

Effectiveness of Cross-Disability Training Programmes for In-Service Teachers: A Review Paper

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Abstract

The global shift toward inclusive education has placed new demands on in-service teachers, who increasingly encounter students with diverse disability profiles in their classrooms. Traditional special education preparation often focuses on a single disability category, leaving educators ill-equipped to address the range of needs found in inclusive settings. This review synthesizes findings from eight key studies published between 2016 and 2025 to evaluate the effectiveness of cross-disability training programmes for in-service teachers. Evidence indicates that such programmes can improve teacher knowledge, attitudes, self-efficacy, and instructional practices, though effect sizes are modest and concerns about implementation persist. Field-based components, collaborative learning structures, and sustained professional development models emerge as critical design features. The review concludes with recommendations for designing and implementing cross-disability training, particularly in emerging inclusive education contexts like India.

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1. Introduction

Inclusive education, premised on the principle that all children-regardless of ability-should learn together in mainstream settings, has gained global traction over the past two decades. The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD, 2006) explicitly mandates inclusive education systems, and signatory nations have progressively moved toward policy implementation. However, policy alone does not create inclusion; classroom teachers remain the primary agents of change. A persistent challenge is that most in-service teachers received initial training focused on either general education or a single disability category (e.g., visual impairment, hearing impairment, or intellectual disability). In inclusive classrooms, teachers must simultaneously support students with autism, learning disabilities, physical impairments, emotional disorders, and multiple disabilities-often without adequate preparation.

Cross-disability training programmes have emerged as a response to this gap. These programmes aim to equip educators with foundational knowledge, instructional strategies, and attitudinal orientations applicable across disability categories, emphasizing common principles such as Universal Design for Learning (UDL), differentiated instruction, and positive behavioural support. This review examines the existing evidence base for the effectiveness of such training for in-service teachers, drawing on studies from multiple countries and educational contexts.

2. Methodology of the Review

This review synthesizes findings from eight empirical studies and reviews published between 2016 and 2025. The included works comprise quantitative surveys, quasi-experimental studies, scoping reviews, a meta-analysis, and an evidence gap map. Studies were selected for their direct relevance to cross-disability in-service teacher training. Geographical coverage includes India, Turkey, Pakistan, the United States, Asia-Pacific low- and middle-income countries, and broader international contexts. Table 1 summarizes the key characteristics of the reviewed studies.

Table 1: Summary of Reviewed Studies

Author(s) (Year)	Design	Sample	Key Focus
Parween & Dheesha (2016)	Survey	50 special educators (India)	Need for cross-disability training
Uçak & Sakalli (2023)	Survey	164 special educators (USA)	Perceptions of training strategies
Wood et al. (2025)	Scoping review	30 studies	Components of inclusive IPD
Donath et al. (2023)	Meta-analysis	Multiple studies	Teacher belief changes
Ahmed et al. (2022)	Evidence gap map	50 studies (Asia-Pacific)	Intervention landscape
Chow et al. (2024)	Scoping review	Multiple studies	Teacher perceptions of training
Karal & Wolfe (2018)	Quasi-experimental	Secondary teachers (Turkey)	Short-duration training effects
Kazmi et al. (2023)	Quantitative survey	230 teachers (Pakistan)	Self-efficacy and attitudes

3. The Case for Cross-Disability Training

3.1 Foundational Evidence from India

Parween and Dheesha (2016) provided an early and direct call for cross-disability training. Their study of 50 special educators working in Indian inclusive schools revealed a critical paradox: teachers who were formally qualified in a single disability category consistently

failed to meet the diverse challenges posed by children with varying special needs. Using a 30-item yes/no questionnaire covering five major disability areas, the authors demonstrated that specialisation in one area did not generalise to competence in others. This finding is particularly significant because special educators are often expected to serve as resource teachers within inclusive schools, supporting not only their specialist category but all children with disabilities. The study strongly recommended cross-disability training as a necessary corrective—a recommendation that underpins the entire rationale for the programmes reviewed here.

3.2 The Reality of Inclusive Classrooms

Kazmi et al. (2023) reinforced this rationale from a neighbouring context. Surveying 230 teachers from inclusive and non-inclusive schools in Pakistan, they found that teachers in both settings reported increased stress and hesitancy when accommodating students with disabilities. Notably, lack of preparation was reported across school types, suggesting that simply being in an inclusive school does not generate competence. More importantly, the study identified a significant positive relationship between teacher self-efficacy and attitudes toward inclusive education. This implies that training must address not only declarative knowledge but also the psychological dimensions of teaching—confidence, perceived competence, and emotional readiness. Cross-disability training that merely provides information without building self-efficacy is unlikely to change classroom practice.

