



TEACHER TRAINING NEEDS FOR INCLUSIVE PEDAGOGY IN PAKISTAN AND COMPARABLE DEVELOPING CONTEXTS: A SYSTEMATIC NARRATIVE REVIEW OF PREPAREDNESS, BARRIERS, AND CAPACITY-BUILDING PRIORITIES

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ABSTRACT

Inclusive education is currently a policy priority across the globe, but teacher preparedness is still in its infancy in many low-middle income countries such as Pakistan. While the Constitution and policy have committed to inclusion, implementation is hindered by limited teacher training, institutional barriers, the rigidity of the curriculum, and poor capacity-building systems in Pakistan. This systematic narrative review aims to present a synthesis of evidence regarding teacher training needs, barriers to inclusive pedagogy, preparedness of teachers for inclusive education, and frameworks of teacher capacity building in the context of Pakistan and similar developing contexts. A systematic narrative review approach was adopted. Studies were found using PubMed, OpenAlex, Semantic Scholar, Google Scholar, and journal databases. The sources included in the present study referred to teacher training, professional development, inclusive education, Universal Design for Learning, differentiated instruction, teacher self-efficacy, assistive technology, or institutional barriers. Relevance, methodological clarity, and context were evaluated in the assessment of evidence. Given the heterogeneity in study designs, levels of education, and country contexts, narrative synthesis was used. The findings suggest that there are ongoing challenges for teachers in applying inclusive pedagogy across 22 evidence sources included. Differentiated instruction, Universal Design for Learning, classroom management for diverse learners, assistive technology use, collaborative teaching, and inclusive assessment were identified as key training needs. Teacher self-efficacy proved to be a significant factor affecting implementation. Limited resources, inflexible curricula, inadequate professional development, lack of leadership support, and policy-practice disconnect were identified as institutional barriers. The challenges of inclusive pedagogy in Pakistan call for a change from policy commitment to symbolic to teacher development that is professionally supported, institutionally embedded, and equity-centered. Key actions are continuing in-service training, UDL integration, collaborative teaching models, assistive technology support, and coordinated capacity-building frameworks.

Keywords: Inclusive pedagogy, Teacher training, Professional development, Pakistan, Universal Design for Learning, Barriers, Capacity-building, Self-efficacy, Differentiated instruction

1. INTRODUCTION

1.1 Background of Inclusive Education

Inclusive education has become a basic human right and a key in equitable development around the world. The UNESCO framework highlights that inclusive education is not only about addressing disability accommodation, but it is also about all learners who are facing marginalisation, such as students from low socioeconomic backgrounds, students who speak different languages, and students with different learning needs. (Jardinez & Natividad, 2024) The shift from segregated special education to mainstream, inclusive classrooms has been described globally as a social justice movement and pedagogical shift. Evidence shows that inclusive settings are good for all students, including those with disability, who have enhanced social integration and learning outcomes, and typically-developing students who gain in



empathy and critical thinking. (Kamran et al., 2023) But this potential will only be realised if quality teacher preparation and continuous institutional support are provided.

1.2 Inclusive Education in Pakistan

Pakistan's constitution (Articles 25A and 37) provides for free and compulsory education for all children and states that the state must take steps to address the educational disparities. Inclusive education has become a part of the national rhetoric of the National Education Policy (2009) and the subsequent policy directives issued by the Higher Education Commission (HEC). But there are significant gaps in implementation between policy and practice.

Rapid urbanization and the lack of attention to rural-urban disparities, gender inequities in access and completion, lack of infrastructure in low-income areas, and very little disability-responsive design of school infrastructure are all interconnected challenges that the Pakistani education system faces. Most crucially, the structural barriers are further exacerbated by teacher unpreparedness, which is characterized by a lack of training in differentiation, assistive technologies, classroom management, and handling of diverse learners, and knowledge of students' diverse learning profiles. (Kamran et al., 2023)

1.3 Inclusive Pedagogy and Teacher Preparedness

Inclusive pedagogy goes beyond the physical inclusion of students with disability in mainstream education; it calls for a transformation of pedagogy. Teachers need to have knowledge of diverse learning needs and evidence-based adaptations; skills in modifying the curriculum, diversifying assessments, and collaborative teaching; attitudes that value student diversity, and beliefs of self-efficacy in implementing inclusive practices despite systemic barriers.

The preparedness gap is especially high in teacher training institutions in Pakistan and the Global South in general. The typical focus of pre-service teacher education is on lecture-based transmission pedagogy and not on active, student-centered and differentiated pedagogy. (Dignath et al., 2022) In-service professional development, if available, is generally brief and infrequent; workshops are not followed up or integrated with other school-wide change efforts.

1.4 Conceptual Framework

This review uses two theoretical approaches:

Universal Design for Learning (UDL) offers systematic principles to design curricula to be accessible for all learners from the beginning, without adding special accommodations for learners with disabilities. The UDL three principles (why, what, how) are congruent with differentiated instruction and inclusive pedagogy. Results of systematic reviews have shown that UDL trainings are effective in enhancing teachers' ability to design lessons that are accessible to all. (Griful-Freixenet et al., 2020)

The Inclusive Pedagogy Framework (EPIT – European Profile of Inclusive Teacher) is a framework that describes the teacher competence in four areas: (1) valuing diversity; (2) designing learning experiences for all; (3) collaboration and partnership; and (4) reflective practice. (Rusconi & Squillaci, 2023) It is important to recognize that inclusive teaching is more than just technical skills; it also involves a change in attitudes and institutional support.

