



Teacher Preparation for Inclusive Education: The Role of Pre-service and In-service Training

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Manuscript ID:
BIJ-SPL1-MAR26-EDU-039

Subject: Education

Received : 23.01.2026
Accepted : 04.02.2026
Published : 14.03.2026

DOI: 10.64938/bij.v10si1.26.Mar039

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Abstract

Inclusive education is the framework to provide equitable learning opportunities for all students. Teachers are the key agents in implementing inclusive education in actual classrooms. So the teacher preparation programs play an important role in imparting inclusive schooling. This article examines the significance of teacher training for the effective implementation of inclusive education. Pre-service teacher education should include practical exposure along with the theoretical knowledge, and it must focus on giving training in the areas of assistive technology, differentiated instruction, and integrating the possibilities of artificial intelligence. In-service teachers also need continuous professional development to address the classroom realities and requirements of students. The teacher in an inclusive classroom should have the ability to do curriculum adaptation, collaborative practices, and reflective teaching for providing accessible learning experience to students. This article also highlights the importance of integrating inclusive education across the curriculum, strengthening school-teacher education institution partnerships, providing hands-on experience with inclusive tools and strategies, teacher training in inclusive schools and special schools, training for using assistive technologies, and professional learning communities. It also aims for systematic strengthening of both pre-service and in-service teacher training programmes for the effective implementation of inclusive education.

Keywords: inclusive science education, students with disabilities, assistive technologies, preservice teacher education programme, inservice teacher education programme

Introduction

Inclusive education is a practice to ensure equity, social justice, and quality education for all learners, which is based on the principles of human rights and equity in education (Shaeffer, 2019). Inclusive education aims to cater to the learning needs of diverse learners, such as those with disabilities, learning difficulties, giftedness, gender differences, linguistic diversity, and socio-economic disadvantages, in regular classrooms. Thus, the role of teachers is significant because they are the main agents responsible for the implementation of

inclusive education in regular classrooms (Shevchenko et al., 2020).

Teachers' preparedness, knowledge, attitudes, skills, and professional competence will directly influence the quality of inclusive education (Dapudong, 2014). In order to cater to the needs of all learners, the teacher needs to give attention to designing instructional strategies, adapting the curriculum, using assistive technologies, and creating supportive learning environments, which promote the involvement of all students in the teaching learning process. However, many teachers are not equipped



for this, so there is an urgent need for comprehensive and systematic teacher training for inclusive education (Tristani & Bassett-Gunter, 2019).

In-service and pre-service teacher education for inclusive education are two types of teacher education that have their own roles in teacher development. Pre-service teacher education is an important component in the development of the foundation for inclusive beliefs, attitudes, and skills, while in-service teacher education is helpful in continuous professional development and adaptation to classroom realities and requirements (Ismailos et al., 2019). The quality of these two components is essential for effective inclusive education.

Pre-service teacher training programmes are responsible for equipping future teachers with essential theoretical knowledge and practical skills related to inclusive education. Prospective teachers need opportunities to understand learner diversity, principles of universal design for learning, differentiated instruction, classroom management strategies, teaching strategies, and assessment techniques suitable for diverse learners (Rajak & Dey, 2025). Providing hands-on experience through giving an opportunity to teach in inclusive school settings under the guidance of trained mentors is also important in creating an inclusive environment for all children (Kamalı-Arslantaş & Yalçın, 2023). Here, they get the opportunity to observe, practice, and reflect on inclusive teaching strategies under the guidance of trained mentors. Pre-service teacher education also helps in shaping positive attitudes towards inclusive education. Many studies show that teachers' beliefs and perceptions significantly influence their willingness and ability to implement inclusive teaching strategies (Chow, 2023). Interaction with learners with diverse needs, and reflective learning experiences during their preservice training period can help to reduce misconceptions and foster a sense of responsibility and confidence among future teachers in dealing with diverse needs.

Whereas pre-service training lays the foundation, in-service training of teachers helps to strengthen them in inclusive practices all through

their teaching life. There are so many challenging situations in schools, such as changes in the curriculum, new technologies, a diverse student population, a large number of students, resource constraints, a lack of specialized support, and time constraints, which cannot be fully anticipated in pre-service training (Aydin et al., 2017). Continuous professional development helps teachers to update their knowledge, improve their skills, and effectively meet these challenges.

In-service training of teachers for inclusive education should be ongoing and should not be limited to workshops and short-term courses. Effective in-service training of teachers for inclusive education should emphasize collaborative learning. Training for the modification in curriculum, developing individualized education plans, classroom modifications, assistive and digital technology, and collaboration with special educators and parents would be extremely valuable (Cagiltay et al., 2019). In-service training of teachers should also enable them to reflect on their practice in the classroom and develop innovative approaches to teaching that can ensure participation and learning of all children.

Some gaps existed in both pre-service and in-service teacher education. These include insufficient hands-on experience, inappropriate curriculum, insufficient integration of values for inclusive education, and a lack of linkage between teacher education institutions and schools. So, there is a need for intentional modifications in teacher education curriculum to align with inclusive education strategies and policies in schools. (Farrell, 2012). In India, National Educational Policies also highlighted the need for high-quality teacher preparation. Reforms in both pre-service and in-service teacher training are therefore not merely an institutional requirement but a prerequisite for achieving inclusive and quality education for all (Forlin & Sin, 2016). In this context, the current article will discuss the Conceptual Framework of Teacher Training for Inclusive Education, challenges in Pre-service and In-service Teacher Training, and reforming teacher training curricula



Conceptual Framework of Teacher Training for Inclusive Education

The conceptual framework of teacher education for inclusive education is based on equity, and equality. It considers teachers as learning facilitators who adapt their teaching to accommodate diverse abilities, backgrounds, and learning styles of students. Inclusive teacher education encompasses concepts such as Universal Design for Learning (UDL), differentiated teaching, collaborative teaching, and learner-centered approaches. All these concepts help teachers in planning flexible teaching and learning processes, applying diverse teaching methods, and creating a supportive learning environment in schools. The teacher education programs for inclusive learning need to emphasize the significance of positive teacher attitude, moral accountability, and reflective teaching in developing inclusive classrooms; then only pre-service and in-service teacher education programs can be aligned with this conceptual framework to ensure consistency between theory and practice.

