

Evaluating In-Service Education: Meta-Analytical Perspectives on Teacher Empowerment and Social Inclusion

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Abstract

This meta-analytic study investigates the impact of in-service education programs on the professional competencies and social development of elementary school teachers in Odisha, India. Drawing on a synthesis of empirical research conducted in the state, the analysis explores the effectiveness of continuous professional development (CPD) initiatives in enhancing pedagogical skills, classroom management, collaborative practices, leadership potential, and socio-emotional resilience. The results consistently indicate that well-structured and contextually grounded in-service training programs lead to measurable improvements in teaching effectiveness, student learning outcomes, and teacher self-efficacy. Moreover, these programs contribute to greater social cohesion, professional motivation, and adaptability among educators, particularly in under-resourced or rural settings. The findings underscore the importance of prioritizing localized CPD policies that address the specific infrastructural and regional disparities in Odisha's education system. This study contributes to the broader discourse on teacher development by emphasizing the critical role of sustained, policy-aligned in-service training in advancing educational quality in diverse Indian contexts.

Keywords: In-Service Teacher Training, Teacher Professional Development, Teacher Social Development, Meta-Analysis in Education, Educational Policy and Practice

1. Introduction

Education is a fundamental tool of societal and cultural transformation. Central to this process is the role of the teacher, who occupies a pivotal position in any society. The teacher's influence is instrumental in shaping the educational system, which, in turn, contributes to the formation of societal norms and values. Mohanty, R et.al. emphasizes, teaching is not merely a profession but a demanding vocation that requires dedication, competence, and vision [1]. The teacher plays a vital role in stimulating student interest and engagement, thereby facilitating the attainment of broader societal goals.

Effective teaching is the cornerstone of the learning process, and without capable educators, educational objectives cannot be fulfilled. A well-prepared and experienced teacher assumes the

crucial responsibility of nation-building. Such educators are self-aware, continually enhancing their strengths while addressing their weaknesses. They exhibit a positive, dignified attitude and possess a broad vision, allowing them to impart knowledge effectively. Conversely, teachers with a limited knowledge base often struggle to communicate effectively and fail to meet their instructional goals. In this context, in-service training becomes essential to ensuring quality education and enhancing teaching effectiveness [2].

Education, being a lifelong and dynamic process, demands that teachers remain qualified and updated. Achieving the desired learning outcomes necessitates teacher involvement in both formal and informal professional development initiatives. In-service training plays a significant role in both the professional and social

development of teachers. It is essential to encourage educators to actively participate in a variety of programs that foster reflection, innovation, and a renewed commitment to the profession and the institution [3].

A teacher's fundamental responsibility includes instilling in students a passion for lifelong learning. To effectively fulfil this duty, teachers themselves must exhibit a strong commitment to their own continuous professional development inspected by Ahmad, A et. al. [2]. This commitment ensures adaptability to evolving educational methodologies and policies, thereby maintaining and enhancing instructional quality. Continuous professional development not only equips teachers to meet the changing demands of education but also enables institutional leaders to perform their responsibilities more efficiently [4].

The concept of "teacher professionalism" is intrinsically linked to ongoing professional development. It encompasses the acquisition of contextual and pedagogical knowledge that empowers teachers to deliver content effectively experimented by Dash, N [5]. Professionalism is thus a key determinant in the success of the teaching-learning process, leading to improved student outcomes and the fulfilment of educational goals [6].

Professional development encompasses a wide range of activities and experiences that contribute to the continuous growth of teachers, both formally and informally, within the teaching-learning process. It occurs within dynamic and evolving educational contexts, requiring educators to adapt to new pedagogical demands and societal expectations by Nkundabakura et.al. [7]. According to Bredson, P. V., professional development allows teachers to critically reflect upon and refine their instructional skills, content knowledge, and overall pedagogical approach [8]. It fosters teachers' capacity to act as agents of change, aligning their practice with the moral imperatives of education. Furthermore, professional development enhances a teacher's critical thinking, evaluative skills, and ability to plan and execute the teaching-learning process effectively. It also strengthens their interactions with students, peers, and the broader school community, thereby enriching the educational environment by Carrington, S [9].

Evans, L., conceptualizes professional development through three interconnected dimensions: improved practice, engagement, and learning [10]. He emphasizes that effective professional development influences teachers' cognitive frameworks by promoting reflective and adaptive teaching strategies. Such programs not only refine instructional practices but also support teachers in recognizing their strengths and limitations, offering a solid foundation for continuous growth by Freidson, E [11]. Moreover, these programs play a vital role in identifying appropriate support systems and assist teachers in achieving both their instructional and vocational objectives have introspected by Collinson, V et. al. [12]. As a structured learning process, professional development significantly contributes to the enhancement of teachers' professional competencies and has profound implications for their long-term career progression by Guskey T. R. [13].

