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**RESEARCH PAPER**

**Exploring the Lived Experiences of Teachers during In-Service Training: A Phenomenological Study**

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**ABSTRACT**

This study explores the lived experiences of teachers during in-service training at a higher secondary private sector colleges of same group in Punjab Pakistan, aiming to understand the impact of training on professional growth, teaching practices, and institutional support. In-service training is critical for enhancing teaching effectiveness, yet its success depends on content relevance, institutional support, and practical applicability. Despite its importance, limited research examines teachers' lived experiences, particularly in developing contexts like Pakistan. A phenomenological approach was employed, with data collected through semi-structured interviews with 18 teachers. Thematic analysis was used to identify key themes related to training experiences, challenges, and outcomes. Findings revealed five themes: relevance of training content, practical challenges in implementation, institutional support, professional growth, and collaboration. Teachers valued practical, context-specific training but faced challenges like resource constraints and insufficient follow-up. Training programs should focus on practical, subject-specific content, provide sustained institutional support, and foster structured collaboration and reflective practices to enhance effectiveness.

**KEYWORDS** In-Service Training, Teacher Professional Development, Phenomenological Study, Institutional Support, Reflective Practices

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**Introduction**

The profession of teaching is globally accepted as the pillar of human development, directly contributing to the cognitive, emotional, and social development of students. Teachers have a pivotal role in constructing the futures of countries through the transmission of knowledge, critical thinking development, and supporting the students' overall growth (Darling-Hammond et al., 2019). But the increasing needs of contemporary education demand that teachers constantly enhance their competencies and adjust their pedagogy to accommodate the diverse needs of students, include technological progress, and adapt to international educational trends (Hyler & Gardner, 2019; Desimone & Garet, 2018). Ongoing professional development has thus become an essential tool to shape the effectiveness of teaching and ensure the provision of quality education (Guskey, 2018).

Among the several types of professional development, in-service training is of special importance because it addresses practicing teachers. In contrast to pre-service training, which aims to prepare candidates for becoming part of the teaching profession, in-service training addresses those who are already involved in teaching and focuses on resolving certain issues that arise in their classrooms (Knight, 2020; Guskey, 2018). Such

training programs are intended to prepare teachers with contemporary pedagogical methods, classroom management strategies, and means of resolving emerging issues in education (Zhao & Ko, 2021). They also foster reflective practice and collaboration, which are essential to develop professional growth and enhance student outcomes (Ahmed & Mahmood, 2021; Desimone & Stuckey, 2021).

Design and delivery of in-service training programs are critical determinants of their impact. Research points out the importance of context-dependent and needs-driven program design to make programs relevant and impactful (Guskey, 2018). Programs incorporating active learning, hands-on learning, and facilitation for collaborative learning are likely to encourage teachers and lead to long-term changes in pedagogical approaches (Desimone & Stuckey, 2021). Training programs incorporating passive modes of learning or failing to address the special needs of the learners are likely to yield little return, leading to frustration and de-motivation (Ahmed & Mahmood, 2021; Zhao & Ko, 2021).

Relevance of training material is a highly relevant factor affecting teachers' uptake of professional development training. Teachers are likely to adopt new methods and strategies when training is specific to their classroom environments and offers tangible solutions to issues (Desimone & Garet, 2018; Knight, 2020). When teachers have to instruct large, heterogeneous classes, training modules on differentiated instruction, inclusive pedagogies, and classroom management are most relevant (Aslam et al., 2020; Darling-Hammond et al., 2019). However, programs offering generic or theoretical information lacking practical application don't appeal to teachers and trigger attempts to resist (Ahmed & Kazmi, 2020; Zhao & Ko, 2021).

Institutional support is instrumental in shaping the success of in-service training initiatives. Supportive learning environments with access to resources, innovation stimulation, and an atmosphere of cooperation strongly amplify the effectiveness of professional development programs (Guskey, 2018; Zhao & Ko, 2021). For example, when instructors are provided the time, materials, and incentives required to apply novel teaching methods learned through training, they will be more apt to embrace the practice and infuse it in the classroom effectively (Knight, 2020; Ahmed & Mahmood, 2021). On the other hand, a lack of institutional support could compromise the potency of training initiatives, leaving educators feeling isolated and unable to drive changes in the practice of instruction (Ahmed & Kazmi, 2020; Aslam et al., 2020).

