



INCLUSIVE LEARNING IN DIVERSE CLASSROOMS: STRATEGIES, CHALLENGES, AND OUTCOMES

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Abstract

Keyword:

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Inclusive learning seeks to ensure meaningful access, participation, and educational development for pupils with different abilities, backgrounds, and learning needs. This systematic literature review examined instructional strategies, implementation challenges, and reported outcomes in diverse elementary classrooms. The manuscript reports a Google Scholar search yielding approximately 16,100 initial records, 862 records after an initial filter, and 35 studies included in the review. The narrative synthesis identified seven interconnected strategies: differentiated instruction, adaptive planning, multimodal teaching, flexible assessment, supportive classroom management, accessible technology, and continuing teacher development. Reported challenges concerned teacher preparation, accessible facilities and learning resources, institutional capacity, and contextual barriers to implementation. Across the reviewed literature, inclusive approaches were associated with opportunities for greater participation, learning support, and social acceptance, although the evidence described was not sufficient to establish a uniform causal effect. The synthesis suggests that classroom-level adaptation is most credible when accompanied by professional learning, resource provision, and collaboration among teachers, families, and schools.

INTRODUCTION

Inclusive education concerns more than placing pupils with different learning needs in the same classroom. Its central question is whether all pupils can participate meaningfully in instruction, receive appropriate support, and experience belonging at school. This distinction matters in elementary education, where early classroom experiences shape academic engagement and social relationships. Norwich (2022) argues that evaluations of inclusion must attend to conceptual aims as well as observable effects, while Ainscow et al. (2019) situate this concern within the enduring goals of inclusive education and Lindner et al. (2022) show why social inclusion requires the perspectives of pupils, parents, and teachers. Accordingly, instructional access, participation, and social acceptance should be considered together rather than treated as interchangeable outcomes.

Elementary classrooms are heterogeneous in academic readiness, language, disability-related needs, interests, and socio-emotional development. Uniform instruction can therefore restrict participation even when pupils share the same physical learning space. In the original studies discussed in this review, adaptive planning, differentiated teaching, varied media, and flexible assessment were repeatedly described as responses to this diversity (Kusuma & Herlambang, 2025;

Pramudita & Prabowo, 2025; Ramli et al., 2026). International evidence similarly connects differentiated instruction with deliberate adjustments to tasks and support, rather than fixed labels for pupils (Meutstege, van Geel, & Visscher, 2023; Zerai et al., 2023). The practical issue is how these adjustments can remain feasible for classroom teachers working with limited time and resources.

Teachers' beliefs and competencies influence whether inclusive principles are translated into everyday classroom practices. A meta-analysis identified an association between teachers' self-efficacy and attitudes toward inclusive education (Yada et al., 2022), while studies of teachers and teacher candidates show that attitudes are not always uniform across dimensions of inclusion (Alnahdi & Schwab, 2021; Jacob & Pillay, 2022; Kazmi et al., 2023; Selisko et al., 2024). In primary schools, efficacy beliefs have also been linked to teachers' prior experiences and willingness to implement inclusive practices (Franzen et al., 2024). These findings suggest that an emphasis on teacher motivation alone would be insufficient without attention to practical capability and conditions of work. Teacher preparation and professional learning consequently form part of the educational problem, not merely a supplementary recommendation.

Implementation difficulties extend beyond individual teachers. Studies report concerns about workload, access to learning materials, specialist support, and the perceived appropriateness of inclusion (Jury et al., 2023; Van Staden-Payne & Nel, 2023). Experiences in Qatar and South Africa demonstrate how administrative arrangements, curricular expectations, and local resources can shape the barriers encountered by classroom teachers (Jabri et al., 2025; Sepadi, 2025). Indonesian discussions likewise describe gaps between inclusive policy commitments and conditions in elementary schools (Biantoro & Rahmatullah, 2024; Rizqi et al., 2025). Classroom strategies therefore need to be interpreted within the wider system that enables or limits their use.

