



Professional Development of Teachers and Teachers' Education in Social Sciences: A Comprehensive Review and Analysis

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Abstract

Professional development (PD) for teachers in social sciences is crucial for enhancing pedagogical skills, updating content knowledge, and fostering innovative teaching practices in an ever-evolving educational landscape. This research paper explores the multifaceted dimensions of PD and teacher education in social sciences, drawing on a synthesis of existing literature, empirical studies, and contemporary practices. The study examines key components such as content-specific PD, the role of technology, collaborative learning networks, and barriers to effective implementation. Utilizing a systematic literature review methodology, data from 35 scholarly sources, including journal articles, reports, and professional guidelines, were analyzed. Findings reveal that effective PD programs in social sciences lead to improved teacher efficacy, student engagement, and learning outcomes, with quantitative data indicating an average 15-20% increase in teacher confidence post-intervention. Tables and figures illustrate trends in PD participation rates and impact metrics. The discussion highlights implications for policy, recommending integrated, ongoing PD models tailored to social sciences educators. This paper contributes to the discourse on teacher education by proposing a framework for sustainable PD that aligns with global standards, such as those from the National Council for the Social Studies (NCSS). Keywords: Teacher Professional Development, Social Sciences Education, Pedagogical Innovation, Teacher Efficacy, Content-Specific Training.

Keywords: Professional Development; Teacher Education; Social Sciences Education; Pedagogical Competence; Continuous Professional Learning

1. Introduction

Professional development has emerged as a cornerstone of educational improvement across the world, particularly in the context of rapidly changing social, technological, and pedagogical landscapes. Teacher's today is expected not only to transmit knowledge but also to act as facilitators of learning, critical thinkers, and agents of social change. As education systems increasingly emphasize learner-centered and competency-based approaches, the continuous professional development of teachers has become essential for ensuring quality education and sustaining educational reforms.

In the field of social sciences education, the role of teachers becomes even more complex and demanding. Social sciences encompass diverse disciplines such as history, sociology, political science, economics, and geography, each of which requires a deep understanding of concepts, contexts, and interdisciplinary connections. Teachers of social sciences are expected to cultivate critical thinking, democratic values, social awareness, and civic responsibility among learners. This necessitates not only strong subject-matter knowledge but also pedagogical competence in inquiry-based learning, discussion-oriented teaching, problem-solving, and reflective practices.

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Teacher education in social sciences, therefore, cannot remain static or limited to pre-service training alone. Initial teacher education provides foundational knowledge and skills, but it is insufficient to address the evolving demands of classrooms characterized by diversity, digitalization, and global interconnectedness. Continuous professional development (PD) serves as a vital mechanism for enabling teachers to update their knowledge, refine instructional strategies, integrate technology, and respond effectively to students' varied learning needs. Well-designed PD programs help Teachers Bridge the gap between theory and practice, encouraging them to reflect critically on their teaching and adopt innovative methodologies.

Moreover, professional development in social sciences plays a crucial role in aligning classroom practices with broader educational goals such as social justice, inclusion, and democratic citizenship. Through sustained PD initiatives, teachers can engage with contemporary social issues, curriculum reforms, and assessment practices, thereby enhancing the relevance and effectiveness of social sciences education. In this context, targeted PD interventions that integrate content knowledge with modern pedagogical practices are essential for empowering teachers and improving student learning outcomes.

This paper seeks to examine the professional development of teachers and teacher education in social sciences through a comprehensive review and analytical perspective. It explores the conceptual foundations, significance, models, challenges, and impacts of professional development, highlighting its critical role in strengthening social sciences education in contemporary educational settings.

2. Conceptual Framework

A conceptual framework provides a theoretical foundation for understanding the key concepts and relationships underlying a research study. In the present paper, the conceptual framework is built around two interrelated concepts: professional development in education and teacher education in social sciences. These concepts together explain how continuous learning opportunities contribute to teachers' professional growth and enhance the quality of social sciences education.

2.1. Professional Development in Education

Professional development (PD) refers to a systematic, continuous, and purposeful process aimed at enhancing teachers' professional knowledge, skills, attitudes, and classroom practices throughout their careers. Unlike traditional one-time training programs, contemporary perspectives view PD as a lifelong learning process that supports teachers in adapting to changing educational demands, curricular reforms, and learner diversity. According to Krille (2020), professional development encompasses a wide range of activities such as workshops, in-service training, mentoring, peer collaboration, action research, and reflective practices, all of which contribute to sustained professional growth.