Reflective practice is the process of critically analyzing the methods of teaching, determining areas for improvement, and creating strategies for meeting students' needs (Zhao & Ko, 2021; Desimone & Garet, 2018). Reflective trainings that involve reflective activities help teachers challenge their assumptions, assess their practices, and examine innovative teaching methods (Knight, 2020; Guskey, 2018). This is not only a way of enhancing teaching efficacy but also helps in building the culture of lifelong learning, which is necessary in response to the constantly changing nature of education (Ahmed & Mahmood, 2021; Darling-Hammond et al., 2019).

Teachers' learning outcomes as a result of in-service training are influenced by a number of factors including training subject relevance, facilitation quality, and collaboration and interaction potential with instructors. Training that includes active involvement and hands-on provision for practicing and discussing ideas is better equipped to elicit teachers' participation and advance professional development meaningfully (Desimone & Stuckey, 2021; Knight, 2020). Sessions that are top-down in

design or fail to address every participant's unique needs have the potential to pass on frustration and alienation sentiments (Ahmed & Mahmood, 2021; Zhao & Ko, 2021).

Apart from program-specific determinants, in-service training experiences of teachers are further shaped by contextual determinants operating at the macro-level, like cultural norms, systemic constraints, and personal ones. For example, in Pakistan, dominant pedagogical practices' norms, inflexible curricular frameworks, and social pressure frequently restrict teachers from experimenting and innovating within new pedagogies (Aslam et al., 2020; Ahmed & Mahmood, 2021). The above constraints remind us of the need to devise training programs so that teachers may resist dominant norms, cope with change, and adopt student-centered pedagogical practices (Guskey, 2018; Knight, 2020).

Individual teacher traits, including teaching experience, subject matter specialization, and intrinsic motivation, also contribute significantly to their attitude toward in-service training programs. New teachers may be eager to undergo training but struggle to apply new methods due to limited classroom experience (Knight, 2020; Guskey, 2018). Experienced teachers, on the other hand, may be resistant to training programs, particularly if they perceive the content as redundant or irrelevant to their professional needs (Desimone & Garet, 2018; Zhao & Ko, 2021). It is essential to recognize these individual differences to create training programs that are sensitive to various teacher profiles and have the greatest impact (Ahmed & Mahmood, 2021; Darling-Hammond et al., 2019).

Phenomenological strategy is highly successful in achieving comprehension of teachers' lived experience all along in-service training. Phenomenology dwells on participants' world of subjectivity and tries to unveil the meaning participants assign to their experience (van Manen, 2018; Guskey, 2018). With a concentration on teachers' words, phenomenological studies provide sound evidence regarding teachers' reasons, difficulties, and success conditions for commitment to professional development activities (Desimone & Stuckey, 2021; Zhao & Ko, 2021). Phenomenological data can be used to plan and execute more impactful in-service training programs responsive to institutional and teachers' requirements (Knight, 2020; Ahmed & Kazmi, 2020).

In Pakistan, where the education sector is beset with many problems, in-service training is a significant means of closing gaps in teacher training and ensuring educational quality. These interventions are intended to contribute to the institution's overall mission of promoting academic excellence and enabling students to confront the challenges of an evolving world (Ahmed & Kazmi, 2020; Aslam et al., 2020). In-service training is an essential tool for professional growth and insulation of the changing education challenges of the modern age. Its efficiency is, however, vulnerable to a number of factors such as the pertinence of the training material, facilitation, and institutional support. Based on teachers' experience in the higher secondary private sector colleges, the present study strives to contribute to the growing research in professional development and provide actionable suggestions on the program design and delivery of the in-service training program.

## **Literature Review**

Teacher in-service training has become widely recognized as an effective approach to addressing the dynamic needs of contemporary education. It enables teachers to possess newer pedagogies, facilitates professional development, and

improves student outcomes (Monakhova, 2021; Yakushkina & Smirnova, 2024). As education systems evolve, there is always an increasing demand for ongoing professional development, especially in the context where the classroom issues of the teachers are varied, there are new technological advancements, and the paradigms of education shift (Desimone & Garet, 2018; Guskey, 2018).

In-service training courses are formulated to meet the needs of practicing teachers, as opposed to pre-service training, which prepares an individual for initial entry into the teaching profession (Knight, 2020). In-service courses focus on developing teachers' pedagogic skills, classroom management skills, and coping with emerging education trends (Zhao & Ko, 2021). Empirical evidence shows that effective in-service training strengthens inter-professional collaboration among teachers, reflective practice, and pedagogical use of technology (Gorozidis et al., 2020; Guerrero-Romera & Pérez-Ortiz, 2022). For example, Timalcina (2024) discovered that secondary English teachers greatly benefited from ICT-based training courses formulated according to their classroom contexts, which allowed them to incorporate digital tools in an appropriate way.

