# Trends in Learning Disabilities and Engagement in Early Childhood Education for Sustainable Teaching Development in Nigeria

[1]**Temitope Rasheedat Aranmolate,** [2]**Taibat Usman-Abdulqadri &**
[3]**Asimiyu Babatunde Yekini**

[1,2&3]*Department of Adult and Special Education, College of Specialized and Professional Education Lagos State University of Education, Otto-Ijanikin, Lagos State, Nigeria*

### Abstract

This study examined the trends in learning disabilities and learner engagement in early childhood education, with a focus on sustainable teaching development in Nigeria. Learning disabilities, including dyslexia, dysgraphia, and dyscalculia, have been increasingly recognized as significant factors affecting children's academic performance and socio-emotional development. Despite global and national awareness, early identification and intervention remain inconsistent, often resulting in reduced engagement and participation in classroom activities. Using a review of empirical studies and theoretical perspectives, this study explored the relationship between learning disabilities, teacher practices, and learner engagement in early childhood settings. The study also highlighted the role of sustainable teaching strategies, such as continuous professional development, inclusive pedagogical practices, reflective teaching, and supportive educational policies, in mitigating the challenges associated with learning disabilities. The paper suggests that early screening, teacher capacity building, and the integration of assistive technologies significantly enhance engagement and learning outcomes for children with diverse abilities. Additionally, the involvement of parents and the broader community strengthen the impact of interventions. The study concludes that sustainable teaching development is central to promoting equitable, high-quality education for all learners, particularly in contexts where resource constraints exist. Policymakers, educators, and stakeholders are encouraged to prioritize inclusive practices, targeted interventions, and systemic support to ensure that children with learning disabilities are effectively engaged and supported in early childhood classrooms.

**Keywords:** *Disabilities, Pedagogy, Engagement, Inclusive, Sustainable*

*Corresponding Author:* **Temitope Rasheedat Aranmolate**

**Background to the Study**

Early Childhood Education (ECE) has increasingly become recognized as the foundation for lifelong learning, cognitive development, and social adjustment, particularly in developing nations such as Nigeria. Research shows that early interventions during the formative years significantly influence children's academic trajectories and overall well-being (UNESCO, 2019). As global attention shifts toward inclusive education, the early years have become a critical stage for identifying and supporting learners with diverse developmental needs, including learning disabilities. The growing emphasis on holistic development and equitable access to quality education underscores the need for a deeper understanding of emerging trends affecting young learners.

Learning disabilities such as dyslexia, attention-deficit disorders, and processing difficulties are increasingly observed among preschool children, yet they remain underdiagnosed and poorly addressed in many African contexts (Akinlade & Olatunji, 2020). The early manifestation of these disabilities often affects language acquisition, numeracy skills, social interaction, and classroom adjustment. Scholars argue that limited teacher knowledge, cultural misconceptions about disabilities, and insufficient diagnostic tools contribute significantly to the under-identification of learning difficulties in early childhood settings (Okoye & Igwe, 2021). Without early detection and adequate support, learners may experience long-term academic challenges that impede their educational outcomes.

Learner engagement the emotional, behavioural, and cognitive involvement of children in the learning process is equally a key determinant of successful early childhood experiences. Engaged learners are more likely to explore, interact, and develop essential foundational skills, while disengaged learners show signs of withdrawal, frustration, or disruptive behaviours (Fredricks et al., 2018). However, studies indicate that young children with learning disabilities often struggle to remain engaged due to instructional approaches that do not match their developmental needs (Ogunyemi & Fakolade, 2022). As a result, ECE teachers play an instrumental role in designing inclusive, stimulating, and developmentally appropriate learning environments that foster engagement among all learners.

In recent years, attention has shifted toward sustainable teaching development as a long-term strategy for strengthening the quality of ECE. Sustainable teaching emphasizes continuous professional development, inclusive pedagogical practices, and the adaptation of evidence-based strategies to support diverse learners (World Bank, 2020). In contexts where resource limitations persist, such as Nigerian early childhood centers, building teachers' capacity to identify and engage children with learning disabilities is crucial for improving overall learning outcomes and meeting global education goals. Understanding current trends in learning disabilities and classroom engagement is therefore essential for informing policy, teacher training, and sustainable ECE reforms that support every child's development.