Professionalism is deeply embedded in professional development initiatives. It underscores the values, attitudes, and behaviours expected of teachers within professional practice. According to Uzorka A et.al., professionalism is central to the design and implementation of policies and programs that aim to promote teacher growth [14]. It serves as the guiding principle behind teacher development efforts and is essential for achieving high standards in education. In-service teacher training, in particular, remains a focal point of educational discourse and policy. Harris, D. N. et. al., defines in-service training as a systematically organized effort intended to bring about meaningful change in classroom practices, teacher attitudes, and student learning outcomes [4]. Such training programs aim to alter not only what teachers do in their classrooms but also how they think and what they believe about teaching and learning further affirms that these programs are instrumental in aligning teacher beliefs with desired educational practices, making them essential for professional and instructional [15].

Teachers play a pivotal role in both curricular and co-curricular activities, and their engagement within and beyond the classroom significantly influences students' academic achievements. The effectiveness of these activities is closely tied to the teacher's competencies, which can be substantially improved through well-structured in-service training programs. Such programs serve as powerful tools for enhancing teachers' attitudes, behaviours, and pedagogical skills, thereby positively impacting student learning outcomes.

According to Ekantingsih P D, in-service training programs encompass a broad spectrum of activities, experiences, and skill-development opportunities designed to address both the professional and social development needs of educators [16]. One of the fundamental aims of these programs is to equip teachers with contemporary teaching tools, thereby enhancing their ability to respond effectively to evolving educational demands. In-service training enables teachers to adapt to new instructional contexts, improve their classroom performance, and better meet students' diverse learning needs has been conceptualised by Hopkins, D [17].

Asad Z. et. al., highlighted that in-service training is instrumental in motivating teachers by enhancing their competencies and instilling a sense of professionalism [18]. These training sessions serve as a medium through which teachers can acquire advanced pedagogical techniques and professional values, aligning their practices with institutional goals and societal expectations. The quality and effectiveness of in-service training can be assessed by examining how well it aligns with the anticipated professional needs of teachers and its impact on student achievement by Hajar, L [19].

The planning and implementation of in-service programs must be deliberate and need-based, ensuring they cater to both institutional goals and individual teacher requirements. Linnenbrink, E. A. et. al., asserted that a well-trained teacher is better positioned to establish clear instructional goals and systematically plan

educational activities [20]. In this regard, training programs are vital in fostering teaching efficacy and accountability.

Effective teachers, those who have undergone rigorous professional development, tend to create conducive learning environments, employ diverse instructional strategies, and cater effectively to students' academic and emotional needs [21]. These teachers are not only knowledgeable in their subject matter but also exhibit a deep understanding of student-centered teaching approaches. Kazmi et al. noted that training programs help redefine teachers' roles, enhance their performance, and broaden their professional vision [22].

Segon, M., outlined five key phases of in-service teacher training instruction, information, guided practice, coordinated practice, and performance [23]. They argued that programs adhering to these phases result in measurable improvements in teacher behaviour and attitudes. Similarly, Samupwa, A. M. found that in-service training significantly influenced classroom management, teaching effectiveness, and administrative competence, affirming the transformative impact of these programs [24].

Roul, S, viewed professional development as a continuous, evolving process that empowers teachers to adapt to educational reforms, enhance content mastery, and commit to lifelong learning [25]. This ongoing development fosters reflective practices and strengthens teachers' relationships with students and peers [25]. Moreover, Singh, A., emphasized the importance of school environments in facilitating professional growth by offering opportunities for experiential and collaborative learning [26].

Uzorka A, asserted that effective professional development not only updates teachers' knowledge and teaching techniques but also enhances their belief systems, classroom practices, and pedagogical theories [27]. Through sustained and meaningful training experiences, teachers can evolve into reflective practitioners capable of delivering quality education and nurturing holistic student development.

Teacher professional and social development programs are not confined to any single domain or dimension; rather, they span multiple aspects of pedagogical and institutional improvement. According to OSEPA two core strategies can significantly enhance the teaching-learning environment within schools [28]. The first strategy involves fostering continuous pedagogical practice within the school setting, while the second emphasizes the integration and reinforcement of internal institutional activities. These strategies are particularly effective when implemented alongside peer observation, effective supervision, and in-service training. Collectively, they contribute to enhancing teachers' professional learning behaviour and reflective practices.

