

Moving from Access to Meaningful Participation through Outdoor Classroom Practices in Inclusive Early Childhood Education

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Abstract

Inclusive early childhood education should not stop at institutional access, as children with special educational needs also require learning environments that enable meaningful participation in daily classroom life. This study aims to synthesize illustrative access-oriented statistical evidence and classroom-based pedagogical evidence on outdoor learning practices in inclusive early childhood education. Using a descriptive-integrative approach based on secondary data and document-based synthesis, this study examined two complementary forms of evidence: statistical data on the distribution of early childhood students with special educational needs across different types of educational centers and pedagogical evidence on outdoor classroom practices in an inclusive early childhood setting. The illustrative statistical evidence from the 2013/2014 dataset shows that public centers recorded the highest proportion of early childhood students with special educational needs at 1.1%, followed by charter education at 0.6% and private non-subsidized education at 0.2%. Meanwhile, the classroom-based evidence indicates that outdoor classroom practices can support inclusion through natural learning media, fun and play-based learning, and daily cognitive-behavioral assessment. The synthesis suggests that inclusive early childhood education should move from administrative inclusion toward participatory inclusion, where access is translated into adaptive outdoor pedagogy, child-centered assessment, teacher readiness, and responsive learning environments. This study contributes to inclusive education discourse by showing that access data need to be interpreted together with classroom-level practices to understand whether children with special educational needs are not only enrolled, but also meaningfully engaged in learning.

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INTRODUCTION

Inclusive education has become a central concern in contemporary educational reform because it affirms that every child has the right to learn, grow, and participate in an educational environment that recognizes diversity. In early childhood education, this concern becomes even more important because the early years form the foundation for children's cognitive, physical, language, social-emotional, moral, and behavioral development. At this stage, education is not merely the transmission of academic content, but a developmental process shaped by interaction, movement, sensory experience, play, and emotional security. Therefore, inclusive early childhood education should be understood not only as a matter of access, but also as a matter of equity, participation, and meaningful learning experiences for all children (G. Coogle et al., 2022; Johnston, 2022).

For children with special educational needs, inclusive early childhood education cannot be reduced to school placement or enrollment. Inclusion requires schools to adjust learning environments, instructional strategies, learning media, teacher responses, and assessment practices according to children's individual characteristics. A child may be physically present in a classroom but still experience exclusion if the learning process does not respond to their developmental

needs. In this sense, inclusive education is not only about allowing children with special educational needs to enter the same educational space as other children, but also about ensuring that they are supported to engage, respond, interact, and develop within that space (Lashley, 2025; White & Fletcher, 2025).

Previous studies have emphasized that school readiness remains a central challenge in inclusive early childhood education. Many early childhood institutions still experience difficulties in serving children with special educational needs due to limited facilities, insufficient teacher preparation, lack of specialized training, and uncertainty in conducting individualized assessment. These challenges may cause inclusion to remain at the administrative level, where children are formally accepted but not fully supported through meaningful learning practices. Teacher readiness is particularly important because inclusive learning depends not only on institutional policy, but also on teachers' confidence, pedagogical flexibility, and ability to adapt instruction to diverse learners (Gülsün et al., 2023; Woodcock et al., 2022; Wray et al., 2022).

Outdoor classroom learning offers one possible pedagogical response to this challenge. Unlike conventional indoor learning, outdoor classroom practices allow children to learn through direct contact with natural objects, body movement, sensory stimulation, peer interaction, and play-based exploration. Such practices are relevant in early childhood settings because young children learn best through concrete experiences and active engagement. For children with special educational needs, outdoor learning may reduce boredom, support attention, provide flexible learning stimuli, and allow teachers to observe children's responses in more natural situations. Evidence from research on nature play also suggests that children's engagement with natural environments can support physical activity and cognitive play behaviors, although the quality and consistency of evidence still require further strengthening (Dankiw et al., 2024; Raney et al., 2023; Stracciolini et al., 2022).

