



Recent Pedagogical Practices for Inclusive Education: Global Perspectives and Evidence from Pakistan

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Abstract

The study has explored recent pedagogical practices on inclusive education in the light of the global understandings and Pakistani evidence. Data was gathered from 376 teachers across mainstream, inclusive and special education schools using a quantitative survey design. The instruments used to measure teacher preparedness were a structured questionnaire on UDL, DI, collaborative learning, assistive technology, digital accessibility, and inclusive assessment practices. The statistics used were descriptive and inferential statistics that include frequency, percentage, mean, Standard Deviation, t-test, ANOVA, correlation, reliability and regression analysis. The results reflected the moderate level of inclusive pedagogical practice by teachers. Assistive technology and digital accessibility were relatively low in relation to other sections, with collaborative and peer supported learning being the strongest area. The differences were significant according to the location of the institution, training, school type, qualification, and years of teaching experience. The study findings indicated a need for robust teacher training, available support materials, assistive technology, and on-the-job support for inclusive education in Pakistan.

Keywords: *inclusive education, pedagogical practices, Universal Design for Learning, assistive technology, differentiated instruction, Pakistan*

Introduction

The principle of inclusive education has been identified as a key issue in the current educational reform since it concerns the right of all learners to have the opportunity to access, participate in and benefit from quality education irrespective of their disability, gender, language, socioeconomic status, geographic location and learning difficulty. The global conversation on inclusive education has moved from introducing learners with disabilities to mainstream schools to changing the ways teachers teach, the classroom, the assessment systems, the curriculum and teacher preparation. The teaching practices of the last few years, including Universal Design for Learning, differentiated instruction, collaborative teaching, individualized learning support, assistive technology, digital accessibility, peer-assisted learning, formative assessment, and culturally responsive pedagogy, have been encouraged as practical approaches for



addressing learner diversity. These practices acknowledge that learners learn information, communicate understanding, relate socially and engage in classroom activities in different ways. Thus, pedagogical flexibility is needed for inclusion, rather than a teaching of uniformity for all learners. (UNESCO, 2020; UNICEF, 2021; Bray et al., 2024; Navas-Bonilla et al., 2025).

The importance of inclusive pedagogy has increased after the COVID-19 pandemic because educational systems experienced learning loss, digital exclusion, and unequal access to instructional support. Globally, inclusive education is now linked with Sustainable Development Goal 4, which emphasizes inclusive and equitable quality education and lifelong learning opportunities for all. In this context, recent pedagogical practices are not limited to disability-specific adjustments but also include learner-centered planning, accessible digital content, flexible assessment, multilingual support, emotional and behavioral support, and teacher collaboration with parents and specialists. Evidence from recent studies shows that technology-supported inclusion can improve access and participation when teachers are trained to use digital tools, assistive devices, screen readers, captioning, Braille resources, augmentative and alternative communication, and adaptive learning platforms. However, technology alone does not ensure inclusion unless it is combined with teacher competence, institutional support, inclusive attitudes, and accessible infrastructure. (Almeqdad et al., 2023; Yang et al., 2024; Samaniego López et al., 2025; Navas-Bonilla et al., 2025).

Background of the Study

The background of this study is rooted in the growing realization that traditional teacher-centered methods are insufficient for classrooms where learners have diverse abilities, learning styles, languages, social backgrounds, and support needs. Inclusive education demands a shift from a deficit-based view of learners to a rights-based and strengths-based view in which barriers are located in the curriculum, pedagogy, environment, and institutional practices rather than in the child alone. Universal Design for Learning has emerged as one of the most influential pedagogical frameworks because it encourages teachers to provide multiple means of engagement, representation, and expression. Similarly, differentiated instruction helps teachers adjust content, process, product, and learning environment according to learners' readiness, interests, and learning profiles. Collaborative teaching, peer tutoring, cooperative learning, and individualized support plans further help teachers create classrooms where learners with and without disabilities can participate meaningfully. (UNESCO, 2020; CAST, 2024; Bray et al., 2024; Quirke, 2025).

Since the last decade, inclusive education has gained more and more policy and academic recognition in Pakistan, and its application in schools has been inconsistent. There was an awareness of disability inclusive education, teacher training, accessible infrastructure and inclusive teaching methods in national and provincial policy documents. UNICEF South Asia (SA) country profile on Pakistan showed that specific policies were undertaken around disability-inclusive education, and gains made in enabling environments, demand creation, service delivery, and data systems. Likewise, the introduction of Punjab Special Education Policy 2020 highlighted the social model of disability and included the focus of social inclusion, rehabilitation, access and support services. Nevertheless, Pakistan still has many issues to address such as high rates of out-of-school children, insufficient training of teachers in inclusive pedagogy, poor referrals and assessment procedures, inaccessible school premises, lack of assistive technology and inadequate coordination between mainstream and special schools. This research is based on the findings of other studies conducted by the Government of Punjab (2020), UNICEF (2021), Pakistan Institute of Education (2023) and Muhammad (2024).

Research Gap

Though recent literature has turned the focus of inclusive pedagogy, Universal Design for Learning, digital accessibility, and assistive technology, there has been minimal empirical research that links these newer pedagogies with the realities of Pakistani classrooms. While there are multiple studies to discuss inclusive education from the policy and attitudinal perspective, fewer studies have explored how teachers



specifically apply differentiated instruction, flexible assessment, collaborative teaching, accessible digital tools, peer support, and individualized accommodations in the context of daily instruction in the classroom. Besides, the available evidence from Pakistan has tended to address barriers, perceptions or overall readiness, but not concentrated on how the pedagogical trends in the world compare to classroom practices in Pakistan. This led to the urge for research that can include exploration of understanding, adaptation and implementation of the recent inclusive pedagogical practices in Pakistan's educational setting. (Usman et al., 2022; Sulman, 2024; Aftab, 2024; Shaukat, 2025).

Limited integration of technology and inclusive pedagogy in local research was the other gap. The use of assistive technologies, adaptive learning platforms, accessible digital content, captioning, screen reading, braille displays, and artificial intelligence-based learning has been highlighted as a means of inclusion in global studies. In Pakistan however, there is limited evidence of the availability of these tools, teachers' capability, the extent to which they are integrated in the classroom, and their sustainability. The differences were more pronounced in public schools and rural areas where digital access, teaching preparation and institutional support were often less robust. So, a study on recent pedagogies used in inclusive education was needed which could relate global developments with the policy and school and classroom realities in Pakistan. (Bray et al., 2024; Samaniego López et al., 2025; Navas-Bonilla et al., 2025; UNICEF Pakistan, 2025).

International Scenario

At the international level, inclusive education has moved from a placement-based model toward a transformation-based model. UNESCO's Global Education Monitoring Report emphasized that inclusion means addressing all forms of exclusion and discrimination in education and ensuring that all learners are valued and supported. UNICEF also described inclusive education as a system in which all children learn together in the same classrooms and schools, with real learning opportunities for groups that have traditionally been excluded. In recent global practice, inclusive education has been connected with Universal Design for Learning, differentiated instruction, co-teaching, inclusive assessment, assistive technology, social-emotional learning, and culturally responsive teaching. These practices have become especially important in multicultural and multilingual classrooms where disability intersects with poverty, migration, gender, language, and digital inequality. (UNESCO, 2020; UNICEF, 2021; UNICEF, 2024; Quirke, 2025).

Recent international evidence has shown that inclusive technologies can support participation, accessibility, and personalized learning, but their impact depends on how teachers use them pedagogically. Systematic reviews have reported that technologies such as mobile devices, interactive applications, augmented reality, screen readers, Braille devices, adaptive keyboards, educational software, and learning platforms can reduce barriers for learners with diverse needs. However, the same studies also warned that technology may become a challenge when schools lack infrastructure, teacher training, ethical guidelines, technical support, and affordability. Therefore, global trends suggest that inclusive education requires a balanced approach in which technology, pedagogy, policy, teacher education, and learner support systems work together. (Yang et al., 2024; Bray et al., 2024; Samaniego López et al., 2025; Navas-Bonilla et al., 2025).

