

Advancing Inclusive Learning Development: Strategies for Effective Special Education Practice

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Abstract: *There is a growing need to balance the individual rights of children and young people with disabilities and the requirements of mixed ability classrooms in inclusive education systems. Thirty years of policy commitment has resulted in mixed practice across educational contexts in the realization of inclusive principles. This study is a synthesis of current evidence for effective instruction and organizational practices in special education and the placement of these strategies in a coherent theoretical framework. The identification and screening of the literature and the eligibility for inclusion was carried out according to the principles of the PRISMA pathway, with the literature reviewed in five main databases via a narrative systematic approach. To undertake thematic synthesis, 64 sources were retained that matched pre-defined inclusion criteria. Six interrelated strategy domains were consistently found to be related to effective practice: Universal Design for Learning, differentiated instruction, multi-tiered systems of support, collaborative co-teaching, individualized education planning, and assistive technology and family-school partnership. These domains are not discrete, but rather connect, and fidelity of implementation and educator preparation are cross-cutting factors of outcomes. The synthesis indicates that inclusive learning development is more of a layered (cladistic) and ecologically embedded process that cannot be summarized in a catalog of techniques. implications for teacher preparation, school leadership and policy design are provided. Building educator capacity, establishing collaborative time and a system of data infrastructure are essential to realizing*

inclusive education from policy to reliable classroom practice.

Keywords: *Inclusive education; special education; learning design; differentiated instruction; multi-tiered supports system.*

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1.0 Introduction

Inclusive education has increasingly become a central principle of contemporary education systems, emphasizing the right of learners with disabilities and other diverse educational needs to participate meaningfully in mainstream learning environments. Rather than viewing disability primarily as an individual limitation, contemporary inclusive education emphasizes the removal of curricular, pedagogical, institutional, and environmental barriers that restrict participation and learning. The development of inclusive education reflects a broader international shift from segregated and specialized educational provision towards learning environments that accommodate learner diversity. This shift has increased expectations for schools and teachers to adapt

instructional approaches, curricula, assessment practices, and support systems to respond effectively to differences in learners' abilities, learning profiles, and educational needs.

The Salamanca Statement (1994) and the United Nations Convention on the Rights of Persons with Disabilities (2006) established important international foundations for inclusive education by emphasizing participation, equity, non-discrimination, and the right of persons with disabilities to access education on an equal basis with others. Consequently, responsibility for achieving meaningful inclusion has increasingly shifted from expecting learners to adapt to existing educational structures towards requiring schools to identify and remove barriers within curriculum design, teaching practices, assessment, physical environments, and organizational systems. In this context, schools have the primary responsibility to modify their curriculum, teaching methods, and organizational structures to allow learners with diverse needs to participate alongside their peers. However, the adoption of inclusive education as a policy principle does not necessarily guarantee its effective implementation in everyday classroom practice.

Individualized education planning and least restrictive learning environments have become important components of special education frameworks, particularly in the United States through the Individuals with Disabilities Education Improvement Act (IDEA, 2004), as well as through comparable inclusive education policies and legislation in other countries. Previous research indicates that effective inclusion depends not only on legislative commitment but also on teachers' knowledge and attitudes, availability of instructional resources, collaboration among education professionals, appropriate learner support, and the capacity of schools to adapt teaching to diverse learning needs. Evidence from inclusive education research further

suggests that no single instructional intervention is sufficient to address the complex and heterogeneous needs of learners with disabilities; rather, effective practice requires complementary classroom, organizational, technological, and family-oriented strategies. However, empirical research continues to demonstrate a persistent disconnect between inclusive education policy and classroom practice, with barriers including inadequate teacher preparation, limited opportunities for professional collaboration, insufficient instructional resources, and unequal access to appropriate levels of learner support (Tristani & Bassett-Gunter, 2020; Forlin, Sharma, & Loreman, 2013). This persistent disparity between inclusive education policy and classroom implementation provides an important rationale for synthesizing evidence on the instructional and organizational strategies that can support effective and sustainable inclusive practice.

