change." (Vasconcellos, 2006).

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Table 1: Activities carried out at CEEP Professor Francisco de Assis Pedrosa in 2023 by PIBID Mathematics

Content	Objective	Activity	Methodology	Year	Evaluation
Exploring the value of π: measuring circumference and understanding the relationship between numbers and measurements	((EF02MA16) Understand the relationship between the circumference length and its diameter	Measuring circular objects and applying the relationship between measurement and proportion	Measuring circular objects and dividing by the diameter; Circle game	1st A Nutrition and 2nd A Environmental Studies	Diagnostic
Percentage and average speed	(EF06MA14) Relate average speed to the concept of percentage	Calculate classmates' average speed	Flipped classroom (sports court)	1st A Nutrition and 2nd A Environmental Studies	
Geometric solids	(EM13MAT302) Build geometric solids; Calculate area and volume; Recognize plane figures of these solids	Construction of solids, calculation of area and volume, and recognition of plane figures	Construction of geometric solids using modeling clay and jelly beans	1st A Nutrition and 2nd A Environmental Studies	
Workshops in the institution to approach mathematics through practical activities and games to work on elementary and fundamental mathematical concepts in high school students' education	(EM13MAT302) Build mathematical games emphasizing equations, history of mathematics, arithmetic, and geometric figures	Production of games, recreational activities, and problem-solving	Game production	1st A and B, 2nd A and B Nutrition; 1st A and B, 2nd A and B Environmental Studies	Formative
Area of a rhombus	((EM13MAT302) Build kites in the shape of a rhombus and calculate their area and perimeter	Kite construction	Kite production	1st A Nutrition	Summative

Source: Author's elaboration

Next, the text explains how each activity was carried out.

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DISCOVERING THE VALUE OF PI

Practice conducted by mathematicians: Gregório, Xavier, Sidney, and PIBID/IFRN/2023 students.

Source: Author's elaboration

Introduction

The history of the number π (pi) is long. Literature shows that many ancient civilizations attempted to determine its value, but it was the great Greek mathematician Archimedes who achieved the best approximation when he divided the circumference length by its diameter, obtaining a value close to 3.14.

General Objective

To discover the ratio between the circumference length and its diameter.

Specific Objectives

Measure circular objects to find their circumference and diameter, and determine the value of π.

Use measuring instruments such as rulers, string, and measuring tape.

Study proportions and decimal numbers.

Knowledge Involved

Mathematics, Engineering, and Technology.

Procedures

Students are asked to measure objects with circular shapes (perimeter) and their diameters.

Divide the perimeter of the circular object by its diameter.

Here is the template.

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Object	Circumference perimeter	Diameter	Circular object perimeter / diameter

Result and Discussion

Students should notice that dividing the circumference by its diameter always yields a constant close to 3.14, which the famous Greek mathematician, engineer, physicist, inventor, and astronomer of Classical Antiquity called an irrational number represented by the Greek letter π.

Evaluation

Students will be continuously assessed through activities and games emphasizing the value of π.

UNDERSTANDING AVERAGE SPEED

Practice conducted by mathematicians: Gregório, Xavier, Sidney, and PIBID/IFRN/2023 students.

Source: Author's elaboration

Introduction

Average speed can be defined as a physical quantity that measures how fast a body or object moves over a displacement in a given time. It is considered an average because its calculation is an arithmetic mean of the speed at all points along the path. The formula used to calculate average speed is:

$$Vm = \Delta S / \Delta t$$

Speed is measured in m/s.

General Objective

To calculate average speed through an experiment.

Specific Objectives

Measure the length of the sports court.

Demonstrate to students that Mathematics is present in everyday life.

Knowledge Involved

Mathematics, Physics, and Physical Education.

Procedures

Students measure the length of the court and record the time taken to run across it.

Divide the length of the court by the time taken.

Result and Discussion

Students should realize that dividing the length of the court by the time taken gives the value of average speed.

Student run:

Source: Author's elaboration

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Evaluation

Students will be continuously assessed through activities and games emphasizing the calculation of average speed.

MATHEMATICAL EXPRESSION RELATING SHOE SIZE AND FOOT LENGTH

Practice conducted by mathematicians: Gregório, Xavier, Sidney, and PIBID/IFRN/2023 students.

Source: Author's elaboration

Introduction

Shoe size varies according to each person's foot length and differs from country to country. In Brazil, for example, the mathematical equation $S = (5p + 28) : 4$ is used to calculate shoe size, where feet are measured in centimeters. Here, S represents shoe size, and p represents foot length in centimeters.

General Objective

To calculate shoe size given foot length in centimeters, as well as the foot size having the shoe number as reference.

Specific Objectives

Show students that Mathematics is present in daily life.

Solve the mathematical equation to calculate foot length.

Explore the history of footwear in various countries.

Locate countries and their shoe size systems.

Knowledge Involved

Mathematics, History, and Geography.

Procedures

Students measure their foot length and calculate shoe size.

Produce a text about the history of shoes and locate countries with different shoe size systems.

Result and Discussion

Students understood the history of shoes and learned to calculate foot length and shoe size using the mathematical equation.

Evaluation

Students will be continuously assessed through activities and games emphasizing shoe size and foot length.

BUILDING GEOMETRIC SOLIDS

Practice conducted by mathematicians: Gregório, Xavier, Sidney, and PIBID/IFRN/2023 students.

Source: Author's elaboration

Introduction

In this practical class, we present the Platonic solids. In Timaeus, a philosophical treatise by Plato explaining nature, each classical element (earth, air, water, and fire) is associated with a regular polyhedron: earth with the cube, air with the octahedron, water with the icosahedron, and fire with the tetrahedron. Regarding the fifth Platonic solid, the dodecahedron, Plato wrote: "There was still a fifth construction, which God used to arrange the constellations of the heavens." Euclid, in Book XIII of The Elements, calculated the ratio between the diameter of the circumscribed sphere and the edge length of each solid. In Proposition 18, he demonstrated that no other regular polyhedra exist. During the class, we also showed, through nets, why there are only five regular polyhedra, constructed them, presented Euler's

theorem $V-A+F=2$V - A + F = 2$V-A+F=2$, and suggested pedagogical activities for building polyhedra to aid visualization and understanding.

General Objective

To present and construct Platonic solids.

Specific Objectives

Show students that Mathematics is present in daily life.

Build geometric solids using toothpicks, modeling clay, or jelly beans.

Identify vertices, edges, and faces.

Solve Euler's relation.

Differentiate between plane and spatial figures.

Name the solids brought to class.

Knowledge Involved

Mathematics, History, Philosophy, and Technology.

Procedures

Students identify plane and spatial figures and construct the requested solids.

Result and Discussion

Students understood the history of Platonic solids and solved Euler's relation.

Evaluation

Students will be continuously assessed through activities and games emphasizing geometric solids.

MATHEMATICS WORKSHOP

Classroom Workshop

Source: Author's elaboration

Introduction

The Mathematics Workshop: Recomposition of Mathematical Knowledge was carried out after the diagnostic assessment applied to first-year high school students at CEEP Professor Francisco de Assis Pedrosa, as these students showed difficulties in numbers, algebra, plane and spatial geometry, trigonometry, and statistics. The objective was to explore mathematics in a practical, creative, and transdisciplinary way, individually or in groups, reinforcing concepts, solving problems, and developing mathematical skills.

A qualitative and descriptive methodology was used for this work. In this workshop, the educator assumes multiple roles: player, researcher, guide, learner, and practitioner. Criticism of the formal method allows overcoming the fear of producing knowledge beyond formal language, embracing transdisciplinarity that leads to the new and unknown, which will be pursued and integrated into the essence of the desire to know. From the concrete to the abstract, language translates the moment of overcoming ignorance. Concepts exist independently of language, but through it, knowledge is historically socialized. The articulation between objectives and methodology involves understanding that these terms can be transcended by transdisciplinarity. This approach should generate something new. The aim is to build an argument showing the multiple possibilities for implementing the process of mathematical literacy, which goes beyond numbers, using the Mathematics Workshop as a space for articulating mathematical knowledge in a transdisciplinary understanding.

Thus, mathematical knowledge is constructed by articulating content observed in objects, artifacts, or other forms where underlying mathematics exists and can be researched. This work synthesizes years of experience born from the intense relationship between theory and practice.

The Mathematics Workshop: Recomposition of Mathematical Knowledge aimed to understand mathematics in a practical, creative, and interdisciplinary way, as well as to reinforce concepts, solve problems, and develop mathematical skills.

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General Objective

Explore mathematics in a practical, creative, and transdisciplinary way, individually or in groups.

Specific Objectives

Reinforce concepts, solve problems, and develop mathematical skills.

Procedure

Each classroom was assigned a game to reinforce a mathematical concept identified in the diagnostic assessment.

Result and Discussion

It was a morning full of knowledge and learning, as confirmed by the survey conducted.

Evaluation

Students were continuously assessed based on their engagement in the assigned game.

KITE ACTIVITY AND LEARNING ABOUT THE RHOMBUS

Practice applied by Sidney, Gregório, and Xavier.

Source: Author's elaboration

Introduction

Literature shows that kites originated in ancient China around 1200 B.C. Since then, they have been used for various purposes, such as military signaling, measuring atmospheric conditions, contributing to the invention of the lightning rod, and, to this day, as a popular toy among children, adolescents, and young people worldwide. The basic structure of a kite consists of a frame supporting a sheet of tissue paper that functions as a wing. Making and flying kites with students from CEEP Professor Francisco de Assis Pedrosa was very enjoyable; however, this activity aimed to enhance knowledge in Physics, as kites (also called stars, papagaios, pandorgas, or raias) are flying toys whose flight occurs due

to the opposing force of the wind acting on the kite, which is held by its operator. In Mathematics and Geometry classes, students worked on length measurements, unit conversions, polygons (specifically the rhombus), angles, symmetry, and face identification. In Geography, it was possible to teach about seasons, differences between weather and climate, and climate elements. Consolidating and expanding mathematical concepts was essential for students to see them in new extensions, representations, or connections with other concepts. The purpose of this activity was to provide students with opportunities to enjoy mathematical knowledge as one of the most important cultural assets constructed by humanity. It was based on Freire (1987) and Sousa (2007), as it was understood that this approach could facilitate learning for first-year Nutrition students at this institution.

General Objective

Build and fly kites.

Specific Objectives

Calculate the area of a rhombus.

Solve word problems involving the perimeter of a rhombus.

Convert length measurements.

Identify angles in polygons.

Identify faces.

Knowledge Involved

Physics, Mathematics, Geometry, and Geography.

Procedures

Students will build kites.

Fly kites.

Solve problems involving the rhombus.

Results and Discussion

The process was enjoyable, and learning occurred satisfactorily.

Evaluation

Students were continuously assessed through activities and games emphasizing the rhombus.

During the implementation of the activities, a structured sequence was always followed. In the reinforcement activities, the process began by reviewing previously taught content, followed by an explanation of how the activity would take place and the rules (in cases where the resource used was a game). From there, students proceeded to carry out the activity. Freire (1997, p.79) was considered: "No one walks without learning to walk, without learning to make the path by walking, remaking and retouching the dream for which one set out to walk." In activities introducing new content, the sequence was slightly different, as active methodologies were used to guide them. It is worth noting that training, in this sense, is conceived as integral and continuous, so that it is not limited to a single formation, but rather multiple formations that require the permanent condition of learning, unlearning, and relearning to interpret reality, broaden one's worldview, and achieve praxis (CAMPOS, 2017).

METHODOLOGY

From a methodological perspective, this study is a qualitative research with a descriptive approach, using bibliographic research and a field study of the case study type. The field research was conducted between May and December 2023 by PIBID students at CEEP Professor Francisco de Assis Pedrosa, a state vocational education institution in Mossoró-RN, in first- and second-year classes. Direct observations were made, and records were kept of the students in 1st A Nutrition. A pie chart was used to discuss the results obtained by these students.

RESULTS AND DISCUSSION

All actions developed at the school were carried out with the assistance of the school supervisor, emphasizing that this partnership was essential for the success of the activities.

It was confirmed that students' academic performance improves when active methodologies such as flipped classroom, problem-solving, and gamification are applied, as shown in the chart below:

Chart 01: Performance of 1st A Nutrition students

GRADES

■10 ■9 ■8,5 ■7,5 ■7 ■6,5 ■6 ■5 ■4

Source: Author's elaboration
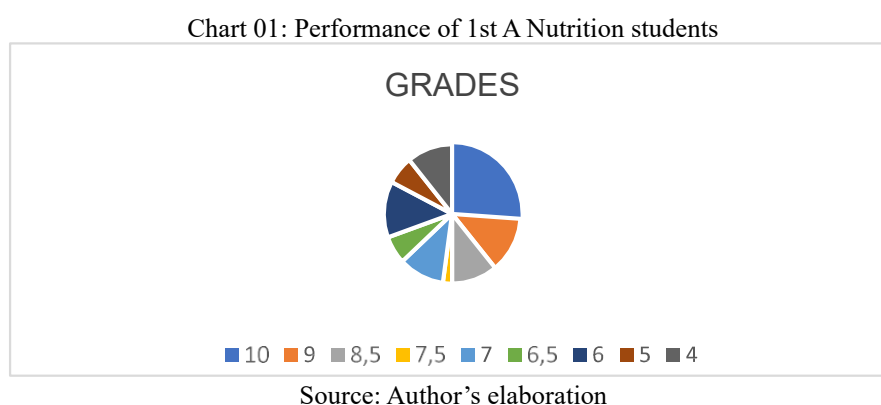
The PIBID participants facilitated the connection between theory and practice, contributing to a differentiated learning experience based on a critical perspective, with the development of practical and playful activities aimed at providing meaningful and enjoyable learning.

CONCLUSION

The PIBID participants created opportunities for collaborative learning, with the entire team working together to achieve the objectives. Collaborative work showed great potential for improving ways of thinking, acting, and solving problems in the face of challenges present in education.

By adopting differentiated methodologies for teaching various contents, it was observed that students' acceptance was satisfactory, with strong engagement in the proposed activities.

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AUTOBIOGRAPHIES, ETHNOGRAPHIES, AND OTHER STORIES: MIGRATIONS AND EXPERIENCES IN THE AMAZON

Josué Carlos Souza dos Santos[1]

ABSTRACT

This work derives from my Doctoral thesis in Education at the Faculty of Philosophy, Sciences and Letters of Ribeirão Preto, University of São Paulo, a research project conducted with the support of the Coordination for the Improvement of Higher Education Personnel – Brazil (CAPES). In 2016, the number of Venezuelans entering Brazil through the border with Venezuela, in the state of Roraima, intensified. This movement, perceived as a forced migratory displacement, led the country to create Operação Acolhida (Operation Welcome), a governmental and interagency humanitarian response that includes the establishment of institutional shelters to accommodate these individuals, as well as practices for local integration. Continuing to this day, the operation still welcomes Venezuelans of different ages and backgrounds, many of whom remain in the process of social and economic adaptation and integration in Brazil. Based on this context, this work presents considerations and preliminary results of the study whose research problem was guided by the following question: What does it mean for Venezuelans to be a migrant and/or refugee in Brazil? The general objective, therefore, is to understand what it means for Venezuelans to be a migrant and/or refugee in Brazil while living in one of the humanitarian shelters in Roraima. The hypothesis I present is twofold: The migration of Venezuelans to Brazil is situated in an in-between space (entre-lugar) (Bhabha, 1998), a non-physical space-time of cultural hybridization; and Migration does not end upon arrival in Brazil but continues in various ways: in the comings and goings between Venezuela and Brazil, in life within the shelter and outside it, in access to public policies, among others. The theoretical framework is based on the studies of Paul Ricoeur (1994, 2004), specifically the hermeneutic triple mimesis (prefiguration, configuration, and refiguration), which consists of a process of self-constitution mediated by time and narrative (Ricoeur, 1994). I also draw on studies on/with narratives following the paths traced by Ricoeur (1994), Oliveira (2011), and Benjamin (1987), and employ Ethnography as a theoretical-methodological approach based on Malinowski (1976). As methodological procedures, in addition to ethnographic writing in a field diary, I adapted the methodology of the Reflective Group based on Passeggi (2011, 2023) and Gabriel (2011) for socialization with participants and collection of their narratives. For data analysis, I rely on the development of investigative axes based on Nóvoa (1988), as well as Szymanski (2004), with the identification of axes. Gabriel (2011) assists me in triangulating these data, a process always mediated by Ricoeur's hermeneutics (1994). The results of this investigation are interdisciplinary contributions to the field of Human Sciences, particularly in Education, and, in the academic sphere, a more specific understanding of discussions about/with migrants and refugees in Brazil, specifically Venezuelans in the Amazon. For the migrant and refugee community, it offers a deeper discussion about being a migrant and/or refugee in Brazil and its social, educational, and humanitarian implications.

Keywords: Migration; Narratives; Ethnography; Education; Interdisciplinarity.

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INTRODUCTION

The Brazilian Amazon possesses a rich cultural, linguistic, and regional diversity that fosters the development of multiple communities, such as riverine communities (peoples who inhabit the rivers), Indigenous communities from different ethnic groups, groups of refugees and migrants from various parts of the world—especially from neighboring countries (Colombia, Venezuela, Guyana)—among other contexts that position this epicenter of the world as multicultural, plural, diverse, and symbolic.

Being from the Amazon, drinking from its rivers, dressing in the warmth of the North, and resting in the shade of ancient trees while listening to ancestral stories, I have directed my studies toward the peoples of the Amazon, seeking to understand how they are constituted and how they help shape the particularities and peculiarities of Amazonian daily life. Thus, I have developed works such as "Refuge, Narratives and Stories: Migrations and Experiences in the Amazon" (Santos; Gabriel, 2019), "Venezuelan Migrants in the Amazon: Listening to Stories" (Santos, 2025), "The Lifeworld of Amazonian Children and Their Childhoods" (Santos, 2025), among others.

My objective as a researcher of/in the Amazon is to give visibility to the cultural context of this region, to its peoples and their stories, to the way their daily lives are constituted, their specific issues of belonging, their relationship with politics, and how life in society unfolds—a constant alternation between life in rural areas (in the countryside and the Amazon rainforest) and in urban areas (in the city).

Considering that Venezuela is one of the nations bordering Brazil in the Amazon region, and also the significant migratory flow of Venezuelans to Brazil since 2016 due to the socio-economic and political context in their country, within the scope of my doctoral work, I asked myself: What does it mean for Venezuelans to be a migrant and/or refugee in Brazil? What meanings do they attribute to their migratory processes? What dialogues and interactions do they establish when faced with the multiple identities present in Roraima?

Through these complex questions, I sought to understand the understanding of Venezuelan migrants and refugees in Brazil regarding themselves, their migration and displacement processes that resulted in leaving their country of origin and arriving in Brazil, coming to live in a large humanitarian shelter in the city of Boa Vista, in Roraima, in the northern region of the Brazilian Amazon.

The considerations in this work derive from my Doctoral thesis in Education at the Faculty of Philosophy, Sciences and Letters of Ribeirão Preto, University of São Paulo, and are also part of the heated discussions within the Educational, Autobiographical, Interdisciplinary and Intercultural Research Group of Roraima (GEPAIIRR) and the Amazonian School of Philosophy, both certified by the National Council for Scientific and Technological Development (CNPq) of Brazil.

The migratory movement of Venezuelans worldwide, especially to Brazil—now conceptualized as what I propose to call Forced Migratory Displacement (FMD)—began in 2016, with a migratory wave of

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Indigenous ethnic groups Warao and Pemon to the state of Roraima, on the Brazil-Venezuela border, gaining even more strength in the following years, particularly in 2018, when more than 800 people were entering the country daily, overcrowding public spaces and demanding social, emergency, and humanitarian assistance from governments, organizations, and society as a whole (CERCA DE 800, 2018). The reasons for such FMD, according to media and other sources, are diverse and stem from the final years of former President Hugo Chávez's administration and the transition to his successor, Nicolás Maduro, evidenced in events such as the overpricing of goods/food that resulted in exorbitant inflation (Ortiz, 2015; MORRE AOS 58, 2013), the poor quality of education in Venezuela, when it existed (Singer, 2021), the increase in violence (Moura, 2021; CICV, 2018), among others.

These social, historical, and especially political events led Venezuelans to migrate to other nations, including Brazil, in search of better socio-economic living conditions, income, and (sub)existence. In Brazil, upon arrival, they began to occupy streets and public spaces until the Federal Government created Operação Acolhida (Operation Welcome), a governmental and interagency response responsible for providing humanitarian aid to these individuals. Living in shelters, migrants and refugees began to re-signify their existence through projects for local integration, livelihoods, and adaptation in the host nation. It is precisely these fundamental processes of self-constitution and reconstitution that this research addresses, aiming to understand who these people are now, in the face of a new context and life configuration.

The research is identified as phenomenological, qualitative, exploratory, and descriptive. The theoretical framework relies on two fundamental concepts: autobiographical narratives and ethnography, both also serving as methodological procedures. Furthermore, the theoretical foundation is based on Paul Ricoeur's philosophy of language (1994; 2004), the French philosopher known for his significant contributions to the fields of Phenomenology and Philosophy of Language, which theoretically underpins this work with the theory of the hermeneutic triple mimesis: the understanding and interpretation of language, action, and human experience.

Field research took place in January 2025 in the state of Roraima, in the Amazon, specifically in one of the urban humanitarian shelters of Operação Acolhida, Rondon 1. Its central elements included the methodology adapted from the Reflective Group (Passeggi, 2011, 2023) and the ethnography of visits to the shelter, recorded in the researcher's field diary, based on Malinowski (1976) and Geertz (1978)[2].

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[2] This research was approved by the Research Ethics Committee (CEP) for studies involving human subjects at the Faculty of Philosophy, Sciences, and Letters of Ribeirão Preto, University of São Paulo (FFCLRP/USP) on December 8, 2024, under opinion no. 7,275,352 and CAAE no. 82766724.9.0000.5407. The authorizations and other technical procedures carried out for field research involving human participants are based on Resolution no. 510/2016 of the National Health Council (BRAZIL, 2016).

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CONTEXTUALIZING THE RESEARCH

The nation of Venezuela possesses many cultural and geographical riches, as well as a history marked by oppression and ongoing tension. According to Coggiola (2017), around 1522, the Spanish Empire established colonies with the enslavement of local native peoples and the use of African labor, aiming to produce cocoa, coffee, and other spices for Europe. It was Simón Bolívar who led its independence in 1811, with an economy essentially based on agriculture for subsistence—a system that persisted until the First World War, during the period of 1914–1918.