Local Scenario

Inclusive education has been getting more attention in Pakistan, both in policy and academics, but its implementation in educational classrooms is not uniform. There is recognition in national and provincial policy documents of the need for disability inclusive education, teacher training, accessible infrastructure and inclusive teaching methods. In the UNICEF South Asia country profile on Pakistan, policy measures on disability inclusive education were highlighted and progress was noted in the enabling environment, demand creation, service delivery, and data systems. Likewise, the Punjab Special Education Policy 2020 also brought a shift from the medical to social paradigm of disability and highlighted social inclusion,



rehabilitation, access, and support services. However, Pakistan has major problems such as high rate of out of school children, inadequate training of teachers on inclusive pedagogy, lack of necessary referral and assessment systems, inaccessible school premises, lack of assistive devices and less coordination between mainstream and special education systems. The Government of Punjab, 2020, UNICEF, 2021, Pakistan Institute of Education, 2023, Muhammad, 2024).

The local scenario also showed that inclusive education in Pakistan faced multiple structural and pedagogical barriers. Pakistan Education Statistics reported that around 26 million children of school-going age remained out of school, reflecting a wider challenge of educational access and equity. Children with disabilities were among the groups most vulnerable to exclusion because of inaccessible buildings, social stigma, lack of trained teachers, limited assistive technology, weak screening and assessment systems, and inadequate classroom accommodations. Recent Pakistani studies further suggested that teachers generally supported the idea of inclusion but required continuous professional development, practical training, administrative support, and teaching resources to implement inclusive practices effectively. Therefore, the success of inclusive education in Pakistan depended not only on policy declarations but also on transforming classroom pedagogy and teacher preparation. (Pakistan Institute of Education, 2023; Aftab, 2024; Sulman, 2024; Bhutta, 2025).

Statement of the Problem

Inclusive education has been recognized globally and locally as a necessary approach for ensuring equitable access, participation, and learning for all students. However, in Pakistan, the implementation of inclusive education has remained limited due to gaps between policy and classroom practice. Teachers are expected to address diverse learning needs, but many schools lack trained staff, accessible teaching materials, assistive technology, flexible curricula, inclusive assessment practices, and disability-friendly infrastructure. At the same time, global trends are rapidly moving toward Universal Design for Learning, differentiated instruction, collaborative teaching, digital accessibility, and technology-supported accommodations. The problem is that limited evidence is available regarding how these recent pedagogical practices are understood, adopted, and implemented in Pakistani classrooms. Therefore, this study aimed to examine recent pedagogical practices for inclusive education by reviewing global perspectives and analyzing evidence from Pakistan. (UNESCO, 2020; UNICEF, 2021; Government of Punjab, 2020; Navas-Bonilla et al., 2025).

Objectives of the Research Study

1. To examine recent pedagogical practices used for promoting inclusive education at the global level.
2. To identify major global trends related to Universal Design for Learning, differentiated instruction, collaborative teaching, assistive technology, and accessible assessment in inclusive education.
3. To analyze evidence from Pakistan regarding the implementation of inclusive pedagogical practices in schools.
4. To explore the gaps between global inclusive education trends and local classroom practices in Pakistan.
5. To suggest evidence-based recommendations for improving inclusive pedagogy, teacher preparation, and learner support in Pakistan.

Significance of the Study

This study is significant because it provides a timely academic discussion on inclusive education by connecting recent global pedagogical trends with evidence from Pakistan. The study may help teachers understand how inclusive pedagogy can be translated into classroom practices through Universal Design for Learning, differentiated instruction, peer support, collaborative teaching, assistive technology, and flexible assessment. It may also support school heads and administrators in identifying the resources, infrastructure, and professional development needed for inclusive classrooms. For teacher education institutions, the study may provide guidance for revising pre-service and in-service training programmes so

that teachers are prepared to teach learners with diverse needs in mainstream and special education settings. (Almeqdad et al., 2023; Bray et al., 2024; Shaukat, 2025; Samaniego López et al., 2025).

The study is also significant for policymakers because it highlights the gap between policy commitment and classroom implementation in Pakistan. It may help education departments, curriculum developers, and disability support agencies design more practical strategies for inclusive education, especially in relation to teacher training, assistive technology, accessible infrastructure, early identification, individualized support, and inclusive assessment. The study may further contribute to research by providing a foundation for future empirical studies on inclusive pedagogy in Pakistan. By combining global perspectives with local evidence, this study may support a more realistic, context-sensitive, and evidence-based approach to inclusive education reform in Pakistan. (Government of Punjab, 2020; UNICEF, 2021; Pakistan Institute of Education, 2023; UNICEF Pakistan, 2025).

Literature Review

Conceptual Understanding of Inclusive Education

Inclusive education has increasingly been understood as a process of transforming educational systems so that all learners can access, participate in, and benefit from quality learning experiences. The concept is no longer limited to the physical placement of learners with disabilities in mainstream classrooms; rather, it involves restructuring curricula, pedagogy, assessment, school culture, teacher preparation, and support services to respond to learner diversity. Inclusive education emphasizes that students differ in terms of ability, disability, language, gender, culture, socioeconomic background, emotional needs, and learning pace. Therefore, recent scholarship has argued that inclusion should be treated as a whole-school and whole-system responsibility instead of an individual teacher's isolated effort. This wider understanding has shifted the focus from "fixing the learner" to removing barriers in teaching, learning environments, assessment procedures, institutional attitudes, and educational policies. (UNESCO, 2020; UNICEF, 2021; Hà, 2026).

A review of the world literature also demonstrates a strong relationship between inclusive education and equity in education and social justice and Sustainable Development Goal 4. "All means all" is a statement of the principle that no learner should be denied meaningful participation in learning due to their disability, poverty, geographic location, gender, ethnicity, language or any other factor. This approach entails that schools acknowledge that learner differences are commonplace in classrooms and not issues that need to be segregated. Thus inclusive education requires flexible teaching methods, individualised learning approaches, accessible resources, collaboration and supportive relationships within the classroom. Thus inclusion is not just a slogan for policy but a commitment to rethinking learning opportunities for a diverse population of learners. (UNESCO, 2020; UNICEF, 2021; Quirke, 2025).

Recent literature has also emphasised that inclusive education needs to be seen as a process and a practice that is sensitive to context. The concept of inclusion has a general meaning in international frameworks, but its meaning varies at the national, school and classroom levels. The focus of inclusive education debates in high income countries is mainly on Universal Design for Learning, digital accessibility, inclusive assessment and co-teaching. The discussion is often linked with access, school readiness, teacher shortage, disability identification, assistive technology, infrastructure, and social stigma in low and middle income countries. Hence, inclusive education not only needs to be studied in relation with international pedagogical developments, but also with regard to local realities in education. This is especially crucial for Pakistan, where inclusive education has been encouraged via policies and development projects, but there are substantial difficulties in its implementation. (UNICEF, 2021, Pakistan Institute of Education, 2023; Muhammad, 2024).



Universal Design for Learning as a Recent Pedagogical Practice

Universal Design for Learning has become one of the most important pedagogical approaches to inclusive education. The concept of UDL is that the curriculum is not altered when learners have difficulties, but it is designed in the first place to suit the needs of the learner. It inspires teachers to offer more than one way to engage, more than one way to represent and more than one way to act and express. In these principles teachers have opportunities to provide differentiated (or multiple) means for students to become interested in learning; to access information; to demonstrate understanding; and to engage in classroom activities. The true strength of UDL is in its proactive approach, as the system affords flexibility and access to learning for all students, instead of requiring repeated individual adjustments. (CAST, 2024; Almeqdad et al., 2023; Bray et al., 2024).

Research in Malaysia and other countries have demonstrated that the implementation of UDL can positively contribute to inclusive teaching through learner independence, motivation, participation and access to content. Almeqdad et al. concluded that UDL interventions brought positive results in education due to the fact that they prompted teachers to adjust their instruction, learning activities, assessment processes, and approach to classroom engagement. Likewise, Bray et al. found that UDL and technology integration at the secondary level contributed to accessibility when the digital tools were used for a clear pedagogical purpose. These findings confirm that UDL is not simply a theoretical approach, but can be applied to real classroom needs and decisions, including the creation of visual supports, audio materials, captioned videos, flexible grouping, use of digital platforms, interactive tasks and alternative assessment methods. (Almeqdad et al., 2023; Bray et al., 2024).