Among the approaches increasingly associated with effective inclusive practice are Universal Design for Learning (UDL), differentiated instruction, multi-tiered systems of support (MTSS), collaborative co-teaching, individualized education planning, assistive technology, and family-school partnerships. Although each approach addresses particular dimensions of learner support, their effectiveness may depend on how they are implemented, coordinated, and integrated within the wider school environment. Research on UDL and differentiated instruction emphasizes proactive adaptation of curriculum, instructional materials, assessment, and learning activities to accommodate learner variability, while MTSS provides a structured framework for delivering increasingly intensive academic and behavioural support. Similarly, co-teaching and individualized education planning promote coordinated professional responses to learner needs, whereas assistive technology and family-



school partnerships can enhance accessibility, participation, communication, and continuity of educational support.

Despite the growing evidence supporting these approaches, the literature is often organized around individual strategies or specific implementation contexts, making it difficult to determine how complementary practices can be integrated into a coherent model of inclusive special education. A significant gap therefore remains in the integration of evidence across instructional, organizational, and system levels. Existing studies have provided valuable evidence on individual practices, but comparatively limited attention has been given to how these practices interact and reinforce one another within an ecologically embedded framework of inclusive education. A synthesis that connects classroom-level instruction with school-level organization, individualized planning, technology, family engagement, and broader policy structures is therefore needed to support the translation of inclusive education principles into consistent classroom practice.

Against this background, this review aims to synthesize current evidence on effective instructional and organizational strategies for special education practice in inclusive settings and to organize these strategies within a coherent multilevel theoretical framework. Specifically, the review seeks to summarize the theoretical foundations of contemporary inclusive practices; identify and categorize instructional and organizational strategies associated with positive outcomes; and derive implications for teacher preparation, school leadership, and education policy. The guiding question for the review is: **What instructional and organizational strategies are consistently associated with effective special education practice in inclusive settings, and how can these strategies be integrated within a coherent multilevel framework?**

The significance of this synthesis lies in its potential to bridge the persistent divide between inclusive education policy and

classroom implementation by identifying complementary strategies that can be translated into teacher preparation, school leadership, professional collaboration, learner support, and policy development. The findings may therefore provide a useful evidence base for teachers, special education professionals, teacher educators, school leaders, families, and policymakers seeking to strengthen sustainable, equitable, and effective inclusive education.

1.1 Theoretical and Conceptual Framework

The theoretical and conceptual framework guiding this review integrates three complementary perspectives: Vygotsky's Sociocultural Theory, Bronfenbrenner's Ecological Systems Theory, and the social model of disability as operationalized through inclusive learning approaches such as Universal Design for Learning. First, Vygotsky's (1978) Sociocultural Theory conceptualizes learning as a socially mediated process in which learners develop through interaction with teachers, peers, and more knowledgeable others within the zone of proximal development. This perspective provides a theoretical basis for collaborative teaching, instructional scaffolding, peer-supported learning, and differentiated assistance for learners with diverse educational needs.

Second, Bronfenbrenner's (1979) Ecological Systems Theory positions the learner within interconnected microsystem, mesosystem, exosystem, and macrosystem environments. The theory provides a basis for understanding inclusive education as a multilevel process in which classroom practices are influenced by relationships among families, teachers, schools, communities, institutional structures, and education policies. From this perspective, classroom-level strategies alone may be insufficient unless they are supported by corresponding alignment across family, institutional, and policy environments.



Third, the social model of disability shifts attention from perceived limitations within the learner to the environmental and institutional barriers that restrict participation. Applied pedagogically through approaches such as Universal Design for Learning (CAST, 2018; Rose & Meyer, 2002), this perspective emphasizes proactive curriculum and learning-environment design that anticipates learner variability rather than relying primarily on individualized adaptations after barriers have emerged.

Drawing on these complementary perspectives, this review conceptualizes inclusive special education practice as a multilevel system comprising classroom-level instructional strategies, school-level organizational structures, and system-level planning and partnerships. At the classroom level, differentiation and UDL address learner variability; at the organizational level, co-teaching and MTSS facilitate coordinated support; and at the system level, individualized education planning, assistive technology, family engagement, and policy alignment support continuity and sustainability. These components are viewed as interdependent

rather than isolated interventions, providing the conceptual basis for organizing and interpreting the evidence synthesized in the subsequent sections.

2.0 Materials and Methods

Given the conceptual and methodological heterogeneity of the inclusive-education literature, this study employed a systematic review design with narrative and thematic synthesis. The systematic component involved a structured literature search, predefined eligibility criteria, duplicate removal, independent screening, full-text assessment, and transparent reporting of the selection process in accordance with PRISMA 2020 guidance, while the narrative and thematic components were used to synthesize heterogeneous evidence that could not be meaningfully combined through statistical meta-analysis.