**Conceptual Clarifications**
**Learning Disabilities**
Learning disabilities refer to a group of neurodevelopmental disorders that significantly affect a child's ability to acquire, organize, retain, or use information despite average or above-

average intelligence (American Psychiatric Association, 2018). These disabilities typically manifest in difficulties related to reading, writing, mathematics, attention, or information processing. Scholars emphasize that learning disabilities are intrinsic to the individual and often arise from subtle dysfunctions in the central nervous system (Lerner & Johns, 2015). They are not caused by external factors such as inadequate instruction, cultural differences, or emotional disturbances, although these factors may influence the degree of difficulty experienced by the child. In early childhood, learning disabilities often present as delays in speech, poor memory skills, difficulty following instructions, or problems with fine motor coordination (Hallahan, Kauffman, & Pullen, 2019). Early identification is crucial because the manifestations can interfere with foundational literacy and numeracy development during the formative years. Research shows that early interventions drastically improve children's academic outcomes and reduce long-term learning gaps (Moats, 2020). Therefore, understanding the nature and early signs of learning disabilities is vital for teachers and caregivers working with young children.

## Learner Engagement

Learner engagement refers to the level of attention, interest, motivation, and active participation exhibited by children during learning activities (Fredricks, Blumenfeld, & Paris, 2004). It encompasses three interrelated dimensions: behavioural engagement (participation and effort), emotional engagement (interest and positive attitudes), and cognitive engagement (strategic thinking and investment in learning). In early childhood, engagement is often expressed through curiosity, exploration, interaction with peers and materials, and sustained involvement in play-based activities. Engaged learners are more likely to develop strong cognitive and socio-emotional skills.

Research indicates that learner engagement is a strong predictor of academic success and long-term educational retention (Ainley & Carstens, 2018). Children with learning disabilities, however, may struggle to stay engaged due to instructional methods that do not match their developmental needs or learning styles (Ogunyemi & Fakolade, 2022). Effective engagement requires teachers to create inclusive, stimulating, and developmentally appropriate learning environments that accommodate diverse learners. Thus, learner engagement is both a key indicator of instructional quality and an essential component of successful early childhood education.

## Sustainable Teaching Development

Sustainable teaching development refers to continuous, long-term practices that strengthen teachers' professional competence and improve the quality of education delivered to learners (UNESCO, 2019). It involves ongoing professional learning, adoption of inclusive pedagogies, adaptation to evolving educational needs, and the integration of evidence-based instructional approaches. Sustainable teaching emphasizes teacher preparedness, resilience, collaboration, and the ability to support diverse learners, including those with learning disabilities.

In early childhood education, sustainable teaching development ensures that teachers can consistently provide high-quality, child-centered instruction that fosters developmental

growth (Darling-Hammond et al., 2020). Building teachers' capacity through training, mentorship, reflective practice, and access to resources enables them to better identify and address learning challenges among young children. Sustainable teaching also supports long-term systemic improvement by promoting inclusive practices, reducing teacher burnout, and ensuring continuity in instructional quality (World Bank, 2020). Ultimately, it contributes to equitable and effective early childhood learning outcomes.

**Types of Learning Disabilities**

**Dyslexia** is widely recognized as the most prevalent learning disability, characterized by persistent difficulties in accurate or fluent word recognition, spelling, and decoding. Research describes dyslexia as a neurobiological disorder that affects phonological processing, making it challenging for children to connect sounds with letters and interpret written language efficiently (Snowling, 2019). In early childhood, dyslexia often manifest in delayed language development, difficulty learning letter–sound correspondences, and challenges with early reading tasks such as blending and segmenting sounds. These foundational difficulties can significantly hinder literacy development, thereby influencing broader academic performance. Scholars emphasize early detection, as timely phonics-based interventions can mitigate long-term reading deficits (Shaywitz & Shaywitz, 2020).

**Dysgraphia**, another major learning disability, involves impairments in written expression, including handwriting, spelling, and the organization of ideas on paper. It is frequently associated with deficits in fine motor skills, orthographic memory, and graphomotor processing (Berninger & Amtmann, 2015). Children with dysgraphia may struggle to form letters consistently, maintain proper spacing, or express thoughts coherently in writing, even when they demonstrate adequate verbal knowledge. The disorder can impede academic performance, particularly in classrooms where writing is a primary mode of assessment. Literature suggests that structured handwriting programs and assistive technologies can support learners with dysgraphia by reducing the cognitive load associated with writing tasks (James, 2017).