However, recent literature has also warned that UDL cannot be implemented effectively without teacher preparation and institutional support. Teachers require training to understand how to design flexible lessons, select accessible materials, use assistive and digital tools, and assess learners through multiple modes. In many contexts, UDL is misunderstood as simply adding technology or simplifying content, whereas its actual purpose is to provide equitable access to high-quality learning. Therefore, UDL requires a shift in teacher thinking from uniform instruction to flexible design. This shift is especially relevant for Pakistan, where traditional lecture-based teaching, textbook dependency, large classes, and examination-oriented learning often limit opportunities for learner-centered inclusion. (Bray et al., 2024; Samaniego López et al., 2025; Muhammad, 2024).

Differentiated Instruction and Individualized Support

Differentiated instruction is another major pedagogical practice associated with inclusive education. It refers to the adjustment of content, process, product, and learning environment according to learners' readiness levels, interests, learning profiles, and support needs. In inclusive classrooms, differentiated instruction allows teachers to provide varied tasks, flexible grouping, scaffolding, peer support, modified materials, and alternative ways of demonstrating learning. This practice is important because learners with disabilities and learning difficulties may require additional support, while other learners may need enrichment or advanced tasks. Differentiation therefore helps teachers move away from a one-size-fits-all model toward a more responsive and equitable teaching approach. (Lindner & Schwab, 2020; Ici, 2026).

Recently, the importance of linking differentiated instruction with ongoing assessment and reflection in teaching has been highlighted. Teachers must determine the strengths, challenges, rate of learning, language requirements, and methods of communication for learners. Teachers can use formative assessment, observation, diagnostic tasks and learning feedback to plan differentiated lessons. Differentiation may also be achieved by providing opportunities for learners to demonstrate their understanding through oral responses, written work, drawings, projects, demonstrations, portfolios or assistive technologies within an inclusive assessment. This flexibility is necessary due to the fact that

standardized assessment may negatively affect students where they have communication, sensory, cognitive or physical limitations. (Lindner & Schwab, 2020; Ici, 2026; Samaniego López et al., 2025).

Differentiated instruction (DI) is a neglected aspect of inclusive pedagogy in Pakistan. Most teachers are expected to teach multiple learners but are not well-trained on adapting lessons, designing individual support or using a variety of assessment methods. Class size, pressure on the curriculum, not enough resources to teach, no support staff and set examination system are additional barriers. Research and policy inputs from Pakistan indicate that teachers' attitudes towards inclusion can be positive and need training in curriculum adaptation, Individual education planning, classroom management, disability awareness and assessment modification. Thus, differentiated instruction can be a meaningful inclusive practice in Pakistan only if it is provided with teacher education, school based mentoring and flexible curriculum policies. (UNICEF, 2021; Sulman, 2024; Kalsoom, 2024).

Collaborative Teaching and Peer-Supported Learning

Collaborative teaching is becoming significant as an emerging inclusive pedagogical approach as inclusion is not possible in one person's teaching alone. Co-teaching, teacher collaboration, resource teacher assistance, multidisciplinary collaboratives and parent-teacher partnership are all identified as essential components of meeting diverse learning needs. The general education teacher in inclusive classrooms can work with special educators, SALT, speech and language therapists, occupational therapists, psychologists, and sign language interpreters. This co-operation enables determining of learner needs, preparing individual support plans, tailoring materials, handling behaviour and tracking progress. Collaborative teaching also helps to minimize teacher isolation and to enhance the quality of classroom support. (UNESCO, 2020; UNICEF, 2021; Hà, 2026).

Another key inclusive practice is peer supported learning, which involves the diversity in the classroom as a strength, not a weakness. Peer tutoring, cooperative learning, buddy systems and group-based academic tasks can enhance academic participation, social interaction, communication, confidence, and a sense of belonging in the classroom. Peer support can be helpful for learners with disabilities to lessen isolation and enhance participation in classroom routines. Peer supported learning can foster empathy, responsibility, co-operation and respect for diversity in the learning process for students without disabilities. Recent literature shows that effective inclusive classrooms are when social participation is planned in parallel with academic learning. So, peer-supported learning is not just a method of teaching but a way of creating a classroom culture that is inclusive. (UNESCO, 2020; UNICEF, 2021; Hà, 2026).

Collaborative teaching and peer-supported learning is an issue of great relevance in the Pakistani context and has not been implemented systematically. Pockets of professional learning and collaboration are diminishing between the mainstream and special education systems. Teachers in the mainstream classes seldom have access to special educators, therapists and trained support staff. Likewise, special schools might also have special skills and experience in disability, but not strong connections with mainstream models of inclusion. Consequently, pupils with disabilities may either be excluded from mainstream schools or cannot be placed in mainstream schools with meaningful support. Such a situation demonstrates the need for collaboration models in the school to support inclusive learning, where teachers work together with parents, specialists and administrators. (Government of Punjab, 2020; UNICEF, 2021; Muhammad, 2024).

Assistive Technology and Digital Inclusion

Assistive technology and digital tools are a key component of more recent practice in inclusive education. Assistive technology is defined as a device, system, piece of software or application, equipment, or a pattern or method that assists a learner in accessing information, communicating, moving, writing, reading, listening to information, participating or demonstrating learning. These include screen readers, braille devices, hearing aids, captioning devices, augmentative and alternative communication devices, adaptive keyboard, speech to text software, speech to text applications, visual schedules, communication boards or accessible learning platforms. Digital inclusion has opened the door to new

forms of assistive technology, including adaptive learning systems, augmented reality, AI, interactive applications, and mobile devices in inclusive pedagogy. (Navas-Bonilla et al., 2025; Samaniego López et al., 2025).

Technology can help inclusive education to overcome barriers, adapt teaching to learners' individual needs, enhance participation, and promote access for learners with diverse needs, as recent systematic reviews demonstrate. Navas-Bonilla et al. summarised research on technologies that promote participation and identified mobile devices, interactive applications and augmented reality as ways of developing more accessible and personalised learning environments. Screen readers, braille devices, adaptive learning platforms and augmented reality tools also were found to be helpful for accessibility and active participation, according to Samaniego López et al. The studies indicate that technology can help be a powerful instrument for inclusion if it is integrated into a well-designed pedagogical plan and not used as a stand-alone device. (Navas-Bonilla et al., 2025; Samaniego López et al., 2025).

Although there are these advantages, technology-based inclusive education also has a number of issues that are highlighted in the literature. The effective use of digital tools can be limited by high cost, lack of teacher training, poor infrastructure, limited internet access, lack of technical support, social inequality, and ethical concerns. However, technology can also exacerbate inequalities if devices and connectivity are not available to all learners or schools. For this reason inclusive technology needs to be planned, teachers need to be competent, accessibility standards must be met, maintenance systems need to be in place and technology must be affordable. Especially in developing countries like Pakistan, where there is a lack of proper digital infrastructure, content availability, and trained personnel within schools, this problem is of great significance. (Bray et al., 2024; Samaniego López et al., 2025; Navas-Bonilla et al., 2025).

In Pakistan, the use of assistive technology for inclusive education has remained uneven. Special education institutions may have some disability-specific resources, but mainstream schools often lack accessible learning materials, screen readers, Braille resources, captioning, hearing support systems, and augmentative communication tools. Rural schools face additional difficulties because of limited infrastructure, internet access, and professional support. Although digital learning expanded during and after the COVID-19 period, learners with disabilities were often disadvantaged when online content was not accessible. Therefore, technology-supported inclusion in Pakistan requires investment not only in devices but also in teacher training, digital accessibility, Urdu and regional language resources, and school-level technical support. (UNICEF, 2021; Pakistan Institute of Education, 2023; UNICEF Pakistan, 2025).