2.1 Literature Search Strategy and Eligibility Criteria.

A systematic literature search was conducted across five databases covering education, psychology, and health sciences: Web of Science, Scopus, ERIC, PsycINFO, and PubMed/MEDLINE.. The databases, search terms and the eligibility criteria used are reported in Table 1.

Table 1: Literature search strategy and eligibility criteria

Parameter	Specification
Databases searched	Web of Science, Scopus, ERIC, PsycINFO, and PubMed/MEDLINE
Search period	January 2014–June 2024
Core search terms	(“inclusive education” OR “special education”) AND (“instructional strategies” OR “evidence-based practice” OR “teacher preparation” OR “individualized education”)
Inclusion criteria	Studies were eligible for inclusion if they were peer-reviewed, published in English, addressed inclusive or special education practices in K–12 or higher-education settings, and reported empirical, review, or theoretically grounded findings relevant to instructional strategies, teacher practices, learner support, or organizational approaches to inclusion.
Exclusion criteria	Studies were excluded if they were non-peer-reviewed sources, including blogs and opinion pieces; conference abstracts without accessible full texts; studies lacking a



Parameter	Specification
	clearly defined focus on educational practice; duplicate records; or publications reporting overlapping datasets without providing distinct evidence relevant to the review objectives.
Screening procedure	Two independent reviewers screened the titles and abstracts of identified records against the predefined eligibility criteria, followed by independent full-text assessment of potentially eligible studies. Disagreements were resolved through discussion and, where consensus could not be reached, by adjudication by a third reviewer. Screening and reporting procedures were conducted in accordance with the principles of PRISMA 2020.
Quality appraisal	Methodological quality was assessed narratively using predefined appraisal considerations, including transparency of study design, adequacy of sample description, clarity of outcome or evidence measurement, and appropriateness of the methods used to address the reported research objectives. The appraisal informed interpretation of the evidence rather than serving as a basis for statistical exclusion of studies.

Note. PRISMA = Preferred Reporting Items for Systematic Reviews and Meta-Analyses. APA 7th edition table formatting generally uses a table number in bold, an italicized title in title case, and no vertical borders.

The search period was restricted to January 2014 through June 2024 to capture contemporary evidence on inclusive and special education practice while maintaining a sufficiently broad temporal coverage of recent policy, pedagogical, technological, and organizational developments.

2.2 Study Selection Process

Study selection followed the four-stage PRISMA sequence of identification, screening, eligibility assessment, and inclusion, illustrated in Figure 1. After duplicate records were removed, the titles and abstracts of the remaining records were screened against the predefined eligibility criteria presented in Table 1. Records considered potentially relevant were subsequently subjected to full-text assessment to determine their final eligibility. Sixty-four sources met all inclusion criteria and were retained for thematic synthesis.

2.3 Thematic Synthesis Procedure

Inductive coding of recurring instructional and organizational strategies was done for retained sources. Constant comparison was used to categorize codes into higher order strategy domains and domains were compared to the theoretical framework outlined above to ensure conceptual consistency.

3.0 Results and Discussion

3.1 Results

Seven interconnected strategy domains associated with effective inclusive and special education practice were identified through the thematic synthesis of the retained literature. These domains comprised Universal Design for Learning, differentiated instruction, multi-tiered systems of support, collaborative co-teaching, individualized education planning, assistive technology, and family-school partnership. Their core characteristics and reported evidence bases are summarized in Table 2.



Figure 1. PRISMA-Informed Flow Diagram of the Literature Selection Process

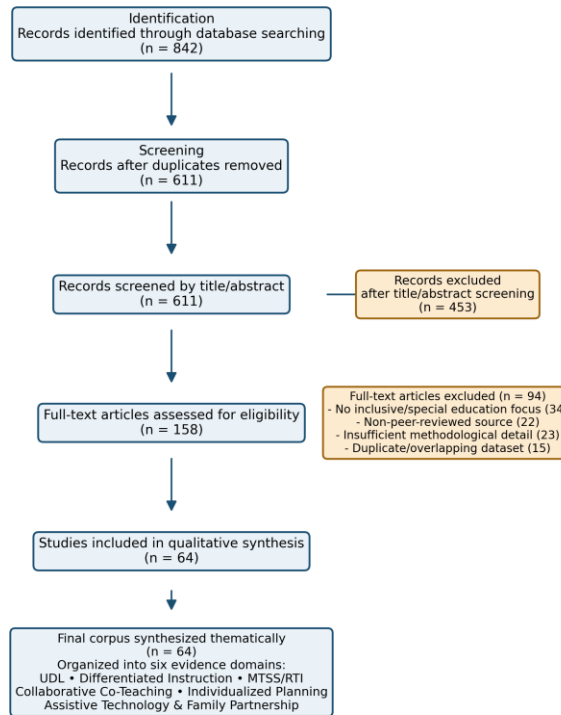
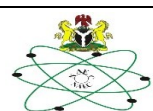