**Dyscalculia** refers to severe and recurrent difficulties in understanding numerical concepts, performing arithmetic operations, and interpreting mathematical relationships. Scholars describe dyscalculia as a disorder rooted in deficits in number sense and visuospatial working memory, which affects children's ability to understand basic mathematical principles (Butterworth, 2018). In the early years, children with dyscalculia may exhibit difficulty recognizing numbers, estimating quantities, or performing simple counting tasks. These challenges can persist if instructional methods do not address the underlying conceptual deficits. Research underscores the need for visual-based and manipulatives-rich instruction to enable learners with dyscalculia to grasp abstract mathematical ideas (Geary, 2019).

**Auditory Processing Disorder (APD)** is a learning difficulty associated with impairments in how the brain interprets auditory information. Though not related to hearing loss, APD affects a child's ability to distinguish sounds, filter background noise, and comprehend oral instructions (Chermak & Musiek, 2021). Children with APD often struggle in classroom

environments where listening demands are high, leading to misunderstandings, difficulties following instructions, and reduced academic engagement. Literature highlights the importance of classroom acoustic modifications, teacher repetition, and multisensory instruction as strategies that support learners with auditory processing challenges.

**Visual Processing Disorder (VPD)** involves deficits in visual perception and interpretation, despite normal visual acuity. Children with VPD may find it difficult to discriminate shapes and letters, track text while reading, or interpret diagrams and spatial relationships (Scheiman & Wick, 2019). These difficulties can hinder performance in reading, writing, and mathematics, particularly when tasks require strong visual-spatial reasoning. Studies recommend the use of enlarged print, visual cues, and targeted perceptual-motor training to enhance visual processing skills in affected children.

**Nonverbal Learning Disability (NVLD)** is characterized by significant challenges in visual-spatial reasoning, motor coordination, and nonverbal communication, despite relatively strong verbal abilities. Children with NVLD often struggle with interpreting facial expressions, understanding spatial relationships, or performing tasks requiring fine motor skills (Mammarella & Cornoldi, 2014). Their difficulties can lead to social misunderstandings and academic challenges in areas such as mathematics and science, where visual reasoning is essential. Research emphasizes the role of explicit instruction in social skills, problem-solving, and spatial awareness to support learners with NVLD.

**Attention-Deficit/Hyperactivity Disorder (ADHD)**, although not classified strictly as a learning disability, is frequently discussed in the literature due to its significant impact on learning processes. ADHD involves persistent patterns of inattention, impulsivity, and hyperactivity that interfere with children's ability to sustain focus and regulate behavior (Barkley, 2018). These symptoms can exacerbate existing learning disabilities or create barriers to academic achievement by reducing engagement and task completion. Classroom interventions such as structured routines, reduced distractions, and behavioral support systems are commonly recommended to address the learning challenges associated with ADHD.

**Language Processing Disorder (LPD)** encompasses difficulties in understanding and producing spoken language, affecting both receptive and expressive communication. Children with LPD may struggle to follow verbal instructions, retrieve words, construct sentences, and participate effectively in conversations (Paul & Norbury, 2016). These linguistic difficulties can hinder literacy development, social interaction, and academic participation. Literature emphasizes early speech-language intervention and the use of visual supports and simplified instructions to enhance comprehension and communication outcomes for affected learners.

### Foundations of Sustainable Teaching Development

The foundations of sustainable teaching development are rooted in the belief that high-quality education depends on teachers who are continuously supported, professionally competent, and equipped to respond to evolving educational needs. Sustainable teaching emphasizes

long-term capacity building rather than temporary or fragmented training initiatives. According to UNESCO (2021), sustainable teacher development requires an integrated framework that strengthens professional knowledge, pedagogical innovation, and reflective practice. This approach supports teachers in adapting to diverse learner needs, including those with learning disabilities, while fostering resilience against the challenges commonly found in resource-limited educational environments. By embedding continuous learning in the professional culture of teachers, sustainable development creates a stable foundation for quality instruction across early childhood settings.