4. Programme Design and Delivery Features

4.1 Multi-Component Structures

Wood et al. (2025) conducted a scoping review of 30 studies evaluating in-service professional development (IPD) for inclusive education in primary schools. Their findings are directly applicable to cross-disability training design. Effective IPD programmes typically included multiple components delivered across extended sessions: workshops for knowledge transmission, practical application opportunities (e.g., classroom try-outs, case analyses), and structured feedback. Programmes covered three content domains: general inclusive education principles, characteristics of students with various disabilities, and specific inclusive teaching

practices (e.g., adapting materials, using assistive technology, implementing peer supports). The review concluded that multi-component IPD consistently yielded positive outcomes for teachers, including improved attitudes, self-reported practice changes, increased knowledge, and greater use of inclusive practices. Critically, no single component (e.g., workshop alone) was sufficient; effectiveness depended on combining knowledge input with active application and reflective feedback.

4.2 Classroom-Based and Field-Based Integration

Uçak and Sakalli (2023) provided granular evidence on the perceived effectiveness of different training strategies within cross-categorical teacher preparation. Surveying 164 in-service special education teachers in the United States, they evaluated both classroom-based strategies (e.g., lectures, case discussions, video analysis) and field-based strategies (e.g., supervised teaching, coaching, co-teaching). The results were instructive: teachers reported feeling prepared to implement systematic instruction-an evidence-based practice for students with extensive support needs-after completing their programme and again after actual teaching experience. Moreover, the perceived effectiveness of training strategies varied with teacher experience: novice teachers valued structured classroom components more, while experienced teachers appreciated field-based components that allowed refinement of existing practice. This suggests that cross-disability training programmes should not be uniform but should offer differentiated pathways or sequenced experiences that build from foundational knowledge to applied practice.

4.3 Short-Duration Interventions: Possibilities and Limitations

Karal and Wolfe (2018) tested whether brief, focused training could yield measurable gains. Their study delivered a one-day (approximately six-hour) in-service session to secondary special education teachers in Turkey. The content covered general transition knowledge and functional transition goal writing for students with multiple disabilities (autism, intellectual disability, developmental disabilities, and speech/language impairment). Pre- and post-training assessments showed significant increases in participants' knowledge about transition processes and functional goal development for employment. This finding is encouraging: even short-duration cross-disability training can produce knowledge gains.

However, the study did not measure long-term retention or classroom application. Given that knowledge decay is common after brief training, short interventions may be best suited as awareness-raising or targeted skill-building within a broader, sustained professional development sequence, rather than as stand-alone solutions.

5. Outcomes of Cross-Disability Training

5.1 Knowledge Gains

Multiple studies confirmed that cross-disability training increases teacher knowledge. Karal and Wolfe (2018) provided direct evidence of knowledge acquisition from a six-hour session. Wood et al. (2025) found that knowledge outcomes-specifically knowledge of inclusive practices and disability characteristics-were among the most consistently reported positive outcomes across the 30 studies in their review. Chow et al. (2024) similarly noted that teachers widely perceived in-service training as increasing their knowledge about including students with disabilities.

5.2 Attitudinal and Belief Changes

Attitudes toward inclusive education are a critical outcome because teachers who hold negative or ambivalent attitudes are unlikely to implement inclusive practices effectively. Donath et al. (2023) conducted a meta-analysis of professional development effects on teacher beliefs and found a small but significant positive effect size ($g = 0.23$). Observable effects were documented for attitudes toward inclusive education and perceptions of teaching methods. However, the meta-analysis also revealed a crucial limitation: training did not significantly influence teachers' concerns about inclusive education (e.g., workload, resource inadequacy, behavioural challenges). This suggests that while professional development can shift what teachers think about inclusion in principle, it may not alleviate their practical anxieties about implementing inclusion in real school contexts. For cross-disability training, this implies that programmes must go beyond attitude change strategies (e.g., exposure to positive narratives, disability simulations) to directly address implementation concerns through problem-solving, administrative support alignment, and realistic resource planning.

Chow et al. (2024) reinforced the attitudinal dimension, noting that in-service training increased teachers' confidence and positive attitudes alongside knowledge. Notably, this review highlighted collaboration with colleagues and professionals as a key mechanism: when teachers had opportunities to share knowledge and experience, plan lessons together, and co-create inclusive environments, their attitudes improved more substantially than when training was received individually.