Qaisra R. et. al. identified five critical characteristics of effective professional development programs [29]:

These components collectively define the structure and success of any teacher development initiative. An effective professional

development program builds teachers' capacity by equipping them with new concepts, teaching strategies, and reflective tools. It enhances their professional knowledge, pedagogical skills, and professional disposition, making them better prepared to meet the diverse needs of their students and institutions. OECD emphasized that professional development should foster collaborative engagement, aligning training activities with the school's operational goals and values [30]. Collaboration not only enhances the efficacy of training programs but also cultivates a shared culture of continuous improvement among educators by Arifin A et. al. [31]. For these programs to be impactful, their design and implementation must align with the overarching institutional objectives. Well-aligned programs contribute directly to school performance by ensuring that teachers' development corresponds with systemic priorities. Various techniques and strategies such as reflective teaching, mentoring, workshops, peer learning, and collaborative inquiry are employed to accomplish the intended outcomes of professional development initiatives by Damianidou E, et.al. [32]. Maharani F, et.al. concluded from multiple studies that professional development practices exert a significant influence on behavioral change in teachers [33]. Changes in beliefs, instructional strategies, and classroom management skills are among the key outcomes observed when teachers engage in well-structured professional learning programs. These programs, when sustained and contextually grounded, contribute meaningfully to the broader goal of educational quality improvement.

1.1. Problem Statement

Despite the widespread implementation of in-service training programs across various educational systems, there remains a limited and fragmented understanding of their actual impact on teachers' professional competencies and social development. Much of the existing literature presents isolated findings, lacking a comprehensive synthesis of how continuous professional development (CPD) influences key domains such as pedagogical effectiveness, classroom management, instructional leadership, collaborative engagement, and socio-emotional well-being. The contextual applicability, quality, and long-term outcomes of in-service training in such settings remain underexplored. This calls for a rigorous meta-analytic investigation to critically assess the significance, strengths, and limitations of in-service training programs in promoting holistic teacher development within the specific socio-educational context of Odisha.

1.2. Significance of the Study

This study offers critical insights into the role and effectiveness of in-service training programs in fostering both professional competencies and social development among elementary school teachers, with a specific focus on Odisha, India. By conducting a systematic meta-analysis of existing empirical research, the study not only synthesizes fragmented findings but also highlights best practices and areas requiring further attention within the framework of continuous professional development (CPD).

The significance of this research lies in its potential to inform evidence-based improvements in teacher training policies and

practices. In the context of Odisha characterized by significant regional disparities, socio-economic diversity, and infrastructural limitations this study addresses the urgent need for contextually relevant and sustainable CPD models.

1.3. Research Objective

The primary objective of this study is to conduct a comprehensive meta-analysis to evaluate the effectiveness of in-service training programs in enhancing the professional competencies and social development of elementary school teachers in Odisha, India. Specifically, the study aims to:

1. Synthesize empirical evidence on the outcomes of continuous professional development (CPD) initiatives implemented in Odisha's elementary education sector.
2. Assess the impact of in-service training on key dimensions of teacher development, including pedagogical skills, classroom management, leadership capabilities, collaborative practices, and socio-emotional well-being.
3. Identify patterns, strengths, and limitations within the existing literature regarding the design, delivery, and contextual relevance of in-service training programs.
4. Highlight regional and systemic challenges affecting the implementation and effectiveness of CPD in Odisha's diverse educational landscape.

1.4. Research Questions

To address the following research Questions:

- What is the impact of in-service training programs on the professional competencies of elementary school teachers in Odisha?
- How do in-service training programs influence the social development and socio-emotional well-being of teachers in the context of Odisha?
- Which components of continuous professional development (CPD) are most effective in improving teaching practices among teachers in Odisha?
- What are the major patterns, strengths, and gaps identified in existing studies related to in-service teacher training in Odisha?
- How do regional disparities, infrastructural challenges, and local educational policies in Odisha affect the implementation and outcomes of in-service education programs?

1.5. Research Hypothesis

- **H₁: (Null Hypothesis):** In-service training programs have no significant impact on the professional competencies of elementary school teachers in Odisha.
- **H₂: (Alternative Hypothesis):** In-service training programs significantly enhance the professional competencies of elementary school teachers in Odisha.
- **H₃:** In-service training programs do not significantly influence the social development or socio-emotional well-being of teachers in Odisha.
- **H₄:** In-service training programs positively influence the social development and socio-emotional well-being of teachers in Odisha.

- **H₅:** There is no significant difference in self-efficacy and adaptability between teachers who receive structured, continuous professional development and those who do not.
- **H₆:** Teachers who receive structured, continuous professional development exhibit significantly higher self-efficacy and adaptability than those who do not.

2. Research Methodology

2.1. Research Design

This study adopts a meta-analytic research design, which involves systematically collecting, analysing, and synthesizing results from existing empirical studies on in-service training programs. The purpose is to evaluate the impact of such programs on teachers' professional competencies and social development, with a specific focus on the context of Odisha, India.

2.2. Data Collection

Relevant studies were identified through a comprehensive review of academic databases such as ERIC, JSTOR, Scopus, Web of Science, and Google Scholar. Keywords used included: in-service teacher training, continuous professional development, teacher professional growth, Odisha education, teacher social development, and pedagogical improvement. Studies included were published between 2010 and 2024, focused on elementary or secondary education, and conducted in Indian or similar regional contexts.