Inclusive Assessment and Flexible Evaluation Practices

Assessment is a critical component of inclusive pedagogy because traditional examination systems often fail to capture the abilities of diverse learners. Inclusive assessment refers to flexible, fair, and accessible evaluation practices that allow learners to demonstrate their knowledge through different modes. It includes formative assessment, oral assessment, portfolio assessment, project-based assessment, performance tasks, observation, assistive technology-supported assessment, extra time, modified formats, simplified instructions, and alternative response methods. Inclusive assessment does not mean lowering academic expectations; rather, it means removing unnecessary barriers that prevent learners from showing what they know and can do. (UNESCO, 2020; Ici, 2026).

Recent literature shows that inclusive assessment is closely connected with differentiated instruction and UDL. When teachers use multiple means of representation and expression, assessment also becomes flexible and learner-centered. For example, a learner with visual impairment may require Braille, audio, or digital screen-reader-compatible material; a learner with hearing impairment may require sign support, captioning, or visual instructions; a learner with physical disability may require assistive writing tools; and a learner with intellectual disability may require simplified instructions and task breakdown.



These supports help ensure that assessment measures learning rather than disability-related barriers. (CAST, 2024; Bray et al., 2024; Ici, 2026).

Assessment is one of the most difficult fields in inclusive education in Pakistan. The educational system is clearly evaluation-oriented, and sometimes the assessment system focuses on the recall of written information, on uniform papers and on time-limited responses. These can be detrimental to students who need accommodations, assistive devices, language support, and alternative means of expression. The literature indicates that teachers require training on assessment modification, formative feedback, individual learning target and documentation of learning progress. Even though inclusive teaching is well designed, it can be unsuccessful if it is not supported by inclusive assessment. (UNICEF, 2021; Government of Punjab, 2020; Kalsoom, 2024).

Teacher Preparation and Professional Development

Educator preparation is one of the most reliable predictive factors of successful inclusive education. Teachers' knowledge, attitudes, self-efficacy and pedagogical skills have been found to impact inclusive classroom practices across a variety of recent studies. Training for teachers is needed on disability awareness, inclusive pedagogy, classroom adaptation, differentiated instruction, UDL, behavior support, assistive technology, collaborative planning, and inclusive assessment. Professional development should also be used to encourage teachers to consider their beliefs about disability and diversity as it can be an unnoticed barrier to inclusion. (UNESCO, 2020; Hà, 2026; Shaukat, 2025).

The literature from around the world indicates that teacher development must be continuous, practical and school-based. One-off workshops can raise awareness but rarely lead to changes in classroom practice. Demonstration lessons, coaching, mentoring, peer observation, reflective practice, collaborative problem solving and follow-up support are all effective training methods. Additionally, teachers must also gain knowledge from special educators, therapists, parents, and learners. Recently, teacher agency and reflexivity have been highlighted in research as important traits that must be fostered in teachers to allow them to reflect on their beliefs, adjust their instructional strategies, and be flexible with student diversity. (Hà, 2026; Bray et al., 2024; Samaniego López et al., 2025).

In Pakistan, teacher preparation for inclusive education remains a major concern. Pre-service teacher education programmes have not always provided sufficient practical training in inclusive pedagogy, while in-service teachers often lack access to continuous professional development. Studies from Pakistan have indicated training needs in awareness, curriculum adaptation, assessment, instructional strategies, classroom support, collaboration, and professional development. Teachers may support the idea of inclusive education but feel unprepared to implement it in classrooms with large numbers of students and limited resources. Therefore, teacher education reform is necessary to bridge the gap between inclusive education policy and classroom practice. (Sulman, 2024; Kalsoom, 2024; Shaukat, 2025).

Global Trends in Inclusive Pedagogy

Recent global trends show that inclusive pedagogy is becoming more learner-centered, technology-supported, evidence-based, and rights-oriented. Educational systems are increasingly focusing on UDL, differentiated instruction, inclusive assessment, co-teaching, early identification, assistive technology, digital accessibility, social-emotional learning, and culturally responsive teaching. These approaches recognize that inclusion is not only about disability but also about responding to multiple forms of diversity. The global trend also shows a movement from medical and charity models toward social, rights-based, and ecological models of disability. This means that barriers are understood as existing in environments and systems rather than only within learners. (UNESCO, 2020; UNICEF, 2021; Quirke, 2025).

Another global trend is the growing use of digital and assistive technologies for inclusive education. Artificial intelligence, adaptive learning systems, accessible applications, augmented reality, communication technologies, and learning analytics are increasingly being discussed as tools for personalized and inclusive learning. However, global literature also warns that these innovations must be



used ethically and equitably. If schools lack infrastructure, teacher competence, privacy safeguards, and accessibility standards, digital tools can reproduce exclusion rather than reduce it. Therefore, the current global trend is not simply toward more technology but toward inclusive, ethical, accessible, and pedagogically meaningful technology use. (Yang et al., 2024; Navas-Bonilla et al., 2025; Samaniego López et al., 2025).

Global trends also emphasize inclusive school leadership and multi-sectoral coordination. School leaders are expected to create inclusive cultures, allocate resources, support teacher collaboration, engage families, monitor learner participation, and remove institutional barriers. Inclusive education requires coordination between education, health, social welfare, disability services, transport, and community organizations. This is especially important for learners who require early identification, rehabilitation, assistive devices, therapy, or family support. Thus, recent literature presents inclusive pedagogy as part of a larger ecosystem of support rather than a classroom technique alone. (UNESCO, 2020; UNICEF, 2021; Hà, 2026).

Evidence from Pakistan

Pakistan has made policy statements to include people with disabilities but this has not seen uniform implementation in the country at the level of the provinces, districts or school systems. The Punjab Special Education Policy 2020 marked a positive step in social model of disability and a shift to focus on access, inclusion, rehabilitation and support services. In addition, UNICEF country profile on disability-inclusive education in Pakistan also identified policy interventions pertaining to inclusive education, teacher training, disability-friendly infrastructure and system strengthening. The developments reflect Pakistan's formal inclusion policies but have not yet been realized in the classroom. (Government of Punjab, 2020; UNICEF, 2021; Muhammad, 2024).

The level of educational exclusion is one of the major problems in Pakistan. According to Pakistan Education Statistics, millions of children were not attending school and children with disability were the most vulnerable to school drop-outs. Inclusive education is impacted by this issue of access as learners with disabilities often encounter several barriers such as poverty, transport issues, inaccessible buildings, lack of assistive devices, lack of trained teachers, and social stigma. This is more serious for girls with disabilities, for rural learners and children from a low-income family background. Thus, inclusive pedagogy cannot be detached from broader issues of access, equity, gender, poverty and disability rights in Pakistan. (Pakistan Institute of Education, 2023; UNICEF 2021; UNICEF Pakistan, 2025).

The local studies and policy analysis indicated that teachers in Pakistan require more practical training in inclusive education. Training needs relate to disability awareness, classroom support, curriculum adaptation, assessment, collaboration, instructional methods, school management, etc. Support for inclusion as a guiding principle may exist for the teachers, but they may not be confident in implementing differentiated instruction, individualized support plans, assistive technology, or flexible assessment. This means that there is a mismatch between policy commitment and teacher readiness. So, in the context of Pakistan, it is concluded that teacher professional development can be considered as an integral approach for inclusive education. (Sulman, 2024; Kalsoom, 2024; Shaukat, 2025).

The Pakistani context also shows a continued divide between special education and mainstream education. Although inclusive education requires coordination between these systems, many learners with disabilities continue to be educated in separate special education institutions. Special schools provide disability-specific services, but segregation may limit social participation and access to mainstream curricula. Mainstream schools, on the other hand, may provide access to general education but often lack specialized support. This creates a policy and practice dilemma in which neither system alone fully addresses the educational rights of learners with disabilities. Therefore, Pakistan needs a phased and well-supported inclusive education model that combines the expertise of special education with the accessibility



and social participation goals of mainstream schooling. (Government of Punjab, 2020; UNICEF, 2021; Muhammad, 2024).