Effective professional development is characterized by its continuity, relevance, and collaborative nature. Research suggests that PD programs are most impactful when they are embedded in teachers' daily practices, aligned with curricular goals, and responsive to contextual needs. Collaborative learning communities, where teachers share experiences and reflect collectively on instructional challenges, have been found to foster deeper professional learning and innovation in teaching practices. Furthermore, reflective practice enables teachers to critically analyse their instructional methods, assess student responses, and make informed pedagogical decisions.

In recent years, the integration of technology has expanded the scope of professional development. Online courses, webinars, digital learning platforms, and professional learning networks have made PD more accessible and flexible. These modes of PD allow teachers to engage in self-directed learning while staying connected with professional communities beyond their immediate institutions. Thus, professional development serves as a crucial mechanism for maintaining teaching quality and supporting educational reforms in a dynamic educational environment.

2.2. Teacher Education in Social Sciences

Teacher education in social sciences is a structured process that prepares educators to teach subjects such as history, sociology, political science, economics, and geography effectively. It includes both pre-service and in-service training programs, each serving distinct but complementary purposes. Pre-service teacher education focuses on developing foundational pedagogical knowledge, subject-matter expertise, and pedagogical content knowledge (PCK), enabling prospective teachers to understand not only what to teach but also how to teach social science concepts meaningfully.

Pre-service programs emphasize theoretical foundations of education, curriculum studies, teaching methodologies, classroom management, and assessment strategies specific to social sciences. These programs aim to prepare teachers

to foster critical thinking, inquiry-based learning, and democratic values among students. However, given the evolving nature of social realities, curricular changes, and technological advancements, pre-service education alone is insufficient to meet the long-term professional needs of teachers.

In-service teacher education, therefore, plays a vital role in enhancing and updating teachers' existing knowledge and skills. Through continuous professional development opportunities, in-service programs help teachers respond effectively to new pedagogical approaches, interdisciplinary perspectives, and contemporary social issues. Such programs encourage teachers to integrate innovative instructional strategies, use digital resources, and adopt learner-centered approaches in social sciences classrooms.

Teacher education in social sciences also emphasizes the development of reflective and research-oriented practitioners. By engaging teachers in classroom-based research and critical reflection, teacher education programs contribute to professional autonomy and continuous improvement. Thus, the integration of professional development within teacher education frameworks ensures that social sciences teachers remain competent, reflective, and responsive to the changing educational landscape.

3. Importance of Professional Development

Professional development plays a pivotal role in strengthening the overall quality of education by enhancing teachers' professional competence and instructional effectiveness. It directly influences teachers' confidence, pedagogical decision-making, and ability to innovate within the classroom. Well-designed professional development programs enable teachers to respond effectively to changing curricular demands, diverse learner needs, and emerging pedagogical approaches. Studies consistently indicate that PD initiatives that are continuous, collaborative, and contextually relevant yield positive outcomes in terms of teaching effectiveness and student engagement.

In the context of social sciences education, professional development assumes even greater importance due to the dynamic and interdisciplinary nature of the subject. Social sciences require teachers to engage learners in critical inquiry, discussion, and analysis of social realities. Through sustained PD, teachers develop the capacity to adopt learner-centered approaches, integrate real-world issues into teaching, and foster higher-order thinking skills among students. Thus, professional development serves as a critical mechanism for improving both teaching quality and learning outcomes in social sciences classrooms.

3.1. Enhancing Pedagogical Skills

One of the primary contributions of professional development is the enhancement of teachers' pedagogical skills. PD programs expose teachers to contemporary teaching methodologies such as student-centered learning, inquiry-based instruction, collaborative learning, and formative assessment strategies. These approaches shift the focus from rote learning to active engagement, encouraging students to participate meaningfully in the learning process.

Research evidence highlights the effectiveness of PD in improving classroom practices. A study conducted among secondary school teachers in Pakistan revealed that participation in structured professional development programs significantly enhanced teachers' pedagogical knowledge, classroom management skills, and use of innovative teaching strategies (Ahmad et al., 2025). Teachers who engaged in regular PD demonstrated improved lesson planning, better student interaction, and more effective assessment practices. Such findings underscore the importance of sustained and practice-oriented PD in transforming instructional approaches.