Play-based learning also provides an important foundation for inclusive early childhood pedagogy. Through play, children explore their environment, experiment with actions, imitate others, communicate feelings, and adapt to social situations. In inclusive settings, play can become a bridge between children with and without special educational needs because it creates opportunities for interaction, cooperation, turn-taking, empathy, and shared experience. Therefore, play should not be viewed as a distraction from learning, but as a developmentally appropriate pathway through which young children construct understanding, build relationships, and express their abilities in ways that may not always be visible through conventional academic tasks (Allee-Herndon et al., 2022; McLean et al., 2023).

At the same time, discussions on inclusive early childhood education often rely on access data to show how children with special educational needs are represented across educational institutions. Such data are valuable because they help identify where children are located within the education system and which types of institutions carry greater responsibility for inclusive provision. However, access data alone cannot explain whether children's participation is meaningful. Statistical information may show that children with special educational needs are enrolled, but it does not reveal whether learning environments, teaching strategies, and assessment practices are responsive to their developmental needs. This is why access-oriented evidence needs to be read together with pedagogical evidence (Andrzejewska & Stolińska, 2022).

Conversely, classroom-based studies may describe effective inclusive pedagogical practices, but they are often discussed separately from broader patterns of access. This separation creates a gap in understanding inclusive education. Access-oriented evidence explains where children are served, while pedagogical evidence explains how children are supported to learn. The urgency of integrating these two forms of evidence lies in the fact that inclusive education may appear successful at the level of enrollment while remaining weak at the level of classroom participation. Limited attention has been given to how statistical evidence of access and pedagogical evidence of participation can be read together to develop a more complete understanding of inclusive early childhood education (G. Coogole et al., 2022; Symeonidou & Loizou, 2023).

This study addresses that gap by synthesizing statistical evidence on access and classroom-based evidence on outdoor learning practices. Rather than comparing two educational systems directly, this study uses both sources as complementary evidence. The statistical data serve as an access-oriented illustration (Nikonowicz et al., 2021) while the outdoor classroom evidence serves as a pedagogical illustration (Kristensen et al., 2021). The central argument of this article is that inclusive early childhood education should move from access to meaningful participation. Access ensures that children are present in school, while meaningful participation ensures that they are actively involved, pedagogically supported, and developmentally recognized in the learning process.

By integrating these two forms of evidence, this study contributes to the discourse on inclusive early childhood education in three ways. First, it reframes access data as an entry point for questioning the quality of participation, not merely as an indicator of enrollment. Second, it positions outdoor classroom learning as a practical and low-cost pedagogical strategy that can support children's concrete, sensory, social, and emotional engagement. Third, it offers an integrative lens for understanding inclusive education as a continuum from institutional access to adaptive pedagogy and meaningful participation. This perspective is important for educators, school leaders, and policymakers who seek to ensure that inclusive education is not only visible in policy and data, but also experienced by children in everyday learning.

RESEARCH METHOD

This study employed a descriptive-integrative design using secondary data and document-based synthesis. This design was selected because the study did not aim to generate new field data or test causal relationships, but to connect two complementary forms of evidence: access-oriented statistical evidence and classroom-based pedagogical evidence. Methodologically, this study is positioned as a document-based integrative synthesis, in which existing documents and secondary data are reviewed, extracted, organized, and interpreted to develop a more comprehensive understanding of a particular educational issue (Dina Diatta & Berchtold, 2023). In this study, the issue concerns how inclusive early childhood education can move from institutional access toward meaningful participation.

The data sources were selected based on their relevance to two analytical dimensions of inclusive early childhood education. The first dimension was institutional access, represented by statistical evidence on the proportion of early childhood students with special educational needs across different types of educational centers. The second dimension was pedagogical participation, represented by classroom-based evidence on outdoor learning practices in an inclusive early childhood setting. This distinction was important because the study did not seek to compare countries or educational systems, but to connect two dimensions of inclusion: access as institutional representation and participation as pedagogical experience. Such a transparent selection of evidence is important in secondary-data-based studies because the analytical value of each source depends on its relevance to the research focus and its function within the synthesis (Simou et al., 2024).