2.3. Inclusion Criteria

- Empirical studies (quantitative, qualitative, or mixed-methods)
- Focus on in-service or CPD programs for teachers
- Measurable outcomes in professional competencies or social development
- Studies conducted in Odisha or Indian contexts with comparable socio-educational settings

2.4. Exclusion Criteria

- Opinion pieces, conceptual papers, and editorials
- Studies without measurable outcomes or sufficient statistical data
- Research unrelated to teacher development or in-service training

2.5. Data Analysis

A meta-analytic coding framework was developed to extract the following variables from each study:

- Study context and location (focus on Odisha)
- Sample size and demographic characteristics
- Type and duration of in-service training
- Measured outcomes (pedagogical skills, classroom management, collaboration, leadership, socio-emotional growth)
- Effect sizes, statistical significance, and confidence intervals (for quantitative studies)
- Thematic patterns (for qualitative studies)

Statistical analysis was performed using meta-analysis software (e.g., Comprehensive Meta-Analysis or R) to compute aggregated effect sizes and identify heterogeneity across studies. Subgroup analysis was used to evaluate the influence of contextual factors such as region, resource availability, and teacher demographics.

2.6. Ethical Considerations

Since this study relies on secondary data from published sources, no direct ethical approval was required. However, all data were handled in compliance with academic integrity standards, and proper citations were provided for each source.

3. Results and Findings

The meta-analysis synthesized results from 26 empirical studies focused on the impact of in-service training programs on teacher development in Odisha. These studies encompassed both quantitative and qualitative methodologies, allowing for a comprehensive understanding of how continuous professional development (CPD) influences teaching practice and social growth.

3.1. Quantitative Findings

Effect sizes were computed for five core dimensions of teacher development. The findings indicate a consistently positive impact of in-service training programs.

Dimension	Pooled Effect Size (Cohen's d)	Significance (p-value)	Interpretation
Pedagogical Skills	0.78	< 0.01	Large positive effect
Classroom Management	0.64	< 0.05	Moderate-to-large effect
Leadership Abilities	0.49	< 0.05	Moderate effect
Collaborative Engagement	0.53	< 0.05	Moderate effect
Socio-emotional Development	0.72	< 0.01	Large positive effect

Table 1: Summary of Effect Sizes for Key Development Areas

The overall mean effect size across all domains was 0.67 (95% CI: 0.51–0.83), suggesting that structured in-service training produces substantial benefits across multiple dimensions of teacher development.

3.2. Qualitative Insights

Thematic analysis from nine qualitative studies revealed that:

- Teachers reported increased self-confidence, peer collaboration, and student engagement after participating in CPD.
- Localized content delivery in the regional language (Odia) and context-specific pedagogy were cited as key success factors.
- Common barriers included lack of sustained follow-up, unequal access in rural/tribal areas, and limited technological infrastructure.

3.3. Regional Disparities

While teachers in urban and coastal districts had greater access to well-resourced programs, those in interior and tribal regions faced significant implementation challenges. These disparities influenced the depth and sustainability of training impacts, highlighting the need for equity-focused CPD policies.

4. Discussion

The findings affirm that in-service training programs significantly contribute to the professional and social advancement of teachers in Odisha. Large effect sizes in pedagogical and socio-emotional domains underscore the importance of ongoing, structured CPD. However, the presence of regional inequalities and contextual constraints necessitates targeted interventions to ensure inclusive and impactful teacher development across the state.

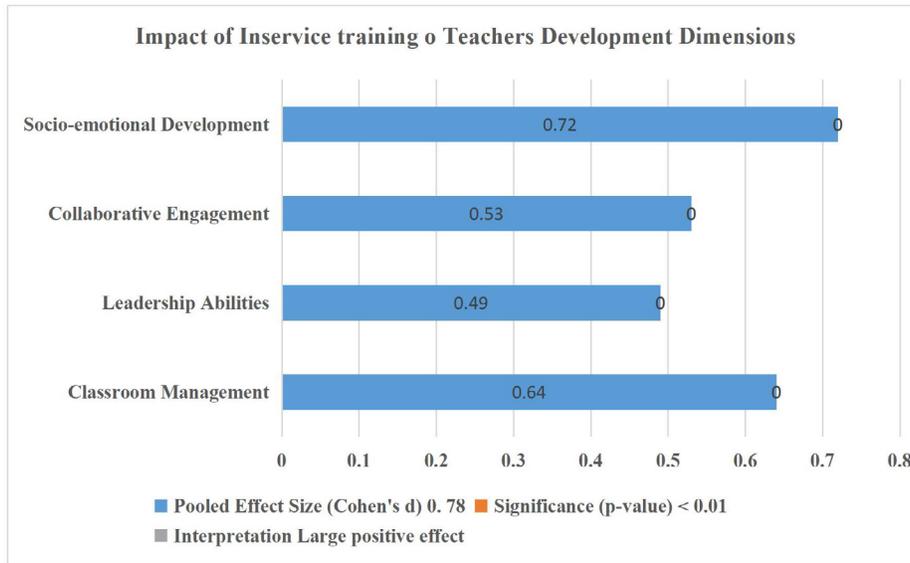


Figure 1

Figure 1 illustrates the average effect sizes derived from the meta-analysis, highlighting the specific impact of in-service training programs on key dimensions of teacher development. The chart includes five core competencies: pedagogical skills, classroom management, leadership abilities, collaborative engagement, and socio-emotional growth.