Furthermore, professional development promotes reflective teaching practices. By encouraging teachers to critically evaluate their instructional methods and student learning outcomes, PD fosters continuous improvement and professional self-efficacy. This reflective dimension is particularly valuable in social sciences education, where teaching often involves interpretation, debate, and multiple perspectives.

3.2. Subject Matter Knowledge and Content Delivery

In addition to pedagogical skills, professional development plays a crucial role in strengthening teachers' subject matter knowledge and content delivery. Even experienced teachers require continuous updating of their content knowledge to keep pace with evolving curricular standards, new research, and interdisciplinary developments. In social sciences, where concepts are closely linked to contemporary social, political, and economic changes, outdated knowledge can limit the relevance and effectiveness of instruction.

Research indicates that professional development enhances teachers' command over subject matter, enabling them to present concepts more clearly, accurately, and confidently. PD programs that focus on content enrichment help teachers deepen their understanding of core concepts, make meaningful interdisciplinary connections, and address students' misconceptions effectively. This is especially important in social sciences education, where subjects often overlap and require integrated teaching approaches.

Moreover, improved subject matter knowledge positively influences content delivery. Teachers who are confident in their knowledge are more likely to use discussion-based teaching, case studies, and real-life examples, thereby making learning more engaging and meaningful for students. As a result, professional development not only enhances teachers' academic competence but also contributes to improved student comprehension and critical thinking skills.

4. Key Components of Effective Professional Development Programs

Effective professional development programs are grounded in well-established principles that promote sustained teacher learning and instructional improvement. Research literature emphasizes that professional development should move beyond isolated training sessions and instead focus on long-term, meaningful engagement with teaching practices. The effectiveness of PD largely depends on its structure, relevance, and alignment with teachers' professional needs.

The following table summarizes the key components identified in educational research as essential elements of effective professional development programs.

Table 1 Key Components of Effective Professional Development

Component	Description	Source
Continuous Learning	Ongoing professional development rather than one-off workshops	Krill (2020)
Collaborative Practice	Peer support, professional learning communities, and shared reflection	Darling-Hammond et al. (2017)
Technology Integration	Use of digital tools, online platforms, and blended learning	Borko (2004)
Reflective Practice	Teachers critically reflect on instructional strategies and outcomes	Schön (1983)
Contextual Relevance	PD tailored to local, institutional, and learner-specific needs	Avalos (2011)

Continuous learning ensures that professional development becomes an integral part of teachers' professional lives rather than a sporadic activity. Collaborative practice encourages teachers to learn from one another, share best practices, and collectively address classroom challenges. Technology integration expands access to PD opportunities and supports flexible learning modes, especially in contemporary digital and hybrid teaching contexts.

Reflective practice enables teachers to examine their instructional choices and student responses critically, leading to informed pedagogical improvements. Contextual relevance ensures that PD programs are responsive to the specific socio-cultural, institutional, and curricular realities faced by teachers. Together, these components contribute to sustainable professional growth and improved teaching effectiveness, particularly in social sciences education.

5. Models of Professional Development

Over the years, various models of professional development have evolved, each reflecting different assumptions about teacher learning and professional growth. These models differ in terms of structure, duration, and pedagogical orientation. In social sciences education, the choice of PD model significantly influences its effectiveness and impact on classroom practices.

5.1. Workshop Model

The workshop model is one of the most traditional and widely used forms of professional development. It typically involves short-term training sessions, seminars, or lectures conducted by experts to introduce teachers to new

curricula, teaching strategies, or assessment methods. While workshops can be effective in raising awareness and providing initial exposure to innovative practices, they often lack sustained follow-up and opportunities for practical application.

Research suggests that the limited duration and passive nature of traditional workshops restrict their long-term impact on teaching practices. Without ongoing support, mentoring, or reflection, teachers may find it difficult to implement newly acquired strategies in real classroom settings. Consequently, although workshops remain a common PD approach, their effectiveness is significantly enhanced when combined with follow-up activities and collaborative learning opportunities.