After these years and events, its economy shifted to the extraction, refining, and export of oil. From the appointment of the first head of state, former President Cristóbal Mendoza (who governed Venezuela from 1811–1812), to the most recent, Nicolás Maduro (2013 until the time of writing this work, in 2026), Venezuela has experienced many extreme contexts: it was once considered the richest country in Latin America, in the mid-1980s, and more recently faces one of its greatest economic crises (Lander, 2017).

Venezuelan authors have dedicated themselves to researching the political, social, and economic context of Venezuela during the Chávez and Maduro periods, such as Urbaneja (2007), Lander (2017), Páez (2015), Llorens (2018), and López Maya (2023). These authors offer perspectives that capture cultural, social, and political nuances with an insider's view, understanding the particularities of the historical context and the complexities of the problems faced by Venezuelan society from their own experiences. According to López Maya (2023), for example, the political polarization of the Chávez era and the crisis under Maduro's government have cultural and historical roots that are best understood when analyzed from within, by those who experience the impacts of these regimes daily.

The Chavista political project had its controversies, as, while promoting public policies in favor of the poor, it also implemented communist/socialist practices of power centralization and militarization (Jácome, 2006), and economic mismanagement mainly related to international oil trade, considering its fluctuations in the global market. This led Venezuela, at the peak of its economic history in previous years, to occupy the position of the 12th largest oil producer in the world (Resende; Leão, 2018), despite having the largest proven oil reserves globally (IBP, n.d.). These factors culminated in a series of socio-economic issues that were possibly responsible, in the years following that period, for the forced migratory displacement of Venezuelans to other nations and to Brazil, as I pointed out in my master's dissertation (Santos, 2022). Among these possible causes, I highlight: the overpricing of goods/food that resulted in exorbitant inflation (Ortiz, 2015; MORRE AOS 58, 2013), the poor quality of education in Venezuela, when it existed (Singer, 2021), the increase in violence (Moura, 2021; CICV, 2018), among others that directly impacted the lives of Venezuelans.

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Before the emergence of shelters in the city of Boa Vista, the capital of the state of Roraima, in northern Brazil, in early 2016, there was an observed increase in the flow of Venezuelans entering Brazil through the border located between the cities of Santa Elena de Uairén, in Bolívar, Venezuela, and Pacaraima, in Roraima, Brazil; they were Indigenous people from various ethnic groups, predominantly the Warao, as noted by Mattos (2018) and UNHCR (2020).

Between 2017 and 2018, the migratory flow of Venezuelans to Brazil increased even more, reaching a record of 800 people entering the border daily (CERCA DE 800, 2018). Over time, some organizations began to provide an emergency humanitarian response to this situation, such as the United Nations (UN) with several of its agencies, funds, and departments, as well as the Federal Government, through the direct involvement of the Brazilian Army in operational logistics, security, and food distribution.

In 2018, the Federal Government systematized the work of these actors in the field, assigning specific mandates: the Ministry of Defense, now with its three branches—Navy, Army, and Air Force—would continue operating in the areas already under development regarding shelters, that is, logistics/infrastructure, security, and food, while UNHCR would be responsible for the management and coordination of shelters, together with its institutional partners, non-governmental organizations, and in joint coordination with the Ministry of Citizenship (currently restructured as the Ministry of Social Development and Assistance, Family and Fight Against Hunger). Thus, Operação Acolhida (Operation Welcome) emerged as a humanitarian, social, budgetary, governmental, and interagency response to the forced migratory displacement of Venezuelans in Brazil.

UNHCR (2021) states the objectives of OA as follows:

> Operation Welcome is structured around three pillars: border management; sheltering; and interiorization, which consists of voluntary relocation to other Brazilian states (UNHCR, 2021, p. 13).

Border management, the first objective, consists of:

(1) having greater control of the situation in loco ("on-site"), whether regarding national security—since this border, in addition to Venezuelan migration, faces other challenges (Indigenous issues, conflicts related to illegal gold and diamond mining, and other Amazonian resources, etc.); (2) statistical control of the number of entries and exits, not only of Venezuelans and Brazilians but of all nationalities passing through; and (3) strategic organization related to the temporary documentation of individuals for entry into the country.

Sheltering, the second objective, consists of providing a place for people who would not have the financial means to rent a house or obtain other forms of housing upon arrival, also on a temporary and

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voluntary basis, subject to availability in these locations. Interiorization, the third objective, consists of transferring Venezuelans to other states in Brazil, through flights operated by the Brazilian Air Force (FAB) or negotiations for seats on private airline flights. Often these transfers, also voluntary, included guaranteed employment and accommodation at the destination for a set period, depending on the modality of interiorization chosen by the person. This was done to provide Venezuelans with other opportunities for socialization and professionalization, considering that in Brazil's major capitals there are numerous possibilities for employment, housing, and income.

In Brazil, institutional shelters for reception are part of public policies generally linked to state and/or municipal departments working with social assistance. These shelters aim to accommodate people in situations of social vulnerability, such as homeless individuals, unaccompanied children and adolescents, orphans, minors under protective measures, the elderly, women victims of gender-based violence, among others. They are small to medium-sized shelters, with immediate action, aiming for reintegration into society under better conditions, from the moment of screening and reception to the post-shelter period, when individuals are prepared for reintegration into life outside these environments.

The shelters in Boa Vista, between 2016 and 2017, did not have this configuration. They faced various structural problems, such as overcrowding, sanitation and hygiene issues, internal and surrounding violence, among others (Costa et al., 2018). This was because they were provided by the competent authorities on an emergency basis and based on the resources available at that time and context. Meanwhile, other public sectors, such as health, labor, and education, which were already struggling with weaknesses in public resource management and other structural problems, saw an increase in demand for services (Arruda-Barbosa et al., 2020), making it evident that a complete reform of public policy systems was necessary—not only to address these new challenges related to increased demand for services but also to tackle the structural problems that already existed prior to this situation.

In this context, and up to the present moment of writing this work, many people did not enter shelters, occupying streets, public squares, and the surroundings of the International Bus Terminal of Boa Vista, the arrival point for buses from Venezuela. This occurred either due to lack of space in shelters or fears of facing other situations associated with sheltering. These places quickly became crowded with people of various ages and vulnerabilities, including children, the elderly, individuals with chronic illnesses, and other conditions.

THEORETICAL MARKER: THE TRIPLE MIMESIS

The reflective moments and guiding questions that are fundamental in the development of the Reflective Group, as well as in my own ethnographic writing in the field diary, are based on Ricoeur's hermeneutics (1994; 2004), which considers *mimesis* as an interpretative process of comprehension and

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self-recognition. Drawing on Aristotle's Poetics, in which Ricoeur analyzes the mediation that occurs between time and narrative, it is possible to observe that, in the interpretative process of these experiences, difficulties emerge in which narrative, reader, and text are in constant interaction. Within Ricoeurian reflections, Melo (2010) highlights that, "To understand a text means, therefore, not only to make explicit its meaning as a whole (its structure), but also to unveil its references, that is, the project of the world that unfolds within it" (Melo, 2010, p. 06).

According to Ricoeur (1994), the theory of triple mimesis can be defined as follows:

> (...) It is by constructing the relationship among the three mimetic modes that I establish the mediation between time and narrative. It is this very mediation that unfolds across the three phases of mimesis. (...) To resolve the problem of the relation between time and narrative, I must establish the mediating role of the weaving of intrigue between a stage of practical experience that precedes it and a stage that succeeds it. (...) *We therefore follow the destiny of a prefigured time into a refigured time, through the mediation of a configured time* (Ricoeur, p. 87).

Thus, in "Mimesis I" there occurs an initial description of the process of human experience, where narrative "imitates" human action through the recreation of events and experiences in narrative form. It is a phase of prefiguration, that is, the one in which language acts as an unfolding of narrative, the evocative act of narrating oneself. "Mimesis II" is an intermediate phase, a mediation between the preceding and succeeding stages of mimesis: a configuration. This configuration, in turn, is inserted in a process that the author calls the "operation of configuration" (Ricoeur, 1994, p. 102), where there occurs "(...) a broader mediation between pre-understanding and, if I may say so, post-understanding, of the order of action and its temporal traces" (Ibidem, p. 103). It is constituted in the relation between narrative and time, providing a structure that enables subjects to understand and interpret events.

"Mimesis III" is constituted as a reflection between the pre-narrative world and the narrative world. Furthermore, it "(...) marks the intersection between the world of the text and the world of the listener or reader" (Ibidem, p. 110). It also involves the synthesis of elements from the empirical world and the narrative world through the analysis of a narrative already produced which, in the exercise of configuring this narrative (Mimesis II), was organized and systematized. Now, in "*Mimesis III*," the narrative acquires possibilities, among them the possibility of attributing new meanings to the world and to our experience within it—a re-signification, since now "(...) the narrative has its full meaning when it is restored to the time of acting and suffering in *Mimesis III*" (Ibidem, p. 110).

As the research advanced, it was possible to perceive how mimesis unfolds in the biography written and inscribed in Venezuelan bodies and lives. In reflecting upon their lives, certain markers became evident, such as time (before and after in Venezuela, with the transition of governments as a catalytic event for their exodus, as well as the future, now in Brazil) and geography (life in Venezuela, life in Brazil). The reflection on oneself, now converted into narrative—the act of projecting these life

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experiences into the world—enabled a movement back and forth across past, present, and future, a recognition of symbols and signs of belonging and reference, and also the envisioning of possibilities in *what is to come*, that is, the future. According to Ricoeur (1994):

> The complete event is not merely that someone speaks and addresses an interlocutor, but also that one aspires to bring into language and share with another a new experience. And this experience, in turn, has the world as its horizon (Ibidem, p. 119–120).

Moreover, not only the act of speaking about oneself, narrating oneself, but reflecting through the spoken and written word enabled the narrator to understand the meanings that are part of their life trajectory and other elements that permeate their universe—now seen as an experience of having the world, their own world and that of others who dialogue with them, as horizon, that is, as possibilities, as breadth, as contemplation. In this sense, the triple mimesis, allied with autobiographical narratives, became an indispensable tool in the educational and narrative work with these participants.

Autobiographical narratives, as a theoretical and methodological research resource, initially received the designation "life stories" under the perspective of biographical studies. As Guérios (2011) shows us, the initial focus of these studies was twofold: "(...) social changes related to migratory processes" (Ibidem, p. 10), when autobiographical accounts began to be used as a research resource, and also "(...) the careers of individuals considered deviant or delinquent" (Ibidem, p. 10), which took into account that the social belonging of a given individual should not be the primary element to be considered in relation to their own constitution of self.

Years later, "life stories" (and later unfolding into "life trajectories"), as well as biographical and autobiographical studies, acquired depth and refinement in their use as theoretical and methodological resources in research in the Social Sciences and also in the Humanities. According to Galvão (2005), narrative possesses three elements that complement one another:

> [1] Story – encompasses the characters involved in certain events, within a given space and time, and allows for a first interpretation of what is narrated; [2] Discourse – the specific form in which any story is presented; [3] Signification – a second-level interpretation that the listener/reader/viewer obtains from the interrelationship of the story and the respective discourse (Galvão, 2005, p. 328).

Now, it is in the articulation of these elements—story, discourse, and signification—that we encounter narrative. It is in narrating oneself, critically reflecting, and mimetically interpreting this self-narrative that we encounter autobiographical narratives. In the exercise of narrating myself, I first remember the situations, the moments. I "excavate" (in the sense of someone delving more deeply) in my memory and bring that event alive again through the lens of the present. Next, I reflect upon it (the situations, the moments), which brings me more details about what occurred, as well as a better

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understanding. Finally, I systematize this reflection in my narrative, thus telling my story. According to Gabriel (2011), "To work with life stories, with narrativity, is to afford ourselves as historical subjects the articulation of lived times" (Gabriel, 2011, p. 44). In this way, I move back and forth in time, in memories, in lived experience.

'*COMO EN VENEZUELA Y EN BRASIL*': ITINERANT ETHNOGRAPHIES AND NARRATIVES

Entering the shelter again brings back many memories: of the first faces that stepped off the bus and walked through those gates when the shelter first opened, of the many people welcomed over the years, of the colleagues I made who now hold other positions, professions, and roles. Choosing to venture down these paths once more meant revisiting a place that was the same, yet also different—the shelter, and myself.

Before setting foot in the shelter, I asked myself a few questions: What will it be like to return to the field after so many years? What has changed since I left? Will the faces I see now be the same as those from back then? What challenges do the teams face today, and how has the operation adapted to different governments, mandates, and policies it has traversed? With these questions in mind, I packed my backpack, my notes, and my ideas, and set off for the specific field site: the Rondon 1 shelter.

The Rondon 1 shelter covers a total area of 65,779.8 m², with various physical structures built from scratch. These include: bathroom containers, offices and storage units, water fountains, light poles, floodlights, and overlays, in addition to temporary housing units known as Refugee Housing Units (RHUs) and Transitional Shelter Units (TSUs), as shown below. The total number of RHUs in the shelter is 153 units, and the total number of TSUs is 211.

Figure 1: RHUs

Source: Personal archive (2025).

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Source: Personal archive (2025).

The RHUs (first photo) were the first to be installed in the shelter. Being emergency housing units, they have structural, physical, and sustainability limitations that deteriorate over time due to usage, local conditions (such as intense heat or heavy rainy seasons), and other factors affecting their durability. The shelter was inaugurated in July 2018 (Folha Web, 2018), completing seven uninterrupted years of operation in 2025. At the time of the field research, in January 2025, the shelter was at full capacity, housing 2,300 people.

Carpa, translated from Spanish into Brazilian Portuguese as "tent," is the popular term used by both the residents and other actors in the shelter (such as the AVSI team, security staff at the gate, military personnel, etc.) to refer to the housing units inside the shelter, whether RHUs or TSUs (when using carpa, no distinction is made between the housing models). I noticed that both Spanish terms are used by Brazilians working in the shelter and Portuguese terms by Venezuelans, resulting in a new hybrid language: *Portuñol*.

Portuñol is a language born of confrontation. It emerges at the threshold between institutional and informal borders, physical and non-physical, geographic-spatial boundaries, and the semantic and symbolic edges that intersect them. The blending of Brazilian Portuguese and Venezuelan Spanish words is a form of adaptation, continuous learning, and fusion. It is a survival strategy.

The teams working in the shelter are threefold: the military component, represented by army personnel responsible for structural and security issues; and the civilian component, composed of the gate security team (outsourced private staff) and AVSI Brasil, responsible for shelter management. Both components—military and civilian—interact with Venezuelans, giving life and meaning to the shelter.

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Issues related to overall management are generally referred to AVSI, which seeks solutions. The AVSI team operates in the following areas: management, protection, registration, distribution, and community participation.

The entrance through which people come and go is located at the center of a space flanked by military offices on the left and humanitarian offices on the right. These offices are temporary containers, and each team works in its designated space. On the humanitarian side, one container houses shelter management, another the registration team (responsible for updating records), another the protection team (which handles cases of extreme vulnerability requiring additional care), and another for general activities, where a poster reading "La voz de los refugiados" informs me that a kind of community radio also operates there.

ENCOUNTERS AND REENCOUNTERS WITH THE REFLECTIVE GROUP: PHASES

The visits to the shelter had as their general objective to allow me to be inserted into the lives of Venezuelans in order to foster closeness—a concern I have carried since my master's research, oscillating between being a stranger and being recognized by the community:

> (...) Who am I in this humanitarian universe? A passerby among specific cultural realities? A *Baudelairean flâneur* who is neither them nor the "me" from before, but a new self that emerges from contact with these realities? I still do not know. But what I do know is that sometimes I am a stranger in the community, and at other times I am a *pana* ("friend" in the Warao language). This happens because the community is always changing, and new faces soon take the place of others who have migrated further into Brazil. Thus, for the newcomers, I am a stranger, and for the old ones, I am part of the house (Santos, 2022, p. 66).

This concern is not mine alone; it can also be seen in Geertz (1989), who feared not being seen and/or recognized by the researched community—and consequently having his insertion hindered. Based on this general objective of the visits to the shelter, the specific objectives consisted of: 1) visits for participant observation, and 2) meetings with the reflective group.

Other *ad hoc* visits ("specific") occurred in parallel to these objectives, such as when I was invited to attend the meeting of the carpa verde (green tent), that is, one of the shelter committees, and another when the Community-Based Participation (CBP) assistants invited me to walk through the shelter, introducing me to different spaces and telling their stories.

I took as a reference the reflective group developed by Passeggi (2011; 2023) as a pedagogical practice in the field of education within the context of "autobiographical writing workshops" (Passeggi, 2023, p. 150). In this group, self-writing is a dialectical process of re-signifying oneself and one's experiences, mediated by a researcher. It is through "autobiographical reflection" (Passeggi, 2011, p. 150) that the group achieves its purpose. According to Passeggi (2023):

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The reflective group is formed by people who share with other participants their sense of belonging to the group and their engagement in a common project: to share and re-signify lived experience in order to understand oneself and be reborn with the other and as another (Passeggi, 2023, p. 04).

Based on Passeggi (2011, 2023) and Gabriel (2011), and adapting to the context of my work, I developed and organized the following table with the reflective moments proposed to mediate group discussions:

Table 1 – Guiding and Complementary Questions

Moment	Guiding Question	Complementary Questions
First	"What experiences marked my life in Venezuela and in Brazil?"	What was my life like in Venezuela? What were the significant moments of my life trajectory? What led me to live in a shelter in Brazil?
Second	"What did these experiences do to me?"	How do these experiences manifest in me now, in Brazil? What is my life like in the shelter? What is my life like in Brazil?
Third	"What do I do now with what this has done to me?"	What do I think about my future? Does writing about myself help me reflect on my story?

Source: Author's elaboration based on Passeggi (2011, 2023) and Gabriel (2011).

These guiding questions were central to the meetings, which were not limited to them but also included icebreaker activities and other methodologies.

The **first meeting** was unexpected. I had spoken with the AVSI team that I would go to the shelter initially to introduce myself, meet the humanitarian staff, and take a first walk through the shelter to gather initial impressions. As I mentioned earlier, this would not be my first visit to the shelter, since, in addition to having worked during its inauguration in July 2018, I made several visits due to my role at UNHCR, which coordinated the shelters in macro (in the context of the national and international humanitarian response) and *in loco*, frequently visiting the field in Roraima (including Rondon 1). However, considering that the shelter undergoes daily changes in human and material resources—among other shifts over the years—revisiting it was a movement of new discoveries, re-signification of impressions, and the emergence of new possibilities.

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When writing the project and deciding to venture down these paths again, I asked myself: What will it be like to return to the field after so many years? What has changed since I left? Will the faces I see now be the same as those from back then? What challenges do the teams face, and how has Operation Welcome adapted to different governments, mandates, and policies?

That is why I use the term (re)know—written separately yet together. The narrative-ethnographic research would allow me to know the shelter again, in terms of its new challenges, new subjects, and other perspectives (another shelter?) (Field Diary, 2025).

All these questions indeed materialized: I met the humanitarian staff, the military personnel, the gate security team, and some Venezuelans; I walked through the shelter, saw people moving about in their daily lives, and so on. However, in addition, the AVSI team had gathered all the selected participants—10 people identifying as men and 10 as women—in a room for what they believed would be the first meeting with me, the first reflective group session. This happened because the person who communicated between me and the shelter team—an AVSI staff member working in an external office—had told them this would be the purpose of my first visit, which was a miscommunication.

This initial visit was not intended for a group session but only for my introduction to the AVSI team and some time in the shelter for participant observation and initial notes. Initially, I had planned the first meeting to occur (at the appropriate time, duly scheduled) with the following structure: first, presentation of the researcher and the research (context, objectives, justification, and other elements); second, collection of consent through the Free and Informed Consent Form (FICF), the Participant Profile Form, and the Consent for Use of Image, Name, and/or Voice; third, an icebreaker activity to transition from the formal moment to a more relaxed one, where participants would express themselves based on guiding questions I had prepared.

Prigol and Ramasco (2018) provide a brief literature review on applying group dynamics in research contexts. According to the authors, Kurt Lewin, in 1944, developed the field theory of group dynamics, stating that participants establish behaviors based on what is or is not comfortable to their cognitions. Later, Bion (1975) argued that interpreting these behaviors allows researchers to read between the lines of group phenomena, thus understanding them better. In the Brazilian context, Weil (1967) stated that one of the main objectives of implementing this methodology was to identify and address obstacles to communication and the causes of conflict (Weil, 1967 *apud* Prigol; Ramasco, 2018).

In this sense, group dynamics are a fundamental element aimed at breaking (or at least minimizing) the non-physical distance between researcher and participants—that is, strangeness, uncertainties, shyness, and even discomfort. As Murthy (2017) points out: Strong social connections are characterized by meaningful shared experiences and mutually beneficial relationships (Murthy, 2017, p. 27). By working on these communication barriers between researcher and participants, it becomes possible to create informal, relaxed, and welcoming spaces, constituting a key strategy for building rapport and even facilitating data collection.

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Due to the internal miscommunication that disrupted my schedule, I had not brought the documents nor prepared the icebreaker activity, since, as I mentioned, my initial visit was only for introductions and rediscoveries of the shelter. I was then led to the room where the participants were waiting. I introduced myself and the research objectives, and at the end of this brief moment, we agreed to meet again in three days for the official first session—which now became the second. The total number of participants was 10 adult men and 10 adult women.

Although unexpected, this first meeting allowed me to reflect on some issues. I noticed that people were quite serious, reserved, and especially showed signs of strangeness toward participating in the research. I explained the importance of having their stories and trajectories discussed in academia and in their own voices and perspectives, especially in other Brazilian states, for broader visibility of their discursive, formative, and performative opinions on how they construct their worlds and histories. Even though they agreed that everything was clear and well explained, their body language told me otherwise. Thus, I reaffirmed the importance of conducting an icebreaker activity in the next sessions.

The **second meeting** began with reintroducing myself and the research. I collected signatures—and their respective consents—on the administrative documents and proceeded to the icebreaker activity, which consisted of the free association technique rooted in the theory of social representations and based on Freud (2001):

> Say everything that comes to mind. Behave as you would, for example, as a passenger sitting on a train by the window, describing to your fellow traveler how the landscape changes before your eyes (Freud, 2001, p. 136, our translation).