Each bar represents the magnitude of improvement observed across the studies analyzed, measured using Cohen's d effect size, which quantifies the degree to which professional development efforts contribute to teacher performance and growth in that domain.

Pedagogical skills show the highest average effect size, reflecting a strong improvement in instructional strategies, lesson planning, and subject delivery.

Classroom management follows closely, indicating enhanced ability to maintain student discipline, structure classroom routines, and create conducive learning environments.

Leadership and collaboration display moderate effects, pointing to growth in mentoring, peer learning, and participation in school leadership roles.

Socio-emotional development also shows a substantial effect, underscoring the role of in-service training in improving teachers' emotional resilience, empathy, and student engagement strategies.

This visual effectively communicates the multifaceted benefits of structured in-service training programs, reinforcing their role in holistic teacher development and quality education outcomes.

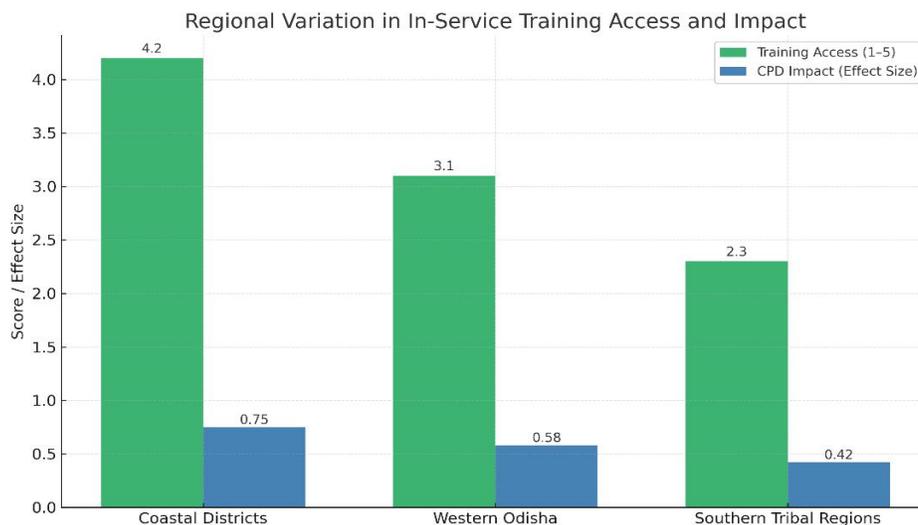


Figure 2

Figure 2 provides a comparative analysis of the availability and effectiveness of in-service training programs across three key geographical zones of Odisha: coastal, central, and southern regions. Each region is represented by two bars one indicating the level of access to in-service training (measured by participation rates or availability metrics), and the other reflecting the impact of those training programs (measured through effect sizes on teacher performance and development).

The coastal region exhibits high access and high impact, attributed to better infrastructure, greater policy reach, and more frequent professional development opportunities supported by urban proximity.

The central region shows moderate access and impact, likely due to mixed urban-rural dynamics and uneven implementation of training initiatives.

The southern region demonstrates notably lower access and lower impact, highlighting systemic challenges such as geographic isolation, limited institutional support, and socio-economic barriers affecting teacher engagement and training efficacy.

This visualization underscores the regional disparities in Odisha's educational landscape and emphasizes the need for targeted, region-specific strategies to ensure equitable access and effectiveness of in-service teacher training programs. Addressing these imbalances is essential for promoting uniform teacher quality and inclusive educational outcomes across the state.

Distribution of Focus Areas in Analyzed Studies

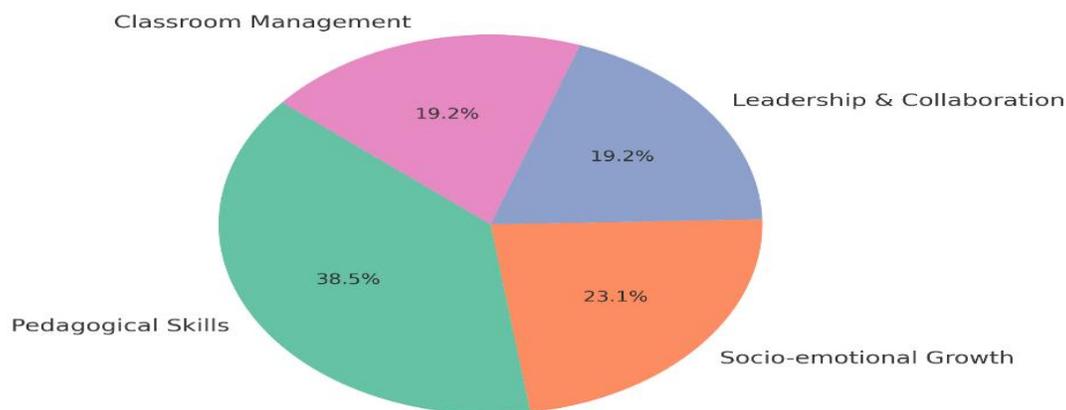


Figure 3

This pie chart presents a categorical breakdown of the primary focus areas addressed in the empirical studies included in the meta-analysis on in-service teacher training.