Synthesis of Literature and Emerging Gaps

The reviewed literature shows that recent pedagogical practices for inclusive education are built around flexibility, accessibility, collaboration, technology, and learner-centered support. UDL provides a framework for designing lessons that are accessible from the beginning. Differentiated instruction helps teachers respond to varied readiness levels, interests, and learning profiles. Assistive technology and digital tools support access, communication, participation, and independence. Inclusive assessment allows learners to demonstrate understanding through multiple modes. Collaborative teaching and peer-supported learning strengthen social participation and classroom belonging. Together, these practices represent a shift from traditional teaching toward inclusive pedagogy. (Almeqdad et al., 2023; Bray et al., 2024; Navas-Bonilla et al., 2025; Samaniego López et al., 2025).

However, there are still some gaps in the literature and practice. Globally, there is still a need for more research to explore the long-term effects and efficacy of inclusive technologies, UDL implementation and differentiated instruction, across various cultural and economic settings. In Pakistan it is more practical and structural. Little empirical research is available regarding how teachers are putting into practice recent pedagogical practices for inclusion in classrooms. Much of the local discussion emphasizes policy, attitudes, or barriers, and fewer studies focus on lesson planning, classroom interactions, classroom adaptation, inclusive assessment, assistive technology use, and the participation of learners. It indicates that there is a need for research to bridge this gap between the global context of inclusive education and the local context of the classrooms in Pakistan. (UNICEF, 2021; Muhammad, 2024; Shaukat, 2025; Hà, 2026).

Further, the literature suggests that the process of inclusive education reform in Pakistan is not just about endorsing policies, but also a pedagogical transformation. The schools require accessible infrastructure, assistive technology, trained teachers, inclusive assessment systems, collaborative support services and community awareness. Teacher education programs should provide modules on UDL, differentiated instruction, classroom accommodations, disabilities specific support, digital accessibility, and inclusive assessment. The study of inclusive education should also include a focus on rural schools, in public sector institutions, girls with disability, low income communities and learners with multiple disabilities, which are among the groups that are underrepresented in inclusive education research. The study is therefore apt as it meets the needs at present to explore the recent pedagogical practices in inclusive education from an international perspective and bring in relevance in the context of Pakistani education. Government of Punjab (2020), Pakistan Institute of Education (2023), UNICEF Pakistan (2025), and Navas-Bonilla et al. (2025).

Research Methodology

Research Design

The study used a quantitative research design to examine recent pedagogical practices for inclusive education with reference to global perspectives and evidence from Pakistan. A quantitative design was considered suitable because the study aimed to collect numerical data from a large group of respondents and analyze patterns, levels, differences, and relationships among variables related to inclusive pedagogical practices. The study followed a descriptive survey approach because it investigated teachers' perceptions, preparedness, and reported classroom practices regarding inclusive education, Universal Design for Learning, differentiated instruction, assistive technology, collaborative teaching, and inclusive assessment. This design helped the researcher obtain measurable evidence about the current status of inclusive



pedagogical practices in Pakistani educational settings. (Creswell & Creswell, 2023; Kielblock et al., 2026; Lindner & Schwab, 2020).

Population of the Study

The population of the study consisted of teachers working in mainstream, inclusive, and special education schools in Pakistan. The target population included general education teachers, special education teachers, and teachers who had experience of teaching learners with diverse educational needs, including learners with disabilities, learning difficulties, behavioral needs, communication difficulties, and other support requirements. These teachers were considered relevant respondents because they were directly involved in classroom teaching, instructional adaptation, learner support, assessment, and implementation of inclusive practices. The population was selected because recent literature indicated that teachers played a central role in translating inclusive education policies into classroom practices through flexible pedagogy, differentiated instruction, assistive technology use, and accessible assessment. (UNESCO, 2020; UNICEF, 2021; Shaukat, 2025).

The population was further relevant to the title of the study because inclusive education depended largely on teachers' knowledge, attitudes, training, and pedagogical competence. Teachers were expected to respond to diversity through learner-centered practices, flexible lesson planning, classroom accommodations, and collaboration with parents and specialists. Therefore, teachers provided the most appropriate source of data regarding the actual use of recent pedagogical practices in inclusive education. The study focused on teachers because global and local evidence suggested that teacher preparation, professional development, and classroom-level implementation remained major factors in the success or failure of inclusive education. (Bray et al., 2024; Samaniego López et al., 2025; Sulman, 2024).

Sample and Sampling of the Study

The study sample comprised 376 mainstream, inclusive and special education teachers. A sample size of 376 was deemed to be sufficiently large that it would allow for quantitative survey research to be conducted, and would allow for greater reliability of the results. The sample consisted of teachers from various school systems, years of experience, academic qualifications, and professional training backgrounds, and with various areas of specialization. The diversity enabled the researcher to understand the pedagogical practices of inclusive education from various groups of teachers and in various educational settings. (Creswell & Creswell, 2023; Memon et al., 2020).

Stratified random sampling technique was used in the study in the selection of the respondents. The population has been subdivided into suitable strata based on school type, teacher category, gender, qualification, professional training, and teaching experience. Respondents were randomly drawn from each stratum to ensure that there is an equal representation of all groups of teachers. Stratified random sampling was deemed appropriate since there are differences in inclusive education practice among mainstream schools, special education schools, urban and rural schools, trained and untrained teachers. The sampling technique ensured that sampling bias was minimised and gave the researcher a more balanced quantitative data. (Creswell & Creswell, 2023; Memon et al., 2020).

Instrument Development

A structured questionnaire was designed by the researcher for the collection of data from the respondents. The questionnaire was developed upon the review of the latest literature pertaining to inclusive education, Universal Design for Learning (UDL), differentiated instruction, collaborative teaching, assistive technology, inclusive assessment, and teacher preparedness. There were two main parts to the instrument. The first part gathered socio-demographic data, such as sex, age, academic qualification, professional qualification, teaching experience, school type, area, inclusive education training and experience of teaching learners with disabilities. The second section was composed of statements of the pedagogical practices in recent years in relation to the inclusive education. The second



section was made up of statements on the pedagogical practices in the recent years regarding inclusive education on Likert scale. (Almeqdad et al., 2023; Bray et al., 2024; Navas-Bonilla et al., 2025).

The second part of the questionnaire was structured in terms of key aspects of inclusive pedagogy. The dimensions encompassed teacher preparedness for inclusive education, use of Universal Design for Learning, differentiated instruction, collaborative and peer supported learning, assistive technology and digital accessibility, inclusive assessment practices and perceived barriers to implementation. The responses were rated on a 5 point Likert scale ranging from strongly disagree to strongly agree. The Likert scale format was chosen because it enabled the researcher to measure the teachers' perceptions and practices and implement descriptive and inferential statistical methods. (Kielblock et al., 2026; Lindner & Schwab, 2020; Samaniego López et al., 2025).

Validity of the Research Instrument

Research instrument validation was done by the expert review and content validation. The preliminary questionnaire was circulated among the experts in the fields of special education, inclusive education, educational psychology, teacher education, and research methodology. The instrument was evaluated in terms of its relevance, clarity, language, construct coverage, cultural appropriateness, and on the goals of the study by the experts. Their recommendations were taken on board to refine the wording of the items, cut out repetition, clarify the wording of the statements in the items and ensure all key aspects of inclusive pedagogical practices were adequately covered. (Creswell & Creswell, 2023; Guo et al., 2024).

Face validity was also confirmed by having a small sample of teachers read the items and comment on their comprehension and clarity, as well as relevance to classroom use. Their feedback was used to aid the researcher to ensure that the language and structure of the questionnaire were improved. Content validity was enhanced by making the connection between each item and the aims of the study, as well as the study's dimensions, which were derived from literature on inclusive pedagogy. The process was designed to ensure the instrument was measuring the constructs it was designed to measure: UDL, differentiated instruction, assistive technology, collaboration, inclusive assessment, and teacher preparedness. (Almeqdad et al., 2023; Bray et al., 2024; Guo et al., 2024).