Thus, as an icebreaker, I placed a flipchart between us and, as I said certain words, they freely expressed the first word that came to mind upon hearing terms like "Venezuela," "Brazil," "Politics," and others. The varied responses—such as "Arepa" (a typical Venezuelan food) when hearing "Venezuela," "Corruption" when hearing "Politics," and "Thank you" when hearing "Brazil"—revealed the unfolding of their migration: dissatisfaction with the Venezuelan government, gratitude for Brazilian hospitality, cultural symbols referenced in their voices, and other markers of belonging and identity.

After the activity and establishing rapport, I explained the guiding question for that session and the corresponding writing prompts: "What experiences marked my life in Venezuela and in Brazil?" At the end, participants asked to write at home, calmly and attentively, and bring their narratives to the next meeting, which I agreed to.

The **third meeting** involved receiving the written narratives requested earlier. In this session, we worked with the guiding question: "What did these experiences do to me?" I noticed that conversations revolved around cross-cutting themes such as education and economic and labor factors.

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The **fourth meeting** included another icebreaker activity, complementing data collection and varying the session dynamics. This time, I asked participants to create an artistic piece on a blank sheet representing life (previously) in Venezuela, life (currently) in Brazil, or both. Participants produced poems, drawings, song lyrics, and spontaneous narratives about the ruptures, gains, and losses of being a migrant in Brazil.

After this activity, I collected the narratives requested in the previous session and continued discussions under the final guiding question: "What do I do now with what this has done to me?" I observed that various themes intertwined, shaping their voices, narratives, experiences, and lives: family, urban life, geography (sometimes speaking of life in Venezuela, sometimes in Brazil), and temporalities (past, present, and future). Thus, the narrative did not follow a chronological linearity but made detours, seeking its mimetic apex in memory, reflection, and action.

The **fifth and final meeting** involved collecting the last narratives and closing the sessions together. The participants who "survived until now" were fully engaged: they arrived on time, enthusiastically delivered their narratives, and actively participated when asked—or even spontaneously—always voluntarily. In this last meeting, we shared a snack and celebrated the conclusion of the sessions.

MIGRANT BIOGRAPHIES: THE AXES OF SELF-CONSTITUTION

As I systematically read and reread the narratives of the Venezuelans, I developed thematic axes based on what they recounted about life, facts, and history. I draw on the axes of formation proposed by Nóvoa (1988) in his methodological description of a teacher-training project in education (called the Prosalus Project), which was successful and focused on educational biography based on group self-training dynamics and retroactive understanding—that is, participants' awareness of their own trajectories. When describing the methodological procedures adopted, the author provides recommendations for applying this dynamic in other contexts, including the use of "investigative axes." According to him:

> The division into groups should be made according to certain "investigative axes," which guide the elaboration of educational biographies and later facilitate content analysis (Nóvoa, 1988, p. 162).

From this point, I took a different path from Nóvoa, as the axes did not guide the constitution of the reflective group nor its discussions (as we saw, that role belonged to the guiding questions). In other words, the axes did not emerge before the group or narrative collection but after a careful reading of the texts. Following Nóvoa's (1988) recommendations and the axes present in educational biographies, I present the axes I extracted from the migrant biographies of the Venezuelans in this study.

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Table 2: Triangulation of Axes

Axes of Investigation			
Axes of Training (Nóvoa, 1988)	**Description**	**Axes of Self-Constitution**	**Description**
Structure and Cycles	Wholeness in a life course: stages, significant moments, transitional phases, etc.	From abundance to scarcity.	From life before the political and social changes in Venezuela to the present moment (or to the time when they left their homeland), focusing on the transition between these periods, Venezuelans narrate moments and experiences that culminated in their departure from the nation.
		We, migrants	Based on their autobiographical narrative, Venezuelans recount how they perceive themselves and how they see themselves in the world.
		I move forward	In finding traces of memories and recognitions, the narrators point out expectations regarding life, that is, the future.
Map of Relationships	Influence of "others" in the constitution of the self, that is, the people who were/are part of their life trajectory in Venezuela and in Brazil. Belonging groups (religious, school, family, and others) that become references in the constitution of the self.	All axes of constitution and training. The map of relationships is constructed from the individual to the collective.	
Spaces and Social Media	Influence of physical and non-physical spaces (such as social networks) that affect the individual's life.	Migration, Trajectories, Journeys	The movements of leaving their homes, cities, and nation until arriving in Brazil and experiencing life in shelters.
School Pathway and Non-formal Education	Learning processes experienced by the subject, whether formal or informal, including family education, schools and/or universities attended, technical and vocational courses, and access to the labor market.	Learning and Experiences	Life in shelters and in Brazil, the interferences and experiences developed in relation to various types of learning and knowledge gained—educational, school-based, professional, cultural, etc.
Continuing Education and Social Origin	Other formative experiences and also the role of culture in this lifelong formative process.	Being a Migrant and a single mom in Brazil	Gender marker that emerged in various narratives of women, allowing the problematization of other issues.
		Being a man, worker, and provider.	Gender marker that emerged in various narratives of men, which also allows the problematization of other issues.

Source: Author's elaboration (2025) based on Nóvoa (1988).

In the first axis, 'From abundance to scarcity,' I noticed the idiosyncrasies of life before the political and social changes in Venezuela compared to the current moment (or the moment they left), focusing on the transition between these periods, the Venezuelans narrated moments and experiences that culminated in their departure from their homeland.

In the second axis, 'Migration, Trajectories, Journeys,' I observed—or rather, was made to observe through the narratives—the movements of leaving their homes, cities, and country until arriving in Brazil

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and living in the shelter. One narrative that struck me and led me to perceive these layers as an investigative axis was the following statement:

> The experience that marked me in Venezuela, my beloved land, was leaving my country, my family, friends, and embarking on a journey into the unknown, into the uncertainty of not knowing if I will return to Venezuela and how long I will have to wait to see my family again, since Venezuela is going through difficult times (Marta, 2025).

I move through Marta's words, one of the reflective group participants and now also an author-narrator. In this movement, I understand the many places of her migration—or rather, the in-between spaces of her textual world. Her departure from Venezuela, in her words, was both an experience and a journey into the unknown.

In the third axis, 'Learning and Experiences,' it is possible to understand life in the shelter and in Brazil through the lens of what they are learning and the experiences they have lived—the inferences and practices developed in relation to various types of learning and experiences: educational, school-related, professional, cultural, etc.—all constitutive of being a migrant. In the fourth axis, 'Being a migrant and a single mother in Brazil,' a gender marker emerges, intersecting the migratory movements of Venezuelan women and highlighting vulnerabilities and issues specific to their condition as women, such as family relations, economic (dis)organization, and other difficulties perceived in practice, including: greater exposure to gender-based violence (such as harassment, exploitation, and abuse), labor exploitation and limited work opportunities, inequality in the job market, language and cultural barriers, stigmatization and xenophobia, stereotyping, and survival sex work (prostitution), among others.

In the fifth axis, 'Being a man, a worker, with a profession,' the gender issue, within the male perspective, appears in the words of Venezuelan men, as evidenced in the excerpt: "(...) since I had the responsibility of bringing bread to my family" (Fernando, 2025), among others, where "being a man" carries pressures and responsibilities of being the provider, strong, unshakable—yet confronted with a moment of powerlessness. In practice, in their daily lives, this manifests in the following ways: pressure regarding the provider role (including stigma, self-esteem issues, frustrations, and demands), targets of racism and xenophobia, labor exploitation and informality, and affective and social isolation.

In the sixth axis, 'We, Migrants,' it is possible to perceive how Venezuelans see themselves in the process—as migrants, in motion, as individuals who make not only physical transits, moving from one place to another, but also non-physical, symbolic ones, tied to their condition as Venezuelans in Brazil, originating from a process of forced migratory displacement. In the seventh axis, 'I Move Forward,' Venezuelans express expectations regarding the devenir—that is, the future—which emerges from the traces of remembrance and recognition.

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The eighth axis, 'Narrators,' emerged after conceiving the others, during the writing of this thesis, as a separate analysis. It stands out in form and aesthetics because not only do Venezuelan migrants see themselves as narrators, but so does the researcher of this thesis—the product of mutual recognition developed throughout this endeavor. Unlike the others, this axis is not limited to the lines of the collected autobiographies but, in addition to this methodological instrument, also incorporates voices expressed in the reflective group (and other interaction moments), as well as the ethnographic writings in the field diary.

FINAL CONSIDERATIONS: TRIANGULATING AUTOBIOGRAPHIES AND ETHNOGRAPHIES

The investigation into Venezuelan migration is still in the data analysis phase, based on Ricoeur (1994) with hermeneutic (interpretative) processes aimed at understanding, Szymanski (2004) with the identification of thematic axes, and Gabriel (2011) with the triangulation of the corpus (that is, the collected data). Although still in progress, it is possible to outline some final considerations to conclude this text, as I will point out below.

How can one produce a text that articulates the main analytical products of this investigation: the oral narratives (in the context of the reflective group and in other field moments) and the written narratives (the production of autobiographical narratives) of the Venezuelans, and the ethnography I produced by writing in a diary? What emerges from the convergence between these two approaches and methodologies? What is the common ground between my ethnography and their autobiographies? Can autobiographical narratives and ethnographies walk together?

In the previous section, I showed which investigative axes I developed from the written autobiographical narratives of the Venezuelans, which allow us to visualize how they constitute themselves—that is, how they identify, form, and understand themselves. It was also possible to notice, at times, that the idealization of one axis incorporated elements of another, so that they relate to each other. Their accounts show that they constitute themselves as migrants in different space-times of socialization and experiences, and that this is not a finished task but one in constant motion, varying according to their expectations, dreams, and goals, pointing toward a "*becoming*."

In other words, when highlighting an axis, such as Axis 2 – "Migration, Trajectories, Journeys," one can also perceive references to experiences left behind or acquired (Axis 3 – "Learning and Experiences"), life before in Venezuela (Axis 1 – "From abundance to scarcity"), among others. In this dialogue, permeated by many similar elements where the axis is, in fact, a junction of place, context, and contact with other people and/or experiences, it is possible to see that the axes, as well as the authors who helped conceive them, are dialogical (they establish dialogue with others) and polyphonic (composed of

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many voices). They do not exist or constitute themselves alone, in isolation, but with others. Thus, the axes, although holders of their own categories and carrying a world of meanings, are also interconnected, linked to the narrative network that constitutes being Venezuelan and a migrant in Brazil.

As I entered the life-world of the Venezuelans, narratives were—and continue to be—produced, in the mimetic and hermeneutic exercise of becoming a narrator. I observed, above all, in many passages of the Venezuelans about telling their story—in the writing that unfolded line after line, in the words politely suggested or abruptly blurted out but spoken—that led me to the following thought: we are all narrators.

In this short span of time I had with Venezuelans, I narrated ethnographically what the shelter is, life in the shelter, life outside the shelter, life in Brazil. I narrated the meetings, my difficulties, my impulses and drives as a researcher, thus transforming narrative into description. Later, when writing the considerations of this work, I (de)scribed about and under my writings—a new writing, a new analysis, a new point of view, complementary to the previous one. I became an ethnographic narrator.

In a similar movement (that of narrating), the Venezuelans spoke orally about life and about things—their things—in various field moments, in interactions inside or outside groups, committees, meetings, and walks. In the context of the reflective group, their words were directed, imbued with an intentionality to discover the phenomenon of "being a refugee in Brazil," which later transformed into "being a migrant in Brazil" as I discovered that this is how they saw themselves. Here, "discover" takes on the sense of knowing something that was still under suspicion, an investigation where what is revealed unfolds and is no longer a mystery—the veil of questionable certainties now uncovered.

At the threshold between speech and interaction came the production of autobiographical narratives—the intentional writing guided by the proposed questions. In each text, I noticed an evolution in how details were told, in the selection of which details to include, in the possibility of seeing that their life story, though difficult and marked by suffering, also had positive points worth highlighting: the strength, resilience, and gratitude of people for being welcomed and protected by a State.

Thus, it is possible to see how we all became subject-participant-authors. I, as someone who enables a space for intentional narrative socialization and moves among voices—sometimes establishing dialogues, sometimes observing them—who ultimately has the mission of interpreting these movements and converting them into analysis, that is, a new dialogue, a new narrative. They, as producers of knowledge, history, and culture, who incorporate autonomy in the act of projecting their voice into the world through different means: a gesture, a look, spoken words, written narratives. All these signs, in the context of research, become academic, in the sense of enabling epistemological contributions where knowledge is, above all, a walking metamorphosis. Thus, our narratives have no end, for in the context of producing this new writing, other writings are possible. In the context of this reading, other readings are possible. An endless narrative.

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The researched and the researcher share common points that arise from this clash, from the tension and novelty of being "together with" the other. When we consider seeing ourselves as narrators, we are also signaling that we are bearers of stories that deserve to be told and retold, in the exercise of living them and writing them in continuum ("continuity"). This telling, when redone in the form of retelling, incorporates Ricoeur's mimesis, for now the narrative reaches its full evocative potential of being—that is, the more thoughtful, edited, rewritten text, pointing to the weavings of virtue, the plots of the present, and the possibilities of the devenir—the three mimetic processes compiled and condensed, the transformative narrative.

In this narrative-ethnographic investigation, with its unique characteristics, a coalition is formed between different worlds guided by the narrative the subject tells about themselves—that is, autobiography—and the ethnography told by the other, the one who comes from outside and makes a sensitive description of places, people, and things. In this approach, narrative and time walk together, allowing us to see that individual stories, social relations (which constitute collective stories), and elements of belonging and reference shape the historical setting (life before) and the everyday setting (the present), where many subjects live their stories and produce their narrative worlds, their worlds of text, their life-worlds. The future, in the incidence of these settings, appears as a *mysterium tremendum et fascinans* ("tremendous and fascinating mystery") (Otto, 2007), clouded, shrouded in fears, anxieties, dreams, and expectations. An imminent "becoming".

The life-world of migrants, narrated by themselves in Rondon 1, reveals individualities amid collectivities. In constituting their life-world—which, impacted and influenced by cultural works, becomes the world of the text—their provocative migrant lives acquire mutual recognition (Ricoeur, 2004). Mutual recognition, in Ricoeur's perspective, occurs through the dialectic between reflexivity and alterity, which, in turn, implies other terms, namely reciprocity and mutuality, representing, in a sense, spaces of collective manifestations.

They are migrants who write their names in the history of the nation that hosts them—in this case, Brazil—on the margins, through quantitative records in infographics, migration glossaries, and so on. Their existences are crossed by social, economic, ethnic, and racial issues that mark their roles as protagonists not only of their autobiographical narratives but of the history of the nations they belong to—Venezuela and Brazil—a history unfolding in the present moment. A history that not only recalls the past but is a simultaneous event to the writing of this thesis, everyday, composing a game of power, struggles, memories, and mechanisms of displacement.

Their autobiographies show that their crossings—from Venezuela to Brazil (and from Brazil to Venezuela, considering the constant comings and goings of certain individuals and groups), from life inside the shelter to life outside, from life before in Venezuela, when times were good, to life in Venezuela

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when times became hard—have turned into trajectories that are now told and retold. In projecting their narratives onto paper, writing stories and excavating memories, other narrative possibilities unfold for those who read them, revealing new narratives—an endless exercise.

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10. ——. (2025, August). A canção de Marta: Produção artística [Marta's song: Artistic production]. Corpus da Pesquisa de Doutorado de Josué Carlos Souza dos Santos [Doctoral research corpus of Josué Carlos Souza dos Santos]. Boa Vista. (Digitized).

11. Nanda. (2025, August). Narrativa autobiográfica [Autobiographical narrative]. Corpus da Pesquisa de Doutorado de Josué Carlos Souza dos Santos [Doctoral research corpus of Josué Carlos Souza dos Santos]. Boa Vista. (Digitized).

12. ——. (2025, August). A poesia de Nanda: Produção artística [Nanda's poetry: Artistic production]. Corpus da Pesquisa de Doutorado de Josué Carlos Souza dos Santos [Doctoral research corpus of Josué Carlos Souza dos Santos]. Boa Vista. (Digitized).

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13.   Perfil dos sujeitos da pesquisa [Profile of the research participants]. (2025, August). Corpus da Pesquisa de Doutorado de Josué Carlos Souza dos Santos [Doctoral research corpus of Josué Carlos Souza dos Santos]. Boa Vista. (Digitized).

14.   Solange. (2025, August). Narrativa autobiográfica [Autobiographical narrative]. Corpus da Pesquisa de Doutorado de Josué Carlos Souza dos Santos [Doctoral research corpus of Josué Carlos Souza dos Santos]. Boa Vista. (Digitized).

Note. All participant names are pseudonyms used to protect their identities.

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MULTIPLE FACES OF VIOLENCE: PERCEPTIONS OF TEACHERS, STUDENTS, FAMILIES, AND EDUCATION AND SOCIAL CARE PROFESSIONALS ABOUT THE DIFFERENT LEVELS OF VIOLENCE

Cintia Ferreira Bezerra[1], Cyntia Kelly de Sousa Lopes[2], Heitor Barros Chrisóstomo[3] and Ricardo Normando Ferreira de Paula[4]

ABSTRACT

Violence against children and adolescents is a complex and multifaceted phenomenon, the consequences of which extend beyond the private sphere and directly affect both the school environment and the learning process. This article seeks to examine manifestations of violence within three specific contexts—family, school, and institutional—with particular emphasis on case identification and the challenges related to underreporting and the absence of formal complaints. The exploratory and analytical investigation reveals that the diverse typologies of violence exert a detrimental influence on the cognitive, social, and emotional development of school-aged individuals, reinforcing existing inequalities and jeopardizing educational continuity. Moreover, the scarcity of information regarding reporting mechanisms, coupled with fear of reprisals, contributes significantly to the invisibility of the issue. The findings underscore the urgency of strengthening intersectoral public policies, promoting awareness-raising initiatives, and expanding the training of educators to enable the early detection of signs of violence. Additionally, the creation of accessible digital platforms, such as applications and websites, is recommended to facilitate reporting in a more efficient, secure, and effective manner. It is concluded that the comprehensive protection of children and adolescents requires a collective endeavor involving the State, society, and educational institutions, in order to guarantee a safe, inclusive, and rights-based school environment.

Keywords: Violence; Children and adolescents; Education; Underreporting; Public policies.

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INTRODUCTION

Violence affecting children and adolescents presents itself as one of the most complex and persistent social issues of contemporary times, directly impacting fundamental rights enshrined in the Federal Constitution of 1988 (Brazil, 1988), the Statute of the Child and Adolescent (Brazil, 1990), and Law No. 13.431/2017 (Brazil, 2017).

Especially following the widespread use of social media, many cases have gained visibility, and in numerous others, the process of case identification has begun, culminating in the prosecution and imprisonment of perpetrators. Although high estimated rates of underreporting still exist, cases are increasingly coming to light.

As violence transcends the boundaries of the domestic and community spheres, its various expressions also manifest within the school environment, affecting the teaching-learning process, student retention, and the holistic development of individuals. These impacts are not limited to academic performance but extend to emotional, social, and relational dimensions, compromising the full exercise of citizenship.

In this context, the following guiding question becomes pertinent:

How do the forms of violence experienced in three contexts—domestic, school, and institutional—impact the educational development of children and adolescents, and how does the absence or insufficiency of reporting compromise the effectiveness of protection and response strategies?

The general objective of this study is to analyze the impact of multiple types of violence—domestic, school, and institutional—on the educational development of children and adolescents, highlighting the role of the absence of reporting in perpetuating these situations and weakening response strategies.

The specific objectives are:

- To identify and characterize the most recurrent forms of violence in the family, school, and institutional contexts, based on theoretical frameworks and documentary data;
- To examine the factors contributing to the absence or underreporting of complaints in the three analyzed contexts;
- To assess the level of knowledge regarding reporting mechanisms.

Thus, this article seeks to contribute to a critical understanding of violence as a multifaceted phenomenon, recognizing its occurrence in the school environment as a factor of vulnerability, but also as a strategic field for intervention, capable of promoting comprehensive protection, equity, and the guarantee of the right to education in safe and inclusive environments.

To achieve the research objectives, a qualitative-quantitative and exploratory approach was adopted, supported by documentary analysis and literature review, aiming to understand the multiple

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impacts of violence on the educational development of children and adolescents. Subsequently, a digital questionnaire containing multiple-choice and open-ended questions was administered to 600 individuals across various Brazilian municipalities.

The material was analyzed from a descriptive-analytical perspective, aiming, on one hand, to identify the main types of violence occurring in each setting, followed by an analysis of the causes of non-reporting and knowledge about tools that enable reporting.

With this approach, the study aims to contribute to academic and social debate on the need for more effective public policies and pedagogical practices that ensure educational environments that are safe, inclusive, and rights-promoting.

THEORETICAL FRAMEWORK

The term violence has gained increasing visibility, especially with the use of social media as a tool for disseminating various cases of its occurrence across different settings.

Broadly speaking, violence can be defined as:

> "[...] the intentional use of physical force or power, whether threatened or actual, against oneself, another person, or against a group or community, that results in or has a high likelihood of resulting in injury, death, psychological harm, impaired development, or deprivation" (WHO, 2002).

The definition of violence presented above, in a comprehensive and multidimensional manner, encompasses both concrete actions and threats, as well as the application of physical force or power. This conception highlights that violence is not limited to visible physical aggression but includes symbolic and structural forms capable of causing injury, death, psychological harm, developmental impairments, or deprivation of rights. By considering the intentionality of the act and its potential effects, the WHO's definition provides a robust conceptual framework for the scientific understanding and analysis of the phenomenon, allowing for the exploration of its various manifestations in diverse contexts, some of which are addressed throughout this research.

A general overview of the various types of violence and the circumstances in which they may occur is available in the study by Silva and Ramos (2023), from which Figure 1 was extracted.