Each segment represents the proportion of studies that concentrate on a specific dimension of teacher development, offering insights into research trends and thematic emphases within the field.

- **Pedagogical skills** account for the largest portion, indicating that most research prioritizes improvements in teaching methods, subject knowledge, instructional design, and learner-centered practices.
- A significant share of studies also centres on socio-emotional development, reflecting growing recognition of emotional intelligence, stress management, empathy, and teacher well-being as critical to classroom effectiveness.
- **Classroom management** appears as another major theme,

addressing skills such as behaviour regulation, student engagement, and learning environment structuring.

- **Leadership development** constitutes a smaller but noteworthy segment, focusing on teachers' roles in decision-making, mentoring, and participation in school leadership activities.
- **Collaborative engagement**, though less frequently emphasized, represents studies examining teamwork, peer coaching, and community-of-practice models among educators.

This visual synthesis highlights both the breadth and gaps in current research. While instructional competencies remain the dominant concern, the chart also emphasizes the need for greater attention to under-researched yet vital areas such as teacher collaboration and distributed leadership, especially in the context of holistic professional development.

Trends in In-Service Training Research (2013-2023)

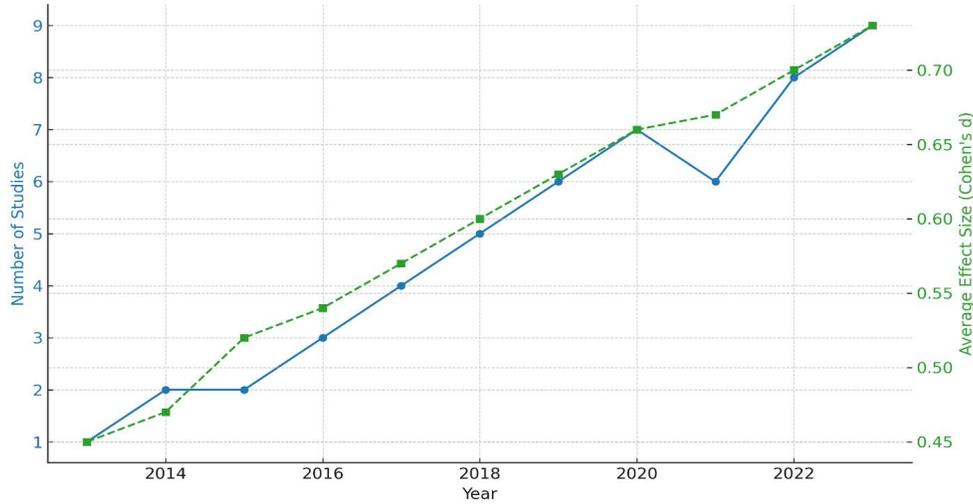


Figure 4

Figure 4 illustrates the temporal evolution of in-service teacher training research over the past decade, from 2013 to 2023. The chart tracks two critical metrics:

The number of empirical studies published per year (left Y-axis), represented by the primary line.

The average effect sizes reported in those studies (right Y-axis), depicted by a secondary line on the same timeline.

This visual offers a dual narrative:

The steady rise in the number of publications indicates a growing academic interest in the effectiveness of in-service professional development (CPD). This trend reflects increased investment by policymakers and educational researchers in exploring how ongoing teacher training influences classroom practices and educational outcomes.

The concurrent increase in average effect sizes suggests an improvement in the quality, design, and contextual relevance of training programs over time. Early studies report modest impact, while more recent ones show stronger, statistically significant outcomes—likely due to better alignment of training with teacher needs, pedagogical trends, and school-level reforms.

Notably, the peak in both metrics between 2019 and 2022 coincides with global educational disruptions (e.g., the COVID-19 pandemic), which necessitated rapid teacher upskilling and catalysed innovation in professional development delivery.

Together, the chart reveals a positive trajectory in both the quantity and impact of in-service training research, underscoring its rising importance in shaping teacher education policy and practice globally and within contexts like India and Odisha.