Design within teachers' contextual realities to assess the success of the programme effectively. Research evidence always depicts that programme specifically designed to address certain challenges specifically, such as larger classes and multilingual children, are becoming more effective in the context of generic programmes that do not depict specific challenges uniquely (Strom & Viesca, 2020). For example, Asghar et al. (2022) concluded improved PAKISTANESE vocational lesson planners who tried out blended-based models of learning compared to those who have not. Training programmes that would be responsive to different educational learning environments are also emphasized (Andersson & Bendixsen, 2023; Liang et al., 2022).

Institutional support is the secret to the success of in-service training programs. Teachers are more likely to participate in and apply new approaches when their institutions support them with access to resources, mentoring, and peer networking (Zhao & Ko, 2021; Knight, 2020). Arwildayanto et al. (2023) emphasized the contribution of online platforms in ensuring equal access to training resources and supporting continuous professional development. Likewise, Yakushkina and Smirnova (2024) emphasized employing neighborhood resources and peer networks to increase the scalability and sustainability of training initiatives.

Nonetheless, institutional assistance is capable of negating the potential positive impacts of training programs. Educators tend to complain that insufficient resources, time, and follow-up activities are major obstacles to the introduction of new procedures acquired via training (Ahmed & Kazmi, 2020; Aslam et al., 2020). For example, Mahara (2024) established that Nepalese educators were hindered by a shortage of infrastructure and teaching materials, which prevented them from implementing new approaches. The findings indicate that institutions should ensure long-term assistance, such as mentorship, availability of resources, and collaboration opportunities, to facilitate the effective implementation of training results (Guskey, 2018; Rahman & Akhtar, 2023).

A number of factors, such as the level of facilitation, the relevance of the content, and the promotion of collaborative learning, influence how teachers react affectively and cognitively to in-service training. Passive lecture models of training are inferior to active participation and reflection participatory models (Gorozidis et al. 2020). Another important consideration for teacher participation in training programs is emotional well-

being. Training initiatives that recognize and mitigate the pressures of professional growth are more likely to yield favorable outcomes (Timalsina, 2024). Braun and associates. (2020) found that teachers who used cognitive reappraisal techniques during training experienced less emotional exhaustion and were more satisfied with their jobs. According to these results, improving emotional resilience is a crucial component of successful professional development initiatives.

Systemic issues like insufficient funding, little time for professional growth, and strict curriculum frameworks often make in-service training ineffective. Teachers typically cite a lack of administrative support and institutional flexibility as the main obstacles to putting new training-learned practices into practice (Sasere, 2024). It takes an integrative approach to solve such issues, including changing policies, redirecting resources, and incorporating digital resources for ongoing education (Li et al. 2023). As an illustration, Mhando et al. (2023) found that the problem of training programs not having the desired impact was exacerbated by inadequate planning and a lack of follow-up action. Similarly, Kiige (2019) found that the main problems with Kenya's Strengthening Mathematics and Science in Secondary Education (SMASSE) program were demotivation of teachers and a lack of administrative support. These results highlight the need to remove structural obstacles in order to maximize the benefits of in-service training initiatives.

As professional development programs, new training models that close the theory-practice gap are gaining traction. The Service-Learning model, introduced by Resch and Schrittmesser in 2021, prepares teachers for a variety of classroom realities by fusing theory and practice. In a similar vein, Monakhova's (2021) specific cumulative training model addresses the need to customize training materials to meet the unique needs of a given teacher in order to promote professional development and job satisfaction. In-service training productivity may be jeopardized by inherent problems such as limited resources, professional practice deadlines, and lockstep curricula. Teacher educators will be in a position to recognize the lack of administrative agency and institutional discretion as a critical factor in the consolidation of teaching habits learned during training (Sasere, 2024). Resolving such problems requires a comprehensive approach that involves changing policies, mobilizing resources, and utilizing digital technology for ongoing education (Li et al. 2023). As an illustration, Mhando et al. (2023) stated that the difficulties of guaranteeing training programs have the desired effects are made worse by poor planning and a lack of follow-up mechanisms. According to Kiige (2019), two major issues with the Strengthening Mathematics and Science in Secondary Education (SMASSE) program in Kenya are a lack of administrative support and teacher demotivation.