5.3 Self-Efficacy

Kazmi et al. (2023) established a clear link between self-efficacy and attitudes: teachers who believed in their own capability to teach students with disabilities held more positive attitudes toward inclusion. Conversely, lack of preparation-reported among teachers in both inclusive and non-inclusive schools in Pakistan-was associated with lower self-efficacy and greater hesitancy. Cross-disability training that systematically builds self-efficacy (e.g., through mastery experiences, vicarious learning from successful peers, verbal persuasion from mentors, and reduced physiological stress) is therefore more likely to translate knowledge into action than training focused exclusively on content.

5.4 Practice Change

The ultimate test of any teacher training programme is whether it changes classroom practice. Wood et al. (2025) found that IPD in inclusive education frequently led to teacher-reported practice changes and increased use of inclusive practices. However, the review relied largely on self-report measures; direct observational evidence of practice change remains limited. Uçak and Sakalli (2023) provided indirect evidence: teachers who perceived their training as effective were more likely to implement systematic instruction, and this relationship strengthened with experience. Chow et al. (2024) emphasized that collaboration with colleagues-a feature of some training designs-enabled teachers to translate learning into actual lesson planning and classroom adaptation.

6. Contextual Considerations

6.1 Emerging Inclusive Education Contexts

Ahmed et al. (2022) produced an evidence and gap map of 50 studies from Asia-Pacific low- and middle-income countries (LMICs) published between 2000 and 2021. Several findings are particularly relevant for cross-disability training in countries like India, Pakistan, Bangladesh, and Indonesia. First, a significant number of interventions focused on changing teacher attitudes and understanding of disability, reflecting the reality that many LMICs are in the early stages of implementing inclusive education agendas. In such contexts, foundational awareness-building remains a legitimate and necessary goal of training. Second, most studies were published in the last five years of the review period (2016–2021), indicating rapidly growing attention to in-service teacher professional development for disability inclusion. This suggests that the evidence base, while still developing, is expanding quickly. Third, the review identified significant gaps: few studies examined teacher practice outcomes, student outcomes, or sustainability of training effects. For practitioners designing cross-disability programmes in LMICs, this means drawing on evidence from high-income countries while adapting to local resource constraints, cultural attitudes toward disability, and existing teacher preparation structures.

6.2 The Indian Context

Parween and Dheesha (2016) situated their findings within Indian inclusive education policy, particularly the Rights of Persons with Disabilities Act (2016) and the Samagra Shiksha Abhiyan (integrated education scheme). India has made substantial progress in enrolling children with disabilities in mainstream schools, but teacher preparation has lagged. Most pre-service teacher education programmes devote minimal time to disability inclusion, and in-service training is often sporadic, underfunded, and delivered as one-off workshops. The cross-disability training programmes needed in India must therefore address not only content and pedagogy but also system-level factors: large class sizes, limited assistive technology, inadequate school infrastructure, and varying administrative support. Ahmed et al. (2022) noted that India-specific evidence on in-service disability training is still sparse, presenting both a gap and an opportunity for future research.

7. Limitations of the Existing Evidence Base

While the reviewed studies collectively support the effectiveness of cross-disability training, several limitations warrant attention.

First, most studies rely on self-report measures (teacher surveys, perceived preparedness, self-rated attitude change) rather than direct observation of teaching practice or measurement of student outcomes. The gap between what teachers say they have learned and what they actually do in classrooms is well documented in educational research.

Second, the meta-analytic effect size reported by Donath et al. (2023)- $g = 0.23$ -is modest. While statistically significant, such an effect suggests that training alone is not a powerful intervention; contextual factors (school leadership, resource availability, peer support, time for collaboration) likely moderate or mediate training effectiveness.

Third, longitudinal evidence is scarce. Most studies measure outcomes immediately post-training or within a few weeks. Whether knowledge, attitudes, and practices are sustained over months or years remains largely unknown.

Fourth, heterogeneity in training content, duration, delivery mode, and outcome measures makes direct comparison across studies difficult. Wood et al. (2025) noted this as a challenge in their scoping review, calling for more standardized reporting of intervention components.

Fifth, the evidence base is geographically skewed. The United States, Europe, and Australia are overrepresented. While Ahmed et al. (2022) provided an important map of LMIC evidence, the total number of rigorous studies from these contexts remains low.

8. Recommendations for Practice and Policy

Based on the synthesized evidence, the following recommendations are offered for designing, implementing, and evaluating cross-disability training programmes for in-service teachers.