Data extraction was conducted by organizing relevant information into an analytical matrix. From the access-oriented statistical evidence, the extracted information included the type of educational center and the percentage of early childhood students with special educational needs. From the classroom-based pedagogical evidence, the extracted information included the learning environment, learning media, pedagogical model, assessment practice, and implications for inclusive participation. This matrix helped ensure that each interpretation was grounded in the available evidence and that the synthesis did not move beyond the scope of the data.

Table 1. Analytical Matrix for Data Extraction and Synthesis

Data Component	Type of Evidence	Extracted Information	Analytical Function
Institutional access	Statistical secondary data	Type of educational center and percentage of students with special educational needs	To identify how children with special educational needs are represented across educational institutions
Classroom practice	Document-based qualitative evidence	Learning environment, learning media, pedagogical model, and assessment practice	To identify pedagogical practices that support inclusive participation
Integrative synthesis	Interpretive analytical matrix	Access, adaptive pedagogy, and meaningful participation	To connect institutional access with classroom-level inclusive learning practices

Data analysis was carried out through interpretive thematic analysis. This approach was considered appropriate because the study did not merely summarize the content of the two data sources, but sought to identify patterns of meaning across them. Thematic analysis allows researchers to move from data familiarization, coding, theme construction, and theme refinement toward an interpretive explanation of the phenomenon under study (Braun & Clarke, 2021). In this study, the analysis was conducted in three stages. First, the classroom-based evidence was reviewed to identify key pedagogical themes related to outdoor classroom learning, including natural learning media, fun and play-based learning, and daily cognitive-behavioral assessment. Second, the statistical evidence was analyzed descriptively to identify patterns of student distribution based on the type of educational center. Third, both forms of evidence were synthesized by connecting statistical patterns of access with pedagogical practices that support children's meaningful participation.

The synthesis was guided by three analytical themes: access, adaptive pedagogy, and meaningful participation. The theme of access was used to interpret how children with special educational needs are represented across educational institutions. The theme of adaptive pedagogy was used to examine how outdoor learning practices respond to the developmental characteristics of young children with diverse needs. The theme of meaningful participation served as the integrative lens, explaining that inclusive early childhood education should not stop at school enrollment, but must be reflected in learning environments, teaching strategies, and assessment practices that recognize each child's individual growth. This theme construction followed the logic of conceptual and interpretive thematic analysis, in which themes are not only descriptive categories but also analytical tools for explaining relationships among evidence (Wilson, 2025).

To strengthen the credibility of the synthesis, several procedures were applied. First, the extracted information was reviewed repeatedly to ensure consistency between the original evidence, analytical themes, and interpretive claims. Second, an audit trail was maintained by documenting how each extracted item was linked to the analytical themes and how each theme supported the findings. Third, the interpretation was kept within the boundaries of the available secondary data to avoid unsupported claims. These procedures were used to enhance trustworthiness, transparency, and evidence-to-claim consistency in the analytical process (Enworo, 2023).

The analysis was also limited by the nature of the data sources. This study does not claim to provide a generalizable cross-national comparison, nor does it represent the most recent condition of inclusive early childhood education in any single country. Instead, it offers an interpretive contribution by connecting access-oriented statistical evidence with classroom-based pedagogical evidence. Through this integration, the study clarifies how inclusive early childhood education can be understood as a movement from institutional access toward adaptive pedagogy and meaningful participation.