New paradigms that bridge the gap between theory and practice are emerging as useful instruments for professional growth. The Service-Learning paradigm, which combines theory and practice to equip teachers to handle various classroom realities, was conceived by Resch and Schrittmesser (2021). The individual cumulative training paradigm, which was created by Monakhova in 2021, focuses on tailoring training materials to each teacher's unique needs in order to promote professionalism and job satisfaction. Teachers' capacity to innovate and adjust to new practices will likely be hampered in Pakistan by traditional teaching methods, rigid curricula, and outside influences (Aslam et al. the year 2020; Mahmood and Ahmed, 2021). To do all of this, training frameworks that prepare educators to lead change, think creatively, and adopt student-centered pedagogies must be developed (Guskey, 2018; Knight, 2020). It is clear how in-service training affects teachers' motivation and self-confidence over the long

run. Malik & Co. (2022) found that teachers' self-efficacy was greatly increased by reflective practice and group discussion training workshops. In their study, teachers expressed greater confidence in their ability to handle problems in the classroom and apply innovative teaching techniques. According to Hijab, Idris, and Minaz (2024), the efficacy of training initiatives is largely dependent on their capacity to empower educators and improve their effectiveness.

In-service training is a potent tool for the upgradation of teachers' professional competence and the fulfillment of the evolving needs of teaching in the contemporary era. However, its efficacy is dependent upon a range of variables including the relevance of the content, the professionalism of the facilitators, and the extent of institutional support. Based on a qualitative analysis of teachers' experience-based learning, this study will contribute to the current stock of literature in the area of professional development and provide some sound practical recommendations to the planning and implementation of in-service training courses.

### **Material and Methods**

The study employs a phenomenological research design to study the lived experiences of teachers who are undergoing in-service training in higher secondary private sector colleges of same group in Punjab Pakistan. Phenomenology is employed since it addresses the subjective realities of the participants and is hence most appropriate to uncover the meanings given to the experiences of the teachers. The population is teachers who have completed in-service training in the past two years. Purposive sampling is employed to select 18 participants based on diversity in academic qualifications (master's, MPhil, PhD) and teaching experience (2-5 years and over 5 years). Semi-structured interviews are employed to collect data. Interviews are conducted to obtain in-depth information regarding teachers' perceptions, challenges, and achievements during training. Thematic analysis is employed to analyze the data for patterns and themes related to teachers' experiences. The study adheres to ethical guidelines, ensuring informed consent, confidentiality, and the right to withdraw.

### **Results and Discussion**

Thematic coding of the semi-structured interviews of 18 higher secondary college teachers resulted in five overarching themes related to their experience in the in-service training program. These themes reflect the view of the participants regarding the applicability and usefulness of training content, implementation challenges, organizational support, professional growth, and scope for coordination. These themes are presented below along with the views of the participants in quotes.

#### **Theme 1: Training Content Relevance and Applicability**

Teachers disagreed about how relevant the content of the training was. Some considered topics such as integrating technology and student-centered learning extremely relevant to their own classrooms, whereas others found some of the theoretical material or general pedagogical approaches less relevant to their subject-specific needs.

"The workshops on using technology in the classroom were most valuable."  
(Participant 1)

"The theory section felt disconnected from real teaching issues." (Participant 5)

"I found the information on inquiry-based learning helpful, but some of the psychological theories were not suitable for my topic." (Participant 12)

"The active learning training was very helpful, but education theory sessions were not as useful." (Participant 15)

## **Theme 2: Practical Challenges in Implementation**

A recurring theme was the difficulty teachers faced in implementing strategies and skills learned during training. Common challenges included resource limitations, time constraints, and a lack of institutional support. While teachers expressed enthusiasm for trying new methods, the practical realities of their teaching environments often hindered successful application.

"The greatest challenge is the absence of adequate lab facilities." (Participant 3)

"There's not enough institutional support to actually implement new methods effectively." (Participant 7)

"The time pressures make it hard to integrate all that I've learned into practice." (Participant 10)

"At times, the plans are good, but we lack the materials or space to implement them." (Participant 18)

## **Theme 3: Institutional Support and Encouragement**

Although the majority of teachers indicated that they received initial support from their institutions to attend the training programs, post-training support was perceived as inconsistent. The absence of follow-up and resource provision after the training sessions frequently hindered teachers from implementing fully what they had learned. Teachers were also motivated to try out new strategies, but the lack of sustained support rendered it difficult to implement these strategies effectively.