A key component of sustainable teaching development is ongoing professional development that is collaborative, evidence-based, and aligned with classroom realities. Research highlights that when teachers engage in sustained professional learning such as mentoring, action research, peer collaboration, and communities of practice they develop stronger instructional skills and a deeper understanding of child development (Darling-Hammond et al., 2021). These forms of professional learning promote adaptive expertise, enabling teachers to tailor instruction to the diverse cognitive, social, and emotional needs of young learners. In the context of early childhood education, sustainable teaching also includes the integration of inclusive pedagogies, developmentally appropriate practices, and culturally responsive teaching strategies. This ensures that children with varying abilities, including those with learning disabilities, are fully supported in their developmental trajectories.

Another foundational pillar of sustainable teaching development is the establishment of supportive institutional and policy environments. As emphasized by the World Bank (2020), sustainable teacher development cannot occur in isolation; it requires systemic support such as adequate funding, access to teaching resources, clear professional standards, and effective school leadership. Policies that promote teacher well-being, reduce classroom overcrowding, and strengthen early childhood infrastructure are essential for sustaining high-quality instructional practices. In many developing contexts, including Nigeria, limited access to instructional materials, insufficient diagnostic tools, and inadequate professional development opportunities hinder the sustainability of teaching innovations. Therefore, systemic reforms are crucial for ensuring that teacher training translates into lasting improvements in practice.

Finally, sustainable teaching development is grounded in reflective practice and teacher autonomy. Teachers who engage in ongoing reflection, self-evaluation, and classroom-based inquiry are better positioned to refine their skills and respond to learner needs. Reflective practice encourages teachers to analyze what works, identify challenges, and redesign instruction based on evidence from their own classrooms (Schön, 2017). This cultivates a professional culture of continuous improvement, where teaching is viewed not as a static skill set but as a dynamic process shaped by experience, research, and learner feedback. Through reflection and autonomy, teachers become agents of sustainable change, capable of innovating and sustaining effective practices that improve learning outcomes over time.

**Trends in Learning Disabilities**
**1.      Early Identification and Diagnosis**
A major trend in learning disabilities is the increasing emphasis on early identification and diagnosis. Advances in developmental screening, assessment tools, and teacher training have enabled educators and specialists to recognize learning difficulties in children at younger ages, particularly in preschool and early primary school (Shaywitz & Shaywitz, 2020). Early identification is critical because it allows for timely intervention before academic gaps widen, reducing the risk of long-term learning challenges. Literature indicates that early detection of dyslexia, dysgraphia, and dyscalculia can lead to more effective individualized instruction and improved literacy and numeracy outcomes (Moats, 2020).

**2.      Inclusive and Differentiated Instruction**
Another trend is the growing adoption of inclusive education and differentiated instructional practices. Researchers note that children with learning disabilities benefit from teaching methods that address their unique learning profiles, including multisensory instruction, small-group teaching, and adaptive learning materials (Berninger & Amtmann, 2015). Differentiation ensures that students with varying abilities can engage with the curriculum at their level of readiness, fostering participation and minimizing stigma. In early childhood classrooms, this approach also supports children's socio-emotional development by providing equitable opportunities to succeed alongside peers.

**3.      Recognition of Comorbid Conditions**
Learning disabilities are increasingly understood as complex and often comorbid with other conditions, such as attention-deficit/hyperactivity disorder (ADHD), anxiety disorders, or language processing difficulties (Barkley, 2018). This trend reflects a shift from viewing learning disabilities in isolation to understanding the interrelated nature of cognitive, behavioral, and emotional challenges. Contemporary research emphasizes the importance of comprehensive assessments that capture multiple dimensions of a child's learning profile, enabling educators and specialists to design interventions that address both academic and non-academic barriers to learning (Hallahan, Kauffman, & Pullen, 2019).

**4.      Integration of Technology and Assistive Tools**
The use of technology and assistive tools has emerged as a prominent trend in supporting children with learning disabilities. Digital applications, speech-to-text software, and interactive learning programs can enhance access to information, improve engagement, and provide individualized feedback (Fletcher et al., 2021). In early childhood education, technology facilitates differentiated instruction for learners with diverse needs, including those with dyslexia or language processing disorders. Literature suggests that when combined with skilled teacher guidance, technology can help mitigate the challenges posed by learning disabilities and foster greater independence among young learners.

**5.      Emphasis on Teacher Professional Development**
A critical trend in the field is the emphasis on building teacher capacity for identifying, understanding, and supporting children with learning disabilities. Research shows that

teachers who receive specialized training in early detection, inclusive pedagogy, and engagement strategies can significantly improve learning outcomes for children with learning difficulties (Ogunyemi & Fakolade, 2022). Professional development programs that are continuous, evidence-based, and context-specific are considered essential for sustainable teaching, particularly in resource-limited settings. This trend aligns with global educational priorities aimed at enhancing teacher competencies to support equitable and inclusive early childhood education.