Reliability of the Research Instrument

A pilot study was used to establish reliability of the research instrument. The questionnaire was given to a small sample of teachers, similar to the final sample, but not included in the data collection. Internal consistency reliability was calculated using responses obtained from the pilot study and entered into a statistical program. The reliabilities of overall scale and the subscales were computed using Cronbach's alpha coefficient. The questionnaire included several items that were Likert scaled and measuring related constructs, for which Cronbach's alpha was found to be suitable. (Creswell & Creswell, 2023; Guo et al., 2024).

The pilot testing enabled the researcher to identify items that were weak, unclear, and/or overlapping. Items that were not well understood or consistent were revised or eliminated prior to final data collection. The reliability analysis revealed that the instrument was appropriate to gather quantitative data on the inclusive pedagogical practice. The reliability of the instrument was important because it helped to achieve consistency in the measurement process, minimize measurement error and enhance the validity of the results. In recent times, the development of instruments in education has focused attention on the need to pilot test instruments, to get them expertly validated and to undertake internal consistency analysis prior to implementation in large scale data collection with a questionnaire. (Guo et al., 2024; Kielblock et al., 2026).

Data Collection Procedure

The data was gathered from teachers who are in mainstream, inclusive and special schools. Formal permission from the relevant school authorities and institutional head was sought prior to data collection.



The purpose of the study was explained to the participants, and they were informed that their participation was voluntary. The respondents were informed that the data collected will not be used for other purposes except for academic studies, and that their information will remain confidential. The questionnaire was mailed and/or internet-based depending on respondent's convenience and access. (Creswell & Creswell, 2023; UNICEF, 2021).

In some schools the researcher personally approached the school heads and teachers to brief them on the objectives of the study and to inform them on how to fill in the questionnaire. Time was allowed for the participants to read and respond to all items. Completed questionnaires were reviewed for errors in responses, blank sections and omissions. Questionnaires that were not well completed were not included in the final analysis. This was a procedure that ensured the quality, accuracy and completeness of the data gathered. (Creswell & Creswell, 2023; Shaukat, 2025).

Data Analysis Procedure

The collected data were coded, entered, cleaned and analyzed using statistical software.

Demographic variables and the study variables were summarized using descriptive statistics.

Demographic characteristics like qualification, school type, teaching experience, and training in inclusive education were analyzed using frequencies and percentages. For the purpose of determining the level of teachers' perceptions and reported practices in inclusive pedagogy, UDL, DI, AT, collaborative teaching and inclusive assessment, mean scores and standard deviations were calculated. (Creswell & Creswell, 2023; Kielblock et al., 2026).

The differences and relationships between variables were explored using inferential statistics. The independent sample t-test was used to compare teachers' responses based on the binary demographic variables of gender, school location, training status, and school type as appropriate. For more than two groups, e.g., qualification, teaching experience, and professional training categories, one-way ANOVA was used to compare teachers' responses. Pearson correlation was conducted to explore the relationship between inclusive pedagogical practices, teacher preparedness, assistive technology use and inclusive assessment. Multiple regression analysis was used to find out the predictive role of the selected variables in inclusive pedagogical practices. The chosen level of significance for the inferential analysis was .05. (Creswell & Creswell, 2023; Lindner & Schwab, 2020; Samaniego López et al., 2025).

Table 1

Demographic Characteristics of Respondents

Demographic Variable	Category	f	%
Gender	Male	168	44.7
	Female	208	55.3
School Type	Mainstream school	176	46.8
	Inclusive school	104	27.7
	Special education school	96	25.5
Location	Urban	232	61.7
	Rural	144	38.3
Academic Qualification	Bachelor	86	22.9
	Master	178	47.3
	MPhil/MS	92	24.5
	PhD	20	5.3
Teaching Experience	1–5 years	104	27.7



Demographic Variable	Category	f	%
	6–10 years	128	34.0
	11–15 years	92	24.5
	Above 15 years	52	13.8
Inclusive Education Training	Yes	214	56.9
	No	162	43.1
Experience with Learners with Disabilities	Yes	238	63.3
	No	138	36.7

Table 1 showed that most respondents were female teachers (55.3%), while male teachers represented 44.7% of the sample. A major proportion of teachers belonged to mainstream schools (46.8%), followed by inclusive schools (27.7%) and special education schools (25.5%). The majority of teachers had inclusive education training (56.9%) and experience of teaching learners with disabilities (63.3%), which indicated that the sample was relevant to the study.

Table 2
Frequency and Percentage of Teachers' Responses on Inclusive Pedagogical Practices

Level of Practice	Score Range	f	%
Low	1.00–2.33	42	11.2
Moderate	2.34–3.66	194	51.6
High	3.67–5.00	140	37.2
Total		376	100.0

Table 2 indicated that 51.6% of teachers reported a moderate level of inclusive pedagogical practices. Only 37.2% of teachers showed a high level of inclusive pedagogical practices, while 11.2% remained at a low level. The findings suggested that inclusive pedagogy was present in schools, but it was not yet consistently practiced at a strong level.

Table 3
Descriptive Statistics of Major Study Variables

Variable	M	SD	Level
Teacher preparedness for inclusion	3.58	0.67	Moderate
Universal Design for Learning practices	3.46	0.71	Moderate
Differentiated instruction	3.62	0.64	Moderate
Collaborative and peer-supported learning	3.69	0.66	High
Assistive technology and digital accessibility	3.21	0.78	Moderate
Inclusive assessment practices	3.39	0.72	Moderate
Overall inclusive pedagogical practices	3.49	0.61	Moderate

Table 3 showed that the overall mean score of inclusive pedagogical practices was moderate ($M = 3.49$, $SD = 0.61$). Collaborative and peer-supported learning received the highest mean score ($M = 3.69$, $SD = 0.66$), showing comparatively better classroom use. Assistive technology and digital accessibility received the lowest mean score ($M = 3.21$, $SD = 0.78$), indicating a weaker area in inclusive pedagogy.



Table 4

Reliability Analysis of the Research Instrument

Scale/Subscale	No. of Items	Cronbach's α
Teacher preparedness for inclusion	6	.84
Universal Design for Learning practices	6	.86
Differentiated instruction	6	.82
Collaborative and peer-supported learning	5	.80
Assistive technology and digital accessibility	6	.88
Inclusive assessment practices	6	.85
Barriers to inclusive pedagogy	5	.81
Overall scale	40	.93

Table 4 showed that Cronbach's alpha values ranged from .80 to .88 for the subscales. The overall reliability of the instrument was excellent ($\alpha = .93$), indicating strong internal consistency. The findings confirmed that the questionnaire was reliable for measuring inclusive pedagogical practices.

Table 5

Independent Sample t-test for Demographic Variables

Demographic Variable	Category	n	M	SD	t	df	p
Gender	Male	168	3.43	0.62	-1.76	374	.079
	Female	208	3.54	0.59			
School Location	Urban	232	3.58	0.57	3.41	374	.001
	Rural	144	3.35	0.65			
Inclusive Education Training	Yes	214	3.68	0.53	7.08	374	< .001
	No	162	3.24	0.60			
Experience of Teaching Learners with Disabilities	Yes	238	3.63	0.56	5.71	374	< .001
	No	138	3.26	0.62			

Table 5 presented the combined independent sample t-test results for demographic variables. Gender showed no significant difference in inclusive pedagogical practices, $t(374) = -1.76$, $p = .079$. However, school location, inclusive education training, and experience of teaching learners with disabilities showed significant differences, indicating that urban teachers, trained teachers, and teachers with disability-teaching experience reported stronger inclusive pedagogical practices.

Table 6

One-Way ANOVA for Demographic Variables

Demographic Variable	Category	n	M	SD	F	p
School Type	Mainstream school	176	3.34	0.61	18.42	< .001
	Inclusive school	104	3.67	0.54		
	Special education school	96	3.56	0.58		



Demographic Variable	Category	n	M	SD	F	p
Academic Qualification	Bachelor	86	3.29	0.65	9.36	< .001
	Master	178	3.47	0.58		
	MPhil/MS	92	3.66	0.55		
	PhD	20	3.78	0.51		
Teaching Experience	1–5 years	104	3.31	0.63	8.74	< .001
	6–10 years	128	3.47	0.59		
	11–15 years	92	3.62	0.55		
	Above 15 years	52	3.73	0.54		

Table 6 presented the combined one-way ANOVA results for school type, academic qualification, and teaching experience. Significant differences were found in inclusive pedagogical practices by school type, $F(2, 373) = 18.42$, $p < .001$; academic qualification, $F(3, 372) = 9.36$, $p < .001$; and teaching experience, $F(3, 372) = 8.74$, $p < .001$. The findings indicated that inclusive school teachers, highly qualified teachers, and more experienced teachers demonstrated stronger inclusive pedagogical practices.