Recent scholarship has examined particular elements of inclusive pedagogy in considerable detail. Research on Universal Design for Learning (UDL) addresses anticipatory lesson design and multiple ways of engaging with, accessing, and expressing learning (Boardman et al., 2024; Lambert et al., 2023; Zhang et al., 2024). Reviews of UDL-based teacher preparation and intervention research describe both promise and implementation challenges (Almeqdad et al., 2023; Rusconi & Squillaci, 2023). Other studies investigate teachers' differentiated-instruction knowledge and professional development (Meutstege, Vrielink, et al., 2023; Yuen et al., 2023), while technology reviews examine the opportunities and limitations of assistive and digital tools (Mukhtarkyzy et al., 2025; Samaniego López et al., 2025). These strands offer important but partly separated perspectives on instructional practice.

A further body of research addresses the conditions and consequences of inclusion. Student perspectives, classroom attitudes, and disability-related participation appear in studies by Graham et

al. (2022), Dukmak et al. (2024), and Adjei et al. (2024). Research-informed school practice and collaboration are examined by Brown et al. (2022), Fränkel et al. (2023), and Grosche and Moser Opitz (2023). Taken together, these publications suggest that strategies, institutional barriers, and reported outcomes interact, but that their connections can be obscured when discussed separately. For the present review, the key synthesis problem is to relate these dimensions without assuming that every reported strategy produces the same effects in every elementary classroom.

Against this background, this systematic literature review examines three connected questions: which strategies are described for inclusive learning in diverse elementary classrooms, which implementation challenges are reported, and which educational or social outcomes are associated with these practices? The review draws on the 35 articles reported as included in the original study and organizes the discussion around strategies, challenges, and outcomes. Its contribution lies in bringing classroom-level adjustments and enabling school conditions into one interpretive account. The intention is not to calculate a pooled intervention effect, but to clarify what the cited literature supports and where its conclusions should remain conditional. Such a synthesis can inform educators and school leaders seeking feasible approaches to inclusive elementary teaching.

METHODS

Research Design

The study employed a systematic literature review (SLR) to examine instructional strategies, challenges, and reported outcomes of inclusive learning in diverse elementary classrooms. The manuscript used the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework to organize the reported identification and screening stages. Because the material available for the review comprised published literature rather than a newly recruited participant sample, the units of analysis were research publications. The synthesis was organized around the three domains specified in the research objective: strategies, challenges, and outcomes.

Search Source and Eligibility Criteria

Google Scholar was the stated search source. The manuscript reports the search phrase 'Inclusive Learning in Diverse Classrooms: Strategies, Challenges, and Outcomes in Elementary Schools' and describes an initial search covering 2019–2026; the eligibility criteria, separately stated in the same manuscript, specified publications from 2022–2026. Other inclusion requirements were relevance to inclusive learning in diverse classrooms and access to the full text. Exclusion criteria were insufficient topical relevance, publication outside the eligibility period, and unavailability of the full article. The original review did not report additional databases, search dates, Boolean strings, or a formal risk-of-bias tool, so no such procedures are attributed to the study here.

Study Selection and Data Synthesis

The original manuscript reported approximately 16,100 initial Google Scholar search results and approximately 862 records following an article-oriented filter. Its PRISMA diagram then showed 862 identified records, 62 duplicate records removed, 800 screened records, 680 records excluded during screening, 120 full-text articles assessed, 85 full-text articles excluded, and 35 studies included in the review. Figure 1 reproduces those reported screening counts in a more legible layout. The published narrative grouped information from the included literature into inclusive teaching strategies, implementation challenges, and reported learning or social outcomes. The results below retain that thematic organization and do not introduce unreported effect sizes, quality scores, or study-level frequencies.