Figure 1. Diagram of the Typology of Violence
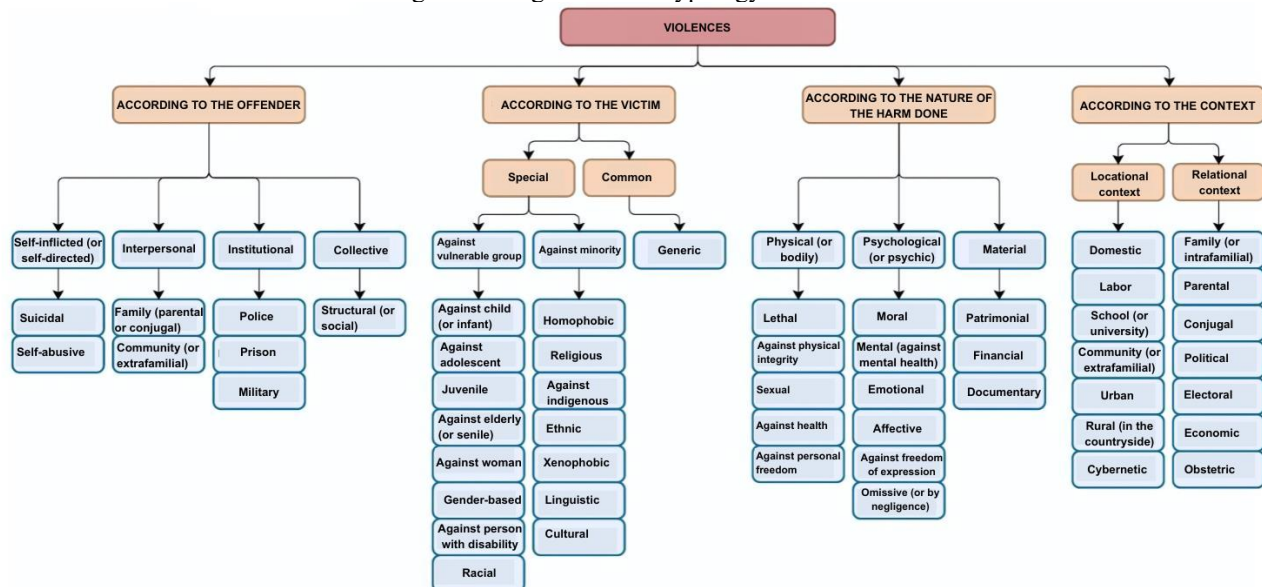
Source: Silva e Ramos (2023)

In general, the diagram presents a synthesis of the typology of violence, structured hierarchically and categorized based on four classification axes, emphasizing the diversity of situations in which violence may be classified.

From a more specific perspective related to the target audience of this research, violence against children and adolescents constitutes a complex and multifaceted phenomenon that manifests in distinct social contexts, such as school, family, and institutional environments. A deeper understanding of the dynamics of this phenomenon, in the broadest possible sense, can enable the development of effective prevention and response strategies.

The analysis conducted in this research considered three distinct scenarios, characterized as follows:

School Violence

School violence encompasses a set of behaviors and practices that, directly or indirectly, cause physical, psychological, or social harm to members of the school community. It may manifest through physical, verbal, symbolic aggression or institutional neglect (De Lélis Santos; De Miranda Moreira, 2025).

In this regard, Souza (2025, p. 14) emphasizes:

> "This type of violence not only compromises students' safety but also creates an environment of fear and hostility that hinders learning and social interaction. Students who experience or witness these episodes are more likely to develop school avoidance behaviors and social isolation, making academic and emotional progress more difficult."

Given the above, the direct relationship between the occurrence of violence in the school environment and its impacts on student development becomes evident, whether these impacts are temporary or permanent. Thus, violence, by instilling a climate of insecurity, fear, and hostility, acts as a risk factor for compromising both academic performance and socio-emotional skills (UNESCO, 2019).

Beyond immediate harm, such as the interruption of pedagogical activities, there are long-term effects, including increased school dropout rates, social withdrawal, and difficulties in establishing interpersonal relationships. These outcomes reinforce the need to understand school violence not merely as a disciplinary issue but as a matter of public health and human rights, requiring integrated prevention and intervention actions involving schools, families, communities, and protection agencies.

Among the various forms of violence experienced and perpetrated within the school setting, bullying is one of the most frequent. This type of violence is characterized by intentional, repetitive aggression involving a power imbalance between the aggressor and the victim (Abdul Ghofur; Nunuk Sri Purwanti; Jenita Doli Tile Donsu, 2022). It can be physical, verbal, social, or virtual (cyberbullying). Its effects include anxiety, depression, social isolation, and decreased academic performance.

Domestic Violence

Domestic violence against children and adolescents, according to Law No. 13.431/2017 (Brazil, 2017), includes physical, psychological, sexual abuse and forms of neglect occurring within the family setting. This type of violence tends to be underreported due to emotional ties, economic dependence, and fear of retaliation (Farias; Barreto, 2025).

Studies indicate that adverse childhood experiences, such as abuse and neglect, have lasting impacts on emotional and social development, producing broad and interdependent effects that extend beyond the family environment and directly affect, for example, educational development (Bonfatti; Ribeiro; Granato, 2023).

From a psychological standpoint, continuous or repeated exposure to physical, psychological, sexual violence or neglect undermines the construction of self-esteem, emotional stability, and concentration capacity—fundamental factors for learning (Da Paz Silva; Da Paz Silva; De Mélo, 2024). Specifically considering the childhood scenario, literature on trauma during this life stage highlights that persistent exposure to violence prolongs toxic stress, affecting cognitive and emotional functions essential to development (Doroudchi, 2023).

Institutional Violence

Institutional violence refers to actions or omissions by public or private agents and institutions that result in rights violations and harm to human dignity (Brazil, 2017). In the school context, it may manifest

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as disrespectful treatment, neglect of specific demands, and abusive use of authority, compromising the educational and protective role of the school (Da Costa Lyra; De Oliveira Bressan, 2022).

Outside the school environment, but intrinsically linked to it, a form of violence that has been growing in scale is racial profiling. This practice involves selecting individuals for searches, stops, or surveillance based on racial or ethnic characteristics without objective justification (De Sousa; De Sousa Veras; Mourão, 2024). In school and community contexts, this practice contributes to the symbolic criminalization of Black youth, especially males, reinforcing inequalities and perpetuating cycles of violence and exclusion (Parreira et al., 2025).

Beyond potential physical harm, this practice causes psychological damage, reinforces social stigmas, and contributes to the normalization of violence in relations between the State and the Black population. Specialized literature associates such dynamics with the reproduction of historical inequalities and structural racism present in public security institutions (Da Silva, 2025). Addressing this type of violence requires coordinated actions for prevention, intervention, and reparation.

To curb the various types and typologies of violence, several regulations support the fight against violence toward children and adolescents in Brazil, backed by a set of normative instruments.

The Federal Constitution of 1988, in Article 227 (Brazil, 1988), states:

> "It is the duty of the family, society, and the State to ensure children, adolescents, and youth, with absolute priority, the right to life, health, food, education, leisure, professionalization, culture, dignity, respect, freedom, and family and community living, as well as to protect them from all forms of neglect, discrimination, exploitation, violence, cruelty, and oppression."

From the perspective of the aforementioned article, by categorically listing the shared obligation among family, society, and the State, a co-responsibility for the protection and promotion of dignified development conditions is imposed. This means that violence, in its various forms, must be combated in an articulated manner, involving public policies, educational practices, social protection networks, and the strengthening of families.

More specific legislation, such as the Statute of the Child and Adolescent (Brazil, 1990), Law No. 13.431/2017, which establishes the system for guaranteeing the rights of children and adolescents who are victims or witnesses of violence (Brazil, 2017), and the Convention on the Rights of the Child (UN, 1989), ratified by Brazil in 1990, are milestones that determine the absolute priority of comprehensive protection, holding families, society, and the State accountable for the prevention and eradication of violence.

Finally, it is necessary to reaffirm that continuous exposure to violence interferes with school performance, affecting attention, memory, and motivation (Rosa et al., 2002). The direct consequence is an increased risk of school dropout, failure, and age-grade mismatch.

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METHODOLOGY

To present the results of this research, a quantitative and qualitative approach was adopted, with an exploratory and descriptive character. The objective was to understand perceptions of violence against children and adolescents from the point of view of different actors within the educational and family environments.

Regarding data collection, it was conducted through an online questionnaire, composed of both closed (multiple-choice) and open (discursive) questions. These were structured based on previous studies and contemporary discussions on the topic of child and adolescent violence. The instrument underwent content analysis by experts in the educational field to ensure clarity and relevance of the questions.

Developed using Google Forms, the questionnaire was available for responses from November 2024 to January 2025. It was disseminated via social media, WhatsApp groups, and institutional emails, reaching a diverse audience from various regions of Brazil, with a primary focus on the Northeast region and, more specifically, the city of Fortaleza – CE.

A total of 600 individuals participated in the research, distributed among the following groups:

- Basic education teachers (n = 285);
- Parents or guardians of children and adolescents (n = 89);
- High school students (n = 148);
- Education professionals (pedagogical coordinators, principals, school psychologists, among others) (n = 50);
- Social assistance professionals (n = 28).

Participation was spontaneous and voluntary, with anonymity and confidentiality of information guaranteed. All respondents were informed about the objectives of the research and agreed to the terms of the Free and Informed Consent Form (FICF), made available at the beginning of the questionnaire.

Regarding data analysis, responses to closed questions were processed using descriptive statistics, with Microsoft Excel used to generate frequency tables, graphs, and percentages, aiming to identify patterns in the perceptions of the respondent groups. Responses to open-ended questions were analyzed using content analysis, following the methodology proposed by Bardin (2016). The statements were organized, categorized, and interpreted in light of the research objectives, allowing for a deeper qualitative analysis of the meanings attributed to violence in educational and family contexts.

The use of a mixed approach (quantitative and qualitative) enabled data triangulation, providing greater robustness and depth to the understanding of the phenomenon investigated from the participants' perspectives.

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RESULTS AND DISCUSSION

This section presents the analysis of data collected from 600 respondents across different Brazilian states, who identified themselves as teachers, students, parents/guardians, education professionals, and social assistance professionals. These participants are distributed as shown in Graph 1, and their absolute numbers were detailed in the previous section. The participants come from various cities and states, with notable representation from the city of Fortaleza – CE, which accounted for 23% of the responses.

Graph 1 – Participants
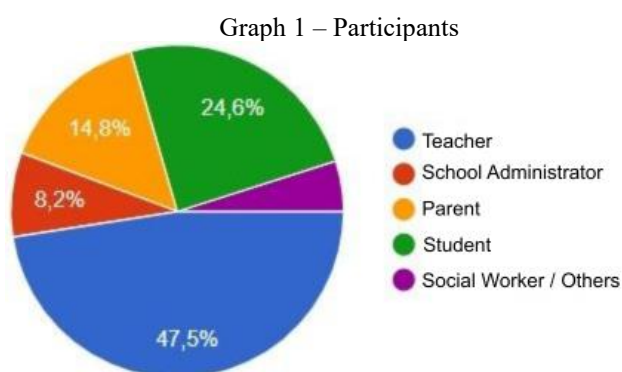
Source: Authors

Among the participants, more than 60% reported having witnessed some form of violence, either at school or at home (Graph 2). Following this question, there was a field for a brief account of the incident, and the responses revealed situations of violence in various settings. Some examples presented in the research include:

a) School violence: *"In fact, violent incidents within educational institutions are trivialized. My childhood and adolescence were marked by daily homophobia from 'peers' and sometimes teachers, and all the school administrations did was neglect the cases. The situations ranged from exclusion from group tasks to death threats!" (SIC)*

This testimony points to the systematic occurrence of homophobia, perpetrated by both peers and educators (De Andrade and Gonçalves, 2024). The trivialization of these episodes and the negligence of school administrations may constitute a scenario of symbolic and institutional violence, in which the absence of effective responses legitimizes and perpetuates discriminatory practices (Vinha *et al*., 2023). The exclusion from activities and death threats reveal an escalation of violence, going beyond bullying and posing a real risk to the student's physical and psychological integrity.

b) Domestic violence: *"The stepfather of a high school student had been sexually abusing her since she was 11 years old, when he moved in with her mother. She only revealed the abuse because the stepfather began harassing her younger sister. Not wanting her sister to go through the same ordeal, she disclosed her secret to the Pedagogical Coordination." (SIC)*

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This second account describes a severe case of intrafamilial sexual abuse—also known as incest—characterized by its continuity over the years and the victim's forced silence, broken only by the imminent risk of further victimization. This situation illustrates the phenomenon of secondary victimization (Oliveira and Pereira, 2024), in which fear, shame, and lack of protection delay reporting. The school played a central role in this case, serving as a support system for identifying and guiding victims of violence.

c) Institutional violence: *"I witnessed several instances where the principal promoted psychological violence and coercion against students, staff, and teachers. The administration feels sovereign within the school." (SIC)*

This third account addresses institutional violence perpetrated by a school authority against multiple segments of the educational community (Da Costa Lyra and De Oliveira Bressan, 2022). The repeated practice of psychological violence and coercion by the school administration reveals an abuse of power that undermines the organizational climate and the school's social function. This type of violence, still underrecognized, is acknowledged by the Convention on the Rights of the Child (UNICEF, 1990) and Brazilian legislation as a violation of human rights, as it affects the dignity, autonomy, and emotional safety of children, adolescents, and education workers.

Although only three examples are presented here, the study collected over 50 reports encompassing various forms of violence experienced by children and adolescents, whether at school or at home. This indicates an urgent need for addressing and preventing such occurrences. Reports ranged from less severe situations to heinous crimes. The accounts came from various participant groups, with students and teachers being the primary sources, making the school one of the main places where help is sought—provided it has professionals equipped to handle such issues.

These testimonies highlight the complexity and severity of violence against children and adolescents in different contexts—school, family, and institutional—reaffirming the multifaceted nature of the phenomenon and the challenges in addressing potential solutions, whether definitive or palliative.

Graph 2 – Have you ever witnessed a situation of violence at school or at home?
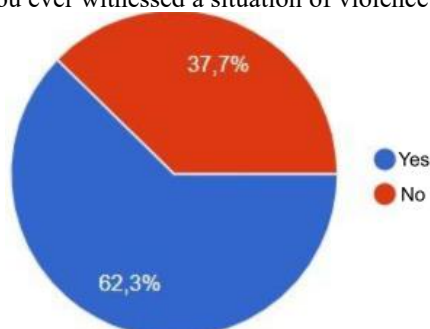
Source: Authors

Next, more specific questions were addressed regarding the location of violent incidents. The first case examined was the school and its surroundings. As shown in Graph 3, more than 62% of respondents know a student who has suffered some form of physical violence at school or nearby.

Graph 3 – Do you know a student who has suffered physical violence (slaps, punches, kicks, coercion, strangulation, injuries, etc.) at school or in its surroundings?
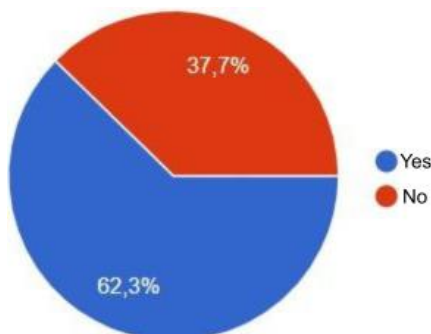
Source: Authors

Among the listed cases (see Graph 4), bullying remains the most frequently identified form of violence. One student shared: *"I've suffered a lot of physical and psychological violence at school, being called names that insulted my body, like whale, well cork, and other things. They also used to call me ball, throw me to the ground, and kick me."* (SIC).As an example of the "Other" category in the questionnaire, one of the most cited cases was: "*Armed robbery*" (SIC) — experienced by both students and teachers.

Graph 4 – Motivations for aggression at school / its surroundings
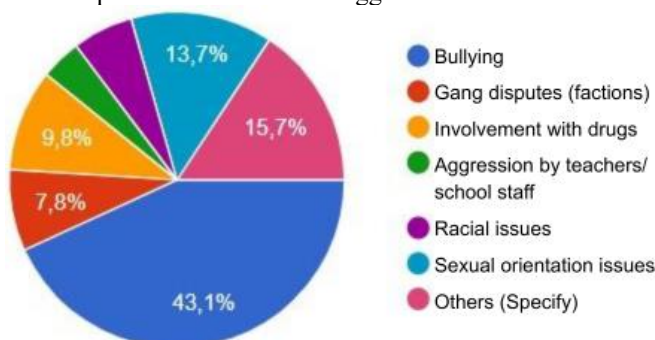
Source: Authors

Cases of police violence due to racial profiling: *"Police approaches in the community are violent. They usually target Black boys with dyed hair and tattoos."*

Racial profiling, in which phenotypic and aesthetic characteristics—such as skin color, hairstyle, and the presence of tattoos—are used as criteria for police stops and searches (Ralph et al., 2022), constitutes a form of institutional violence and racial discrimination. This practice violates constitutional

principles of equality and non-discrimination, as well as international human rights treaties to which Brazil is a signatory.

Therefore, the analysis of this account highlights the urgent need for policies focused on training and oversight of police conduct based on human rights, as well as the implementation of monitoring and accountability mechanisms that inhibit discriminatory practices and ensure equal treatment for all citizens.

The schools mentioned by research participants are predominantly state-run public institutions, as shown in Graph 5. Municipal schools rank second. These schools are distributed across various states and municipalities, without any significant concentration, which allows us to infer that this issue is not isolated but rather a widespread reality within these institutions. Federal public schools accounted for a slightly lower percentage, just under 7%.

The second context analyzed was the students' homes (Graph 6).

Despite the relatively balanced results, the reports indicate a high level of awareness of such cases. It is important to emphasize that, according to literature on the subject, many cases go unreported for a variety of reasons (shame, feelings of guilt, etc.) (Oliveira, 2024).

Regarding the types of violence experienced, the options provided were as follows:

- Sexual violence perpetrated by parents, stepparents, or other family members
- Sexual violence perpetrated by individuals not biologically related to the family but who frequently visited the victim's home (friends, acquaintances, etc.)
- Physical violence perpetrated by parents, stepparents, or other family members as part of "disciplinary punishments"
- Physical or psychological violence perpetrated by parents due to marital or family problems
- Physical or psychological violence perpetrated by parents who use drugs (alcohol, marijuana, crack, etc.)
- Sexual violence perpetrated by individuals not biologically related to the family but who visited the victim's home sporadically (religious leaders, occasional workers, delivery personnel, etc.)
- Other (please specify)

Graph 5 – Natureza das escolas relatadas
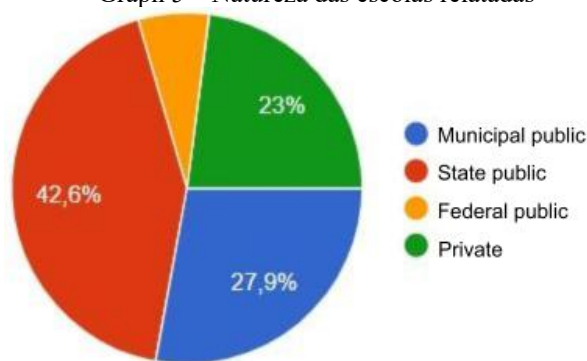
Source: Authors

The results presented in Graph 7 reveal a wide range of motivations for the occurrence of violence within households, with the most frequent being physical violence inflicted by parents, stepparents, or other family members under the guise of "disciplinary punishments."

"A student was abused by her stepfather's son. He would stay with her occasionally. She was advised to tell her mother, and the mother herself filed a report and took all necessary measures." (SIC)

Lastly, the issue of institutional violence was analyzed (Graph 8), with the types of violence reported shown in Graph 9. These results indicate that moral harassment is the most prevalent form of institutional violence, which in some cases includes sexual elements, as evidenced by the following testimonies: *"The student was led to believe that he would only pass if he engaged in sexual activity."* (SIC) *"A school employee harassed students, asking them to go out with him."* (SIC)

Graph 6 – Do you know a student who has suffered physical violence (slaps, punches, kicks, coercion, strangulation, injuries, etc.) at home?
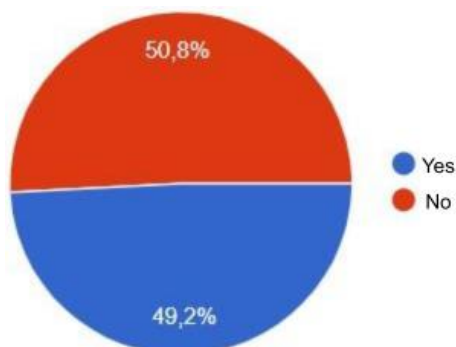
Source: Authors

Moving away from the sexual dimension and analyzing another aspect of institutionalized violence, one participant reported: "Students at a certain school were assaulted during physics classes by a teacher who threatened and verbally abused them with rude and vulgar language. The teacher's undidactic teaching style, combined with years of learning deficiencies, did not help the students. Hearing this was awful! From the classroom I was in, it was horrible to hear the moral aggression." (SIC)

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Graph 7 – Motivations for aggression at home

- Sexual violence by parents, stepfather/stepmother, or other family member
- Sexual violence by people not related by blood to the family
- Physical violence by parents, stepfather...
- Physical or psychological violence...
- Physical or psychological violence by...
- Sexual violence by acquaintances
- Others (Specify)
- Physical violence by acquaintances

9,1% 12,1% 15,2% 27,3% 21,2% 9,1%
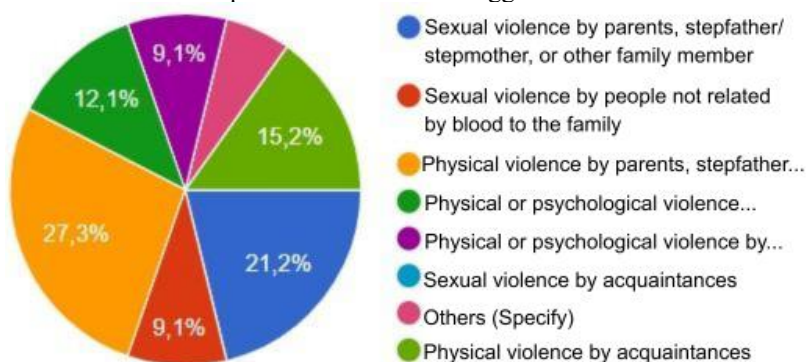
Source: Authors

This account indicates that the pedagogical practice was disconnected from effective and inclusive teaching methods tailored to students' needs, especially considering a history of learning difficulties. The absence of inclusive strategies and the use of intimidation as a disciplinary tool compromise not only academic performance but also students' emotional health and self-esteem.

Graph 8 – Do you know a student who has suffered institutional violence?