**Sustainable Teaching Development Strategies**

**1.      Continuous Professional Development (CPD)**

Continuous professional development is widely recognized as the cornerstone of sustainable teaching. It involves structured and ongoing learning opportunities for teachers, such as workshops, seminars, mentoring, and peer collaboration (Darling-Hammond et al., 2021). In early childhood education, CPD enables teachers to acquire knowledge and skills needed to identify and support learners with diverse abilities, including those with learning disabilities. Evidence shows that sustained training programs not only improve instructional quality but also enhance teacher confidence and classroom engagement, leading to better academic outcomes and socio-emotional development among children (Ogunyemi & Fakolade, 2022). CPD fosters a culture of lifelong learning, ensuring that teachers remain responsive to evolving educational standards and teaching innovations.

**2.      Inclusive Pedagogical Practices**

Inclusive pedagogy focuses on creating learning environments that accommodate all children, regardless of their abilities, backgrounds, or learning styles (UNESCO, 2021). In early childhood classrooms, this strategy involves differentiated instruction, the use of multisensory approaches, and adaptive learning resources that cater to learners with diverse developmental needs. For example, children with dyslexia or auditory processing difficulties may benefit from visual aids, audio support, and hands-on learning activities. Research highlights that inclusive teaching not only enhances learning outcomes for children with disabilities but also promotes collaboration, empathy, and equity among all learners (Berninger & Amtmann, 2015). Implementing inclusive pedagogies is therefore critical for sustaining effective and equitable teaching practices.

**3.      Reflective Practice and Action Research**

Reflective practice and action research encourage teachers to critically examine their instructional methods, assess the effectiveness of their lessons, and make evidence-based adjustments (Schön, 2017). In early childhood education, reflective practice helps teachers respond to the developmental, cognitive, and socio-emotional needs of young children. Through reflection, educators identify areas for improvement, experiment with innovative approaches, and refine their teaching strategies over time. Action research, often integrated into reflective practice, allows teachers to collect data on student learning, test interventions, and iteratively improve classroom outcomes. This strategy ensures that teaching remains adaptive, dynamic, and grounded in real classroom experiences.

## 4.     Policy Support and Systemic Interventions

Sustainable teaching development is highly dependent on supportive policies and systemic interventions (World Bank, 2020). Access to adequate teaching materials, manageable class sizes, effective school leadership, and government policies that prioritize teacher training are critical to maintaining high-quality instruction. In contexts like Nigeria, where early childhood education often faces resource constraints, systemic support enables teachers to implement inclusive and evidence-based strategies effectively. Policies that provide structured mentorship programs, continuous evaluation, and funding for professional development further ensure that teaching innovations are sustainable over time. Systemic support forms the backbone of sustainable teaching by creating an environment where teachers can consistently deliver high-quality education.

## Theoretical Framework

The theoretical underpinning of this study is primarily anchored in Vygotsky's Sociocultural Theory of Learning, which posits that children's cognitive development is deeply influenced by social interaction, language, and cultural tools (Vygotsky, 1978). According to this framework, learning is an active process shaped by collaboration with peers, teachers, and caregivers, emphasizing the role of scaffolding in helping learners achieve higher levels of understanding. In the context of early childhood education, children with learning disabilities benefit significantly from guided interaction, differentiated instruction, and supportive classroom environments that facilitate engagement and skill acquisition. By applying Vygotsky's principles, educators can design interventions that promote not only cognitive development but also socio-emotional skills, ensuring that all learners, including those with diverse abilities, actively participate in the learning process.

Complementing the sociocultural perspective is Piaget's Cognitive Development Theory, which explains how children construct knowledge through stages of development, from sensorimotor exploration to formal operational thought (Piaget, 1972). This theory emphasizes the importance of developmentally appropriate practices and the gradual acquisition of skills at each stage, which aligns with early identification and intervention strategies for learning disabilities. By integrating Piagetian principles, early childhood educators can tailor activities that match the cognitive readiness of learners, facilitating engagement, problem-solving, and critical thinking. Together, Vygotsky's emphasis on social learning and Piaget's focus on developmental readiness provide a robust theoretical framework for understanding how trends in learning disabilities intersect with learner engagement and sustainable teaching practices in Nigerian early childhood classrooms.