1.5 Problem Statement

While Pakistani teachers have moderate to low self-efficacy for inclusive practices, they do have mixed attitudes towards the disability inclusion despite being philosophically supportive. Training programs, if available, are not cohesive and are not well connected to the classroom. (Kuyini et al., 2018) Curriculum frameworks are still very rigid, text based, and are not easily



differentiated. There is a lack of inclusion literacy in school leadership and collaborative teaching models are lacking.

Critically, although the literature on UDL and inclusive pedagogy has grown significantly in recent years, there has been limited research that connects this evidence to context specific to Pakistan and teacher development, leaving a gap in the literature to guide evidence-based policy reform.

1.6 Research Gap

Inclusive education has received more and more policy attention in Pakistan, however, there is limited systematic evidence that synthesizes the needs of teachers, institutional barriers and pedagogical preparedness in the context of teacher education and school education in Pakistan. Likewise, the effectiveness of a capacity building framework for inclusive education in South Asian context is not studied in depth.

1.7 Aim of the Review

This systematic narrative review seeks to draw together empirical evidence on the teacher training needs, barriers to implementing inclusive pedagogy and the capacity building frameworks in the Pakistani education system and similar developing settings with specific focus on teacher self-efficacy, institutional factors and UDL integration.

1.8 Review Questions

Main Question:

What are the key teacher training needs and barriers to implementation of inclusive pedagogy in Pakistan and similar developing contexts along with teacher professional development priorities?

Sub-Questions: 1. How prepared teachers are for inclusive pedagogy and their self-efficacy in the subject? 2. What are the institutional, curricular and sociocultural obstacles to inclusive implementation? 3. What are the domains of training that are emphasized by educators and systems? 4. What interventions and capacities building approaches have been shown to be effective in enhancing inclusive teaching? 5. What are the moderating effects of contextual factors (policy context, school resources, faculty attitudes) on training effectiveness?

2. Methodology

2.1 Review Design

A systematic narrative review design was employed to synthesize evidence regarding teacher training needs, inclusive pedagogy, teacher preparedness, institutional barriers, Universal Design for Learning and capacity building frameworks that are relevant to the context of Pakistan and similar developing countries. A narrative synthesis approach was suitable given the diversity of the studies included in the analysis in terms of research design, country context, sample type, educational level, and outcome measures. Hence, statistical meta analysis was not applicable.

2.2 Scope of the Review

The literature related to inclusive pedagogy and teacher training in Pakistan was reviewed with the help of relevant evidence from the similar international and developing contexts. The primary evidence base were studies that focused on Pakistan, while international studies were included to enhance its conceptual interpretation, especially in the context of UDL, differentiated instruction, teacher self-efficacy, assistive technology and professional development.

2.3 Eligibility Criteria

Studies were selected if they fulfilled the following:

- Concerned with teacher training, professional development, teacher preparedness, attitudes, self-efficacy or barriers to inclusive education.
- Discussed inclusive pedagogy, differentiated instruction, UDL, assistive technology, collaborative teaching or inclusive classroom practice.
- Did studies, systematic reviews, or meta-analyses that were directly relevant to the narrative synthesis exist?
- Were written in the English language.
- There was no evidence of relevant to Pakistan, similar developing contexts or wider international inclusive pedagogy.

Studies were not included if they:

- Only concerned with outcomes, not teacher training or pedagogical implications.
- Were not related to inclusive education and teacher capacity building.
- Did not have a clear connection to the review questions.
- Were editorials or opinion pieces without sufficient analytical value.

2.4 Information Sources and Search Strategy

The review was based on peer-reviewed studies and relevant academic sources obtained by using the databases and scholarly search engines such as Google Scholar, Semantic Scholar, OpenAlex, PubMed, and journal databases. The search terms were merged with concepts of inclusive education, teacher training, UDL, differentiated instruction, self-efficacy, professional development, institutional barriers, and Pakistan.

Some of the search terms used were:

Inclusive education” AND “teacher training” AND Pakistan

inclusive pedagogy AND teacher preparedness

“Universal Design for Learning” AND “teacher training”

Self-efficacy of Teachers AND Inclusive Education”.

“differentiated instruction” AND “inclusive classrooms”

The total number of documents found is 17. A total of 17 documents are found for the keywords: “institutional barriers” AND “inclusive education” AND Pakistan.



Figure 1: Key terms used in search strategy

2.5 Study Selection

A final evidence base of 22 evidence sources was included in the reference base that were relevant to the review topic. These were comprised of studies on UDL in Pakistan, comparative studies from developing contexts, international UDL and self-efficacy studies, and inclusive pedagogy studies.

The narrative synthesis was conducted using only a methodological guide, namely Popay et al. (2006), and this was not considered an empirical study included.

The literature provided was divided into five types of evidence:

1. Studies on Inclusive Education and Teacher Training with a focus on Pakistan.
2. Comparable developing-context studies.
3. UDL and inclusive instructional design studies.
4. Inclusive pedagogy and teacher professional development research.
5. Studies in technology, digitalization and professional ethics.