47,5%

52,5%

- Yes
- No
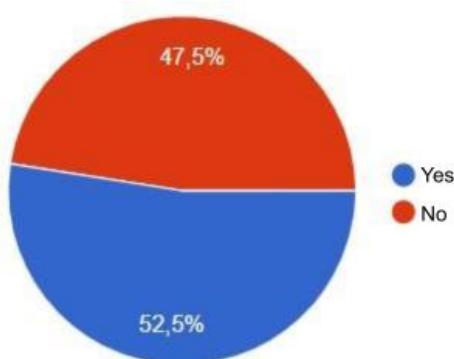
Source: Authors

This type of violence demands immediate institutional action, including teacher training in classroom management, implementation of prevention and reporting protocols, and psycho-pedagogical support for victims. The school administration's response is crucial to breaking the cycle of violence and restoring a safe and conducive learning environment.

Graph 9 – Reasons for institutional violence
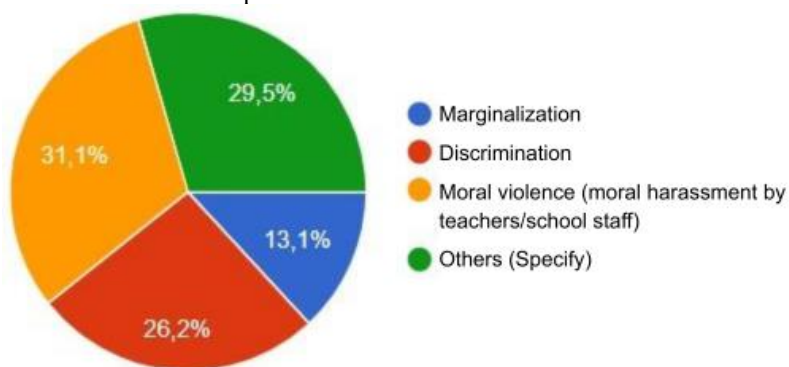
Source: Authors

After investigating the types and locations of violence, the issue of reporting was addressed. As previously mentioned, one of the major challenges in combating various forms of violence is the victims' reluctance to report, due to a significant number of reasons. Only slightly more than 13% of cases were known to have been reported by the participant (Graph 10).

This supports earlier findings that over 32% of cases in this study were not reported.

Graph 10 – Did the victim report the cases of violence?
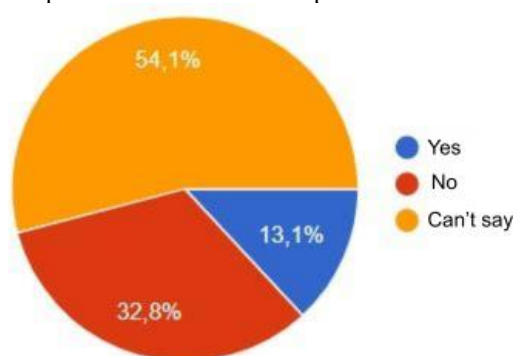
Source: Authors

Those who selected "Other" in Graph 11 indicated that the reporting process began through social media, the Guardianship Council, or conversations with friends who encouraged the victim to report.

Graph 11 – Where was the reporting process initiated?
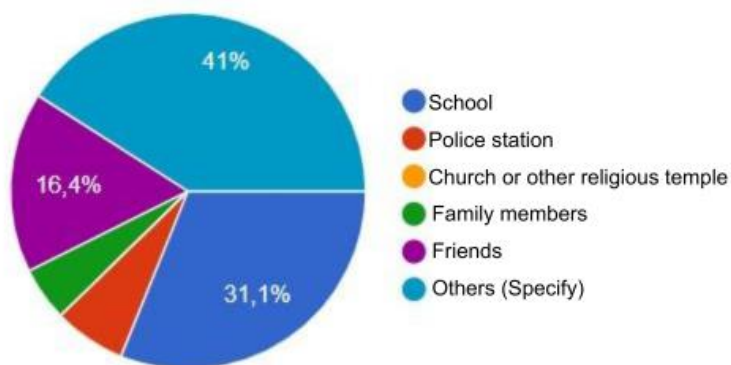
Source: Authors

A noteworthy finding is that the school is one of the main places where the process of identifying violence and guiding victims begins.

Regarding the lack of reporting, the research shows that the majority of cases are linked to fear of the aggressor (Graph 12).

The testimonies emphasize that victims suffer from a sense of potential impunity, as seen in the following statements:

- *"Fear, coercion, and I've seen many people give up trying to talk to school authorities because they know nothing will change."* (SIC)
- *"Thought it wouldn't lead to anything."* (SIC)

To limit it to just two accounts, which represent the majority. In this case, when the records were individually analyzed, in some of those instances where the report was not made and there was, on the part of the victim, a feeling of the aggressor's impunity, there was exposure and use of social media in an attempt to preserve their integrity and try to ensure that the case reached the authorities.

Graph 12 – Main reasons why the report did not occur
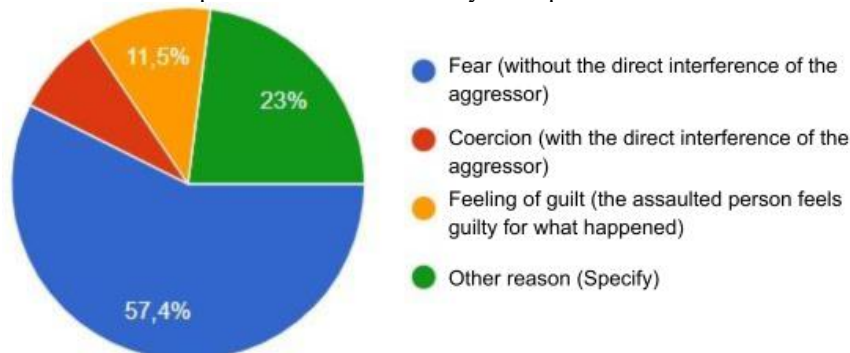
Source: Authors

Finally, participants were asked about their knowledge of reporting tools. 90% stated they did not know of any application that could facilitate the reporting process. The remaining participants mentioned

an app from a retail company whose shopping platform includes a reporting channel (Agrela, 2020). This indicates that despite technological advancements and the widespread use of smartphones, the integration between digital resources and public policies to combat violence remains incipient. The widespread lack of awareness limits the potential of these tools as protective instruments, especially in situations requiring confidentiality and swift communication with authorities.

One of the main reporting apps is Proteja Brasil (UNICEF, 2017). Its primary goal is to facilitate access to information about the rights of children and adolescents, allowing users to identify nearby protection agencies and file reports. Mention of this digital tool shows that, for these participants, mobile technologies can serve as complementary resources in the protection and referral process for vulnerable cases, especially when combined with awareness and training strategies on existing legislation. This perception suggests the need for greater integration between technological solutions and pedagogical practices aimed at promoting citizenship and inclusive education for students with special needs.

In the context of this research, the mention of Proteja Brasil reinforces the importance of integrating mobile technologies with public protection policies, as digital solutions can expand the reach of prevention and reporting actions, enhancing the effectiveness of strategies to guarantee rights established in the Convention on the Rights of the Child and Brazilian legislation.

Regarding Disque 100, one of the main reporting mechanisms, more than 52% of participants indicated they were aware of it and understood its purpose (Graph 13). On the other hand, a significant number of participants still do not know about the service or its function (over 47%).

Graph 13 – Do you know Disque 100 and its purpose?
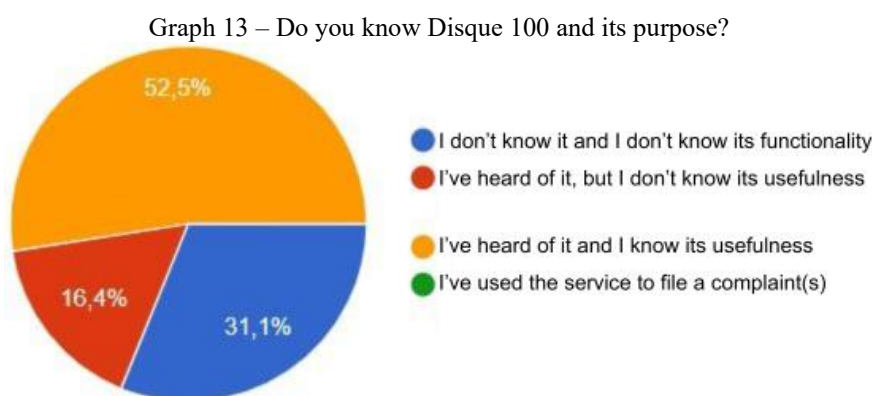
Source: Authors

The data reveal a significant gap in the dissemination and access to information about protection mechanisms. This lack of awareness can have direct consequences, such as underreporting of violence, neglect, or discrimination, hindering the work of defense agencies and the development of effective public policies. Moreover, in the context of this research, this finding highlights not only an informational

deficit but also the need to assess whether initial and continuing teacher education includes content on human rights and reporting channels.

Practically speaking, this result reinforces the importance of including tools like Disque 100 in training and awareness initiatives so that educators can properly guide students, families, and the school community, strengthening the protection network.

The research revealed that situations of violence against children and adolescents are recurrent in school, family, and institutional environments, but are often not reported—either due to fear of retaliation or disbelief in the effectiveness of protective measures. It was also found that there is a significant lack of knowledge about formal reporting channels, such as Disque 100, and specialized apps, with low mention of tools like Proteja Brasil. These findings point to the urgent need to expand the dissemination of existing channels and develop more accessible, secure, and integrated digital mechanisms capable of directly connecting victims with security agencies, reducing barriers to communication and case referral.

CONCLUSION

This research addressed the issue of violence against children and adolescents in its multiple manifestations—domestic, school-based, and institutional—revealing its significant impact on academic and socio-emotional development. It is configured as one of the main risk factors for school retention and the full exercise of the right to education.

The results show that such episodes, from the perspective of various segments (teachers, parents, students, and social assistance professionals), not only compromise the safety and well-being of the victims but also perpetuate cycles of exclusion and fragility in social relationships within the school environment. In a broader view, the findings also highlight the causes of underreporting and the lack of knowledge, on the part of victims and some participants, regarding mechanisms for reporting cases of violence.

The issue of underreporting proved to be central throughout the analysis. The absence of official records—whether due to omission, fear of retaliation, or lack of awareness about reporting channels—hinders the accurate measurement of the phenomenon and compromises the effectiveness of public policies aimed at addressing it. This scenario reveals a dual challenge: on one hand, the need to expand dissemination and training regarding existing mechanisms for reporting and protection; on the other, the urgency of investing in more accessible technological strategies, such as mobile applications and online platforms, that enable secure, rapid, and effective reporting.

From these perspectives, several practical recommendations and possibilities for future work emerge, structured in light of the findings of this research. Thus, some priority actions are proposed to

confront the problem of violence against children and adolescents and mitigate its effects on the educational process:

- Creation of integrated digital platforms (applications and websites) that centralize information, allow anonymous reporting, and ensure data protection for victims;

- Continuous training of teachers and school administrators to identify signs of violence and activate protection mechanisms promptly and appropriately;

- Development of awareness campaigns targeting families, communities, and schools about the importance of reporting and the rights guaranteed to children and adolescents by national and international legislation;

- Interinstitutional integration among schools, guardianship councils, public prosecutors, and health services, in order to create effective pathways for support and referral;

- Incorporation of inclusive and protective pedagogical practices capable of strengthening bonds and reducing the vulnerability of children and adolescents to situations of violence.

In conclusion, mitigating the impacts of school, domestic, and institutional violence on children and adolescents requires a joint effort among the State, civil society, and the school community. Strengthening public protection policies, combined with the innovative use of social technologies, can consolidate a safer, more inclusive, and protective educational environment, ensuring the full academic and social development of future generations.

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CHALLENGES OF PHYSICS TEACHING IN BRAZILIAN PUBLIC SCHOOLS

Marcionilio F-Silva[1]

ABSTRACT

Physics teaching in Brazil, especially in public schools, faces several challenges that compromise the teaching-learning process and limit the critical and civic education of students. Among the main difficulties are the lack of adequate infrastructure, scarcity of teaching resources, teacher work overload, gaps in initial and continuing teacher education, as well as the predominance of traditional pedagogical practices that distance students from interest in the subject. These factors are aggravated by social issues such as economic inequality, violence, and precarious public education policies.

This article aims to analyze the challenges of teaching Physics in Brazilian public schools, based on a bibliographic review carried out in scientific databases and open-access journals published between 2015 and 2025. The research is organized into five axes: school infrastructure, teacher education, teaching methodologies, inclusion and diversity, and student perception.

The results show that the lack of laboratories, the absence of consistent public policies, and the devaluation of teachers remain as structural barriers. However, they also highlight that innovative practices, such as the use of digital technologies, active methodologies, and inclusive strategies, can contribute to more meaningful and motivating learning. It is concluded that to move forward, continuous investment in infrastructure, teacher appreciation, and policies to encourage pedagogical innovation are necessary.

Keywords: Physics teaching; Public schools; Teacher education; Science education; Inclusion.

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INTRODUCTION

Physics teaching, throughout the history of Brazilian education, has been characterized as a field full of challenges. Since the institutionalization of the subject in school curricula at the beginning of the 20th century, Physics has been associated with content considered complex, abstract, and distant from students' everyday reality. This perception, often reinforced by the absence of innovative pedagogical strategies and the lack of teaching resources, contributes to the construction of a negative image of the discipline, marked by learning difficulties and student disinterest (Carvalho, 2018).

Nevertheless, the relevance of Physics teaching is unquestionable. It is a field of knowledge that enables the understanding of natural phenomena, the interpretation of technological transformations, and the development of essential competencies for civic education and the exercise of critical thinking. In a society increasingly permeated by scientific innovations and the need for scientific literacy, Physics plays a strategic role, both in practical life and in integration into the labor market (Menezes & Gomes, 2020).

In Brazil, however, the reality of public schools reveals obstacles that compromise the effectiveness of this teaching. Official reports, such as those from the National Institute for Educational Studies and Research Anísio Teixeira (INEP), point to persistent deficits in infrastructure, availability of laboratories and libraries, as well as access to updated teaching materials. Added to this is the precariousness of the teaching profession, marked by low salaries, lack of adequate working conditions, and limitations in initial and continuing teacher education (Oliveira, 2019).

In addition to structural factors, there are also pedagogical issues that directly impact the teaching-learning process. The predominance of traditional practices, centered on oral exposition and mechanical resolution of exercises, distances students from meaningful and contextualized learning. In this scenario, Physics teaching risks becoming a merely instrumental discipline, focused on memorizing formulas and procedures, without awakening in students the ability to relate scientific knowledge to their daily lives (Silva & Farias, 2021).

Another aspect that deserves attention concerns the social inequalities that permeate the Brazilian educational system. Students from contexts marked by socioeconomic vulnerability face additional barriers, such as lack of access to technological resources, difficulties with school transportation, community violence, and discouragement in the face of limited professional prospects. These factors directly affect student engagement and increase the challenges for teachers in seeking inclusive and effective strategies (Santos & Costa, 2022).

Given this context, the central objective of this article is to analyze the main challenges faced in Physics teaching in Brazilian public schools, based on a bibliographic review conducted in open-access databases. The aim is to understand how different authors have discussed the structural, pedagogical, and

social barriers that impact the discipline, as well as to identify possible paths for overcoming these obstacles.

The specific objectives of the study are:

- To map the main challenges identified in recent literature regarding Physics teaching in public schools.
- To analyze how teacher education and teaching methodologies impact the learning process.
- To identify innovative strategies and public policies that may contribute to improving the teaching of the discipline.
- To propose critical reflections on the role of Physics in civic education and the development of scientific and technological competencies.

The relevance of this research lies in the fact that, by analyzing the contemporary challenges of Physics teaching, it is possible to provide support for the formulation of more consistent educational policies, as well as to inspire pedagogical practices that value student protagonism and promote more meaningful learning.

Thus, this article is structured into five main parts, in addition to this introduction. In the theoretical framework, the main conceptual and empirical contributions regarding Physics teaching in public schools are discussed. Next, the methodological procedure adopted is presented, highlighting the criteria for selecting bibliographic sources. The results and discussion section organizes the research findings into thematic axes, highlighting the main challenges and possible solutions. Finally, the concluding remarks synthesize the reflections developed throughout the text, pointing to future recommendations in the field of Physics education.

THEORETICAL FRAMEWORK

Physics teaching in Brazilian public schools has been the subject of numerous academic studies, which point to the existence of structural, pedagogical, and social barriers. This section seeks to organize the theoretical contributions into five major axes: **school infrastructure, teacher education, teaching methodologies, inclusion and diversity**, and **student perception**. The analysis engages with recent studies published in open-access journals, official reports, and normative documents, in order to construct a comprehensive and critical view of the topic.

SCHOOL INFRASTRUCTURE

One of the greatest obstacles faced by Physics teaching in public schools concerns the lack of adequate infrastructure for pedagogical practice. Research such as that by Carvalho (2018) indicates that a

large portion of institutions lack properly equipped science laboratories, which limits the possibility of experimentation—a fundamental element for understanding physical concepts.

According to data from the School Census (INEP, 2022), only a fraction of Brazilian public schools have functioning Physics laboratories. In many cases, even when physical infrastructure exists, basic materials, equipment maintenance, or trained professionals to operate them are lacking. This reality compromises the implementation of investigative and experimental practices, which are central to the teaching-learning process in the discipline.

The absence of updated libraries and limited access to digital technologies also reinforces the precariousness. Although public policies such as the National Textbook Program (PNLD) have expanded the distribution of printed materials, the use of digital resources remains restricted. According to Santos and Costa (2022), the lack of quality internet in public schools—especially in rural and peripheral areas— prevents the use of virtual platforms, digital simulations, and educational software that could make classes more attractive and interactive.

Furthermore, factors such as overcrowded classrooms, lack of suitable spaces for interdisciplinary projects, and absence of audiovisual resources further hinder pedagogical practice. In this sense, school infrastructure proves to be a central component in the discussion of the challenges of Physics teaching in Brazil.

TEACHER EDUCATION

Another crucial aspect concerns the education of Physics teachers. Studies such as Oliveira (2019) highlight that many teachers work without specific training in the field, which compromises the quality of instruction. According to data from INEP (2020), a significant number of professionals teach Physics without having completed a degree in the discipline, especially in regions far from major urban centers.

Even when initial training exists, it presents gaps. Research indicates that undergraduate Physics programs generally prioritize theoretical training and mastery of disciplinary content, but offer little emphasis on pedagogical practices, the use of active methodologies, and the development of competencies to deal with the diversity present in classrooms (Menezes & Gomes, 2020).

Continuing education, in turn, remains incipient. Although there are government programs and university initiatives, such as extension and specialization courses, teachers often face difficulties in participating due to work overload, lack of institutional incentives, and the absence of consistent policies for teacher appreciation. As Santos and Farias (2021) emphasize, the precariousness of the teaching profession—marked by low salaries and professional instability—discourages the pursuit of additional training and compromises teacher motivation in the classroom.

In this regard, teacher education constitutes one of the main axes of reflection on the challenges of Physics teaching, as it directly impacts pedagogical practice and the capacity for innovation in the educational process.

TEACHING METHODOLOGIES

The teaching methodology adopted by educators plays a fundamental role in the learning of Physics. Recent research indicates that, in many public schools, a traditional teaching model still predominates—centered on oral exposition of content and repetitive exercise solving (Silva & Farias, 2021). While this model may be effective for preparing students for selective exams, it proves limited in promoting meaningful and contextualized learning.

Studies such as those by Menezes and Gomes (2020) advocate for the adoption of active methodologies, which place the student at the center of the learning process, encouraging participation, protagonism, and collective knowledge construction. Among the suggested practices are the use of simple experiments with low-cost materials, project-based learning (PBL), flipped classrooms, and the integration of digital resources such as simulations and Physics apps.

A relevant aspect in this debate is the National Common Curricular Base (BNCC), which emphasizes the importance of competency- and skill-based teaching, valuing interdisciplinarity and the contextualization of scientific knowledge. In this sense, Physics should be presented not merely as a set of laws and formulas, but as a tool to interpret everyday phenomena, develop critical thinking, and promote scientific citizenship.

Moreover, new technologies such as artificial intelligence (AI) have been incorporated as pedagogical support tools. F-Silva (2025) discusses how AI can be used in Chemistry teaching in public schools, highlighting both benefits and risks. This reflection can be extended to Physics, as AI resources can support personalized learning, provide immediate feedback, and expand access to advanced simulations.

INCLUSION AND DIVERSITY

Physics teaching in public schools must also confront the challenge of inclusion and the appreciation of diversity. Research such as that by Santos and Costa (2022) indicates that students with disabilities still face numerous barriers to accessing scientific knowledge, due to the absence of accessibility resources, adapted materials, and adequate teacher training for inclusive education.

In addition, there are marked regional inequalities. Schools located in rural areas or urban peripheries face more precarious infrastructure conditions, higher teacher turnover, and difficulties in

implementing innovative projects. These inequalities widen the gap between students from different regions of the country, compromising educational equity.

Gender and representativity issues also emerge as challenges. Physics has historically been associated with a male-dominated field, which can discourage girls and women from identifying with the discipline. Strategies that promote female representation in science—through historical examples, science outreach, and the promotion of inspiring role models—are essential to combat stereotypes and increase female student participation.

STUDENT PERCEPTION

Finally, students' perception of Physics is a key element in understanding the challenges of teaching the discipline. Studies such as those by Carvalho (2018) and Silva & Farias (2021) show that many students consider Physics a difficult, abstract subject that is poorly connected to their reality. This disinterest is reflected in low performance scores on external assessments, such as the National High School Exam (ENEM), where the Natural Sciences area shows high error rates and low achievement in Physics questions.

However, research also reveals that when exposed to innovative pedagogical practices, students demonstrate greater engagement and interest in the subject. Classes that incorporate experimentation, contextualization with everyday situations, and the use of digital resources tend to foster greater motivation and support meaningful learning (Menezes & Gomes, 2020).

Thus, understanding students' perceptions is essential for developing pedagogical practices that meet their needs and expectations, making Physics teaching more inclusive, relevant, and transformative.

METHODOLOGICAL PROCEDURE

This article adopts **bibliographic review research** as its methodological approach. This choice is justified by the need to systematize the knowledge already produced about Physics teaching in Brazilian public schools, allowing the identification of convergences, gaps, and persistent challenges.