Fig. 1: PRISMA 2020-informed flow diagram showing the identification, screening, eligibility assessment, and inclusion of literature in the review.

Table 2: Organizing Evidence Based Strategies for Inclusive Special Education Practice

Strategy Domain	Core Description	Reported Evidence Basis	Representative Source(s)
Universal Design for Learning (UDL)	Proactive curriculum design offering multiple means of engagement, representation, and action/expression to reduce barriers before instruction begins	Associated with broadened access and reduced need for retrofitted accommodation across diverse learner profiles	CAST (2018); Rose & Meyer (2002)
Differentiated Instruction	Adjustment of content, process, and product according to student readiness, interest, and learning profile within a shared classroom	Linked to improved engagement and more responsive grouping practices in mixed-ability settings	Tomlinson (2001)
Multi-Tiered System of	Tiered continuum of increasingly intensive, data-driven academic and	Systematic reviews report favorable behavioral and	Nitz et al. (2023); Clark



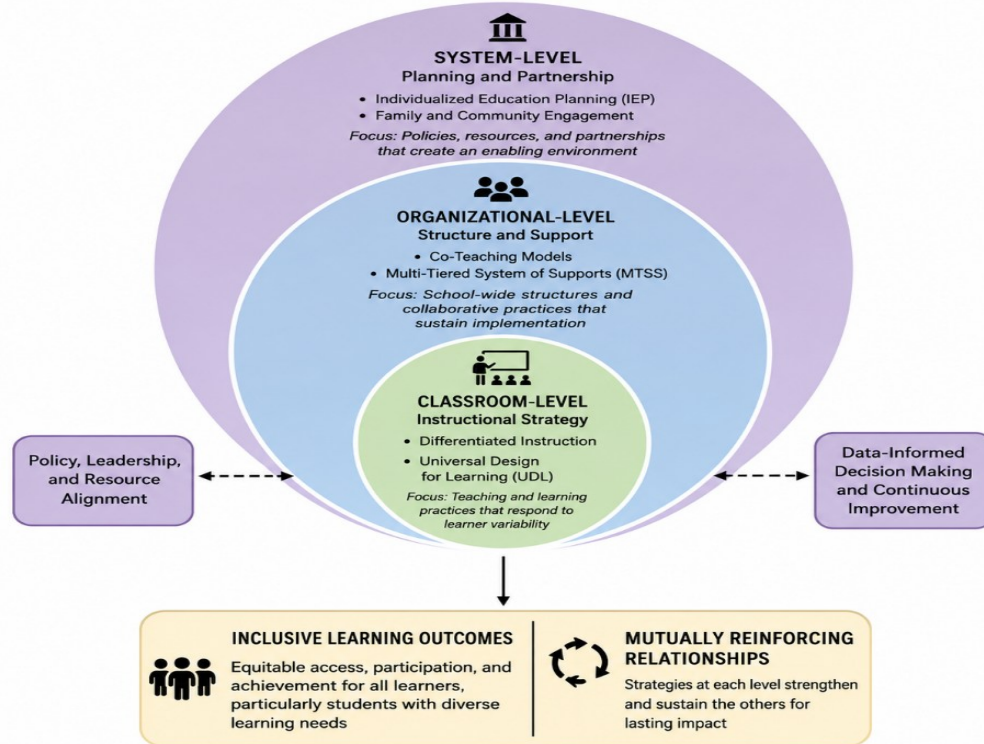
Supports (MTSS/RTI)	behavioral supports delivered within general education	academic outcomes, particularly for Tier 2/3 interventions	& Dockweiler (2019)
Collaborative Co-Teaching	Joint planning and instruction by general and special educators sharing responsibility for a shared classroom roster	Associated with improved instructional consistency and professional support, contingent on adequate common planning time	Friend & Cook (2017); Florian & Spratt (2013)
Individualized Education Planning	Legally structured, goal-driven planning process translating assessment data into personalized instructional targets	Central mechanism for personalization mandated under IDEA; effectiveness tied to fidelity of implementation	IDEA (2004); Morningstar et al. (2017)
Assistive Technology & Family–School Partnership	Technology-mediated access supports combined with structured caregiver engagement in goal-setting and progress monitoring	Reported to strengthen participation, generalization of skills, and continuity between school and home contexts	Zurbriggen et al. (2023); Dell'Anna et al. (2020)