RESULT AND DISCUSSION

Result

Access-Oriented Evidence in Inclusive Early Childhood Education

The first finding concerns the distribution of early childhood education students with special educational needs across different types of educational centers. As illustrative access-oriented evidence, the dataset shows that public centers recorded the highest proportion of early childhood students with special educational needs at 1.1%. Charter education followed with 0.6%, while private non-subsidized education recorded the lowest proportion at 0.2%.

Table 2. Percentage of Early Childhood Education Students with Special Educational Needs by Type of Center

Type of Center	Percentage of Students with Special Educational Needs
Public centers	1.1%
Charter education	0.6%
Private non-subsidized education	0.2%

Source: The Ministry of Culture (2015), processed by the authors.

Based on the Statista dataset accessed for this study, which reports data for the 2013/2014 academic year, public centers served a larger proportion of early childhood students with special educational needs than the other types of centers. The percentage in public centers reached 1.1%, almost twice that of charter education at 0.6% and more than five times that of private non-subsidized education at 0.2%. This pattern indicates that public centers appeared as the most visible institutional category for early childhood students with special educational needs within the dataset.

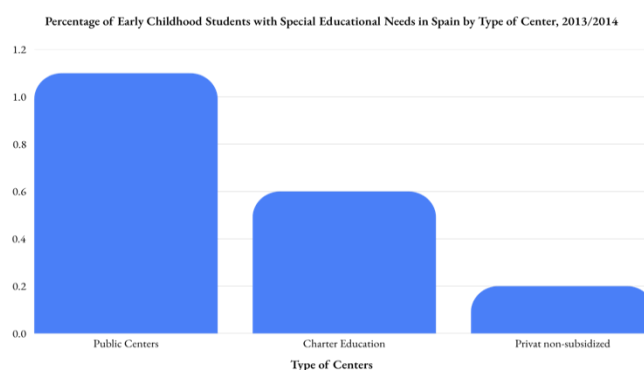


Figure 1. Distribution of Early Childhood Education Students with Special Educational Needs by Type of Center

Source: The Ministry of Culture (2015), processed by the authors

Figure 1 visualizes the percentage difference across public centers, charter education, and private non-subsidized education. The figure shows that inclusive access is unevenly distributed across institutional types, with public centers representing the largest proportion of early childhood students with special educational needs. This finding provides an important entry point for understanding inclusive education as an issue of institutional access.

Outdoor Classroom Practices as Pedagogical Evidence of Participation

The second finding concerns outdoor classroom practices as pedagogical evidence of inclusive participation. The reviewed classroom-based evidence shows that outdoor learning was implemented by using the surrounding environment as a learning space. Instead of relying primarily on worksheets, books, and indoor instruction, learning activities involved natural and reusable materials such as leaves, tree branches, stones, soil, water, cardboard, bottles, and bottle caps (Trina & Monsur, 2025).

These materials functioned as concrete learning media that allowed young children, including children with special educational needs, to engage directly with learning objects. Through natural and surrounding materials, children could touch, move, observe, compare, classify, count, imitate, and express ideas using real objects. This indicates that outdoor classroom practices can make learning less abstract and more connected to children's everyday experiences.

The reviewed evidence also shows that outdoor learning was supported by a fun and play-based learning model. The concept of "fun" refers to a learning atmosphere that is relaxed, emotionally safe, engaging, and free from excessive pressure. The concept of "play" positions play as the central mode of learning for young children. Through this model, children learn through exploration, experimentation, imitation, and adaptation (Beisly, 2024). These processes support children's cognitive, motor, language, social, and emotional development in an integrated way.

Another important feature of the outdoor classroom practice was daily assessment. Assessment was conducted after learning activities and covered two main aspects: cognitive development and behavior or attitude (DeJoseph et al., 2026). This finding indicates that inclusive early childhood assessment does not only focus on academic achievement, but also attends to behavioral responses, social interaction, emotional regulation, independence, and willingness to participate. In this context, assessment becomes a tool for understanding children's individual progress rather than merely comparing children against uniform standards.