According to Gil (2019), bibliographic research consists of a procedure based on already developed materials—especially books, scientific articles, and reports—with the aim of analyzing, discussing, and reinterpreting existing information from new investigative objectives. In this study, a time frame was chosen covering the years **2015 to 2025**, a period that encompasses recent discussions on educational policies, the implementation of the National Common Curricular Base (BNCC), and the impacts of the COVID-19 pandemic on the teaching-learning process.

DATABASES CONSULTED

Various open-access academic and scientific databases were consulted to ensure diversity and quality of sources. The main ones include:

- **Google Scholar** – used to locate recent articles in national and international open-access journals.
- **SciELO (Scientific Electronic Library Online)** – an important database that gathers Brazilian and Latin American scientific journals.
- **CAPES Journals Portal** – provides access to a wide range of scientific articles, with filters for open-access materials.
- **Specialized Science Education Journals** – such as the *Revista Brasileira de Ensino de Física* (RBEF), *Caderno Brasileiro de Ensino de Física*, *Investigações em Ensino de Ciências,* and institutional journals from public universities.
- **Official Reports** – including documents from the National Institute for Educational Studies and Research Anísio Teixeira (INEP), the School Census, and publications from the Ministry of Education (MEC).

INCLUSION AND EXCLUSION CRITERIA

To select the works analyzed, inclusion and exclusion criteria were defined to ensure the relevance of the sources:

- **Inclusion Criteria:**
o Articles published between 2015 and 2025.
o Texts available in open access (free of charge).
o Research related to Physics teaching in public schools.
o Studies addressing at least one of the defined thematic axes: infrastructure, teacher education, methodologies, inclusion, and student perception.
- **Exclusion Criteria:**
o Works published before 2015.
o Articles without full free access.
o Research focused exclusively on Physics teaching in private or higher education institutions.
o Texts not directly relevant to the research objectives.

ANALYSIS CATEGORIES

The analysis of selected texts was conducted based on the definition of **thematic categories**, which allow for systematic organization and interpretation of data. These categories were established based on preliminary literature review and the recurrence of themes identified by different authors:

1. **School infrastructure:** physical conditions, presence (or absence) of laboratories, libraries, and digital technologies.

2. **Teacher education:** profile of initial training, continuing education programs, professional appreciation, and working conditions.

3. **Teaching methodologies:** pedagogical practices, use of active methodologies, teaching resources, and technological integration.

4. **Inclusion and diversity:** accessibility, regional inequalities, gender, and representativity.

5. **Student perception:** interest, difficulties, engagement, and performance in external assessments.

DATA COLLECTION AND ANALYSIS PROCEDURES

Data collection was carried out in two main stages:

1. **Initial search in databases**, using descriptors such as "*Physics teaching in Brazil*", "*public schools and Physics teaching*", "*challenges in Physics teaching*", "*Physics teaching methodologies*", and "*Physics teacher education*". This stage resulted in approximately **120 articles found**.

2. **Filtering and selection of textss**, based on the inclusion and exclusion criteria. After reading abstracts and introductions, **25 scientific articles** were selected, along with **official reports and normative documents**, which constituted the main corpus of analysis for this study.

The analysis was conducted through critical and interpretative reading, aiming to identify the main arguments, empirical evidence, and proposals presented by the authors. Whenever possible, dialogues were established between different works to highlight convergences, divergences, and complementarities.

STUDY LIMITATIONS

It is important to note that bibliographic review, although it provides a broad view of the topic, has limitations. Due to reliance on open-access materials, some relevant studies may not have been included. Additionally, Brazil's regional diversity implies that certain local specificities may not be fully represented. Nevertheless, the review conducted here offers a consistent overview of the main challenges faced in Physics teaching in Brazilian public schools.

PRESENTATION AND DISCUSSION OF RESULTS

Based on the bibliographic analysis conducted, a set of recurring challenges in Physics teaching in Brazilian public schools was identified. These challenges were systematized into five main axes: school infrastructure, teacher education, teaching methodologies, inclusion and diversity, and student perception. Below, the main findings of the review are presented, accompanied by critical discussions and comparisons among different authors.

SCHOOL INFRASTRUCTURE

The literature analysis shows that the lack of infrastructure remains one of the most serious obstacles to effective Physics teaching. Carvalho (2018) had already identified that more than 70% of public schools do not have dedicated Physics laboratories. INEP (2022) data confirm this reality, showing that even when laboratories exist, they are often underutilized or lack maintenance.

This deficiency directly compromises experimental practice, which is essential for understanding physical phenomena. As Menezes and Gomes (2020) emphasize, the absence of experimentation reduces the discipline to mathematical formulas and abstractions, disconnected from students' everyday lives.

Some authors, such as Santos and Costa (2022), argue that this limitation can be partially mitigated through the use of low-cost experiments assembled with accessible materials. However, while this practice is valid, it does not replace the need for consistent structural investments. The literature therefore converges on the need for public policies that prioritize strengthening school infrastructure, including access to quality internet, audiovisual equipment, and virtual laboratories.

TEACHER EDUCATION

Another central finding concerns the education of Physics teachers. Oliveira (2019) highlights that a significant number of teachers still work without specific training in the field, which compromises teaching quality. This problem is more severe in peripheral and rural regions, where teacher turnover is higher.

Initial training for Physics graduates also presents limitations. As Silva and Farias (2021) argue, degree programs emphasize theoretical content and applied mathematics but offer little space for innovative pedagogical practices and discussions on inclusive methodologies.

Regarding continuing education, Menezes and Gomes (2020) point out that although institutional programs exist, teacher participation is limited due to work overload, low incentives, and lack of professional appreciation. This point is corroborated by Santos and Farias (2021), who emphasize the precariousness of the teaching profession as a demotivating factor.

The identified scenario suggests that any proposal to improve Physics teaching must necessarily include measures for teacher appreciation, such as fair remuneration, adequate working conditions, and policies that encourage ongoing professional development.

TEACHING METHODOLOGIES

With respect to teaching methodologies, the literature reveals a predominance of traditional practices centered on content exposition and exercise solving. Although this approach is effective for preparing students for standardized tests, it contributes little to critical development and meaningful learning (Silva & Farias, 2021).

In contrast, recent studies point to innovative alternatives. Menezes and Gomes (2020) and Carvalho (2018) advocate for the use of active methodologies, such as project-based learning (PBL) and flipped classrooms. These practices allow physical concepts to be related to real-life situations, fostering student engagement.

Another point discussed is the role of digital technologies. Resources such as computer simulations, interactive apps, and artificial intelligence platforms can enrich the pedagogical process. F-Silva (2025), in analyzing AI use in Chemistry teaching, shows that these tools can personalize learning and provide immediate feedback. In the context of Physics, their use can democratize access to virtual experiments, especially in schools without laboratories.

However, caution is needed. Technology use should not be seen as a magical solution but as part of a consistent pedagogical project. Moreover, it requires adequate technological infrastructure and specific teacher training to ensure effective use of these resources.

INCLUSION AND DIVERSITY

Inclusion emerges as a cross-cutting challenge. Santos and Costa (2022) demonstrate that students with disabilities still face significant barriers, such as the absence of adapted materials, lack of accessibility in school spaces, and inadequate teacher training for inclusive practices.

Regional inequalities were also widely discussed. While schools in major urban centers have greater access to resources, those located in peripheral or rural regions face precarious infrastructure conditions and a lower availability of qualified teachers. This scenario exacerbates learning disparities across different regions of the country (Oliveira, 2019).

Furthermore, recent studies have problematized gender issues in Physics education. The low female representation among teachers and scientific role models contributes to the perpetuation of the stereotype that Physics is a predominantly male field. Strategies such as highlighting women scientists in

the history of Physics and encouraging female participation in science fairs and Olympiads can help reverse this situation (Menezes & Gomes, 2020).

Therefore, the findings suggest that inclusion and diversity should not be treated as secondary issues, but rather as foundational pillars of any Physics education policy.

STUDENT PERCEPTION

Students' perception of Physics is marked by feelings of difficulty and disinterest. Carvalho (2018) reports that many students view the subject as "difficult" and "detached from reality." This diagnosis is corroborated by ENEM results, which show low accuracy rates in Physics questions (INEP, 2022).

However, research also indicates that students' perception changes when the subject is taught in innovative ways. Menezes and Gomes (2020) show that practical activities, simple experiments, and everyday contextualizations increase interest and engagement.

Another relevant finding is the impact of the COVID-19 pandemic. The studies analyzed point out that the transition to remote learning exposed inequalities in access to digital resources. Many public school students were excluded from the process, which worsened disinterest in the subject. Even so, successful experiences with hybrid learning showed that, when supported by inclusive digital resources, the pedagogical process can be enriched (Santos & Costa, 2022).

Overall, students' perception reveals that the problem does not lie in Physics itself, but in how it is taught. By bringing content closer to students' realities and valuing their active participation, it is possible to transform this perception and make the subject more attractive and meaningful.

FINAL CONSIDERATIONS

The analysis conducted throughout this study made it possible to identify the main challenges of Physics teaching in Brazilian public schools, as well as to point out possible paths for overcoming them. The bibliographic review revealed that the teaching of this discipline is immersed in a complex context, marked by structural, pedagogical, and social problems that intertwine and produce a scenario of educational inequality.

First, the issue of **precarious school infrastructure** was highlighted, which limits the execution of experimental practices and restricts students' access to experiences that bring Physics closer to their daily lives. Without adequate laboratories, basic equipment, or even digital connectivity, the discipline tends to be reduced to a set of mathematical abstractions, discouraging a large portion of students.

Second, **teacher education** emerged as a decisive factor. The absence of licensed Physics teachers, combined with insufficient initial training and lack of opportunities for continuing education, contributes to rigid and uninspired pedagogical practices. Public policies aimed at valuing and

strengthening the teaching profession—with an emphasis on dignified working conditions—are therefore indispensable.

Another central point was the **predominance of traditional methodologies**, which, although still widely used, have proven limited in fostering students' critical development. Active methodologies and the use of digital technologies were identified as promising alternatives, but they require planning, infrastructure, and teacher preparation. The integration of resources such as virtual simulations and artificial intelligence—already explored by F-Silva (2025) in Chemistry teaching—can be incorporated into Physics as a way to democratize access to experimentation and enrich learning.

It was also observed that issues of **inclusion and diversity** must not be treated as secondary. The inequality of access between urban and rural schools, the lack of resources for students with disabilities, and gender challenges in Physics reveal the need for an educational policy that is sensitive to differences. Initiatives that promote equity—such as adapted materials, the recognition of women scientists, and greater attention to peripheral schools—are fundamental to making teaching more just and inclusive.

Finally, **students' perception** of the discipline proved to be directly linked to the pedagogical practices adopted. When Physics is taught in a decontextualized manner, disinterest prevails; however, when concepts are connected to everyday life, accessible experimental practices are introduced, and students' active participation is valued, the discipline gains new meaning and fosters greater engagement.

Therefore, overcoming the challenges of Physics teaching in Brazilian public schools requires a systemic approach that involves:

- investment in school and technological infrastructure;
- appreciation and continuous training of teachers;
- encouragement of active methodologies and digital technologies;
- strengthening of inclusion and diversity policies;
- constant dialogue between teachers and students to reframe the discipline.

These points do not represent merely isolated solutions, but a **collective project of educational transformation**. Physics teaching, when critically rethought, can become a powerful instrument for scientific, civic, and emancipatory education, capable of preparing young people to face the challenges of the 21st century.

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CHALLENGES AND POSSIBILITIES IN THE SCHOOL INCLUSION OF DEAF STUDENTS: THE ROLE OF THE LIBRAS INTERPRETER AND PEDAGOGICAL ADAPTATION

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ABSTRACT

This article discusses the challenges and potentials of the inclusion of deaf students in regular schools, focusing on the role of Libras interpreters and the need to adapt pedagogical practices to meet the specificities of visual learning. Using a qualitative approach, observations and analyses of classroom interactions among deaf students, teachers, and interpreters were conducted, highlighting the importance of linguistic mediation to ensure access to educational content. However, it was found that the fast pace of lessons, combined with the lack of planning that considers the visual time needed for comprehension and note-taking, significantly compromises the learning of deaf students. Additionally, insufficient teacher training regarding the particularities of bilingual education and the interpreter's role worsens the difficulties for effective inclusion. The study emphasizes that inclusion cannot be limited to the presence of the interpreter but requires a reorganization of pedagogical time, the valorization of Libras as the first language, and collaborative work among all school professionals. Therefore, ongoing teacher training and the development of pedagogical practices that respect linguistic and cultural differences are essential to promote a truly accessible, equitable, and inclusive school environment.

Keywords: School inclusion; Deaf students; Libras interpreter; Visual learning; Pedagogical practices.

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INTRODUCTION

The inclusion of deaf students in mainstream education is a right guaranteed by the **Federal Constitution of 1988**, by the **Law of Guidelines and Bases of National Education (LDB – Law No. 9.394/1996)**, by **Law No. 10.436/2002**, which recognizes **Brazilian Sign Language (Libras)** as a legal means of communication and expression, and by **Decree No. 5.626/2005**, which regulates this law and establishes guidelines for the training of professionals, linguistic accessibility, and the guarantee of specialized educational services. These legal provisions not only recognize Libras as the first language of the Brazilian deaf community but also reaffirm the State's commitment to **equitable, inclusive, and quality** education, respecting the linguistic and cultural specificities of deaf students.

In this context, the presence of the **Libras interpreter** in regular education classrooms has become an essential measure to enable communication between deaf students, teachers, and hearing peers. This professional acts as a linguistic and cultural mediator, interpreting content from spoken Portuguese into Libras and vice versa. However, it is important to emphasize that the interpreter's role does not replace the teacher's pedagogical responsibility. As Quadros (2004, p. 35) points out, l**inguistic mediation alone does not guarantee full learning**; it is necessary for the teaching staff to understand the implications of deafness in the educational process and to adapt their practices in accordance with the students' needs.

Despite legal advances and the recognition of Libras as a fundamental part of the inclusive educational process, significant challenges remain in realizing this right. The presence of the interpreter in the classroom, although crucial, **does not by itself ensure quality education**. Many factors hinder the learning of deaf students: the fast-paced nature of lessons, the centrality of oral communication, the scarcity of accessible visual materials, the lack of specific teacher training, and the absence of pedagogical planning that considers the time required for mediation through Libras.

One of the most critical aspects relates to **pedagogical time**. Simultaneous interpretation requires pauses and a different organization of classroom dynamics. When this time is not respected, the deaf student's right to comprehension is compromised, resulting in learning gaps, veiled exclusion, and frustrations that could be avoided with more sensitive and collaborative pedagogical practices. Furthermore, the presence of Libras in the school environment should extend beyond the moment of interpretation. It is essential that the school community — teachers, administrators, students, and staff — develop a culture of accessibility and linguistic respect, valuing Libras as part of the educational routine.

This article aims to reflect on the **challenges faced by deaf students in mainstream education**, even with the support of the Libras interpreter, based on **concrete situations observed in the school context**. The analysis seeks to highlight that the full inclusion of deaf students requires more than formal

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compliance with legislation: it demands **ongoing teacher training**, reorganization of pedagogical practices, and the valorization of **visual learning as the primary channe**l for these students.

The study is supported by **legal, theoretical, and pedagogical** foundations that underpin the educational inclusion of deaf individuals in Brazil and point to ways to overcome the communicational and attitudinal barriers still present in educational institutions. The valorization of Libras as the first language, the understanding of deafness as a linguistic and cultural difference — and not merely a disability — and the commitment to inclusive practices should guide the actions of education professionals at all levels of teaching.

By shedding light on these issues, the article hopes to contribute to the strengthening of a **truly inclusive school**, one that not only welcomes the presence of deaf students but also recognizes their uniqueness and promotes real conditions for learning, participation, and belonging. Inclusion, in this sense, should not be seen as a technical or bureaucratic challenge, but as an **ethical, collective, and ongoing** construction, grounded in social justice and the right to quality education for all.

METHODOLOGY

This study is grounded in a qualitative approach, of a descriptive and interpretative nature, which seeks to understand the meanings and practices related to the inclusion of deaf students in mainstream education. The choice of this approach is justified by the complexity of the subject matter, which involves subjective, social, cultural, and pedagogical dimensions present in the relationships established between deaf students, teachers, and Libras interpreters within the school environment.

The research was conducted in a public regular education school located in an urban area, which includes the presence of Libras interpreters in the classroom to support deaf students enrolled at various stages of basic education. The selection of this institution was intentional, considering the existence of an internal policy for specialized educational services for deaf students, which allowed access to a concrete and relevant context for investigation.

Data were collected through **participant observation**, carried out over the course of one academic semester, with systematic monitoring of classes in different subjects. During the observations, efforts were made to meticulously record the interactions among the research subjects — deaf students, teachers, and interpreters — as well as the pedagogical resources used, the communication strategies adopted, and the teaching-learning dynamics.

In addition to classroom observations, informal accounts obtained through **spontaneous conversations** with interpreters and students after classes were considered. These accounts were fundamental to understanding the experiences of the subjects, their perceptions of the inclusion process, and the obstacles faced in daily school life. Although no formal interviews were conducted, the

conversations were recorded in a field diary and analyzed as complementary material to direct observation.

The adopted methodology enabled an in-depth analysis of school practices and the actual conditions of inclusion, especially regarding the role of the Libras interpreter and the pedagogical adaptations made — or not made — by teachers. As Mantoan (2003, p. 47) highlights, *"school inclusion will only be effective when educational practices are reviewed with a focus on equity, respecting different ways of learning."* From this perspective, the study sought to understand how the traditional pedagogical model, often centered on orality and linear content delivery, impacts the learning of deaf students and what alternatives have been (or could be) adopted to promote equitable access to knowledge.

During the analytical process, several **central categories** emerged, constructed from the observations and anchored in the scientific literature of the field. These categories guided the interpretation of the data and served as the framework for organizing and discussing the results:

1. The Role of the Teacher in School Inclusion

It was observed that teacher commitment to inclusion goes beyond the presence of the interpreter. Teachers who show openness to dialogue, sensitivity to difference, and methodological flexibility are able to create a more accessible and participatory environment. However, the lack of specific training remains a limiting factor, and many teachers feel unprepared to deal with deafness in the classroom, transferring the responsibility of mediation to the interpreter.

2. Pedagogical Time and Visual Learning

Mediation in Libras requires a different teaching rhythm, with strategic pauses, repetitions, and the use of visual resources. However, it was observed that most teachers maintain the traditional pace of lessons, compromising the understanding of deaf students. The time needed for simultaneous translation, copying from the board, and mental elaboration of concepts in Libras is often disregarded in lesson planning.

3. The Role of the Libras Interpreter as Mediator

The Libras interpreter acts as a bridge between two distinct linguistic and cultural worlds: Libras and spoken Portuguese. However, their role, although essential, cannot compensate for the absence of accessible pedagogical practices. When the teacher does not adapt their strategies, the interpreter becomes overburdened, being forced to "teach" and "interpret" simultaneously — which is neither their legal nor ethical function, as established by Decree No. 5.626/2005.

4. Deaf Identity, Visual Culture, and School Belonging

The data reveal that recognizing Libras as the first language and deafness as a cultural difference — not merely a disability — is essential for building an inclusive educational environment. Valuing deaf culture, respecting the timing and forms of expression of students, and

encouraging the use of Libras in school contexts are fundamental strategies for promoting the sense of belonging among deaf students.

5. Ongoing Teacher Training

The research also highlights the urgency of teacher training policies that address deaf education, Libras, and the specificities of visual learning. Teachers who participated in continuing education courses demonstrated greater engagement and initiative in creating accessible activities. Training should not be sporadic but continuous and integrated into the school's daily routine.

Thus, the choice of a qualitative methodology enabled **immersion in the school reality and a deep understanding of the practices and challenges of including deaf students**, valuing the voices and experiences of those involved in the process. The interpretative analysis, combined with theoretical grounding, allowed for a critical examination not only of existing barriers but also of the possibilities for transforming the educational context from an ethical, critical, and inclusive perspective.

DEVELOPMENT

Although the presence of the Libras interpreter is essential to ensure communication between the teacher and the deaf student, experiences observed in school contexts demonstrate that this mediation alone does not guarantee full access to the teaching-learning process. The educational inclusion of deaf students requires, beyond linguistic translation, the recognition of the cognitive, cultural, and visual specificities involved in learning through Libras.

One of the main challenges observed in everyday school life relates to **pedagogical time** and the **structure of lessons**, which are often organized to prioritize orality and the linearity of verbal exposition. In many subjects, teachers speak continuously while writing on the board, asking students to simultaneously follow the explanation and take notes. For hearing students, this dynamic is feasible because they can listen while looking at the board and writing. However, for deaf students, this simultaneity is unworkable, as they rely on the visual channel both to follow the interpreter and to make written records. As Lacerda (2011, p. 45) points out, *"deaf students learn visually and, therefore, need more time to alternate between paying attention to the interpreter and engaging in recording and reading activities."*

This exclusionary dynamic results in significant losses in the learning process. In trying to keep up with the pace of the class, the deaf student often has to choose between understanding the content through interpretation or taking notes from the board, which leads to cognitive gaps and compromises their performance. Moreover, the **rapid switching between subjects** and teachers, without adequate breaks, exacerbates this reality. In many cases, when the student is still finishing copying the previous content,

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the next teacher begins a new explanation and erases the board, disregarding the need for extended time for students with a visual learning profile.

In this context, it becomes evident that the **presence of the interpreter, although necessary, is not sufficient to ensure effective inclusion.** As Quadros and Schmiedt (2006) emphasize, the inclusion of deaf students goes beyond simple linguistic mediation — it requires a restructuring of pedagogical practices focused on linguistic accessibility and the valorization of Libras as the language of instruction. It is essential to understand that the deaf student is part of a bilingual and bicultural process, and that the time needed to access, process, and understand information requires **planned pedagogical pauses** as well as **adapted visual resources.**

Furthermore, the interpreter's role is not limited to sign translation. Often, at the end of classes, deaf students seek out interpreters to clarify doubts about words, concepts, or terms they did not fully understand during the lesson. This shows that, in addition to being linguistic mediators, interpreters also act as **cultural and conceptual mediators**, translating not only language but also the meaning of what was said, contextualizing the information so that the student can fully understand it. This overlap of functions, although necessary, highlights a gap in the pedagogical process: **the absence of teaching strategies that ensure the deaf student's autonomy.**

Another relevant factor is the lack of coordination between teachers and Libras interpreters. When there is no prior communication about the content, methodology, or objectives of the lesson, the interpreter is forced to perform improvised mediation, without time to prepare specific signs, visual resources, or metaphors that facilitate content comprehension. This directly compromises the quality of learning, as the interpreter is not — and should not be — responsible for adapting pedagogical content, a function that belongs to the teacher, as emphasized by Decree No. 5.626/2005.