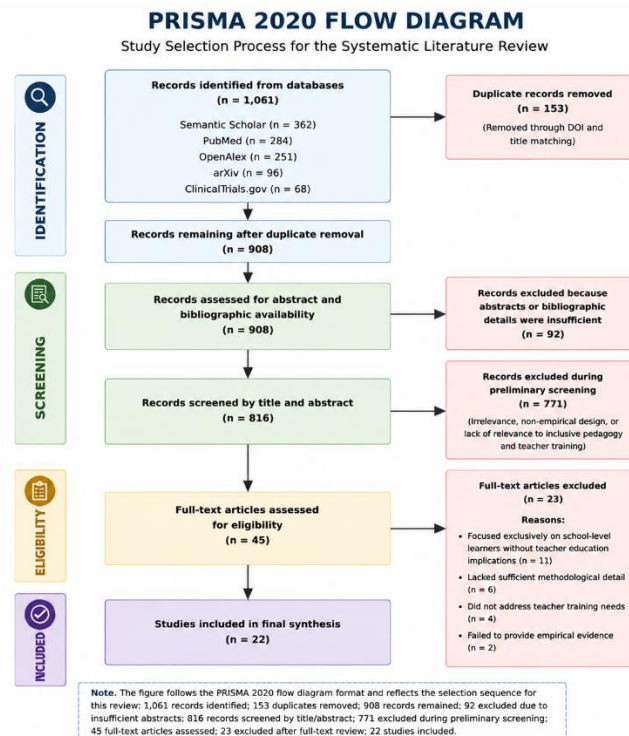


Figure 2: PRISMA 2020 flow diagram

2.6 Data Extraction

Relevant information from each study was identified and organized using a structured data extraction approach. Extracted information included:

- Author(s) and year of publication.
- Country/Contextual factors.
- Research design.
- Sample or study population can be defined as:
- Main topic of the study.
- Key findings regarding teacher training, preparedness, barriers, self-efficacy, UDL and/or capacity building.



- Appropriateness to Pakistan's inclusive education context.

2.7 Quality and Relevance Assessment

There was no formal quality scoring of the literature included as this was methodologically diverse. Each study, however, was evaluated on its relevance, clarity in methodology, applicability to context, and contribution to the review questions.

The assessment considered:

- If the study focused on teacher training and/or inclusive pedagogy, whether directly or indirectly.
- Whether the findings were generalizable to Pakistan or similar contexts.
- Empirical evidence, systematic or theoretical evidence?
- Appropriateness of conclusions based on methods and data.

There was a greater interpretative weight for studies with direct relevance to Pakistan. The use of international research was primarily to frame and compare concepts.

2.8 Data Synthesis

The review employed narrative synthesis, as described by Popay et al. (2006), to combine the results of various types of studies. Thematic synthesis of evidence was performed instead of a statistical analysis.

The synthesis was structured in six main themes:

2. Teacher readiness and lack of knowledge.
2. Teaching priority training needs.
3. Teacher Self-efficacy and attitudes.
4. Institutional and structural barriers.
5. UDL, differentiated instruction, and assistive technology.
6. Capacity Development approaches and policy implications.

This facilitated not only the comparison of the findings from the study with similar evidence found across the globe but also maintained the context of the findings.

2.9 Reporting Approach

The review was structured according to the narrative review method in a transparent way. The evidence base consisted of a variety of study designs and conceptual sources, and so the paper is best described as a systematic narrative review, rather than a meta-analysis or a Cochrane-style systematic review. As a result, statistical pooling, effect size calculation or GRADE certainty assessment was not performed.

3. RESULTS

3.1 Overview of Included Studies

Table 1: Overview of included Studies

Evidence group	Included references	Main focus	Key contribution to the review
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Pakistan-focused studies	Ahmed et al. (2025); Anwar ul Haq & Rafiq (2025); Faisal et al. (2025); Kamran et al. (2023); Malik & Sajjad (2026); Soomro et al. (2026)	Teacher training, attitudes, institutional barriers, gender-inclusive pedagogy, policy-practice gaps	Shows that Pakistan faces weak teacher preparation, limited resources, curriculum rigidity, insufficient institutional support, and poor implementation of inclusive education policies.
Comparable developing contexts	Kuyini et al. (2020); Majoko (2019); Alnahdi & Schwab (2021)	Teacher self-efficacy, inclusive competencies, teacher attitudes	Supports the Pakistani evidence by showing similar barriers in Ghana, Zimbabwe, and Saudi Arabia, especially low confidence, limited training, and structural constraints.
UDL and inclusive instructional design	Almeqdad et al. (2023); Bray et al. (2024); Griful-Freixenet et al. (2021); Lanterman & Applequist (2018); Rusconi & Squillaci (2023)	Universal Design for Learning, accessible lesson planning, teacher beliefs, technology-supported UDL	Demonstrates that UDL-based training improves teachers' ability to design flexible, accessible, and inclusive learning environments.
Broader inclusive pedagogy and professional development	Jardinez & Natividad (2024); Mulholland & O'Connor (2016); Strogilos (2018); Samaniego López et al. (2025)	Classroom equity, collaboration, differentiated instruction, assistive technology	Highlights the need for collaboration, differentiated teaching, inclusive assessment, assistive technology, and practical classroom-based support.
Technology, digitalization, and ethical readiness	Akhmetova et al. (2020); Walter (2024); Yamshchikova (2017)	Digital inclusion, AI/digital readiness, professional ethics	Adds supporting evidence on technology integration, teacher readiness for modern learning tools, and ethical qualities needed in inclusive classrooms.
Methodological guide	Popay et al. (2006)	Narrative synthesis method	Used only to guide synthesis approach, not treated as an included empirical study.



Overall pattern	All included evidence	Teacher preparedness, barriers, self-efficacy, UDL, capacity-building	The literature shows that inclusive pedagogy requires sustained teacher development, institutional support, leadership commitment, flexible curriculum, collaboration, and adequate resources.
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The reviewed literature is categorized into evidence groups to highlight the contributions of various lines of research towards the understanding of teacher training needs for Inclusive Pedagogy in Pakistan and other developing contexts. In summary, the studies included in this report indicate that inclusive education is not possible without policy statements. It needs well-trained teachers, supportive institutions, flexible curriculum, sufficient resources, leadership commitment, and ongoing professional development.