Table 12
Correlation Matrix of Major Study Variables

Variable	1	2	3	4	5	6
1. Teacher preparedness	—					
2. UDL practices	.61**	—				
3. Differentiated instruction	.58**	.64**	—			
4. Assistive technology	.52**	.57**	.55**	—		
5. Inclusive assessment	.60**	.62**	.66**	.54**	—	
6. Overall inclusive pedagogy	.74**	.78**	.81**	.69**	.76**	—

Table 12 showed that all major variables were positively and significantly correlated with overall inclusive pedagogy. Differentiated instruction had the strongest relationship with overall inclusive pedagogy ($r = .81$, $p < .01$), followed by UDL practices ($r = .78$, $p < .01$). The findings showed that stronger teacher preparedness, UDL, differentiation, assistive technology, and inclusive assessment were associated with better inclusive pedagogical practices.

Table 13
Multiple Regression Predicting Overall Inclusive Pedagogical Practices

Predictor	B	SE B	β	t	p
Constant	0.82	0.17	—	4.82	< .001
Teacher preparedness	0.24	0.04	.27	6.00	< .001
UDL practices	0.21	0.04	.24	5.25	< .001
Differentiated instruction	0.28	0.05	.30	5.60	< .001
Assistive technology	0.13	0.03	.16	4.33	< .001
Inclusive assessment	0.19	0.04	.21	4.75	< .001
Model	R	R ²	Adjusted R ²	F	p
Regression model	.84	.71	.70	181.42	< .001



Table 13 showed that the regression model significantly predicted inclusive pedagogical practices, $F(5, 370) = 181.42$, $p < .001$. The model explained 71% of the variance in overall inclusive pedagogy, $R^2 = .71$. Differentiated instruction was the strongest predictor ($\beta = .30$), followed by teacher preparedness ($\beta = .27$) and UDL practices ($\beta = .24$).

Table 14*Rank Order of Inclusive Pedagogical Practices*

Rank	Inclusive Pedagogical Practice	M	SD
1	Collaborative and peer-supported learning	3.69	0.66
2	Differentiated instruction	3.62	0.64
3	Teacher preparedness for inclusion	3.58	0.67
4	Universal Design for Learning practices	3.46	0.71
5	Inclusive assessment practices	3.39	0.72
6	Assistive technology and digital accessibility	3.21	0.78

Table 14 showed that collaborative and peer-supported learning ranked first among inclusive pedagogical practices ($M = 3.69$, $SD = 0.66$). Assistive technology and digital accessibility ranked lowest ($M = 3.21$, $SD = 0.78$). The results indicated that teachers were more comfortable with classroom-based social practices than technology-supported inclusive practices.

Table 15*Summary of Hypotheses Testing*

Hypothesis	Statistical Test	Result	Decision
There is a significant difference in inclusive pedagogical practices by gender.	t-test	$p = .079$	Rejected
There is a significant difference in inclusive pedagogical practices by school location.	t-test	$p = .001$	Accepted
There is a significant difference in inclusive pedagogical practices by inclusive education training.	t-test	$p < .001$	Accepted
There is a significant difference in inclusive pedagogical practices by disability-teaching experience.	t-test	$p < .001$	Accepted
There is a significant difference in inclusive pedagogical practices by school type.	ANOVA	$p < .001$	Accepted
There is a significant difference in inclusive pedagogical practices by academic qualification.	ANOVA	$p < .001$	Accepted
There is a significant difference in inclusive pedagogical practices by teaching experience.	ANOVA	$p < .001$	Accepted
Teacher preparedness, UDL, differentiation, assistive technology, and inclusive assessment significantly predict inclusive pedagogy.	Regression	$p < .001$	Accepted

Table 15 showed that most hypotheses were accepted because significant differences and predictive relationships were found. Gender was the only demographic variable that did not show a significant difference in inclusive pedagogical practices. The findings confirmed that training, school type, location, experience, qualification, and pedagogical factors played important roles in inclusive education practices.

Discussion

The findings of the study were consistent with recent international literature, which emphasized that inclusive education required flexible, learner-centered, and barrier-free pedagogical practices. The moderate level of inclusive pedagogical practices found in this study suggested that teachers had begun to

understand inclusion but still needed stronger practical support for classroom implementation. UNESCO emphasized that inclusion required education systems to address exclusion linked with background, disability, or ability, while UNICEF highlighted that inclusive education required children to learn together in the same classrooms with meaningful support. The present findings supported this view because teachers' practices improved when training, experience, and institutional support were available. (UNESCO, 2020; UNICEF, 2021; Hà, 2026).

The mean score for collaborative and peer supported learning was higher, suggesting teachers had more knowledge of social and classroom-based inclusive strategies. This study confirmed that peer support, cooperative learning, and collaborative teaching are effective teaching models in promoting participation, classroom belonging and social interaction among students with different needs. The lower score on assistive technology and digital accessibility did indicate that technology-supported inclusion was a weak point, however. Systematic reviews published recently have shown that inclusive technologies can increase participation and accessibility for people with disabilities, namely: screen reading technologies, braille devices, adaptive learning platforms, mobile applications, Augmented Reality, and digital accessibility tools. The results of the present study indicated that Pakistani schools had not got the full benefits of these global technological trends due to issues of limited resources, training, infrastructure and technical support. (Bray et al., 2024; Navas-Bonilla et al., 2025; Samaniego López et al., 2025).

The difference between the teachers and the non-teachers in rural and urban areas was significant and reflected the use of more inclusive pedagogies in urban areas. This might be due to the fact that in general, urban schools have more access to professional development opportunities, administrative supervision, internet facilities, assistive resources and to inclusive education programmes. Importance of the finding for Pakistan was considerable as educational inequalities between urban and rural areas have been a big issue for Pakistan. There were many out of school children in Pakistan and the learners with disabilities were at high risk of being excluded as a result of poverty, inaccessible schools, rural location and lack of trained teachers. Hence, the importance of the rural gap of inclusive pedagogy has to be seriously addressed by the policy makers and teacher education institutes. (2023, Pakistan Institute of Education; UNICEF Pakistan, 2025)

The impact of inclusive education training was found significant as it was noticed that the teachers' professional development was a key factor in their inclusive practices. Teachers that had received training were more likely to report practices as strong than teachers that had not received training. This is in line with recent studies demonstrating that teachers need ongoing professional development in UDL, DI, disability awareness, assistive technology, inclusive assessment, classroom accommodation and collaborative teaching. Teachers were assisted by training to shift from being able to think about inclusion to being able to practice it. Thus, teacher training should not be restricted to a few short awareness building workshops, but also involve mentoring, demonstration lessons, teacher-training modules based on practice, teacher observation, and post training support. (Sulman, 2024; Shaukat, 2025; Kielblock et al., 2026).

The findings indicated that there was a significant difference by school type with teachers in inclusive schools reporting more inclusive pedagogical practices than teachers in mainstream and special education schools. This finding showed the relationship between school environment and institutional culture with inclusive pedagogy. Inclusive schools could offer more opportunities to engage teachers with diversity and inclusive strategies. Mainstream schools, on the other hand, may not always offer special education services, and special education schools may offer services for a particular disability but not as many opportunities to interact with typically developing peers. The need for a balanced model in Pakistan with mainstream and special education systems working together and not in isolation emerged from this finding. (Government of Punjab, 2020; UNICEF, 2021; Muhammad, 2024).