Across the reviewed literature, no individual strategy domain was consistently identified as sufficient to address the full range of instructional, behavioural, organizational, and participation needs associated with inclusive education.

Studies examining Universal Design for Learning most frequently reported outcomes related to learner engagement, participation, and access, whereas studies examining multi-tiered systems of support more commonly assessed academic and behavioural outcomes through structured progress-monitoring measures. . See figures 2 and 3, modified after Nitz et al. (2023). Shared planning time and administrative support were consistently mentioned as being necessary for collaborative co-teaching arrangements to be

successful (Florian & Spratt, 2013; EASNIE, 2024). Individualized education planning emerged as an important procedural link between assessment and instruction; however, its contribution to effective practice appeared to depend more on the quality and fidelity of implementation than on the mere existence or completion of an individualized plan (Morningstar et al., 2017). Finally, studies addressing assistive technology and structured family engagement reported improvements in learner participation, continuity of support, and the transfer or generalization of learning across home and school settings (Zurbriggen et al., 2023; Dell'Anna et al., 2020).





ig. 2: Multilevel conceptual framework illustrating the interaction among classroom-level, organizational-level, and system-level strategy domains in inclusive special education practice.

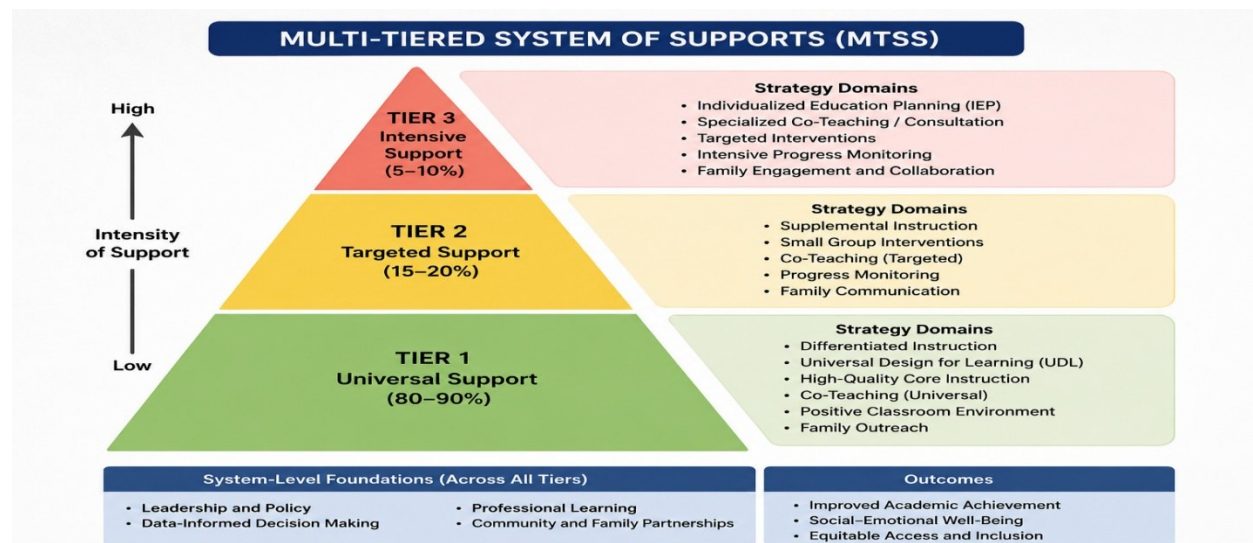


Fig. 3: Multi-tiered system of supports (MTSS) framework illustrating the progression from universal Tier 1 support to increasingly intensive Tier 2 and Tier 3 interventions.