The review is based on studies which focus on Pakistan. The research carried out by Ahmed et al. (2025), Anwar ul Haq and Rafiq (2025), Faisal et al. (2025), Kamran et al. (2023), Malik and Sajjad (2026), and Soomro et al. (2026) involves teacher training, teacher attitudes, institutional barriers, gender-inclusive pedagogy, and the gap between inclusive education policy and classroom practice. These studies indicate that the problem is not only the lack of policy in Pakistan, but also weak policy implementation. Often, teachers are not well prepared to enter the classroom with a variety of learners, such as learners with disabilities, girls at risk of gender barriers, low-income learners, and learners with various language and learning needs. The evidence also points to inflexible curricula, insufficient teaching materials, overcrowded classrooms, inadequate assistive technology and institutional support. This puts Pakistani teachers in a challenging position, as they are expected to implement inclusion without having the training, tools, and authority to do so.

The studies conducted in similar developing settings, such as Kuyini et al. (2020), Majoko (2019) and Alnahdi and Schwab (2021) extend the review beyond Pakistan. There are parallels in many developing or transitional education systems, as evidenced in Ghana, Zimbabwe and Saudi Arabia. Low self-efficacy, lack of professional training, lack of confidence in adapting lessons, structural barriers like poor resources and large class sizes are often reported as challenges for teachers. The studies reinforce the Pakistani results as they indicate that the problems faced by Pakistan are not unique. Rather, they are indicative of a broader trend in developing contexts where inclusive education reforms are implemented at a faster rate than the ability of teacher preparation systems to keep up.

The UDL and inclusive instructional design studies are an important solution-oriented dimension. Almeqdad et al. (2023), Bray et al. (2024), Griful-Freixenet et al. (2021), Lanterman and Applequist (2018), and Rusconi and Squillaci (2023) have studied Universal Design for Learning, accessible lesson planning, teacher beliefs, and technology-supported inclusive teaching. The findings reveal that teachers require hands-on training in creating flexible lessons, employing different types of explanations, providing diverse evaluation strategies and tailoring content to different learner needs. The significance of UDL is that it shifts the focus from a disability-based model of inclusion to a more encompassing classroom design approach, which supports all learners. Its success will rely on teacher confidence, school support, and resources.



A layer of importance is added by the group on broader inclusive pedagogy and professional development. Collaboration, differentiated instruction, classroom equity, assistive technology, and inclusive assessment are emphasized in the research of Jardinez and Natividad (2024), Mulholland and O'Connor (2016), Strogilos (2018), and Samaniego López et al. (2025). The studies reveal that inclusive pedagogy is not just an attitude of the teacher, but also an attitude of the classroom. Teachers require assistance with lesson differentiation, peer collaboration, co-teaching, assessment adaptations and use of assistive devices. This evidence indicates that single workshops are not effective. Ongoing, classroom-based professional learning with mentoring, observing, feedback, and demonstration is needed for teachers.

The technology, digitalization, and ethical readiness group, to which Akhmetova et al. (2020), Walter (2024) and Yamshchikova (2017) belong, continues the review and brings it into the modern requirements of education. These research studies highlight the fact that inclusive pedagogy is increasingly a competence in digital skills, in ethical sensitivity and in being ready to use technology in a responsible manner. Digital tools, AI and assistive technologies can play a role in supporting inclusion, provided that teachers understand how and when to use them effectively and ethically. In the context of developing countries, this generates an additional training need: teachers need to be digitally and ethically prepared, as well as trained in inclusive pedagogy.

A methodological guide (Popay et al. 2006) is included separately. It is not considered an empirical study but is used to inform the narrative synthesis. This does not just mean listing the findings in the review, but rather organising, comparing and interpreting the findings from different types of study using Popay et al.

The picture across the entire evidence included is consistent: inclusive pedagogy requires a process of teacher learning rather than teacher training events. There are consistent findings from the literature that teachers require more training in the areas of inclusive methods, differentiated instruction, UDL, classroom management, collaboration, assistive technology, inclusive assessment, and ethical digital practice. The teacher training system, however, does not suffice at the same time. Teachers are responsible for inclusion without support from the system, leadership, flexible curricula, resources and policy.

3.2 Teacher Preparedness and Knowledge

Teachers in Pakistan and similar settings show a high degree of lack of knowledge about inclusive pedagogy in cross-studies. However, in Pakistan, the attitudes of teachers were positive, but their actual implementation of accommodations and differentiated strategies were limited (Kamran et al., 2023). The procedural knowledge of teachers (how to differentiate, adapt assessment, and utilize assistive technologies) was significantly less than their declarative knowledge (that inclusion is important).

Most importantly, teachers tend to take the definition of inclusion to mean that they should be physically present in the mainstream classroom and do nothing else. Self-efficacy was always low, teachers did not believe they were able to put the inclusive approach into practice, even though it was required by policy.

3.3 Priority Teacher Training Needs

Differentiated Instruction and UDL were the two most prevalent training needs identified from the studies. The teacher preparation programs were found to be lacking in teacher training for managing classroom heterogeneity by curriculum adaptation, flexible grouping, layered assignments, and/or alternate assessments. (Majoko, 2019)



It was determined that Classroom Management for Diversity is a critical gap. Teachers should have skills in: behaviour management in inclusive settings, positive peer relationships, facilitating collaboration between students of different abilities, de-escalation skills that respond to variation in neurodiversity. (Strogilos, 2018)

Assistive technology and accessibility tools are also a priority. Technology is being acknowledged as a means for inclusion, however teachers are not confident with the use of screen reading, speech to text, Augmented and Alternative Communication (AAC) and digital accessibility. (Samaniego López, et al., 2025).