Pre-service Teacher Training for Inclusive Education

Pre-service teacher education is the starting point for preparing teachers for inclusive schools. During this stage, the teachers will develop their professional beliefs, attitudes, and knowledge to work in schools. Pre-service teacher education programs should incorporate inclusive education as a core subject, not as an elective or additional subject with low weightage. And the concept of inclusive education needs to be integrated in all subjects, such as pedagogy of all subjects, evaluation, classroom management, etc., then only the teachers can understand learner diversity, learning barriers, and teaching strategies, such as differentiated teaching and the importance of cooperative and collaborative learning. Teaching practice and internships in inclusive schools enable student teachers to work with children from diverse backgrounds, get exposed to inclusive practices, and learn from the experiences of inclusive classrooms. But there is a lack of training for children with special needs in the

preservice period. During the internship period, they have a few opportunities to handle children with special needs. They need to get exposure to assistive technology, individual education planning, and inclusive assessment practices during this period. In addition, pre-service training needs to emphasize the development of positive attitudes towards inclusion. Sensitization programs, reflective journals, case studies, and interactions with children with disabilities will help them to become the best teachers in inclusive classrooms.

In-service Teacher Training for Inclusive Education

In-service teacher training is an important part of updating teachers' knowledge and improving the inclusive education practices in their careers. This will provide the necessary skills to meet the evolving needs and challenges due to the increasing diversity of the classroom, large class sizes, resource constraints, and diverse needs of children. In-service teacher training should be a continuous one to cater to the needs of all types of learners instead of a one-time training activity. Topics such as curriculum modification, classroom modifications, inclusive assessment practices, assistive and digital technology, and parental and staff collaboration need to be discussed in in-service teacher training programmes. In-service training programs will lead to the formation of professional learning communities, which improve inclusive education practices through sharing experiences, reflecting on problems, and finding solutions together. In-service training programs can also help in attitude change by making teachers In-service training programs can also help in attitude change by making teachers realize that inclusion is a collective responsibility, not an individual one.

Challenges in Pre-service and In-service Teacher Training

There are a number of challenges that affect the effectiveness of teacher training. The lack of hands-on experience, lack of emphasis on inclusive education, and lack of strong partnerships with inclusive schools and teacher education institutions



are the challenges faced by preservice teacher preparation programmes. The lack of time, a lack of institutional support, and a lack of access to quality training programmes are the challenges faced by in-service teachers in attending the professional development programmes. In many cases, teachers feel that training programs are too theoretical and lack relevance to the realities of the classroom. Also, there is a lack of follow-up and support limits, which limit the effectiveness of training programs.

Suggested Reforms in Teacher Training Programmes

The following reforms are needed to improve teacher education programme for inclusive education.

- Modification in the teacher education curriculum to include inclusive education in all aspects of the program.
- Training of teacher educators in inclusive education to provide students with the best practices.
- flexible and teacher-focused in-service teacher training programme.
- Development of learning communities where teachers can reflect on their practices
- Partnerships between schools, teacher education institutions, and policy agencies to improve the coherence and continuity of professional development.
- Technology and online professional development platforms for improving access to training in inclusive education, especially in developing countries.

Discussion

Teacher education is an important determinant of the success of inclusive education programme. Although inclusive education policies stress the need for equal learning opportunities for all students. Pre-service teacher education is an important determinant of teachers' beliefs and orientations toward inclusion. Incorporating inclusive education into teacher education curricula and practical experience in inclusive classrooms help pre-service teachers

develop positive attitudes toward learner diversity. However, if pre-service teacher education is mainly theoretical with little practical experience, teachers may lack the confidence to deal with diverse learners. Experiential learning and reflection are important components of effective pre-service teacher education.

In-service teacher education is also critical in maintaining inclusive education and addressing the dynamic issues in the classroom setting. School-based in-service teacher education approaches and professional learning communities facilitate collaborative problem-solving and reflective practice, making inclusion more effective. In contrast, short-term training programs are less effective in influencing classroom practices. The increasing use of artificial intelligence in education offers new possibilities for inclusive education through personalized learning and assistive technology. However, teachers need to be equipped with adequate digital and artificial intelligence literacy to employ these technologies responsibly and effectively. It is important to consider pre-service and in-service teacher education as interrelated parts of lifelong learning process to empower teachers to address learner diversity and achieve inclusive and quality education for all.

Conclusion

Teacher training is a key component in the effective delivery of inclusive education. Both pre-service and in-service training programs have complementary roles in equipping teachers to respond to learner diversity and ensure equitable learning opportunities. While pre-service training provides a foundation for inclusive beliefs and practices, in-service training provides opportunities for continuous professional development. Modification in the curriculum of teacher training programs, flexible in-service teacher training programs, development of teachers' learning community, online professional development programmes, partnership between schools and teacher education institutions, improving hands-on experience during internship period, and ensuing lifelong professional development are the key areas for implementing inclusive education effectively.



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