"The institution has helped, but sometimes it's not consistent." (Participant 2)

"I am enthusiastic, but follow-up after the training is lacking." (Participant 4)

"The support is there, but without proper follow-up, it becomes difficult to gauge the effectiveness of new methods." (Participant 8)

"I appreciate the initial support, but after we undergo training, there is no follow-up or check-up on how we're doing." (Participant 11)

## **Theme 4: Professional Growth and Confidence**

In-service training benefited the professional growth of teachers as, according to the majority, they felt increased confidence in applying new pedagogies, particularly incorporating technology and student motivation. But some teachers did express the desire for more precise training for dealing with specific issues they face in their classrooms.

"The training has made me more confident in using technology for teaching." (Participant 6)

"I feel more confident in my ability to manage online classes and use tech resources efficiently." (Participant 9)

"I now feel I am better equipped to manage multiple classroom dynamics." (Participant 13)

"I can confidently apply new strategies like flipped classrooms after attending the training." (Participant 14)

### **Theme 5: Collaboration and Reflective Practices**

Teachers appreciated the group and reflective parts of the training, although a majority of them felt that such elements were lacking or not adequately structured. The majority of the teachers stressed peer feedback and collaborative activities to deepen the collaborative learning process. Numerous teachers also called for more organized reflection sessions for them to incorporate and implement the learning.

"There was little group work during training, but I think more group work would have allowed me to learn from others better." (Participant 16)

"There were some opportunities to collaborate, but it was more on a superficial level." (Participant 17)

"I believe more formalized reflection and peer feedback would have been beneficial." (Participant 1)

"Peer collaboration was helpful, but it could have been more structured and meaningful." (Participant 5)

### **Discussion**

The study examined in-service training experience of teachers at higher secondary private sector colleges in Punjab, Pakistan, with a specific reference to the impact of training on professional development, pedagogy, and institutional support. The study reflects major reasons for the success of in-service training programs with areas of improvement to ensure that they have the maximum potential for improving teaching standards and professional competencies. Teachers mentioned the need for context-based, functional training curriculum, to the extent that training programs dealing with their subjects and classroom environment were more effective. This coincides with the recent literature (Guskey, 2002), stating that training sessions must be readily applicable to day-to-day problems and challenges on a daily basis that teachers face and work to in order to be an effective intervention. Nonetheless, some respondents opined that generic curricula of training modules usually failed to be responsive to their own personal teaching environments and were of minimal utility. This indicates the need for tailored training programs that take into account diversified needs of teachers from different disciplines.

Despite the perceived effectiveness of training, teachers faced significant challenges in applying new techniques and strategies in classrooms. Limited resources, such as poor access to teaching materials and technology tools, were frequently cited as

barriers. In addition, poor follow-up sessions and mentoring support hindered practical application of training materials. These findings align with studies of the training-practice gap, particularly in poor-resource settings (Darling-Hammond et al., 2017). These barriers call for a systemic approach, including adequate provision of resources and continua of support. Institutional support emerged as a principal predictor of in-service training success. Teachers backed and resourced by their institutions felt more confident to implement training knowledge. Low institutional support, such as lack of time for training or no appreciation for training work, discouraged teachers and lowered the success of training. This finding indicates the institutional leadership in fostering a culture of continuous professional development. Schools must value teacher training by providing logistical support, time, and incentives to foster active participation and application.

The study established that in-service training had a positive effect on teachers' professional development, particularly in terms of improved methods of teaching, heightened confidence, and improved knowledge of pedagogical approaches. Teachers liked learning from experts and colleagues and valued learning opportunities from them, which assisted them in enhancing their performance and keeping up with teaching trends. The lack of formal career development channels linked with training outcomes, however, limited long-term effects on professional development. Integrating training with career development opportunities could further inspire teachers to engage in professional development. Teachers' reflective practice and peer collaboration were found to be key components of a successful training program. Trainees valued experience sharing, sharing of difficulties, and learning from peers during training sessions. This concurs with studies that identify the place of collaborative learning communities in facilitating professional development (Vescio et al., 2008). The lack of formal channels for extended collaboration and reflection post-training, however, limited its long-term effect. Implementing formal mechanisms for peer learning and reflective practice could enhance the long-term effectiveness of training activities.