3.2 Discussion

The synthesis indicates that effective inclusive education is not adequately represented as a sequence of isolated techniques; rather, it

operates as a multilevel and interconnected system of instructional, organizational, and contextual supports. This finding is consistent with Bronfenbrenner's (1979) Ecological



Systems Theory, which conceptualizes learner development as being influenced by interactions among multiple environmental systems.

At the classroom level, strategies such as Universal Design for Learning and differentiated instruction can reduce barriers to participation and learning; however, their sustained implementation appears to depend on organizational structures such as tiered support systems, collaborative planning, leadership support, and protected co-teaching time (Clark & Dockweiler, 2019; Friend & Cook, 2017). At the classroom level, strategies such as Universal Design for Learning and differentiated instruction can reduce barriers to participation and learning; however, their sustained implementation appears to depend on organizational structures such as tiered support systems, collaborative planning, leadership support, and protected co-teaching time (Clark & Dockweiler, 2019; Friend & Cook, 2017).

An important cross-cutting theme emerging from the retained literature was fidelity of implementation. Even well-established approaches, including individualized education planning (IEP), may produce inconsistent outcomes when implementation is incomplete, progress monitoring is inadequate, or educators lack sufficient preparation and support (Tristani & Bassett-Gunter, 2020). This pattern is consistent with the sociocultural perspective of Vygotsky (1978), in which effective scaffolding depends not merely on the existence of formal plans or instructional structures but on the skilled, responsive, and sustained mediation of learning through interaction between educators and learners. (Vygotsky, 1978).

The evidence also indicates that family–school partnership is a connecting mechanism that links the classroom microsystem with the larger mesosystem, and helps to generalize skills away from the classroom. (Dell'Anna et al., 2020) All of this evidence points to the idea that the effectiveness of the strategies is not

only a product of the quality of the design, but also of the extent of the structural support and the degree to which the strategies are rehearsed and continued across settings.

3.2.1 Implications

The results suggest an improvement in teacher preparation: the need to shift away from single strategy training and instead incorporate integrated instruction that focuses on UDL-based design, tiered intervention logic, and structured co-teaching partnership as interwoven skills (Forlin, Sharma, & Loreman, 2013).

Practice: School teams will focus on protected common planning time for co-teaching pairs and incorporate progress monitoring practices in MTSS tiers, not use tiers as discrete placement categories as follows

(i) Policy: Fidelity of implementation metrics for individual education plans (IEP) should be encouraged rather than only plan completion or IEP compliance reporting, as these should be encouraged within funding and accountability structures.

(ii) Leadership: The school administration should view the family–school partnership infrastructure as an integral part of the work of inclusive service delivery instead of an add-on activity.

(iii) Teacher preparation: UDL, differentiation and tiered-support should be embedded in the same curriculum units for pre-service and in-service teacher preparation to demonstrate the interconnectedness of these practices in the real classroom.

3.2.2 Limitations and Future Work

This study has a couple of limitations. First, the narrative-systematic design does not allow for meta-analysis effect size aggregation so there may not be quantitative comparability across strategy domains. Second, the literature that is available is not uniform across educational levels and contexts, with more literature in primary and secondary school contexts than in the early childhood or postsecondary settings.



Third, publication bias towards research showing positive results can be ruled out. Longitudinal, multi-site designs that control for the contribution of each strategy domain to student achievement should be conducted and the evidence base broadened to contexts that have not been represented, such as low-resource education systems and postsecondary inclusive education.

4.0 Conclusions

Inclusive learning development involves coordination of classroom based, organizational based and system based strategies not just any one of these strategies or classroom based instructional techniques. The findings from this review suggest that Universal Design for Learning, differentiated instruction, multi-tiered systems of support, collaborative co-teaching, individualized education planning and assistive technology are mutually reinforcing and complementary practices for effective special education delivery when combined with family partnership. Aligned educator preparation, structural collaboration time and system-level data infrastructure to these evidence-based domains is needed to ensure continued progress toward genuine inclusive schooling.

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Jacob Oluwasanjo Adelakun contributed to conceptualization, methodology, literature search, thematic synthesis, and manuscript preparation. Bemowo Elisha Agbo-Adediran contributed to literature review, data extraction, evidence synthesis, and critical revision. Moyosoreoluwa Abidemi Ajayi contributed to literature screening, evidence organization, interpretation, editing, and manuscript revision. All authors approved the final manuscript.