Integrating Access and Participation in Inclusive Early Childhood Education

The third finding emerges from the integration of access-oriented statistical evidence and classroom-based pedagogical evidence. The statistical evidence shows where children with special educational needs are represented within educational institutions, while the pedagogical evidence shows how learning practices can support their participation. Taken together, these two forms of evidence suggest that inclusive early childhood education should be understood as a continuum from institutional access to meaningful participation.

Table 2. Integrative Synthesis of Access Data and Outdoor Classroom Practice

Analytical Focus	Access-Oriented Evidence	Pedagogical Evidence	Interpretive Meaning
Institutional access	Public centers recorded the highest proportion of early childhood students with special educational needs.	Inclusive early childhood settings provide opportunities for children with diverse needs to learn together.	Access is the entry point of inclusion, but it must be followed by pedagogical support.
Learning environment	Access data show institutional distribution, but not the quality of learning spaces.	Outdoor classrooms use the surrounding environment as a flexible and concrete learning space.	Inclusive participation requires learning environments that respond to children's sensory, motor, and social needs.
Learning media	Statistical data do not explain how children learn in classrooms.	Natural and reusable materials are used as concrete learning media.	Learning media should support direct experience, exploration, and interaction.
Pedagogical model	Access data show where children are served.	Fun and play-based learning supports exploration, experimentation, imitation, and adaptation.	Participation is strengthened when learning follows the developmental characteristics of young children.
Assessment	Statistical data do not show individual developmental progress.	Daily assessment covers cognitive and behavioral aspects.	Inclusive assessment should be continuous, individualized, and developmentally sensitive.

Source: Developed by the authors based on the synthesis of secondary data.

The synthesis indicates that inclusive early childhood education should not be assessed merely by the presence of children with special educational needs in schools. A more meaningful indicator is whether children are given opportunities to participate in learning activities that match their developmental characteristics. Outdoor classroom learning demonstrates how participation can be supported through sensory engagement, natural materials, play, movement, social interaction, and flexible assessment.

Discussion

The findings of this study show that inclusive early childhood education consists of two inseparable dimensions: access and participation. The access-oriented data indicate that public centers recorded the highest proportion of early childhood students with special educational needs. This finding suggests that public institutions may play an important role in widening access to early education for children with diverse needs. However, access alone does not guarantee inclusion. Inclusive education requires schools to transform access into learning opportunities that allow children to engage, interact, communicate, and develop according to their individual characteristics. This argument is consistent with the view that inclusion should be understood not merely as physical placement, but as a process of improving participation, equity, and educational quality (Jackson et al., 2025).

The distinction between placement and participation is central to interpreting the findings. A child may be physically present in an early childhood institution but still experience exclusion if the curriculum, learning media, teaching strategies, and assessment practices do not respond to the child's developmental needs. Therefore, inclusive early childhood education should not be evaluated only from the number of children admitted to school, but also from the quality of learning experiences provided for them. High-quality inclusion requires attention to context, instructional practice, child engagement, and the extent to which educational environments support the participation of all children (Grace et al., 2022).

The reviewed outdoor classroom practice contributes to this discussion by showing how inclusive education can be translated into classroom-level pedagogy. The use of natural learning media reflects an effort to make learning more concrete, sensory, and child-centered. For young children, especially those with special educational needs, concrete objects are not merely teaching aids; they function as bridges between experience and understanding. Leaves, stones, soil, water, and reusable materials allow children to learn by touching, observing, moving, comparing, classifying, and interacting. This kind of learning reduces dependence on abstract verbal instruction and supports children who require direct, sensory, and repeated learning experiences. Research on nature play also suggests that children's engagement with natural environments can support physical activity and cognitive play behaviors, which are important for early development (Furley, 2021).