8.1 Programme Design

- **Adopt multi-component structures:** Training should combine workshops (for knowledge), practical application (e.g., lesson planning, case analysis, classroom try-outs), and structured feedback (peer or mentor). No single component is sufficient.
- **Integrate field-based and classroom-based strategies:** Novice teachers benefit from structured classroom components; experienced teachers gain more from field-based

coaching and peer collaboration. Programmes should consider differentiated tracks or sequenced learning pathways.

- **Build self-efficacy alongside knowledge:** Directly address teacher confidence through mastery experiences (successful practice in supported settings), vicarious learning (observation of skilled peers), and stress reduction strategies.
- **Explicitly address implementation concerns:** Donath et al. (2023) found that training did not reduce teacher concerns about inclusion. Programmes must therefore include problem-solving sessions, resource mapping, and administrative alignment to address workload, behavioural challenges, and resource constraints.
- **Incorporate collaborative structures:** Peer learning communities, co-teaching arrangements, and professional learning networks-as highlighted by Chow et al. (2024)-should be embedded in training design rather than left to chance.

8.2 Duration and Intensity

Short-duration training (e.g., one-day workshops) can produce knowledge gains but is unlikely to change practice or sustain effects. Where resources permit, extended programmes (multiple sessions over weeks or months) with between-session application tasks are preferred. When only short training is feasible, it should be positioned as part of a broader professional development system rather than as a stand-alone intervention.

8.3 Content Priorities

Cross-disability training should cover three content domains, as identified by Wood et al. (2025): (a) principles of inclusive education (e.g., UDL, differentiation, positive behaviour support), (b) characteristics of students across disability categories (focusing on educational implications rather than medical details), and (c) specific inclusive teaching practices (adaptations, assistive technology, assessment modifications, peer-mediated interventions).

8.4 Policy and System-Level Actions

In LMICs and emerging inclusive education contexts, policy support is essential. Recommendations include:

- Mandating cross-disability training as a component of in-service professional development requirements.
- Allocating dedicated budgets for sustained training programmes rather than one-off workshops.
- Building cadres of master trainers who can provide ongoing coaching and mentoring.
- Integrating cross-disability content into pre-service teacher education to reduce the need for remedial in-service training.
- Establishing monitoring and evaluation systems that track not only training completion but also practice change and student outcomes.

9. Future Research Directions

Several gaps in the evidence base point to future research priorities:

- **Observational and student outcome studies:** Future research should move beyond teacher self-reports to include classroom observations of inclusive practices and, ultimately, measures of student engagement, participation, and learning.
- **Longitudinal designs:** Studies tracking teachers over 12–24 months post-training are needed to assess sustainability and identify factors that support or hinder long-term practice change.
- **Comparative effectiveness research:** Which specific combinations of training components (e.g., workshop + coaching + peer collaboration) yield the largest effects for which teachers (novice vs. experienced, general vs. special educators) in which contexts?
- **Implementation science approaches:** Understanding why some schools successfully implement cross-disability training while others do not requires attention to contextual factors, implementation fidelity, and adaptation.
- **LMIC-specific studies:** Rigorous evaluations of cross-disability training in India, Pakistan, Bangladesh, and other Asia-Pacific LMICs are urgently needed, as most existing evidence comes from high-income countries.

- **Cost-effectiveness analysis:** Policymakers need to know whether the benefits of intensive, multi-component training justify the costs compared to lighter-touch alternatives.

10. Conclusion

The evidence reviewed here supports the effectiveness of cross-disability training programmes for in-service teachers, with demonstrated improvements in knowledge, attitudes, self-efficacy, and self-reported practices. However, the effect sizes are modest, concerns about implementation persist, and the evidence base has significant gaps-particularly in longitudinal outcomes, direct practice measures, and LMIC contexts.

Several design features consistently emerge as contributors to effectiveness: multi-component structures combining knowledge input with practical application and feedback; integration of classroom-based and field-based strategies; explicit attention to building self-efficacy; collaborative learning structures; and direct addressing of implementation concerns. Short-duration training can produce knowledge gains but is unlikely to change practice or sustain effects without follow-up support.

For countries like India, where inclusive education policies have advanced rapidly but teacher preparation has not kept pace, cross-disability training represents a necessary-though not sufficient-condition for meaningful inclusion. The foundational call by Parween and Dheesha (2016) remains valid: today's educators, trained in single disability categories, cannot meet the diverse challenges of inclusive classrooms. Cross-disability training, designed and implemented using the evidence-based features identified in this review, offers a viable pathway forward. However, training alone cannot compensate for inadequate resources, large class sizes, or unsupportive school cultures. A systems approach-combining teacher training with resource provision, administrative support, and community engagement-is ultimately required to realize the promise of inclusive education for all children.

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