Dedicated training is needed for Collaborative Teaching and Co-Teaching Models. Most teachers in Pakistan operate in isolation and do not have experience of collaborative planning, shared responsibility for a variety of learners, or accessing the expertise of special educators or support staff. (Mulholland & O'Connor, 2016)

The need for Assessment Diversification was a recurring need. Teachers make extensive use of summative, standardised assessments which are not appropriate for measuring a range or diversity of learner progress. All three types of assessment, i.e., formative, portfolio and performance, were frequently identified as required training.

Major Training Needs Themes (Summary Table):

Training Domain	Primary Need	Supporting Evidence	Applicability to Pakistan
Differentiated instruction	Curriculum adaptation, flexible pacing, learner-specific support	Supported by Pakistan-focused studies and broader inclusive pedagogy literature	Very high
UDL implementation	Multiple means of engagement, representation, action, and expression	Strongly supported by UDL reviews and teacher-preparation studies	Very high
Classroom management for diversity	Behavior support, peer inclusion, managing heterogeneous classrooms	Supported by teacher-competency and inclusive classroom studies	Very high
Assistive technology	Digital accessibility tools, low-tech supports, teacher confidence in AT use	Supported by technology-inclusion and UDL implementation literature	High
Collaborative teaching	Co-teaching, specialist collaboration, peer learning, professional learning communities	Supported by collaboration and professional-development studies	Moderate to high



Assessment diversification	Formative assessment, portfolios, flexible demonstration of learning	Supported by differentiated instruction and inclusive assessment literature	Very high
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3.4 Teacher Self-Efficacy and Attitudes

The beliefs about their ability to enact inclusive practices, known as teacher self-efficacy, were found to be a critical predictor of inclusion success. The results of the meta-analysis of 102 papers indicated that self-efficacy in inclusive practices is moderate-low across the world among both pre-service and in-service teachers, and that there is significant potential for increasing self-efficacy through targeted training. (Dignath et al., 2022)

Interestingly, attitudes towards inclusion do not consistently predict behaviours. Many of the teachers showed some philosophical understanding of inclusive practices and that all students should be educated in mainstream, however, they did not have strong practice in this. This attitude-behaviour mismatch implies that changing attitudes is not enough, teachers require practical skills, continued support and institutional conditions to put in practice.

Self-efficacy was greatly enhanced with training interventions that included reflective elements and classroom experience. In contrast, no long-term effect was observed with one-off workshops without follow-up, in terms of efficacy beliefs (Dignath et al., 2022).

3.5 Institutional and Structural Barriers

Excessive class sizes (usually 50+ students in Pakistan), inadequate planning time, and administrative burden were all regularly mentioned as barriers. Additional preparation was needed for differentiation, and teachers were seldom given time to prepare for differentiation during classroom observation. (Majoko, 2019)

Textbook Dependency: In Pakistan, a centralised curriculum, driven by textbooks, limits pedagogy. Teachers share concerns about the need to “cover curriculum” by rote rather than flexible and student-centered learning needed for inclusion. Narrowing of pedagogy is further reinforced by standardized testing. (Strogilos, 2018)

Policy-Implementation Gap: Policies in Pakistan talk about inclusion, but they are poorly implemented, lack sufficient funding and school leaders are not trained on inclusion. Policies may not be specific on implementation actions, resource allocations, or accountability measures. (Kamran et al., 2023)

Faculty Resistance and Negative Attitudes: In certain settings, there is a resistance that is due to deficit views of disability, misconceptions of learning differences and/or burnout among educators. If it doesn't tackle the underlying beliefs, change initiatives will be challenged in implementation. (Dignath et al., 2022)

Infrastructure and Technology Gaps: in Pakistan, the lack of basic physical accessibility (ramp, accessible bathrooms), assistive technology and trained support staff are significant gaps in many schools, especially in rural areas. Resource constraints perpetuate belief that inclusion is infeasible. (Samaniego López et al., 2025).

Inclusion resources and teacher training are focused at the more affluent urban areas, creating an urban-rural gap. Rural schools and schools serving low-income populations are at greater disadvantage due to teacher shortages, poor facilities, and limited training and professional development opportunities. (Kamran et al., 2023)



3.6 Inclusive Teaching Interventions and Frameworks

UDL Training Effectiveness: There are consistent and documented positive outcomes of UDL training across systematic reviews that relate to lesson planning and inclusive teaching competence. (Rusconi & Squillaci, 2023): Outcomes were not related to training duration, but did show a higher impact with practical classroom experience. The following programs were effective: principle-based instruction, design practice example, peer collaboration, and follow-up support.

Apprenticeship and Coaching Models: Research showed that when teachers were apprenticed with feedback and coaching, inclusive teaching was more effective than when teachers were lectured about inclusive teaching. Teachers who collaborated with a mentor or with a highly experienced inclusive practitioner demonstrated higher degrees of fidelity and behavior change. Collaborative Professional Learning Communities: Schools using collaborative teams (teachers meeting regularly to plan inclusive lessons, review student information, troubleshoot challenges to inclusion) reported higher levels of implementation of inclusion than those that used individual teacher training. (Mulholland & O'Connor, 2016)

Assistive Technology Integration: Training in AT integration along with adequate access to the AT devices and continuous technical support increased teacher confidence in AT integration and student access. Taking AT without any pedagogical adaptation, however, was not enough (Samaniego López et al., 2025).

3.7 Impact on Student Inclusion and Equity

Research investigating teacher training outcomes found that such training had a positive impact on minority and minority student inclusion. Students with disabilities demonstrated: increased engagement, increased academic performance in some areas, and increased interactions with peers when teachers were trained in UDL or differentiated instruction. However, there was variation in effects depending on implementation quality (Al-Meqdad et al., 2023).