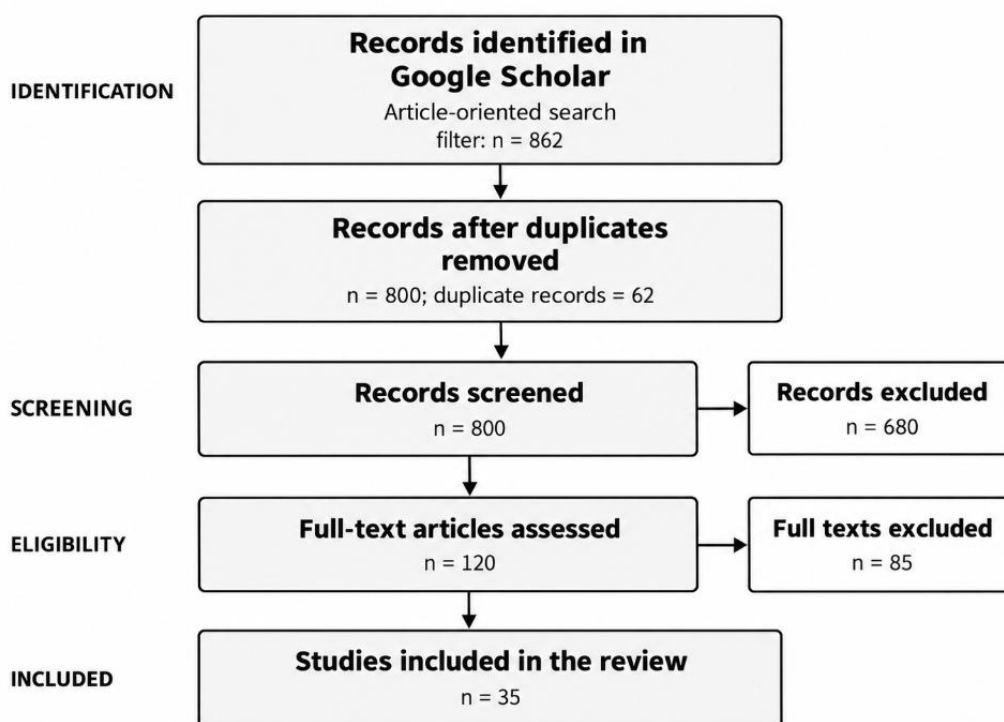


Figure 1. Study selection flow adapted from the counts reported in the original manuscript.

RESULTS AND DISCUSSION

The original review organizes the reported evidence into seven pedagogical strategies, four groups of implementation challenges, and a set of academic and social outcomes. These categories describe recurring concerns in the reviewed narratives rather than experimentally established effects. Table 1 summarizes the thematic structure without assigning unsupported frequencies to individual strategies or outcomes.

Thematic Summary

Table 1. Thematic categories identified in the original review; frequencies were not provided for individual themes

Domain	Theme	Reported focus
Strategy	Differentiated instruction	Adapting tasks, materials, and assessment opportunities to different pupil needs.
Strategy	Adaptive learning planning	Using initial understanding of pupils' needs to plan flexible instructional support.
Strategy	Multimodal and multisensory methods	Combining accessible visual, auditory, digital, and other teaching resources.
Strategy	Flexible and authentic assessment	Allowing different ways to demonstrate knowledge and development.
Strategy	Supportive classroom management	Encouraging participation, respectful interaction, and a safe class environment.
Strategy	Educational and assistive technology	Using appropriate tools to expand access and opportunities for engagement.
Strategy	Teacher professional development	Strengthening teachers' capacity to design, implement, and review inclusive practices.
Challenge	Teacher preparation and attitudes	Knowledge, confidence, training, and perceptions concerning diverse learner needs.
Challenge	Facilities and materials	Limitations in accessible infrastructure, adaptive resources, and learning media.
Challenge	System and stakeholder support	Curriculum flexibility, specialist staffing, and coordination across the school community.
Challenge	Contextual implementation barriers	Regional differences, resource constraints, and gaps between policy and practice.
Outcome	Reported academic and social opportunities	Student engagement, participation, learning support, tolerance, empathy, and acceptance of difference.

Narrative Synthesis

The first results domain concerns instructional adjustment. The reviewed discussion describes differentiation, adaptive planning, varied teaching media, and flexible assessment as ways to make lessons more responsive to pupil differences (Kusuma & Herlambang, 2025; Pramudita & Prabowo, 2025; Ramli et al., 2026; Wijayanti et al., 2025). Supportive classroom management and educational technology are also presented as practices that may reduce barriers to participation (Catama, 2025; Sabiq et al., 2025). The seventh strategy, continuous teacher development, concerns the capacity to sustain the other practices over time (Damyanov, 2024; Munawir et al., 2025). The descriptions identify pedagogical options, but the manuscript does not supply comparable outcome estimates for each one.