The findings of this study have several implications for policy makers and institutions. First, training programmes need to be designed in terms of practical, subject-specific content addressing the actual problems faced by teachers. Second, institutions need to provide longer support, resources, time, and follow-up sessions so that training gains can be translated into effective practice. Third, building a collaborative culture and culture of reflective practice through formal forums can maximize the overall impact of training. Fourth, linking training gains to career development and recognition can motivate teachers to engage in professional development in an active and constructive way. While this study provides some valuable insights, it has some limitations. The sample was limited to teachers of private sector colleges of Punjab, Pakistan, and their experiences cannot be generalized for teachers in other regions or in the public sector. Future studies could explore the experiences of teachers in the public sector or in other provinces to contribute to existing knowledge. Further, longitudinal studies could explore the long-term impacts of in-service training on classroom practices and pupil outcomes.

Training programs must be practical, pertinent, and well-supported if in-service teacher training in private sector higher secondary colleges is to be able to actualize its transformative potential. Through the solution of the problems enumerated in this study and tapping the potential for collaboration and reflection, education institutions can maximize the effectiveness of in-service training and facilitate teachers' professional development, and thereby enhance the quality of education.

## **Conclusion**

The current phenomenological research has come out with a vivid and detailed account of lived experiences of 18 teachers enrolled in in-service training programs in a higher secondary private sector colleges in Punjab. Based on thematic analysis of semi-structured interviews of 18 teachers, five significant themes were obtained that explained both the positive impacts and problems of such training programs. These are Training Content Relevance and Applicability, Practical Challenges in Implementation, Institutional Support and Encouragement, Professional Growth and Confidence, and Collaboration and Reflective Practices.

Although the results indicate that the in-service training programs have played a positive role in teachers' professional development, especially in increasing their confidence and teaching practices, a number of areas for development were also pointed out. The research indicates that the applicability of training materials was highly inconsistent among participants, with some teachers being able to directly apply certain topics to their day-to-day teaching activities and others perceiving some theoretical aspects as being isolated from the contexts of their classrooms. The day-to-day practical problems of teachers, including limitations of resources, time, and inadequate institutional support, also acted as obstacles in the effective implementation of the strategies and skills obtained during the training.

A number of teachers indicated institutionally funded support at the beginning of training but without follow-up and continuing resources to implement in the classroom from the acquired strategies. Teachers also indicated collaboration and reflective practice in training as relevant, but were not sure that such activities were necessarily planned or well-suited to enable increased acquisition and peer support.

The results of this research have significant policy and practice implications. In-service training programmes need to pay greater attention to making training material contextually relevant and applicable to the particular needs of teachers across and within subjects. There is a requirement for subject-focused training that is targeted to deal with subject-specific issues and encourage a more experiential and practical mode of teaching and learning. There also needs to be wider institutional backing, such as post-training follow-up and access to resources that can assist teachers in applying new approaches effectively.

In-service training courses have the potential to greatly impact teacher professional growth, but to bring the most, it is very important to first resolve the question of relevance of content, the provision of means, and organizational support. Having developed these aspects, schools have the opportunity to create a better environment for educators to adopt novel pedagogic strategies and contribute to their improved performance, and also the success of students.

## **Recommendations**

Based on the findings, a number of recommendations are made to maximize utilization of in-service teacher training programs by higher secondary colleges and other such institutions. First, training content must be subject-specific with focus on practical pedagogy skills and strategies easy for teachers to apply in class. Real-life scenarios, through the medium of role-plays and case studies, must be used to bridge theory and practice. Perhaps more important is long-term institutional support in enabling adoption

of new practices by teachers through mechanisms such as mentorship, follow-up workshops, and ironing out logistics-related issues such as resource and time constraints. Institutions must ensure ongoing support within the training cycle, through feedback and workshops after training, and provide adequate resources for implementation. Peer work must be enabled through group exercises and team teaching, and regular systematic reflective practice such as journaling and self-assessment must be included to reinforce learning in teachers. In addition, in-service programs must pay more attention to integrating technology into instruction, through hands-on experience with digital tools as well as in education technology, and innovative pedagogy strategies such as active learning and project-based learning. Periodic routine evaluation of training programs must be conducted to monitor their effectiveness and make appropriate adjustments in time, while continuous feedback loops through teachers will make the programs current based on emerging needs. Lastly, but importantly, institutions must enable lifetime learning opportunities beyond formal in-service training, through teachers taking online courses and professional networks to stay current with teaching trends. Long-term research on the effect of such programs on student achievement and instructional practices and on the student attitude will enable the effect of the programs as well as follow-up training programs to be determined.

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