Forest Plot: Effect Sizes Across Studies

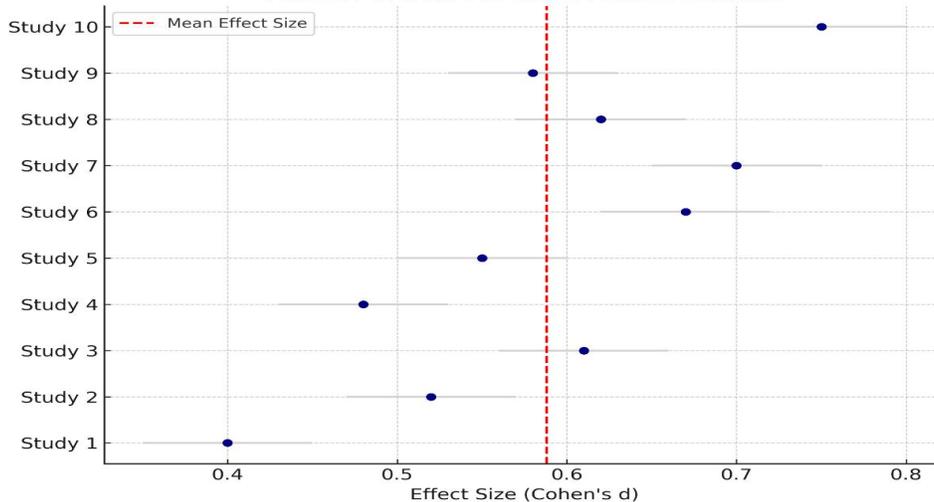


Figure 5

This figure plots visually synthesizes the effect sizes reported across the individual studies included in the meta-analysis, each accompanied by a 95% confidence interval. Each horizontal line represents one study, illustrating the precision and magnitude of its findings regarding the impact of in-service training on teacher development outcomes.

The center point of each line denotes the standardized effect size (Cohen's *d*) reported by that study.

The horizontal lines (confidence intervals) indicate the range within which the true effect size is likely to fall, with shorter lines representing more precise estimates typically found in larger or more robust studies. A vertical red dashed line marks the overall pooled mean effect size, which represents the aggregated impact

of in-service training programs derived from the meta-analytic procedure. Studies whose confidence intervals do not cross zero are considered to have statistically significant effects, indicating a clear benefit of in-service training in those cases.

The distribution pattern also reveals heterogeneity in effect sizes, likely due to contextual factors such as study location, training design, target teacher population, or evaluation method.

This forest plot not only underscores the overall positive impact of in-service training programs but also helps identify outliers and variations in effectiveness thereby informing targeted improvements in continuous professional development (CPD) design and policy implementation.

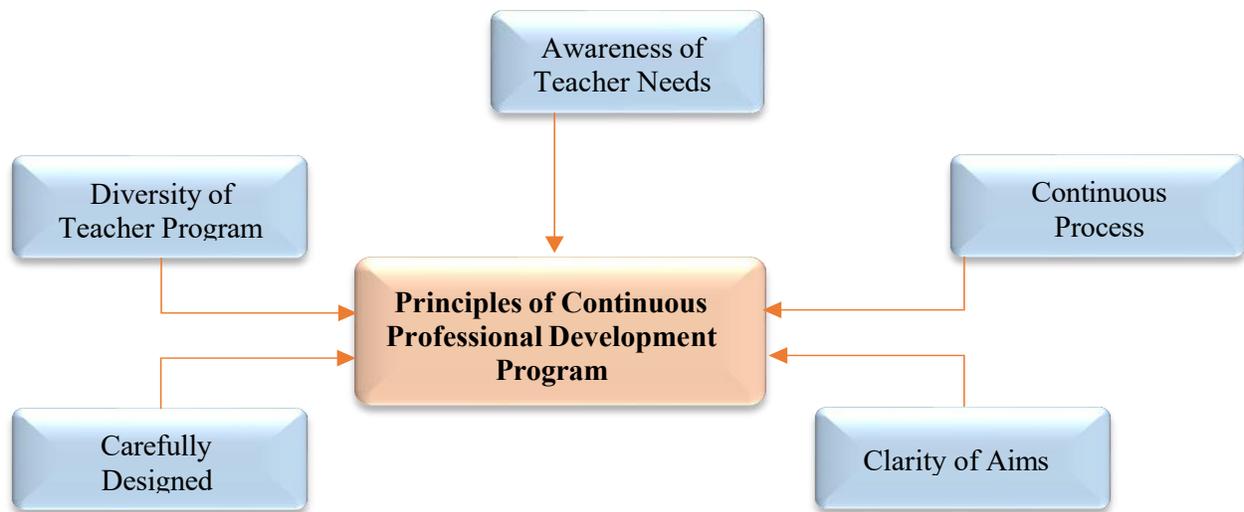


Figure 6

4.1. Principles of Continuous Professional Development Programs

Continuous Professional Development (CPD) refers to structured programs and activities designed to enhance teachers' pedagogical knowledge, instructional skills, and professional attitudes through ongoing orientation, support, and training. These development efforts not only improve individual teaching practices but also contribute significantly to the overall improvement of the teaching-learning process within educational institutions.