Outdoor learning also expands the meaning of an inclusive learning environment. In many educational settings, inclusion is often imagined as placing all children in the same room. However, inclusive environments should be flexible enough to respond to children's physical, sensory, social, and emotional needs. Outdoor spaces can offer children more opportunities to move, explore, regulate attention, communicate, and interact with peers. When guided by teachers who understand children's characteristics, outdoor classrooms may become inclusive spaces where diverse learners can participate through multiple modes of expression. This is especially important because inclusive practice depends not only on policy, but also on teacher readiness, pedagogical flexibility, and the ability to adapt learning to diverse learners (Alkhatib, 2025).

The fun and play-based model further strengthens inclusive participation. Play is not a secondary activity in early childhood education; it is a central pathway for learning. Through play, children explore their environment, imitate others, experiment with new actions, negotiate meanings, and adapt to social situations. In an inclusive classroom, play also becomes a medium for interaction between children with and without special educational needs. It allows children to encounter differences naturally and learn social behaviors such as cooperation, turn-taking, empathy, and communication. Play-based learning is therefore relevant because it supports children's academic, social, and emotional development through experiences that are meaningful and developmentally appropriate (Kausar et al., 2024).

The daily assessment practice identified in the reviewed outdoor classroom evidence also deserves attention. In many educational settings, assessment is still understood primarily as a measure of academic outcomes. However, in inclusive early childhood education, children's

progress must be understood more broadly. Cognitive development is important, but so are behavioral development, social participation, emotional responses, independence, and willingness to engage in learning. By assessing cognitive and behavioral aspects daily, teachers can better understand children's individual progress and adjust learning activities accordingly. Such assessment supports inclusion because it recognizes that children develop through different pathways and at different rhythms. Authentic and developmentally responsive assessment is therefore essential for understanding the learning progress of young children with diverse needs (Burke et al., 2025).

The integration between statistical access evidence and classroom-based pedagogical evidence offers a broader insight into inclusive early childhood education. Access data show where children with special educational needs are represented within educational institutions, while pedagogical evidence shows how schools can respond to their presence through learning practices. This means that policy-level access and classroom-level practice must support each other. If access increases without adaptive pedagogy, inclusion may become symbolic. If adaptive pedagogy exists only in isolated schools without broader institutional support, inclusive practice may remain limited and difficult to sustain. Studies on the distribution of inclusive early childhood services also show that access needs to be interpreted critically because institutional availability does not automatically reflect the quality of children's participation (Morales-Murillo et al., 2025).

This study therefore argues for a shift from administrative inclusion to participatory inclusion. Administrative inclusion focuses on whether children with special educational needs are accepted into schools. Participatory inclusion asks a deeper question: are these children meaningfully involved in learning? The answer depends on teacher readiness, learning media, classroom flexibility, assessment practices, and the ability of schools to create environments where children feel safe, engaged, and recognized. This shift is important because inclusive education should not only be visible in policy or enrollment data, but also experienced by children in everyday learning activities (Aderet-German, 2025). To clarify this conceptual movement, **Figure 2** presents an integrative model showing how inclusive early childhood education can move from institutional access toward meaningful participation. The model emphasizes that access is only the entry point of inclusion. It must be followed by adaptive outdoor pedagogy, child-centered assessment, and enabling conditions so that children with special educational needs are not only present in school, but also actively engaged in meaningful learning experiences.