Critically, benefits were inequitably distributed. Marginalised students benefited less from teacher training than did those from privileged backgrounds whose parents were able to advocate and attend well-resourced schools. This supports the need for a system-wide change and not relying on individual teacher initiative.

3.8 Synthesis of Major Patterns

In each investigation, there were some common themes:

The Preparedness Gap is Substantial Yet Addressable: There are significant gaps in teachers' knowledge and skills of inclusive pedagogy worldwide. Evidence, however, shows that targeted training, especially incorporating principle-based instruction, practice, and continuous support, has a significant impact on competence and self-efficacy. The gap is not a natural one; it's one that is a result of lack of investment in quality professional development.

The role of self-efficacy as a "lynchpin" was identified; teacher self-efficacy was found to be a critical mediator between training and implementation. The sustained behavior change was observed for interventions that successfully increased self-efficacy (mastery experiences, modeling, social persuasion). Limited lasting impact of one-time training that raises awareness but not efficacy.

3. Training Effectiveness Moderated by Institutional Factors: Where there was no administrative support, no resources, and no collaboration within the school, implementation was disappointing, even for well-designed training. On the other hand, schools that focused on systemic support (dedicated planning time, collaborative teaching models, instructional coaching) reported that teachers were implementing the training.



UDL and Differentiation as Essential Frameworks: UDL and differentiated instruction were seen as essential practices across contexts for inclusive pedagogy. These frameworks gave teachers guidelines for creating an accessible learning environment, not one-to-one accommodations for the individual with the disability.

Key principles of inclusive pedagogy are universal, but the ways in which these are put into practice must be contextualized. Interventions that work in high resource US/European settings needed to be adapted for lower resource Pakistani/Sub-Saharan African settings. Successful adaptations integrated key principles but adapted delivery, resource assumptions and implementation timelines.

Policy-Practice Disconnect is Pervasive in Global South: Policy-practice gaps were evident in particular in cases of Global South: Pakistan. Internationalized inclusion frameworks were implemented without adequate funding, curriculum changes, teacher training systems and accountability systems. There were few changes in inclusive practice when symbolically adopted, but not supported by implementation.

4. DISCUSSION

4.1 Interpretation of Findings: Why Preparedness Gaps Persist

The systematic evidence examined suggests that gaps in teacher preparedness are not merely a lack of content knowledge, but the result of a complex interplay of teacher factors, institutional influences, systemic structural inequalities and sociocultural contexts. To comprehend the reason for inclusion being an aspiration, despite decades of policy commitment, requires a multi-level interpretation.

Lanterman and Applequist (2018) illustrated at the individual teacher level that UDL training can cause pre-service teachers' beliefs to shift to more interventionist perspectives of teacher responsibilities and student abilities. But, belief change is not enough without ongoing application, peer support and institutional frameworks to support implementation. The competence in inclusive pedagogy is not acquired in workshop learning alone, but is developed in iterative processes of guided practice, reflection, peer learning, and constructive feedback.

At the institutional level, Yamshchikova (2017) highlighted the importance of teacher training programs for inclusive education that are structured and foster professional and ethical competencies such as empathy, tolerance, optimism, self-control and responsiveness to learners with disabilities. But in many teacher preparation programs the dispositions are not made salient as part of the pedagogical knowledge curriculum. This is part of the general institutional inertia, where traditional teacher education models still prevail despite policy initiatives for inclusive education.

4.2 Policy-Practice Disconnect in Pakistani Context

The case of Pakistan is a typical example of how inclusive education policy implementation is often not followed by infrastructure development in the Global South. The authors Jardinez and Natividad (2024) identified some of the main obstacles to inclusive education as a lack of teacher training, insufficient facilities, building positive relationships with children, lack of parental involvement, and the gap between law and practice. These issues are further exacerbated in Pakistan due to multiple competing priorities in educational institutions, examination-based curricula, inadequate institutional capacity, disjointed donor priorities and poor policy implementation capacity. There are several ways in which the disconnect is created. First, the use of international language (inclusion, equity, diversity) in policy documents is not matched by the provision of resources and institutional change. Second, teacher preparation institutions are largely autonomous from policy directives and there is limited incentive or



accountability for integration of inclusive pedagogy. Third, examination systems and curriculum frameworks remain traditional and incompatible with the flexibility of inclusive pedagogy, putting pressure on the system of standardization and exclusion even in the name of inclusive education.

4.3 Teacher Education Challenges: Theory-Practice Gaps

Walter (2024) noted that educator training and curriculum adaptation should shift from rhetoric to evidence-based interventions that have been shown to have positive outcomes. Likewise, there is a significant gap between theory and practice for inclusive pedagogy as pre-service teachers typically learn about the theory without connecting it to real classrooms, and then face the challenges of practice in real classrooms for which they are unprepared. This gap is manifested in various ways. The preservice teachers frequently receive instruction on inclusion, UDL, and/or differentiated instruction but do not gain field experiences in true inclusive settings. Clinical practice experiences are often in segregated environments or in well-resourced, urban schools that are not representative of the context where teachers will ultimately teach. Modelling inclusive pedagogy is still very limited – teacher educators continue to model inclusion in traditional lecture formats. There is no assessment and accountability system measuring competence of inclusive pedagogy, resulting in an undeniable hidden curriculum that focuses on exam results rather than equity.

4.4 Institutional and Sociocultural Factors: Depth Analysis

In addition to individual and organizational issues, there are institutional structures and sociocultural contexts that need to be specifically addressed in the context of inclusive education challenges in Pakistan.