This reality reveals a lack of **ongoing teacher training** for working with the inclusion of deaf students. Initial training generally does not include Libras, nor the principles of bilingual education or visual learning. Many teachers, although well-intentioned, show a lack of knowledge about how to plan a lesson accessible to deaf students. As Gesser (2009) points out, there are still strong stigmas and myths about deafness, which negatively impact teachers' expectations and reduce the possibilities for full inclusion.

Therefore, pedagogical practice needs to be rethought in its entirety. The inclusion of deaf students should not be understood as a punctual adaptation or an institutional favor, but as an **ethical commitment to the right to quality education.** This implies:

- the systematic use of **accessible visual materials** (images, videos, concept maps, diagrams);
- **coordination between speech and writing**, respecting visual attention times;

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- the implementation of **strategic pauses** so that the student can alternate between watching the interpreter and recording information;
- the establishment of **ongoing dialogue with the Libras interpreter** to jointly plan moments of explanation and assessment.

Moreover, it is essential that the **school institution as a whole understands and respects the visual time of the deaf student,** reevaluating the organization of the school schedule, transitions between classes, support resources, and spaces for listening and welcoming. Inclusion, in this sense, goes beyond the classroom and becomes a collective responsibility — involving administrators, teachers, interpreters, families, and the students themselves.

THEORETICAL FOUNDATION

The inclusion of deaf students in mainstream education is a complex process that goes beyond simply placing these students in regular classrooms. It is a challenge that involves a series of structural, pedagogical, linguistic, and cultural factors, which require a deep understanding of the specificities of deafness and bilingual education. Brazilian legislation, through **Law No. 10.436/2002** and **Decree No. 5.626/2005**, recognizes **Brazilian Sign Language (Libras)** as a legal means of communication and expression for deaf individuals, establishing, among other provisions, the mandatory presence of Libras interpreters in educational contexts as a way to guarantee the right to communication and learning.

However, the presence of the interpreter, although essential, d**oes not by itself guarantee quality education**. It is necessary to understand that the role of this professional must be embedded within an inclusive pedagogical project, built upon adapted practices, the valorization of deaf culture, and respect for the visual time required for the student to understand the content being taught. As Quadros (2004) emphasizes, the Libras interpreter acts as a **linguistic and cultural mediator**, responsible for translating between spoken Portuguese and sign language, without being directly responsible for the learning or pedagogical development of deaf students.

The school, in turn, must recognize that **visual communication is the primary means of accessing knowledge for deaf students.** This characteristic demands significant changes in pedagogical planning, including the organization of school time, the use of appropriate visual resources, the creation of moments for note-taking, and the strengthening of cooperation between teachers and interpreters. In many everyday situations, deaf students are exposed to a **fast-paced lesson rhythm**, in which the teacher's continuous speech, simultaneous with writing on the board and requests for copying, prevents the student from following and recording information autonomously (Lacerda, 2011).

This difficulty is directly related to the need for constant visual attention to the interpreter during explanations. When alternating between interpretation and the content on the board, the deaf student ends

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up missing important parts of the lesson. Additionally, immediate transitions between subjects, without sufficient time for reorganization, result in **cognitive and emotional overload**, which compromises learning and school engagement.

In light of this, **pedagogical time must be reconsidered** through the lens of visual learning. According to Skliar (2010), the true inclusion of deaf students depends on a school that recognizes l**inguistic and cultural differences** as legitimate components of human diversity and does not impose a pedagogical model centered solely on orality. The valorization of **Libras as the first language (L1)** and written Portuguese as the second language (L2) is an essential guideline of bilingual education for the deaf, which seeks to ensure not only access to the curriculum but also the strengthening of deaf identity and culture.

Mantoan (2003) reinforces that inclusion will only be effective when the school stops treating difference as a problem and begins to understand it as an **educational and social value.** This implies offering **appropriate training to teachers**, enabling them to adapt their teaching practices and work in partnership with Libras interpreters, respecting the limits and possibilities of each professional's role. Unfortunately, the lack of training is still a reality in many institutions, causing teachers to be unsure of how to respond to the specific needs of deaf students, which often leads to merely formal or symbolic inclusion.

It is in this context that the Libras interpreter becomes a key figure, but not a sufficient one. Their role must be articulated with accessible pedagogical practices, visually organized teaching materials, collaborative teaching strategies, and, above all, **an inclusive school culture**. As Gesser (2009) warns, there are still many misunderstandings and prejudices surrounding Libras and the role of interpreters, which hinder the construction of an educational environment truly open to difference.

Therefore, it is necessary to overcome the assistentialist view of inclusion, which is limited to ensuring the physical presence of the deaf student and the interpreter in the classroom. The inclusive school must understand that deafness is not a deficiency in the sense of lack, but a linguistic and cultural difference that demands respect, recognition, and empowerment. As Strobel (2008) states, deaf education must promote the empowerment of deaf identity, valuing the use of Libras as a legitimate means of knowledge production and subjective expression.

Thus, the theoretical foundation for the inclusion of deaf students points to the need for a broader transformation in how schools understand teaching and learning. This involves:

- Understanding **Libras as a language of instruction** and not merely as an auxiliary resource;
- Respecting **visual time and the interpreter's mediation** as part of the pedagogical process;
- Providing critical and ongoing teacher training focused on **bilingual education and inclusive practices**;

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- Valuing **deaf culture and identity** as constitutive elements of a democratic school;
- Promoting collaborative action among teachers, interpreters, students, and administrators to build accessible and welcoming learning environments.

Therefore, more than ensuring compliance with legislation, the inclusion of deaf students in mainstream schools requires **an ethical and political commitment to educational equity**, which will only be possible through the development of pedagogical practices committed to respecting differences and promoting quality education for all.

DISCUSSION

Based on the observations conducted in the school environment and the theoretical reflections, it is possible to affirm that, despite the legal and normative advances regarding the inclusion of deaf students, everyday practice still presents several limitations that compromise the learning process of these students. The inclusion of the Libras interpreter in the classroom, as provided by Decree No. 5.626/2005, represents a significant achievement for the right to communication, but their isolated presence does not guarantee full educational inclusion.

One of the main obstacles identified relates to the lack of synchronization between the fast-paced nature of lessons and the visual time required for deaf students to follow explanations mediated in Libras. Visual learning demands that the student dedicate full attention to the interpretation, making it impossible to perform other tasks simultaneously, such as copying content from the board. This necessity creates an attention overload and a rhythm incompatible with the traditional teaching model, which privileges orality and speed, failing to accommodate the specific pedagogical time of deaf students (Lacerda, 2011).

Moreover, the absence of adequate ongoing training for teachers regarding bilingual education and the particularities of deafness contributes to many educators being unaware of the interpreter's role and the needs of deaf students. This training gap can lead to a mistaken attribution of responsibilities to the interpreter, who should not act as a pedagogical mediator, but rather as a facilitator of communication between the teacher and the deaf student (Quadros, 2004). The lack of joint planning between interpreter and teacher highlights the fragility of the collaborative work necessary for effective inclusion.

It was also observed that the interpreter frequently assumes roles beyond simple sign translation, acting as a cultural and conceptual mediator by clarifying doubts and explaining content in an accessible way to deaf students. This scenario reveals the need for interdisciplinary and integrated work, in which the school is organized to provide adequate support to students, considering their linguistic and cultural specificities.

These difficulties reflect a school organization still poorly prepared to embrace diversity as a pedagogical principle. Inclusion, when understood merely as formal compliance with legislation or the

physical presence of the student in school, becomes a superficial and ineffective process. Mantoan (2003) emphasizes that true inclusion requires the transformation of pedagogical practices, with respect for difference and equity in access to knowledge.

In this context, pedagogical time emerges as a central element for the inclusion of deaf students. Respecting the rhythm of visual learning implies reorganizing classroom time, with planned pauses so that the student can follow the interpretation, take notes, and clarify doubts. This reorganization demands sensitivity from educators and commitment from school management to review and adapt traditional methodologies (Skliar, 2010).

Finally, the school inclusion of deaf students must be understood as a complex process involving multiple aspects: critical teacher training, collaborative action by the entire school team, valorization of Libras as the first language, strengthening of deaf identity, and adapted pedagogical practices. Failure to observe these elements can turn inclusion into veiled exclusion, where the student is physically present but does not effectively participate in the educational process, nor is recognized in their uniqueness (Strobel, 2008).

The construction of a truly inclusive school therefore depends on collective engagement in an educational culture that values diversity, recognizes deafness as a cultural and linguistic difference, and promotes real conditions for learning for all.

RESULTS

The observations conducted in the school environment revealed that, although the presence of the Libras interpreter is essential for the inclusion of deaf students, there are still several barriers that hinder full access to classroom content.

One of the main aspects identified was the **fast pace of lessons**, which prevents the deaf student from simultaneously following the explanation and taking notes. Since the student relies exclusively on visualizing the interpreter to understand what is being said, they must focus entirely on the moment of translation. As a result, the time available to copy content from the board is reduced. In many cases, when the student attempts to record the information, the board has already been erased or the teacher has moved on to another topic.

Another observed factor was the l**ack of organized pauses during lessons**, which impairs mediation between teacher, interpreter, and student. In many situations, the content was presented continuously, without breaks that would allow the deaf student to reflect, ask questions, or adequately record the information.

It was also noted that there is a **lack of prior coordination between teachers and interpreters**. In most of the observed classes, there was no joint planning between these professionals. This made the

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interpreter's work more difficult, as they often had to improvise signs or explain technical terms during the lesson itself, consuming time and requiring additional effort from both the interpreter and the student.

Additionally, it was recorded that **the Libras interpreter frequently assumes expanded roles**, such as clarifying doubts after class, explaining word meanings, and reinforcing concepts. On several occasions, deaf students approached the interpreter after class to seek information they were unable to grasp during the explanation.

During transitions between subjects, it was noted that **the deaf student was still copying material from the previous class when the new teacher had already begun the explanation,** causing confusion and loss of information. This occurred repeatedly and highlighted the need for more flexible pedagogical time for this group.

Another significant finding was the **absence of complementary visual resources,** such as images, videos, or diagrams, which could facilitate the learning of deaf students. Most of the observed classes relied solely on the teacher's speech and the use of a traditional chalkboard.

Thus, the data indicate that, although the presence of the Libras interpreter is an important advancement, it is not sufficient to ensure full inclusion. The main results point to the need for adjustments in lesson pacing, improved communication between teachers and interpreters, greater appreciation of the deaf student's visual time, and the use of resources that support learning through Libras.

FINAL CONSIDERATIONS

This study has shown that the presence of the Libras interpreter is fundamental to enabling communication and access to pedagogical content for deaf students in mainstream education, serving as an indispensable instrument for school inclusion. However, the results indicate that inclusion, although guaranteed by law, faces significant practical challenges that still compromise the effectiveness of the learning process for these students.

Among the main obstacles identified is the fast-paced nature of lessons, which does not respect the visual time necessary for information assimilation. The traditional dynamic, based on orality and the simultaneity of speech and writing, does not accommodate the specificities of visual learning for deaf students, who need to alternate their gaze between the interpreter and the board, requiring more time to process and record content. This discrepancy creates learning gaps and reinforces the need to readjust pedagogical practices to make them truly inclusive.

Effective inclusion therefore requires more than the mere presence of the interpreter in the classroom; it demands collaborative and coordinated work among teachers, interpreters, and the entire school team. Joint planning and the organization of pedagogical activities, considering the pace and

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particularities of deaf students, are essential to ensure equitable learning. Furthermore, ongoing training for education professionals becomes indispensable to expand knowledge about deaf culture, the specificities of Brazilian Sign Language, and methodologies that promote full inclusion.

Another key point for successful inclusion is the recognition and appreciation of the linguistic and cultural diversity of deaf students. The school must be a space that promotes respect for deaf identity and Libras as the first language, building an educational culture that embraces differences and offers real conditions for participation and development.

Thus, it is recommended that educational institutions invest in the awareness and training of their professionals, in the reorganization of pedagogical time, and in the adaptation of teaching resources, prioritizing a bilingual and multicultural approach. Only through this collective commitment will it be possible to guarantee the right to quality education for deaf students, promoting an inclusion that goes beyond formality and translates into effective practices of equity, accessibility, and respect for differences.

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THE ART OF TEACHING IN TECHNICAL AND TECHNOLOGIST COURSES IN RADIOLOGY: STRATEGIES, CHALLENGES, AND TRAINING COMPETENT PROFESSIONALS

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ABSTRACT

Technical education in Radiology constitutes the central theme of this work, given its relevance for training professionals capable of acting with technical, ethical, and interpersonal competence in the healthcare sector. The main objective was to analyze the art of teaching in technical Radiology courses, identifying pedagogical strategies used, challenges faced, and perspectives for training competent professionals prepared to meet the demands of the market and society. The methodology adopted was bibliographic and qualitative in nature, developed from the analysis of books, scientific articles, and academic documents that addressed technical education in health, the specificities of teaching in Radiology, and the elements necessary to consolidate an effective teaching-learning process. The results obtained showed that training in Radiology required an articulation between theory and clinical practice, associated with active methodologies such as simulation, case studies, use of digital technologies, and practical laboratories. It was found that pedagogical practice demanded a teaching role focused on mediation and the construction of meaningful experiences, overcoming traditional teaching models centered solely on content transmission. Furthermore, it was verified that the training of competent professionals involved the balanced development of technical skills for performing exams, ethical competencies related to professional responsibility, and interpersonal skills aimed at patient communication and care. Among the highlighted challenges were limitations in infrastructure in some educational institutions, scarcity of updated equipment, difficulties in students' adaptation to complex techniques, and the need for constant teacher updating in the face of technological innovations. The analysis allowed us to conclude that the art of teaching in technical Radiology courses was a dynamic, interdisciplinary, and humanized process, in which the integration between theory and practice played a central role in consolidating learning. The research also indicated that investing in teacher training, technological resources, and innovative methodologies was essential to qualify pedagogical practice, meet scientific and social transformations, and, above all, contribute to improving healthcare delivery.

Keywords: Technical education; Radiology; Teaching-learning; Professional competencies; Teacher training.

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INTRODUCTION

The training of professionals in the healthcare field requires not only technical knowledge but also a pedagogical process capable of articulating theory, practice, and professional ethics. Within this scenario, technical education in Radiology occupies a highly relevant space, as it prepares professionals who perform essential functions in diagnostic imaging services, directly contributing to the quality of healthcare delivery. The art of teaching in this field goes beyond the mere transmission of content: it is an educational process that seeks to integrate pedagogical resources, active methodologies, technologies, and clinical practices to train competent, ethical technicians prepared to face contemporary challenges in the sector (Padoveze, 2012; Oliveira & Silva, 2018).

Radiology, since the discovery of X-rays by Wilhelm Conrad Röentgen in 1895, has undergone profound transformations, incorporating different diagnostic and therapeutic modalities such as computed tomography, magnetic resonance imaging, ultrasonography, and nuclear medicine (Langland et al., 2018). In this context, technical education must keep pace with technological innovations and meet the demands of an increasingly demanding market. Technical Radiology courses should balance scientific foundations, such as anatomy and applied physics, with laboratory practices and supervised internships that allow students to experience real work situations (Albuquerque & Carmo, 2019). Thus, understanding the specificities of this teaching and reflecting on the best pedagogical strategies becomes essential for building quality education.

This study aims to analyze the art of teaching in technical Radiology courses, discussing fundamental concepts, pedagogical strategies, professional training, and challenges faced in this process. As a hypothesis, it is considered that the use of active methodologies, combined with educational technologies and the integration of theory and clinical practice, significantly contributes to the training of competent professionals capable of meeting the technical, ethical, and human demands of the profession. The justification for choosing this topic lies in the social and educational relevance of Radiology, since the quality of technical training directly impacts patient care, safety in the use of ionizing radiation, and the effectiveness of healthcare services (Sloniak et al., 2017; Santos, 2021).

Methodologically, the work was developed through a bibliographic review of authors who discuss both the technical field of Radiology and the pedagogical practices applied to vocational education. In this way, the aim was to articulate concepts from the literature on technical education, health teaching, and the specificities of diagnostic radiology to understand the paths and challenges of teaching practice in this field.

The structure of the work is organized as follows: initially, a conceptualization of Radiology is presented, highlighting its historical evolution and current role in healthcare. Next, technical education in Radiology is discussed, focusing on its specificities, student profile, and labor market requirements.

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Subsequently, pedagogical strategies applied to this teaching are addressed, such as active methodologies, simulations, case studies, and multimedia resources. Following this, the training of competent professionals is analyzed, emphasizing the technical, ethical, and interpersonal competencies required, as well as the integration between theory and clinical practice. Finally, the challenges faced by this type of education are discussed, including infrastructure issues, student adaptation to complex techniques, and the need for continuous teacher training.

DEVELOPMENT

CONCEPTUALIZING RADIOLOGY

Radiology is a healthcare field dedicated to obtaining images of the human body for diagnostic, therapeutic, and clinical follow-up purposes, using ionizing radiation and other advanced imaging technologies. It is a specialty that combines knowledge of anatomy, physics, biology, and technology, enabling professionals to visualize internal structures, identify pathological changes, and contribute to precise medical decision-making (Albuquerque & Carmo, 2019).

The concept of Radiology has evolved significantly since the discovery of X-rays by Wilhelm Conrad Röentgen in 1895, when the use of radiation for diagnostic purposes represented a major scientific innovation. Today, Radiology encompasses different modalities, such as conventional radiography, computed tomography, magnetic resonance imaging, ultrasonography, and nuclear medicine, each with specific physical principles, clinical indications, and protocols (Langland et al., 2018). This technological diversity requires radiology professionals not only to have theoretical knowledge but also practical skills to operate complex equipment, interpret images, and apply radiological safety measures, ensuring the protection of both patients and professionals.

Beyond its diagnostic role, Radiology plays a therapeutic role in image-guided interventional procedures, such as biopsies, drainages, and minimally invasive treatments, expanding its importance within hospital and outpatient contexts (Sloniak et al., 2017). Therefore, Radiology is not limited to the mere production of images but integrates a set of technical, scientific, and ethical practices aimed at promoting health, preventing diseases, and ensuring quality clinical care.

Another relevant aspect is the impact of Radiology on the evolution of modern medicine. The development of increasingly sophisticated techniques has contributed to early diagnoses, reduced the need for invasive procedures, and increased precision in surgical and therapeutic planning. This technological advancement has also brought new challenges, such as the need for constant professional updating in the face of rapid innovations and strict compliance with biosafety standards to minimize risks associated with radiation exposure (Sloniak et al., 2017).

Furthermore, Radiology has established itself as an interdisciplinary field, interacting with various medical specialties and decisively contributing to comprehensive healthcare. In this sense, its practice requires not only technical mastery but also ethical sensitivity and communication skills to work in a multidisciplinary team and provide humanized care to patients (Sloniak et al., 2017). Thus, conceptualizing Radiology means understanding its hybrid nature: a science that combines cutting-edge technology and human responsibility, being indispensable for diagnosis, treatment, and improving quality of life.

TECHNICAL EDUCATION IN RADIOLOGY

Technical education in Radiology is characterized as a form of vocational training aimed at preparing professionals to work effectively in diagnostic imaging services. Unlike higher education, technical training has specific features that require an intensive practical approach combined with essential theoretical foundations for safe and ethical professional practice. According to Padoveze (2012), the primary goal of technical education is to provide rapid and efficient training, promoting practical skills that meet the immediate demands of the labor market without neglecting the understanding of the scientific principles underlying the activities performed.

In the context of Radiology, technical training involves a variety of competencies, including mastery of imaging equipment, knowledge of anatomy, physics applied to radiology, biosafety, and professional ethics. The specificity of this teaching is reflected, for example, in the need for practical simulations and supervised internships, which are fundamental for building professional competence. According to Oliveira and Silva (2018), technical Radiology courses must balance theory and practice, ensuring that students understand not only the operation of X-ray machines, computed tomography, and magnetic resonance imaging but also patient care and compliance with regulatory standards.

The profile of Radiology students, in turn, presents distinctive characteristics. Generally, these are individuals motivated by a technical-scientific career, interested in working in hospitals, clinics, or diagnostic laboratories. The literature indicates that these students need to develop cognitive, psychomotor, and socio-emotional skills, including attention to detail, critical analysis ability, and ethical conduct toward patients (Gonçalves, 2020). Furthermore, the labor market imposes increasing demands: professionals must master new technologies, stay updated on clinical protocols, and demonstrate flexibility to work in different contexts, such as conventional radiology, computed tomography, magnetic resonance imaging, and interventional procedures (Padoveze, 2012).

PEDAGOGY AND TEACHING STRATEGIES

Pedagogy applied to technical Radiology education must consider the particularities of this training, which requires not only theoretical knowledge but also complex practical skills and technical precision. In this context, the adoption of active teaching methods has proven essential to promote meaningful learning and professional competence among students. Active learning, for example, involves strategies in which students become protagonists of the educational process, participating in discussions, solving problems, and making decisions in simulated situations, which favors the construction of knowledge in a contextualized and applied manner (Freire, 2014).

The use of simulations and practical laboratories is another fundamental pedagogical resource. These methodologies allow students to reproduce radiological procedures in a controlled environment, learning to handle equipment, correctly position patients, and apply safety standards without health risks. Studies indicate that simulated practice significantly contributes to knowledge retention and the development of technical confidence, preparing students for real work situations (Gonçalves & Oliveira, 2020). Furthermore, the study of clinical cases enables critical analysis of complex situations, stimulating decision-making skills and the application of theoretical concepts in practical contexts, which is particularly relevant in areas such as interventional radiology and advanced diagnostic imaging (Melo, 2019).

The use of educational technologies and multimedia resources complements these strategies, expanding learning possibilities and making the process more dynamic and interactive. Digital platforms, educational videos, simulation software, and virtual reality resources allow students to visualize anatomical structures, understand radiological processes, and practice procedures in different scenarios, even outside the physical laboratory (Santos, 2021). These tools not only facilitate access to complex content but also promote student autonomy, enabling them to review concepts and perform training independently, contributing to the consolidation of technical competencies necessary for professional practice.