The second domain covers four interrelated barriers. The original sources describe limited teacher preparation and uneven attitudes, insufficient accessible infrastructure and materials, weaknesses in specialist and administrative support, and wider disparities affecting implementation (Biantoro & Rahmatullah, 2024; Jumahir et al., 2025; Lastini et al., 2024; Masrifah, 2024; Sepadi, 2025). These problems operate at different levels: instructional decisions occur in classrooms, whereas staffing, accessibility, curriculum arrangements, and partnerships require organizational

support. The synthesis therefore does not treat teacher effort as a complete solution to systemic constraints.

The third domain concerns reported learning and social outcomes. The studies discussed in the original manuscript associate inclusive teaching with opportunities for active participation, more responsive academic learning, supportive peer interaction, and attitudes of empathy and tolerance (Bindhani & Gopinath, 2024; Sabiq et al., 2025; Sari et al., 2025). Those reported benefits depend on the settings and kinds of evidence described in the underlying publications. Since the review does not provide a standardized effect-size synthesis or a complete study-by-study outcome matrix, these statements are interpreted as reported patterns rather than evidence of a uniform causal improvement.

Discussion

The most consistent instructional message of the synthesis is the need to replace a single uniform pathway with planned flexibility. Differentiated instruction and adaptive planning can give teachers options for content, participation, and assessment without separating pupils into permanently fixed categories. This interpretation is consistent with the instructional adaptations described by Zerai et al. (2023) and the teacher knowledge requirements analyzed by Meutstege, Vrielink, et al. (2023). The initial review also connects variation in tasks and teaching materials to elementary classrooms where pupils differ in readiness and support needs (Pramudita & Prabowo, 2025; Wijayanti et al., 2025). The central implication is that differentiation requires informed decisions about learning barriers, not simply a larger number of unrelated activities.

A related finding is that inclusive planning must connect access to curriculum goals. UDL offers a useful conceptual language for multiple ways of engaging with content, receiving information, and demonstrating learning, although its implementation is not automatic (Boardman et al., 2024; Lambert et al., 2023; Zhang et al., 2024). Almeqdad et al. (2023) reported heterogeneous intervention evidence across educational settings, which cautions against treating UDL as a universally successful technique. The instructional framework developed by Pannullo et al. (2025) further shows how digital resources and inclusive lesson planning can be considered together. In elementary classrooms, a flexible plan is most persuasive when adaptations enable participation in meaningful learning rather than merely making a lesson appear varied. Accordingly, planning quality should be judged in relation to specific pupil needs and intended learning experiences.

The review's emphasis on multimodal teaching and educational technology has practical relevance, particularly where conventional materials create barriers. Assistive and digital tools can offer alternative ways to access text, communicate, or interact with a task, as discussed in recent technology reviews (Mukhtarkyzy et al., 2025; Samaniego López et al., 2025). Yet the presence of technology does not itself establish a learning benefit; its value depends on accessibility, instructional

fit, and teacher capacity. The original review likewise identifies insufficient facilities and specialized media as obstacles to sustained implementation (Adelia et al., 2023; Rizqi et al., 2025; Sari et al., 2024). An implication is to prioritize appropriate and usable resources before treating technological innovation as an outcome in its own right.

Assessment and classroom climate form a second link between pedagogical design and pupils' experience of inclusion. Flexible and authentic assessment can offer different means of demonstrating understanding while retaining a clear relationship with intended learning goals (Ramli et al., 2026). The emphasis on a safe classroom, respect for difference, and participation also resonates with student-centered evidence on inclusive teaching (Graham et al., 2022) and the multiperspective findings on social inclusion of pupils with special educational needs (Lindner et al., 2022). Dukmak et al. (2024) further illustrate why pupils' own attitudes are relevant to the social dimensions of schooling. These strands suggest that participation and belonging should be considered alongside academic performance, although they are not substitutes for direct evidence of learning improvement.