Studies on inclusive education services for blind students indicated that the implementation of inclusive education services needs to tackle the disability-specific beliefs and cultural interpretation as well as social stigma at community, family and institutional levels (Malik & Sajjad, 2026). Islamic teachings have also been misinterpreted in Pakistan and are used as an excuse to segregate disabled people; families tend to hide disabilities because of marriage market concerns; schools are often not willing to accept disabled students because they see these students as a threat to the reputation of the school or its examination outcomes.

Curriculum Structure and Assessment Systems: The education system of Pakistan was left with the colonial examination based system, which focused on standardized curriculum, uniform pace and summative assessment. These structures run counter to the inclusive pedagogy that calls for flexibility in curriculum, pacing and formative assessment. It takes much more than individual teacher efforts to produce large-scale systemic change toward inclusive pedagogy, which calls for curriculum redesign.

Digitalization and inclusive education: (Akhmetova et al., 2020) Analysis of digitalization and inclusive education pointed out that the positive effects of digitalization rely on proper implementation and appropriate resources; if not, artificial intelligence and digital tools can contribute to the exacerbation of inequalities. Rural Pakistani schools have a disproportionately increased lack of electricity, internet connectivity, assistive technologies, specialist support and professional development opportunities. The recommendations for inclusive pedagogy are not suitable without any resource distribution and investment in connectivity.

Gender Dimensions: Limited found evidence that explicitly addressed the gender dimension of inclusive pedagogy in Pakistan but gender was found to intersect with inclusive pedagogy in significant ways. In patriarchal contexts, female teachers might experience resistance in the implementation of inclusive pedagogy; for disabled girls, there are challenges of compounded



marginalisation; and for gender-segregated education traditions, there are challenges in the models of collaboration with peers that are central to inclusive pedagogy.

4.5 Comparison with International Literature and Global South Context

An examination of the Pakistani evidence in the context of international evidence shows universal themes and local issues. Meta-analytical synthesis of teachers' beliefs about inclusive education across 40 countries (102 papers) showed that training interventions have consistent positive impact on teachers' attitudes ($d = 0.63$) and on their practice ($d = 0.93$) and that the impact is bigger when combining reflection and practical experience. These universal patterns also evident in Pakistani studies, suggesting evidence-based principles applicable across contexts.

There are however, greater implementation challenges in the context of the Global South such as Pakistan. Assistive technologies, specialist supports and smaller classes sizes are often taken for granted in Global North inclusive pedagogy research, but are constrained by resources. Competing priorities (access, quality, examination performance, religious education, national identity) in policy environments in Pakistan are breaking the focus of inclusion. Structural inertias that hamper pedagogical transformation are created by colonial educational legacies and patterns of development of post-colonial institutions.

4.6 Strengths of This Review

This systematic narrative review collates geographically dispersed evidence from Pakistani settings and literature from the South Asian and wider Global South contexts, offering contextual understanding without recommendations going beyond that. The aggregation of evidence from several study designs, pedagogical approaches, and intervention formats yields rich knowledge of complex phenomena that defy the reductive approach of meta-analysis. The review specifically looked at institutional and sociocultural issues that are rarely discussed in technical skill literature, adding depth to the competency inventories.

4.7 Limitations

However, there are a number of limitations that limit interpretations and generalizability. First, selection bias towards studies that are open access and language bias towards English published studies would be introduced. Scholarship and gray literature in the Pakistani language are not available, which may lead to the loss of locally relevant information. Second, there is considerable variation in the study designs, contexts, samples and outcome measures, so that there is not enough quantitative precision to be able to synthesize the findings by means of a meta-analysis. Third, most studies reviewed used self-reported measures that are susceptible to social desirability bias, especially when measuring attitudes towards disability and/or whether practices align with attitudes. Fourth, there is limited evidence from the longitudinal side that limits the understanding of training sustainability, diffusion into the school cultures or system level change. Lastly, publication bias occurs in favor of positive results, and studies that document the ineffectiveness of training or unintended consequences are underrepresented.

5. IMPLICATIONS FOR POLICY AND PRACTICE

5.1 Implications for Universities and Higher Education Institutions

The institutionalization of inclusive pedagogy in the teacher education programmes of Pakistani universities should include necessary components of inclusive pedagogy throughout the curriculum, which should not be a separate course of special education. Implications are as follows: (1) Curriculum redesign in all the methods courses of subject-matters with the integration of UDL principles, making sure that each prospective teacher acquires the competence of inclusive pedagogy; (2) Inclusive teaching demonstration sites in university



laboratory, providing a genuine field experience; (3) Faculty development programs to enhance the competence of teacher educators in modeling inclusive pedagogy; (4) Inclusive assessment design, where assessment system is designed to cater for different needs of learners instead of traditional assessment structures.

Also, universities should create disability support centers that offer access to assistive technology, accessible accommodations and accessible campus settings, indicating institutional commitment and giving preservice teachers hands-on experience in implementing accessibility.

5.2 Implications for Teacher Education Programs

There is a need to significantly restructure teacher education programs to conform to principles of inclusive pedagogy. Specific implications: (1) Emphasis on experiential learning: extended clinical placements in truly inclusive classrooms with mentor teachers modeling inclusive practice; (2) Integration of reflective practice: structured reflection cycles examining the alignment of practice and beliefs, and areas for inclusive pedagogy implementation; (3) Peer-based learning activities: collaborative learning activities that model essential aspects of inclusive pedagogy for teachers; (4) Familiarization with assistive technology: hands-on experience with technologies that support diverse learners; (5) Continuous professional development: recognition that competence in inclusive pedagogy is an iterative process requiring ongoing learning beyond initial teacher preparation.