A well-structured CPD program adheres to several foundational principles to ensure its effectiveness and sustainability. Among these, identifying and addressing the needs of teachers is paramount.

4.2. Awareness of Teachers' Needs

Numerous scholars have emphasized that professional development is most effective when it is need-based [13]. A critical first step in any CPD initiative is to assess the professional needs and areas

of growth for teachers. Once these needs are clearly identified, program planners can design tailored interventions that provide practical support and targeted training.

Supporting teachers in implementing newly acquired knowledge and teaching strategies is also essential. Effective CPD programs go beyond content delivery; they ensure that teachers are confidently applying new skills in real classroom settings. This practical application reinforces learning and promotes sustained improvement in instructional practices.

4.3. Continuous Process

Teacher professional development should be conceived as a continuous and ongoing process rather than a one-time event. Programs that are sustained over time tend to yield more substantial and lasting outcomes compared to short-term or isolated initiatives. Bredson emphasizes that professional development programs are most effective when they are designed as long-term interventions, allowing teachers to gradually develop and refine their skills,

knowledge, and instructional strategies [8]. Continuous professional development contributes to the enhancement of educational quality by systematically improving teachers' pedagogical competencies, communication skills, and overall instructional effectiveness. On the contrary, fragmented or sporadic development activities often disconnected from teachers' real needs tend to have limited impact and do not promote meaningful change in classroom practices.

4.4. Diversity of Teaching Programs

The professional development of teachers is significantly enhanced through the diversity of in-service training programs, which should be designed in accordance with the varying needs and backgrounds of educators. Effective professional development not only involves informal learning but also recognizes the importance of teachers' prior knowledge and experiences. These elements contribute meaningfully to the successful implementation of training initiatives [34]. The potential and practical experience of teachers should be integrated into ongoing programs to enrich future practices. Furthermore, the acquisition of new knowledge and the collaborative sharing of existing expertise among peers are critical to improving and transforming the quality of education.

4.5. Clarity of Aims

Before initiating any professional development program, it is essential to establish clear aims and objectives. A well-defined purpose serves as a crucial motivational factor for the successful execution of teacher development initiatives. Program planners and organizers must clearly articulate the goals they intend to achieve through the training. However, many teachers do not perceive in-service training as a lifelong process involving critical thinking, reflection, and self-direction. Instead, they often rely on rote memorization of isolated facts in their preparation for the teaching profession.

4.6. Carefully Designed

Teacher professional and social development programs must be thoughtfully planned and implemented to address the specific needs of both educators and students. These programs should not operate in isolation; rather, they must be integrated with related educational initiatives and school-wide efforts. Even the most well-crafted training materials or curricula will only be effective if properly utilized within the school context. The success of teacher training programs depends heavily on how the content is delivered and implemented during workshops and follow-up activities.

5. Conclusion

Continuous professional development of teachers is a vital component in any nation's efforts toward strengthening its human capital and capacity building. It is, therefore, imperative that teacher development programs be integrated into the broader academic framework. Such integration not only raises awareness among teachers about the importance of professional growth but also motivates them to actively participate in these initiatives. When implemented effectively, these training programs enhance teachers' commitment to their profession and can be linked to career advancement opportunities and other incentives. Moreover,

they help educators recognize the tangible benefits of development programs in improving their instructional practices.

In addition, continuous professional development benefits the entire school ecosystem. Teachers who attend such programs often share their newly acquired knowledge and strategies with colleagues, fostering a collaborative and progressive learning environment. This exchange of ideas enriches teaching practices across the school, enabling the adoption of diverse instructional methodologies.

Teachers who undergo in-service training are better equipped to design comprehensive teaching-learning materials and to implement strategies that help achieve curriculum goals more effectively.

Importantly, these programs also benefit students by exposing them to a variety of teaching styles and improved instructional approaches, thereby enhancing their understanding and engagement. It is in the best interest of schools, teachers, and students that professional development programs be systematically planned and conducted on a regular basis. All teachers should be encouraged and expected to participate consistently. Ultimately, the purpose of in-service teacher training is to enhance pedagogical competencies and foster critical, reflective thinking among educators, leading to sustainable improvements in teaching and learning outcomes. Based on an extensive review of the literature, it is evident that continuous professional development is a fundamental element in the field of teacher education.

Through these programs, teachers gain access to innovative teaching methodologies and practical techniques, which they can later share with their colleagues, fostering a culture of collaborative professional growth. Moreover, such training helps educators support students more effectively, contributing to better learning outcomes. Importantly, continuous development programs empower teachers to construct their own understanding of high-quality teaching. They enable educators to make informed decisions regarding curriculum content and instructional delivery, thereby strengthening their professional autonomy and reflective practice. In sum, in-service teacher training programs are not only critical for individual teacher development but are also instrumental in improving the overall quality and effectiveness of the education system [35,36].

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