5.2. Collaborative and Inquiry-Based Models

Collaborative and inquiry-based models of professional development emphasize active teacher participation, shared learning, and reflective inquiry. These models encourage teachers to work together in professional learning communities, engage in classroom-based research, and critically reflect on their instructional practices. Such approaches view teachers as co-learners and knowledge creators rather than passive recipients of training.

Studies indicate that when teachers participate in inquiry-based PD and classroom research, their instructional strategies improve significantly. Engaging in action research allows teachers to identify classroom challenges, experiment with new methods, and evaluate outcomes systematically. In social sciences education, this model is particularly effective as it promotes critical thinking, dialogue, and contextual understanding-core elements of the discipline.

Collaborative PD models also foster professional autonomy and collective responsibility, contributing to a culture of continuous improvement within schools and institutions.

5.3. Technology-Enhanced Professional Development

Technology-enhanced professional development has gained prominence with the rapid advancement of digital tools and online learning platforms. This model includes online courses, webinars, virtual mentoring, learning management systems, and digital professional networks. Technology-enhanced PD offers flexibility, accessibility, and scalability, making it especially valuable for teachers in remote or resource-constrained settings.

Integrative reviews suggest that digital mentoring platforms and online PD tools strengthen professional growth support structures by enabling continuous interaction, feedback, and resource sharing. In hybrid and online teaching contexts, technology-enhanced PD equips teachers with the skills required to integrate digital tools effectively into social sciences instruction. This model also supports self-directed learning and lifelong professional engagement, aligning well with contemporary educational demands.

6. Challenges in Professional Development

Although professional development (PD) is widely recognized as a key mechanism for improving teaching quality and educational outcomes, its implementation is often constrained by several structural and contextual challenges. These challenges limit the effectiveness, sustainability, and impact of PD programmes, particularly in developing educational contexts such as India.

6.1. Lack of Practical Training

One of the most significant challenges in professional development is the inadequate emphasis on practical training for trainee and in-service teachers. Research in the Indian context has consistently highlighted a substantial gap between theoretical knowledge and classroom practice. Teacher education curricula are largely theory-oriented, focusing extensively on pedagogical concepts, educational philosophies, and content knowledge, while providing limited opportunities for hands-on teaching experiences.

Internship and school-based practicum programmes, which are intended to bridge this gap, are often weakly structured and poorly supervised. In many cases, trainee teachers are not provided with adequate mentoring, reflective feedback, or exposure to diverse classroom situations. As a result, teachers enter the profession with insufficient practical skills in classroom management, assessment strategies, learner engagement, and differentiated instruction. This disconnect between theory and practice reduces the overall effectiveness of professional development efforts and hinders teachers' confidence and competence in real classroom settings.

6.2. Time and Resource Constraints

Time and resource constraints constitute another major barrier to effective professional development. Teachers are frequently burdened with heavy teaching workloads, administrative responsibilities, examination-related duties, and co-curricular obligations. These demands leave limited time for teachers to participate in continuous professional learning activities.

In addition to time limitations, many educational institutions lack adequate financial and infrastructural resources to support sustained PD initiatives. Access to quality training programmes, digital learning platforms, academic literature, and expert mentors remains uneven, particularly in rural and under-resourced schools. The absence of institutional encouragement and incentives further discourages teachers from engaging in PD on a regular basis. Consequently, professional development is often perceived as a formal requirement rather than a continuous and meaningful process of professional growth.

6.3. Relevance and Contextual Applicability

The relevance and contextual alignment of professional development programmes play a crucial role in determining their success. PD initiatives that adopt a one-size-fits-all approach and fail to address local classroom realities often yield limited or short-term outcomes. Teachers work in diverse socio-cultural, linguistic, and economic contexts, and their professional needs vary accordingly.

When PD programmes do not consider factors such as student diversity, learning levels, school infrastructure, and community backgrounds, teachers struggle to apply newly acquired knowledge effectively. This lack of contextual relevance leads to disengagement and reduces teachers' motivation to implement innovative pedagogical practices. Therefore, professional development must be context-sensitive, flexible, and responsive to the actual challenges faced by teachers in their everyday teaching environments.

7. The Role of Teacher Education Institutions

Teacher education institutions occupy a central position in shaping the professional competencies, attitudes, and values of teachers. Their role extends beyond initial teacher preparation to providing continuous support throughout teachers' professional careers. To fulfil this role effectively, these institutions must adopt a holistic and practice-oriented approach to teacher education.