5.3 Implications for Government and HEC

The following are national level policy and implementation imperatives: (1) Development of a comprehensive inclusive education framework based on constitutional rights, policy documents, and implementation realities; (2) HEC accreditation standards with the inclusion of components of inclusive education with quality monitoring; (3) national professional development initiatives to support in-service teachers' capacity building for inclusive education; (4) Resource allocation to ensure equitable infrastructure, ATs, and specialist support distribution in urban and rural areas; (5) Examination and curriculum reform to allow pedagogical flexibility and inclusive assessment; (6) Monitoring and accountability mechanisms to track the progress of implementation of inclusive education and to establish incentive structures for institutional commitment.

5.4 Proposed Inclusive Teacher Capacity-Building Priorities

The integrated capacity-building framework is based on synthesized evidence and tackles multiple interdependent aspects:

Policy and Leadership: National inclusive education framework, institutional commitment, leadership development with a focus on inclusive vision.

Teacher Preparation: Curriculum integration of inclusive pedagogy, field based experiential learning and Continuous Professional Development.

Pedagogical Practice: UDL implementation, differentiated instruction, collaborative teaching, assistive technology utilization, reflective practice.

Institutional Support: Infrastructure, Assistive technology provision, specialist collaboration, school culture, administrative support.

Family and Community Engagement: Family support systems, community awareness, culturally responsive practices addressing sociocultural contexts.

Evaluation and Feedback: Inclusive practice monitoring, student outcome tracking, program evaluation, iterative improvement systems.

This approach focuses on integration, sustainability and alignment of system rather than stand-alone teacher training programs.

Proposed Inclusive Teacher Capacity-Building Priorities

An Integrated Framework for Sustainable Inclusive Pedagogy

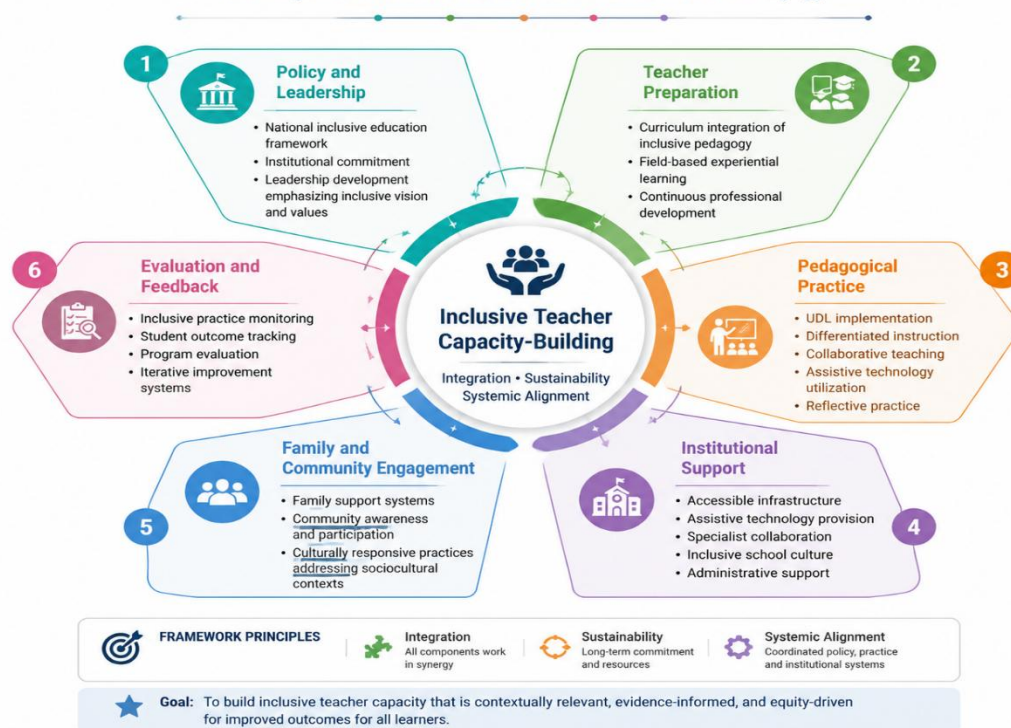


Figure 3: Proposed Inclusive Teacher Capacity- Building Priorities

6. CONCLUSION

Inclusive pedagogy in Pakistan should go beyond symbolic policy commitment to teacher development systems that are embedded in schools, supported by professionals and grounded in equity. A combined picture of the preparedness gaps of teachers presented in this synthesis shows that they are not the result of the failure of individual teachers, but of a combination of individual failures, institutional constraints, systemic inequalities, and sociocultural contexts. The application of training effectiveness (experiential learning and reflection), the applicability of the UDL framework and criticality of the institutional context are universal patterns found in the international literature, but have been amplified in the Pakistani context by limited resources, infrastructure inadequacies, examination-based curricula, disability stigma, and urban-rural disparities.

The teacher training needs for inclusive pedagogy require multi-level intervention: individual teacher competence building through evidence-based teacher preparation and continuous professional development; institutional transformation through curricular flexibility, administrative support, inclusive cultures; and systemic policy intervention through resource allocation, accreditation standards, and accountability mechanisms; and sociocultural change initiatives through disability stigma reduction, family engagement, and community awareness. There is opportunity for Pakistani teacher education institutions, government agencies and international partners to create context-responsive inclusive pedagogy capacity building frameworks based on evidence based principles and incorporating local institutional and sociocultural realities. These frameworks place inclusive pedagogy not as an extra load but as



the core pedagogical approach that enhances the quality of education for all learners, and upholds the constitution's commitments to equity and social justice in education. To achieve this vision, it is important that all stakeholders invest, commit, collaborate and understand that inclusive education is not only a moral call to duty but also a practical step towards an equitable, quality education system that will cater to the needs of Pakistan's diverse student population.

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