Teacher preparation emerged as both a proposed strategy and a major obstacle. Studies linking self-efficacy and attitudes toward inclusive education indicate that classroom practice is shaped by beliefs and perceived capability (Alnahdi & Schwab, 2021; Yada et al., 2022). Research with primary teachers similarly points to the role of professional experience, while findings on teachers' concerns show that resources and the perceived feasibility of inclusion are separate but connected issues (Franzen et al., 2024; Jury et al., 2023; Opoku et al., 2022). Rusconi and Squillaci (2023) and Meutstege, van Geel, and Visscher (2023) discuss the design of professional learning around inclusive or differentiated teaching skills. Taken together, these studies support development that combines pedagogical knowledge, supported practice, and opportunities to reflect on classroom decisions rather than relying on one-off awareness sessions.

Implementation barriers are not confined to teacher-level competencies. The cited accounts of resource-constrained schools describe gaps in accessible environments, curriculum flexibility, specialist staffing, and cooperation between school and home (Biantoro & Rahmatullah, 2024; Jumahir et al., 2025; Sepadi, 2025). International studies likewise report organizational and resource constraints from teachers' perspectives (Jabri et al., 2025; Rodrigues et al., 2026; Van Staden-Payne & Nel, 2023). Collaboration has potential value, but research-informed school practice depends on usable evidence and institutional arrangements, not on a general call for cooperation alone (Brown et al., 2022; Grosche & Moser Opitz, 2023). Thus, recommendations for inclusion should distinguish what a teacher can adapt immediately from what requires school leadership and policy action.

The outcomes described in this review are best understood as context-dependent possibilities rather than guaranteed improvements. Studies on social inclusion point to the importance of peer

relationships, support, and perceptions of belonging (Lindner et al., 2022), while a systematic review of learners with disabilities in low- and middle-income countries reports variation in the available academic-performance evidence (Adjei et al., 2024). The original manuscript also reports opportunities for engagement, improved learning support, and stronger respect for differences (Sabiq et al., 2025; Sari et al., 2025). However, outcomes from distinct study designs, educational contexts, and student groups should not be combined into a single causal claim. Norwich (2022) argues that judgements about inclusion require attention to what is being assessed, a distinction that applies directly to the review's academic and social outcome categories.

The contribution of the present synthesis is to connect classroom strategies, implementation conditions, and reported outcomes within one elementary-school framework. Studies of teacher preparation and beliefs (Jacob & Pillay, 2022; Selisko et al., 2024), professional learning for inclusive subject teaching (Fränkel et al., 2023), and differentiated instruction in changing school conditions (Letzel-Alt et al., 2022; Yuen et al., 2023) help explain why no single classroom technique can resolve all forms of exclusion. Within the original review, the three domains were derived from the reported literature, but the available manuscript did not provide study-level appraisal results or sufficient information to compare the strength of evidence across all 35 articles. This limits conclusions about relative effectiveness and transferability across settings. Future evidence syntheses could make such comparisons more informative by reporting full search procedures, study characteristics, appraisal criteria, and outcome measures, while practitioners can use the present themes as a cautious planning guide.

CONCLUSION

This systematic literature review identified seven interconnected strategies for inclusive learning in diverse elementary classrooms, alongside four groups of implementation challenges. Differentiated instruction, adaptive planning, multimodal resources, flexible assessment, supportive classroom management, appropriate technology, and continuing teacher learning were the main instructional or professional responses described. Teacher readiness, accessible materials, institutional capacity, and contextual constraints shaped the feasibility of these responses. The reviewed narratives associated inclusive approaches with opportunities for academic participation and positive social interaction, including empathy, tolerance, and acceptance of differences, but the available synthesis does not establish uniform causal effects.

The principal implication is that classroom adaptation and school-level support should be developed together. Teachers need feasible options for identifying barriers and adjusting instruction, while schools and stakeholders need to address resources, professional collaboration, and an enabling

environment. Because the original review does not report detailed appraisal results or a complete study-level outcome matrix, its conclusions are best read as a thematic synthesis. This boundary does not diminish the relevance of the identified practices; it clarifies the kinds of claims that the reported evidence can support.

AUTHORS' CONTRIBUTIONS STATEMENTS

Rifqa Elvi Mufida, Anita Dwi Lestari, Al Hikmah, Marsa Amalia Rosita, and Via Naila Putri contributed to conceptualization, literature collection and analysis, and drafting of the methods, results, and discussion. Ari Wibowo supervised the work and reviewed the final manuscript. All authors contributed to manuscript revision and approved the final version.

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