TRAINING COMPETENT PROFESSIONALS

The training of competent professionals in Radiology goes far beyond acquiring theoretical knowledge about anatomy, equipment physics, and imaging techniques. It is an integral educational process aimed at developing technical, ethical, and interpersonal competencies that are essential for safe and qualified performance in healthcare settings. According to Oliveira and Silva (2018), professional competence in Radiology involves not only the ability to operate diagnostic imaging equipment but also the skill to interpret results accurately, apply correct clinical protocols, ensure patient safety, and comply with ethical and legal standards governing radiological practice.

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Technical competencies form the foundation of professional performance and include, among other aspects, proficiency in conventional radiology exams, computed tomography, magnetic resonance imaging, and interventional radiology.

Additionally, it is essential for professionals to master biosafety procedures, such as the correct use of radiological protection and contamination prevention, ensuring the health of patients and colleagues (Gonçalves, 2020). However, technical mastery alone is not enough; radiological practice also requires interpersonal skills, such as effective communication with patients, families, and multidisciplinary teams, empathy, and the ability to handle stressful situations and clinical emergencies. These skills are fundamental not only for ensuring quality care but also for humanizing healthcare delivery (Padoveze, 2012).

Professional ethics, in turn, is a central component in the training of radiology professionals. Ethical practitioners respect patient privacy and confidentiality, act responsibly when handling sensitive exams, and strictly follow principles established by professional councils and international radiology standards. Integrating ethics into technical education allows students to develop not only practical competence but also critical awareness and a sense of social responsibility—attributes indispensable in modern healthcare (Freire, 2014).

Another crucial aspect of training competent professionals is the integration of theory and clinical practice. Technical learning should occur in environments that simulate real situations, enabling students to apply theoretical concepts in practical procedures under qualified supervision. Studies show that this integration strengthens content understanding, increases student confidence, and reduces errors in real work environments (Melo, 2019). Supervised internships, practical laboratories, and the use of simulation technologies, such as software and virtual anatomical models, are pedagogical tools that foster this connection between theory and practice, preparing students to handle everyday challenges in the profession.

Thus, the training of Radiology professionals should be understood as a complex process that combines technical knowledge, interpersonal skills, and ethical principles, ensuring that students become competent, responsible professionals capable of adapting to the constant innovations in the healthcare sector. Developing these competencies requires active methodologies, continuous pedagogical support, and learning environments that encourage critical reflection, safe practice, and humanized care, thereby consolidating the quality of technical training and excellence in professional performance.

CHALLENGES IN TECHNICAL RADIOLOGY EDUCATION

Technical education in Radiology faces several challenges that directly impact the quality of professional training and the effectiveness of pedagogical practice. Among the main obstacles are

infrastructure limitations and the scarcity of appropriate materials or equipment for learning. Many technical courses operate with
laboratories that do not keep pace with technological innovations in healthcare, making it difficult for students to interact with modern equipment and current market practices (Gonçalves, 2020). This reality highlights the need for institutional investments and educational policies that ensure well-equipped laboratories, access to simulation software, and sufficient teaching resources for practical learning, enabling students to develop technical skills safely and efficiently.

In addition to structural issues, another significant challenge is students' adaptation to complex techniques and clinical procedures that require precision and technical rigor. Radiology, by its very nature, demands refined psychomotor skills, critical interpretation of images, and strict application of safety protocols, which can pose barriers for students at the beginning of their training or those who struggle to reconcile theory and practice (Oliveira & Silva, 2018). In this context, the use of active methodologies such as simulations, case studies, and supervised practical laboratories is essential to facilitate learning, reduce student anxiety, and promote the gradual acquisition of competencies, consolidating the confidence and technical autonomy necessary for professional practice.

The role of the teacher in this scenario is equally challenging. The Radiology instructor must not only master technical and scientific content but also develop pedagogical skills to mediate learning, provide constant feedback, and adapt teaching strategies to individual student needs. Furthermore, teachers are required to engage in continuous professional development, staying updated on technological advances, new teaching methodologies, and regulatory changes in healthcare (Padoveze, 2012). This ongoing updating is fundamental for educators to effectively integrate theory and practice, promoting excellence in technical training and preparing competent, ethical professionals who can adapt to labor market demands.

Therefore, the challenges in technical Radiology education involve structural, pedagogical, and human aspects that require integrated solutions. Investments in infrastructure and teaching resources, active teaching methodologies, individualized
student support, and continuous teacher training are essential strategies to overcome these difficulties, ensuring the quality of technical education and the development of professionals capable of working safely, ethically, and competently in the context of modern radiology.

CONCLUSION

The conclusion of this study allows us to reflect on the centrality of pedagogical practice in technical Radiology education and its relevance for training professionals who work directly in health promotion and diagnostic imaging. Throughout the research, it was found that the art of teaching in this

area goes far beyond content transmission: it is a complex process that involves the development of technical, ethical, and interpersonal competencies, as well as the integration of theory and clinical practice. This combination is essential to prepare technicians capable of dealing with the growing technological and human demands of the profession, ensuring not only diagnostic quality but also patient care and safety (Padoveze, 2012; Oliveira & Silva, 2018).

It was observed that technical Radiology courses face multiple challenges. Among them, infrastructure limitations, scarcity of modern materials, and the need for constant updating in the face of technological innovations stand out (Gonçalves, 2020). Furthermore, the difficulties students encounter in adapting to complex techniques and the requirement for technical rigor highlight the importance of active methodologies and pedagogical resources that bring practice closer to professional reality (Melo, 2019). This scenario emphasizes the role of the teacher, who, in addition to mastering technical content, must act as a mediator, using innovative teaching strategies and engaging in continuous professional development (Freire, 2014).

Another aspect highlighted is the relevance of pedagogical methodologies that make teaching more dynamic and effective, such as active learning, simulations, case studies, and the use of digital and multimedia technologies. These strategies, in addition to promoting greater student autonomy, enable the construction of meaningful learning, in which theory is directly linked to practice (Santos, 2021). Thus, it is clear that technical Radiology education requires flexible pedagogy that addresses both scientific demands and the human aspects of the profession.

In light of these reflections, it can be affirmed that training competent professionals in Radiology depends on the articulation of three fundamental pillars: technical solidity, ethical commitment, and interpersonal interaction skills. Only when these elements are worked on together is it possible to consolidate a professional profile that meets market demands and, above all, patient needs (Sloniak et al., 2017). The future of technical Radiology education, therefore, is intrinsically linked to the quality of pedagogical practices adopted, investment in infrastructure, and the appreciation of teacher training.

Thus, the art of teaching in technical Radiology courses should be understood as a continuous formative process capable of transforming health education and contributing to strengthening diagnostic imaging services. It is a constant challenge but also an opportunity to innovate, humanize, and qualify pedagogical practice, ensuring that technical training remains aligned with scientific and social transformations of contemporary times. Ultimately, investing in the quality of this education means investing in improving healthcare delivery and valuing professionals who play an indispensable role in human care.

In this sense, Radiology should be understood not only as a technological field but as an area of practice that demands sensitivity, social responsibility, and commitment to life. Strengthening

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pedagogical foundations in technical education constitutes a promising path to ensure that the future of Radiology is marked not only by diagnostic precision but also by the human and ethical excellence of its professionals.

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TEACHER EDUCATION AND ENVIRONMENTAL EDUCATION: ESSENTIAL PRINCIPLES FOR SUSTAINABLE TEACHING

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ABSTRACT

Teacher education and environmental education constitute the central theme of this work, which analyzed the fundamental principles for sustainable teaching. The objective of the research was to investigate the relationship between teacher training and environmental education, emphasizing pedagogical practices that promote sustainability in schools. The methodology employed was qualitative and bibliographic in nature, allowing for the collection and analysis of information from classical and contemporary works, scientific articles, and legal documents. The research revealed that environmental education has become an essential field for the formation of critical, conscious citizens engaged in promoting sustainability. The results indicated that teacher education must include specific competencies to implement environmental practices, as well as promote active methodologies that integrate theory and practice. The conclusions highlighted the importance of continuous training that enables teachers to mediate meaningful experiences, connecting theoretical knowledge to everyday practice. The study emphasized that environmental education is not limited to the transmission of information but should foster responsible and ethical attitudes toward the environment. The research contributed to the understanding that teacher education, combined with solid principles of environmental education, is crucial for building a more sustainable and conscious society.

Keywords: Teacher education; Environmental education; Sustainability; Pedagogical practices.

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INTRODUCTION

This research explored the intersection between teacher education and environmental education, recognizing the growing relevance of this theme in contemporary times. Training teachers to address socio-environmental issues is fundamental in a world marked by ecological and social challenges, requiring a pedagogical approach that promotes awareness and environmental responsibility.

The theme was contextualized in light of the consulted literature, which ranged from the historical foundations of environmental education to its contemporary guidelines. Classical and contemporary authors were analyzed to understand how environmental education evolved and established itself as an essential field for forming critical and participatory citizens. The bibliographic approach allowed for reflection on the competencies necessary for teaching in this context, highlighting the importance of interdisciplinarity and critical thinking.

The research objectives were clearly defined: to investigate the relationship between teacher education and environmental education, identify pedagogical practices that promote sustainability, and propose applicable guidelines within the school context. The formulated hypothesis indicated that continuous training and the adoption of active methodologies are crucial for developing effective environmental education.

The justification for conducting this study lies in the urgent need to prepare educators to face the challenges of the 21st century, where sustainability must be a priority. The research suggested that environmental education should not be treated as an isolated theme but as a transversal component that permeates all areas of knowledge, contributing to the holistic formation of students.

The work was developed through a qualitative and bibliographic methodology, which enabled the analysis of a wide range of sources, such as books, scientific articles, and legal documents. This approach provided a deep understanding of the principles and practices related to environmental education and teacher training.

Furthermore, the introduction emphasized the importance of systematically and coherently integrating environmental education into school curricula, stressing that teacher education must go beyond mere transmission of theoretical content. The research addressed the need to create learning environments that encourage active student participation, promoting practical experiences that connect theory to everyday reality. This approach not only fosters the development of critical environmental awareness but also stimulates socio-emotional skills essential for forming citizens committed to the community and the planet's future. Environmental education, therefore, emerges as a fundamental pillar in teacher training, reflecting the urgency of an educational transformation that prioritizes sustainability and socio-environmental responsibility in all spheres of life.

In summary, the introduction presented a comprehensive view of the theme, aligning objectives,

hypotheses, and justifications, and established the foundation for the critical analysis developed in the subsequent sections of the work. The research sought to contribute to building more effective and integrated environmental education, essential for forming conscious citizens committed to sustainability and environmental preservation.

METHODOLOGY

This research adopts a qualitative and bibliographic approach, aiming to analyze the principles of environmental education and its relationship with teacher training, identifying pedagogical practices that promote sustainability in the school context. The choice of bibliographic research is justified by the need to understand, from different theoretical perspectives, the foundations of environmental education, its historical evolution, and the competencies required for teaching in this field. This type of study allows organizing, comparing, and reflecting on information from reliable sources, promoting a critical analysis that supports the development of the article.

To construct the theoretical framework, works by classical and contemporary authors were selected, covering concepts, principles, and practices of environmental education, as well as studies related to teacher training and sustainable pedagogical methodologies. Among the selection criteria for sources, academic relevance, publication currency, and pertinence to the central theme of the study stand out. Books, scientific articles, legal documents, and reports from international organizations such as UNESCO were consulted, ensuring a broad and well-founded approach.

The analysis of information followed a critical and interpretative logic, allowing the identification of patterns, convergences, and divergences among authors, in addition to relating theory and practice in environmental education. In this process, essential competencies and skills for teachers to implement pedagogical strategies that promote environmental awareness were highlighted, as well as the challenges and opportunities of continuous training. The methodology also enabled understanding how the principles of sustainability, interdisciplinarity, critical thinking, and socio-environmental responsibility can be incorporated into teaching practices, making education more meaningful and transformative.

Moreover, the research sought to integrate theoretical reflections and practical recommendations, ensuring that the study does not remain limited to conceptual exposition but also offers applicable guidelines for everyday school life. The absence of interviews or field surveys did not compromise the analytical nature of the work, as the bibliographic approach provided a consistent overview of the theme, supporting the discussion of pedagogical strategies, active methodologies, and successful teaching experiences.

In summary, the adopted methodology combines academic rigor and practical relevance, enabling the construction of a well-founded and reflective study on teacher education and environmental

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education. The critical analysis of specialized literature provides solid theoretical support to understand the importance of environmental education principles, the need for teacher training, and the application of sustainable pedagogical practices, contributing to the formation of conscious citizens committed to environmental preservation.

DEVELOPMENT

ENVIRONMENTAL EDUCATION: CONCEPTS AND EVOLUTION

Environmental Education (EE) has established itself as an essential field for forming critical, conscious citizens capable of acting in favor of sustainability. Although its modern expression has intensified in recent decades, the concepts that underpin it stem from a historical concern with the relationship between society and the environment. According to Capra (1996), environmental education is not limited to transmitting information about the natural environment but involves developing attitudes, values, and behaviors that promote preservation and quality of life on the planet. In this sense, EE presents itself as a broad, interdisciplinary, and continuous educational process, whose objective is to build ecological awareness capable of guiding sustainable everyday practices (Sauvé, 1996).

Classical authors, such as Carson (1962), in the work Silent Spring, emphasized the need to sensitize society to the impacts of human actions on the environment, warning about the harmful effects of chemical products and the predatory exploitation of natural resources. This pioneering perspective influenced the development of educational programs that sought to integrate scientific knowledge and environmental awareness. Similarly, Hungerford and Volk (1990) highlight that EE should combine cognitive, affective, and behavioral aspects, promoting not only understanding of environmental problems but also motivation for responsible action.

In the contemporary context, environmental education is understood as a process that articulates theory and practice, integrating different areas of knowledge and considering the complexity of socio-environmental problems. Ornstein and Lasley (2011) stress that modern EE seeks to form critical citizens capable of understanding ecological, social, and economic interrelationships, encouraging participatory solutions to environmental challenges. Furthermore, the modern concept of EE emphasizes sustainability as a guiding principle, promoting ethical reflection and social responsibility in all spheres of life. Historically, environmental education worldwide consolidated through global ecological awareness movements, especially following United Nations Conferences on the Environment. The Stockholm Conference in 1972 marked a turning point by recognizing the need for educational policies aimed at environmental protection, establishing guidelines for incorporating EE into school curricula and teacher training programs (UNESCO, 1978). Later, the Rio de Janeiro Conference in 1992 emphasized

sustainability and education as fundamental instruments for environmental preservation, consolidating EE as a central strategy in building more responsible and conscious societies (Brazil, 1992).

In Brazil, the first records of environmental education initiatives date back to the 1970s, mainly in projects focused on fauna and flora conservation and the protection of natural areas. From the 1990s onward, with the creation of the National Environmental Education Policy (Law No. 9.795/1999), EE became officially recognized as a right for all citizens, integrating into formal and informal education systems and strengthening teacher training aimed at sustainability (Brazil, 1999; Dias, 2002). Currently, environmental education in the country seeks to articulate ecological, social, and cultural issues, promoting participatory and interdisciplinary pedagogical practices that value collective responsibility in building a sustainable future.

Thus, environmental education presents itself as an ever-evolving field that transcends simple instruction on ecological issues and consolidates as a formative strategy of ethical, critical, and transformative character. Its historical trajectory demonstrates the growing understanding that environmental preservation depends not only on public policies but also on social mobilization and the formation of citizens capable of acting consciously and responsibly in the face of contemporary challenges.

PRINCIPLES OF ENVIRONMENTAL EDUCATION

The principles of environmental education constitute the foundation for forming conscious citizens engaged in promoting sustainability. Among the fundamental concepts, sustainability, interdisciplinarity, critical thinking, and socio-environmental responsibility stand out, guiding both educational practice and ethical reflection on the environment. Sustainability, as defined by Meadows et al. (2004), involves the ability to meet present needs without compromising resources and opportunities for future generations, becoming a central guide for organizing content and pedagogical activities aimed at environmental preservation.

Interdisciplinarity, in turn, allows environmental education to transcend the limits of isolated disciplines, integrating scientific, social, cultural, and ethical knowledge. According to Morin (2000), the complexity of environmental problems requires students to understand the interrelationships between natural and social systems, developing a holistic vision capable of connecting theory and practice. This principle reinforces the need for pedagogical strategies that promote dialogue among different areas of knowledge and encourage collaborative and contextualized problem-solving.

Critical thinking is another essential pillar of environmental education, as it stimulates reflection on the impacts of human actions and the development models adopted by society. According to Sauvé (1996), EE does not limit itself to transmitting information about the environment; it seeks to form

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individuals capable of analyzing, questioning, and proposing ethical and sustainable solutions, promoting critical awareness regarding consumption practices, resource use, and environmental public policies.

Socio-environmental responsibility is directly linked to the perception that each individual plays a role in maintaining and protecting the environment. For Dias (2002), this responsibility should be practically incorporated into school life and students' routines, encouraging conscious attitudes and actions that promote collective sustainability, such as conscious consumption, waste reduction, and participation in community projects.

The relationship between theory and teaching practice is fundamental for the effectiveness of these principles. EE requires teachers not only to transmit knowledge but also to articulate practical experiences, such as visits to natural areas, school gardens, recycling projects, and community awareness activities (Ornstein & Lasley, 2011). In this way, concepts learned in the classroom gain real meaning, allowing students to internalize environmental values and develop attitudes applicable beyond the school context.

Moreover, building environmental values and attitudes in students is central to environmental education, as effective learning involves the affective dimension as much as the cognitive one. According to Hungerford and Volk (1990), it is essential to promote experiences that awaken empathy for the environment and a sense of social responsibility, encouraging sustainable behaviors and an ethical stance toward environmental challenges. This approach values the integral formation of the individual, preparing them to act consciously and participatively in society.

Therefore, the principles of environmental education function as guiding frameworks for teaching practice, integrating knowledge, critical reflection, and responsible action. They not only structure pedagogical content but also promote the construction of ethical and sustainable environmental awareness, fundamental for forming citizens committed to the planet's future.

TEACHER EDUCATION AND ENVIRONMENTAL EDUCATION

Teacher education plays a central role in the effectiveness of environmental education, as the teacher is the main mediator between theoretical knowledge and sustainable pedagogical practice. The need for continuous training stands out as an essential requirement, since the complexity of socio-environmental problems and the constant evolution of educational practices demand that teachers remain up to date. According to Sá and Dias (2001), ongoing training enables teachers to acquire new knowledge, develop innovative pedagogical skills, and integrate sustainability concepts into different subjects, promoting more effective and transformative environmental education.

Furthermore, teacher education should include the development of specific competencies and skills to implement environmental practices. Among these

competencies are the ability to plan interdisciplinary activities, stimulate critical thinking, promote active student participation, and connect school content with concrete environmental issues. According to Ornstein and Lasley (2011), trained teachers can create educational experiences that link theory and practice, making learning meaningful and encouraging students to adopt environmentally responsible attitudes.

The adoption of active methodologies and sustainable pedagogical strategies is an indispensable component of teacher education in environmental education. Among the most effective practices are school projects focused on environmental preservation, community gardens, technical visits to conservation units, field studies, recycling activities, and conscious consumption initiatives (Dias, 2002; Ornstein & Lasley, 2011). These methodologies allow students to experience learning practically, develop socio-emotional skills, and build ethical values related to environmental preservation. Additionally, these strategies strengthen interdisciplinarity and collective participation, fundamental principles of environmental education, promoting a school culture committed to sustainability.

Another relevant aspect of teacher education is the ability to critically reflect on one's own pedagogical practice and adapt it to the needs of students and the school community. According to Hungerford and Volk (1990), teachers who develop this ability are more capable of engaging students in active learning processes, stimulating socio-environmental awareness, and fostering collective responsibility. The integration of educational technologies, audiovisual resources, and collaborative activities also proves effective in enhancing student engagement and making environmental education more dynamic and meaningful.

Therefore, teacher education in environmental education goes beyond acquiring theoretical knowledge; it involves building competencies, skills, and attitudes capable of transforming pedagogical practice and promoting environmental awareness in an integrated and participatory manner. Well-prepared teachers become agents of social transformation, contributing to building a more ethical, critical, and sustainable society, in which the principles of environmental education are reflected in concrete and lasting actions.

CONCLUSION

The analysis of teacher education and the principles of environmental education demonstrates that promoting education aimed at sustainability goes far beyond the mere transmission of information about the environment. It is necessary for teachers to be prepared not only to teach theoretical content but also to mediate meaningful experiences that connect knowledge to everyday practice, encouraging responsible and ethical attitudes toward the planet. Continuous training proves essential in this process, enabling

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teachers to acquire new competencies, develop innovative pedagogical skills, and remain up to date in the face of contemporary socio-environmental challenges.

The principles of environmental education—sustainability, interdisciplinarity, critical thinking, and socio-environmental responsibility—provide the foundation for building comprehensive and reflective pedagogical practice. They guide the development of activities that not only inform but also promote active student engagement, strengthening values, attitudes, and environmentally conscious behaviors. When systematically and consistently incorporated, these principles allow environmental education to fulfill its transformative role, forming citizens capable of understanding the complex interrelationships among society, economy, and nature, and acting ethically and participatively in constructing sustainable solutions.

Furthermore, the integration between theory and teaching practice is fundamental for classroom content to become meaningful experiential learning. The use of active methodologies, interdisciplinary projects, field studies, and community actions contributes to making learning concrete and relevant, stimulating students' autonomy, creativity, and critical capacity. This pedagogical approach strengthens collective responsibility and demonstrates that environmental education is not an isolated theme but a transversal dimension that permeates all areas of knowledge and social life.

In summary, environmental education, combined with solid and continuous teacher training, constitutes a powerful instrument for building a more conscious, critical, and sustainable society. It transforms the teacher's role, making them an agent of social change capable of inspiring students to adopt sustainable practices and understand the importance of every individual and collective action in preserving the environment. In this context, it is possible to affirm that environmental education, when grounded in solid principles and mediated by well-prepared professionals, plays a strategic role in forming citizens committed to sustainability, promoting a paradigm shift that values life, ecological balance, and the planet's future.

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REALIZATION:

Aurum

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