## Empirical Review

Empirical studies highlight the growing recognition of learning disabilities in early childhood education and their impact on learner engagement. For instance, Akinlade and Olatunji (2020) investigated preschool children in Southwest Nigeria and reported that a significant proportion exhibited early signs of dyslexia, dysgraphia, and dyscalculia, often going unrecognized until primary school. Their findings emphasized the importance of early identification and intervention, noting that children who received targeted support

demonstrated higher literacy and numeracy outcomes compared to peers without interventions. Similarly, Okoye and Igwe (2021) found that challenges in diagnosing learning disabilities in early childhood centers were compounded by inadequate teacher training and limited assessment resources, which negatively affected classroom engagement and learning progression. These studies collectively underscore that trends in learning disabilities are not only about prevalence but also about the capacity of educational systems to respond effectively.

Other studies have focused on learner engagement as both an outcome and a mediating factor in early childhood education. Fredricks, Filsecker, and Lawson (2018) reported that children's cognitive, behavioral, and emotional engagement significantly predicted academic achievement, even in contexts with limited instructional resources. In Nigeria, Ogunyemi and Fakolade (2022) demonstrated that inclusive teaching strategies, such as differentiated instruction and multisensory approaches, improved engagement among learners with learning disabilities, leading to better academic and social outcomes. Furthermore, the research of Moats (2020) and Berninger and Amtmann (2015) highlighted that teachers' professional development in understanding learning disabilities directly influenced the effectiveness of classroom interventions. These empirical findings suggest that sustainable teaching development, encompassing teacher training, inclusive practices, and reflective pedagogy, is crucial for addressing learning disabilities and promoting active engagement in early childhood education settings.

**Conclusion**

In conclusion, current research highlights that the identification and management of learning disabilities in early childhood education are undergoing significant transformation, driven by advances in diagnostic practices, inclusive pedagogical approaches, and teacher professional development. Trends indicate that early detection, individualized instruction, and the integration of assistive technologies are critical for fostering learner engagement and mitigating the academic and socio-emotional challenges faced by children with learning disabilities. Empirical evidence from Nigeria and other contexts underscores that sustainable teaching development characterized by continuous professional learning, reflective practice, and supportive policies is essential for equipping educators to respond effectively to diverse learner needs. Consequently, addressing learning disabilities in early childhood settings not only promotes equitable learning opportunities but also strengthens the foundation for long-term educational quality and sustainability.

**Recommendations**

Based on the findings of the study, it is recommended that;

1. **Early Identification and Intervention:** Early childhood education centers should implement regular screening programs to identify children with learning disabilities at the earliest stages. Teachers and caregivers should be trained to recognize early warning signs of dyslexia, dysgraphia, dyscalculia, and other learning difficulties to provide timely support.
2. **Teacher Professional Development:** Educators should participate in continuous

professional development programs that focus on inclusive teaching strategies, differentiated instruction, and the use of assistive technologies. This will enhance their capacity to support children with diverse learning needs effectively.

3. **Inclusive Pedagogical Practices:** Classrooms should adopt inclusive and multisensory teaching approaches that accommodate all learners, including those with learning disabilities. Activities should be tailored to meet cognitive, social, and emotional needs to ensure meaningful engagement and participation.

4. **Reflective Practice and Action Research:** Teachers should engage in reflective practice and classroom-based action research to assess the effectiveness of their teaching methods. By analyzing student responses and learning outcomes, they can refine instructional strategies to promote sustainable learning.

5. **Policy and Institutional Support:** Government agencies, school administrators, and educational stakeholders should provide adequate resources, supportive policies, and infrastructure that facilitate sustainable teaching development. This includes funding for teaching aids, manageable class sizes, and access to diagnostic tools for learning disabilities.

6. **Parental and Community Involvement:** Parents and caregivers should be actively involved in the educational process through awareness programs and home-based support strategies. Collaboration between schools and families ensures continuity in intervention for children with learning disabilities.

7. **Use of Technology and Assistive Tools:** Early childhood centers should integrate technology and assistive learning tools into daily instruction. Digital applications, audio-visual aids, and interactive software can enhance engagement, accommodate diverse learning styles, and improve academic outcomes for children with learning challenges.

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