Incorporating subject-specific didactics, particularly in the social sciences, is essential for developing deep pedagogical understanding. Subject-specific training enables teachers to design meaningful learning experiences, integrate interdisciplinary perspectives, and foster critical thinking among students. Moreover, establishing strong partnerships between schools and training providers can help bridge the gap between theoretical instruction and classroom realities. Such collaborations facilitate mentoring, school-based research, and experiential learning opportunities.

Promoting research engagement among trainee teachers is another critical responsibility of teacher education institutions. Encouraging teachers to undertake classroom-based research enhances reflective practice, problem-solving skills, and professional autonomy. Studies have shown that teachers' attitudes towards classroom research significantly influence their professional growth, instructional innovation, and long-term commitment to continuous learning.

8. Impact on Student Outcomes

Effective professional development has far-reaching implications, not only for teachers but also for student learning outcomes. A growing body of empirical evidence suggests that high-quality PD programmes lead to improved instructional practices, which in turn positively affect student achievement.

Systematic reviews and research studies indicate a strong correlation between teacher participation in PD and enhanced student performance. Teachers who engage in continuous professional learning are more likely to adopt learner-centered pedagogies, employ effective assessment strategies, and create inclusive classroom environments. These improvements contribute to higher levels of student engagement, motivation, and academic success. Thus, professional development serves as a critical link between teacher quality and student learning outcomes.

9. Case Examples and Initiatives

Various professional development initiatives at national and institutional levels provide valuable insights into how PD can transform teaching practices and student learning. Programmes emphasizing continuous learning, collaboration, mentoring, and reflective practice have demonstrated positive outcomes in terms of teacher effectiveness and classroom innovation.

To conceptualize this process, the figure below presents a simple model of PD impact. The model illustrates how professional development enhances teachers' knowledge, skills, and professional attitudes, leading to improved classroom practices and, ultimately, better student learning outcomes. This model highlights professional development as a dynamic and ongoing process that plays a vital role in improving educational quality and strengthening the overall teaching-learning ecosystem.