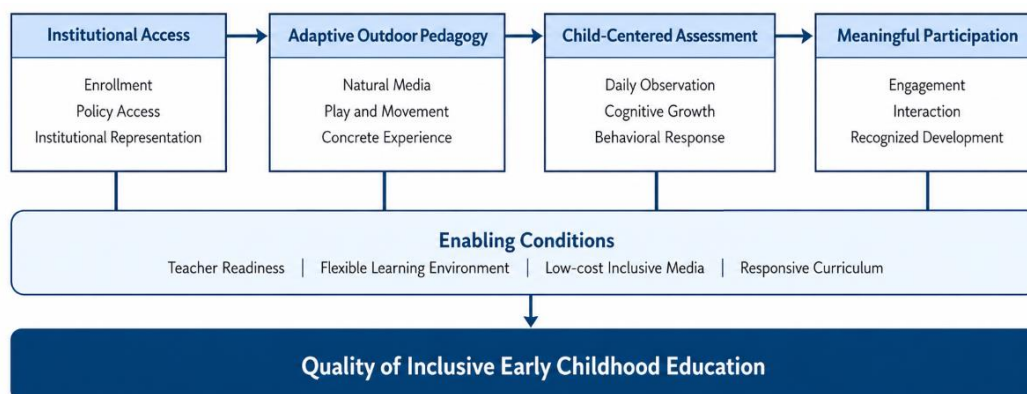


Figure 2. From access to meaningful participation in inclusive early childhood education.

Source: Developed by the authors based on the synthesis of secondary data.

As shown in Figure 2, inclusive education quality is achieved when institutional access is translated into classroom-level practices. Outdoor classroom learning provides a flexible pedagogical space, natural learning media make learning more concrete, and child-centered assessment helps teachers recognize children's individual progress. Through this process, inclusion moves beyond administrative acceptance and becomes a participatory learning experience.

For early childhood institutions that serve children with special educational needs, the implication is clear. Schools need to invest in teacher training, low-cost inclusive learning media, outdoor learning spaces, flexible curriculum planning, and child-centered assessment. Outdoor classroom practices are particularly promising because they do not always require expensive equipment. Instead, they require teachers' creativity in transforming the surrounding environment into a learning resource. This makes outdoor classroom learning relevant not only for well-resourced schools, but also for institutions with limited facilities. Teacher self-efficacy and professional preparation are important because inclusive practices are more likely to be implemented when teachers feel capable of adapting instruction and engaging diverse learners (Woodcock et al., 2022).

The contribution of this study lies in its attempt to connect statistical access data with pedagogical evidence from inclusive outdoor classroom practice. By combining these two sources, this study shows that inclusive early childhood education should be understood as a continuum: from access, to adaptive learning, to meaningful participation. This perspective can help educators, school leaders, and policymakers avoid the narrow view that inclusion is achieved simply when children with special educational needs are placed in school. True inclusion begins when schools are willing to change the way learning is designed, delivered, and assessed. However, this study has several limitations. It does not aim to compare Indonesia and Spain as equivalent educational systems. The statistical dataset is used as illustrative access-oriented evidence, while the outdoor classroom study is used as pedagogical evidence. Therefore, the synthesis should be understood as an interpretive contribution rather than a generalizable cross-national comparison. In addition, the statistical dataset reflects a specific reporting period and should not be interpreted as representing the most current condition of inclusive early childhood education. Future studies should include more recent datasets, broader document sources, and primary data from teachers, school leaders, parents, and children in inclusive early childhood settings, while maintaining transparent reporting and evidence-to-claim consistency in line with document-based review principles (Rudrabhatla et al., 2024).

CONCLUSION

This study concludes that inclusive early childhood education cannot be adequately understood through access data alone. The statistical evidence shows that public centers carry a disproportionate share of enrollment for children with special educational needs, yet enrollment figures cannot reveal whether those children are meaningfully engaged in learning. The outdoor classroom evidence addresses this gap directly: natural learning media, play-based activity structures, and daily cognitive-behavioral assessment collectively demonstrate how institutional access can be translated into genuine pedagogical participation. Inclusive education achieves its purpose not at the moment a child is admitted to school but when the learning environment is organized around that child's developmental characteristics. This study is limited by its reliance on a single illustrative statistical dataset from 2013/2014 and a single classroom-based source, which constrains the generalizability of the synthesis. Future research should incorporate more recent and cross-national access datasets, examine outdoor classroom practices across diverse institutional and cultural contexts, and collect primary data from teachers, school leaders, parents, and children to empirically test the access-to-participation continuum proposed here.

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