The correlation and regression results indicated that differentiated instruction, teacher preparedness, UDL, inclusive assessment, and AT were important contributors to the inclusive pedagogical practices. The strong predictor was differentiated instruction which revealed that there is a need for teachers



to adapt content, teaching method, learning activities and assessment which is the central of inclusive education. This was also reinforced by other sources of literature at the international level that identified differentiation and individualization as key elements of inclusive classroom practice. Results also validated the need for UDL and inclusive assessment as learners require numerous means of representation and means of assessment. Consequently, it is essential to change the approach from similar teaching to flexible and responsive teaching in the context of inclusive education in Pakistan. (Lindner & Schwab, 2020; Almeqdad et al., 2023; Bray et al., 2024).

Overall, it was concluded that Pakistan had taken steps in policy making in the direction of inclusive education, however, at the class level the implementation was not uniform. The Punjab Special Education Policy 2020 was a shift towards taking a social model approach to disability and placed a focus on access, inclusion and support. The results of this research, however, revealed that a policy intention must be implemented at the level of teacher training, school resources, accessible infrastructure, assistive technology, and inclusive assessment systems. The study thus, strengthened the need for the reform of inclusive education in Pakistan that goes beyond enrolment or placement, and also to look into the quality of pedagogy, participation and learning support. (Government of Punjab, 2020; UNICEF, 2021; Muhammad, 2024).

Conclusion

The study revealed moderate implementation of recent pedagogical practices for inclusive education in educational institutions in Pakistan. There were better uses of collaborative learning, peer support, and differentiated instruction but weak uses of assistive technology, digital accessibility, and inclusive assessment practices by teachers. The results indicated that inclusive pedagogy was more effective when the teachers have received professional training, the teachers have experience in teaching learners with disabilities, the teachers have higher degrees, and teacher support is good. It was also found that there was a huge gap between the trends in inclusive education globally and in the Pakistani context, at the classroom level. Although local evidence highlighted the need for systematic support of practices such as Universal Design for Learning and assistive technology, accessible digital content, flexible assessment, and collaborative teaching, the practices were still developing and their presence were emphasized in the literature in the rest of the world. Hence, practical teacher training, accessible infrastructure, AT, support networks and policy implementation at the classroom level was needed in the context of inclusive education in Pakistan. (UNESCO, 2020; UNICEF, 2021; Pakistan Institute of Education, 2023; Navas-Bonilla et al., 2025).

Recommendations

Teachers should be provided continuous professional development in Universal Design for Learning, differentiated instruction, assistive technology, inclusive assessment, and classroom accommodations so that they can address learner diversity more effectively. Schools should be equipped with accessible infrastructure, digital resources, assistive devices, screen readers, Braille materials, captioned content, hearing support systems, and alternative communication tools. Special education and mainstream education systems should be linked through collaborative teaching, resource teachers, referral mechanisms, and school-based support teams. Rural schools should receive special attention through targeted teacher training, accessible resources, and monitoring support. Inclusive education policies should be implemented at classroom level through practical guidelines, funding, teacher mentoring, and regular evaluation of inclusive pedagogical practices. (UNESCO, 2020; UNICEF, 2021; Samaniego López et al., 2025).

References



- Aftab, M. J. (2024). Perceptions and attitudes of college teachers toward inclusive education in Punjab, Pakistan. *Journal of Inclusive Education*.
- Almeqdad, Q. I., Alodat, A. M., Alquraan, M. F., Mohaidat, M. A., & Al-Makhzoomy, A. K. (2023). The effectiveness of universal design for learning: A systematic review of the literature and meta-analysis. *Cogent Education*, 10(1), Article 2218191. <https://doi.org/10.1080/2331186X.2023.2218191>
- Bhutta, M. J. (2025). Exploring the barriers to inclusive education in Pakistan. *Research Journal of Social Sciences and Advancement*.
- Bray, A., Devitt, A., Banks, J., Fuentes, S. S., Sandoval, M., Riviou, K., Byrne, D., Flood, M., Reale, J., & Terrenzio, S. (2024). What next for universal design for learning? A systematic literature review of technology in UDL implementations at second level. *British Journal of Educational Technology*, 55(1), 113–138. <https://doi.org/10.1111/bjet.13328>
- CAST. (2024). *Universal design for learning guidelines*. <https://www.cast.org>
- Creswell, J. W., & Creswell, J. D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). SAGE Publications.
- Government of Punjab. (2020). *Punjab Special Education Policy 2020*. Special Education Department, Government of the Punjab.
- Guo, S., Shi, L., & Zhai, X. (2024). Validating an instrument for teachers' acceptance of artificial intelligence in education. *Education and Information Technologies*. <https://doi.org/10.1007/s10639-024-12606-7>
- Hà, T. A. (2026). Teachers as agents of inclusive education: Developing a reflexivity cycle and examining teachers' conceptions and practices in Vietnam. *The Asia-Pacific Education Researcher*. <https://doi.org/10.1007/s40299-026-01077-2>
- Ici, Y. (2026). Differentiated instruction and inclusive assessment in education: A systematic review. *Didaktika: Jurnal Kependidikan*.
- Kalsoom, S. (2024). Assessing teachers' training needs for inclusive education. *Quarterly Journal of Social Sciences*.
- Kielblock, S., Woodcock, S., & Ehrich, J. (2026). Examining teachers' attitudes towards inclusive education for all: Development of a new scale. *BMC Psychology*, 14, Article 503. <https://doi.org/10.1186/s40359-026-04478-6>
- Lindner, K. T., & Schwab, S. (2020). Differentiation and individualisation in inclusive education: A systematic review and narrative synthesis. *International Journal of Inclusive Education*. <https://doi.org/10.1080/13603116.2020.1813450>
- Memon, M. A., Ting, H., Cheah, J.-H., Thurasamy, R., Chuah, F., & Cham, T. H. (2020). Sample size for survey research: Review and recommendations. *Journal of Applied Structural Equation Modeling*, 4(2), i–xx. [https://doi.org/10.47263/JASEM.4\(2\)01](https://doi.org/10.47263/JASEM.4(2)01)
- Muhammad, Y. (2024). Constructing disability and special education: A critical discourse analysis of the Punjab Special Education Policy 2020. *International Journal of Special Education and Social Sciences*.



- Navas-Bonilla, C. R., Guerra-Arango, J. A., Oviedo-Guado, D. A., & Murillo-Noriega, D. E. (2025). Inclusive education through technology: A systematic review of types, tools and characteristics. *Frontiers in Education*, 10, Article 1527851. <https://doi.org/10.3389/feduc.2025.1527851>
- Pakistan Institute of Education. (2023). *Pakistan education statistics 2021–22: Highlights report*. Ministry of Federal Education and Professional Training, Government of Pakistan.
- Quirke, M. (2025). Universal design for learning and the Sustainable Development Goals: Reframing inclusion in education. *European Journal of Inclusive Education*.
- Samaniego López, M. V., Orrego Riofrío, M. C., Barriga-Fray, S. F., & Paz Viteri, B. S. (2025). Technologies in inclusive education: Solution or challenge? A systematic review. *Education Sciences*, 15(6), Article 715. <https://doi.org/10.3390/educsci15060715>
- Shaukat, S. (2025). Bridging gaps between theory and practice in inclusive teacher education in Pakistan. *Cogent Education*.
- Sulman, N. (2024). Training requirements of educators in relation to inclusive education management in Sindh, Pakistan. *Social Research Journal*.
- UNESCO. (2020). *Global education monitoring report 2020: Inclusion and education: All means all*. UNESCO. <https://unesdoc.unesco.org>
- UNICEF. (2021). *Disability-inclusive education practices in Pakistan*. UNICEF Regional Office for South Asia.
- UNICEF. (2024). *Inclusive education*. <https://www.unicef.org/education/inclusive-education>
- UNICEF Pakistan. (2025). *UNICEF Pakistan annual report 2024*. UNICEF Pakistan.
- Usman, M., Ahmad, M., & Ali, M. (2022). Inclusive education of children with special needs: Practices, opportunities and barriers. *Journal of Inclusive Education*, 6, 59–76.
- Yang, M., Chen, Y., & Zhang, J. (2024). Universal design in online education: A systematic review. *Distance Education*. <https://doi.org/10.1080/01587919.2024.2303494>