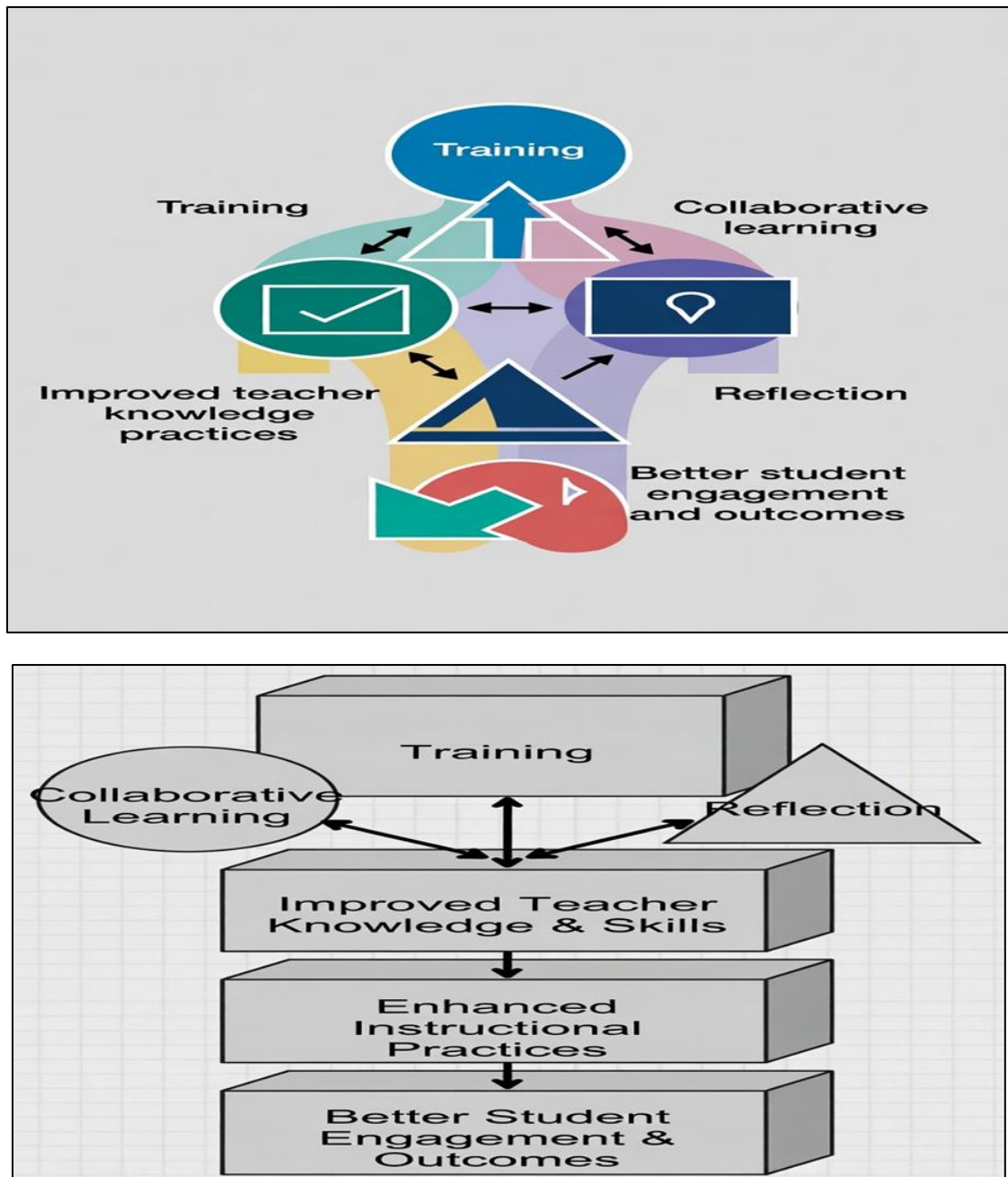


Figure 1 Professional Development Impact Pathway

10. Policy Implications

Effective professional development (PD) for social sciences teachers requires robust, evidence-informed policy frameworks that prioritize sustainability, relevance, and inclusivity. As global and national education systems evolve, policies must actively support teacher capacity building to achieve high-quality social sciences education that fosters critical citizenship, interdisciplinary inquiry, and socio-emotional competencies.

First, sustained funding for PD is essential to move beyond short-term, sporadic interventions toward long-term, high-impact programs. Research consistently shows that PD programs lasting 50+ hours with follow-up support yield significantly better outcomes in teacher efficacy and instructional quality (Darling-Hammond et al., 2017; OECD, 2020). In India, the National Education Policy (NEP) 2020 recognizes this by positioning teachers at the center of educational reform and mandating continuous professional development (Ministry of Education, Government of India, 2020). However, implementation challenges persist, including inconsistent budgetary allocation and reliance on centralized schemes like NISHTHA (National Initiative for School Heads' and Teachers' Holistic Advancement). Recent analyses (2025–2026) highlight the need for dedicated, ring-fenced funding streams-potentially 5–7% of state education budgets-for content-specific PD in social sciences, including resources for inquiry-based pedagogy, current affairs integration, and local history/civics modules (Brookings Institution, 2026; International Journal of Social Impact, 2025). Globally, frameworks such as the UNESCO-Education International Global Framework of Professional Teaching Standards advocate multi-year funding commitments tied to measurable teacher growth indicators (Education International, 2019).

Second, alignment of PD with national curricula and social science goals ensures coherence and relevance. NEP 2020 emphasizes competency-based, multidisciplinary learning in social sciences, integrating Indian Knowledge Systems (IKS), constitutional values, and sustainable development themes (Ministry of Education, 2020). Policy must therefore mandate PD programs that directly support these goals-e.g., training in teaching controversial issues, source evaluation in history, and civic engagement in economics/political science. The National Professional Standards for Teachers (NPST), developed under NEP 2020, provide a clear benchmark for aligning PD with expected competencies (NCTE, 2023). In practice, this requires curriculum-linked modules in NISHTHA 3.0 and beyond, with state-level adaptations (e.g., Odisha-specific focus on regional tribal histories and Odia-medium resources) to avoid a one-size-fits-all approach (IDR, 2025; Kumar, 2025).

Third, equitable access to PD for all teachers, particularly those in rural, marginalized, and underserved areas, is a critical equity imperative. NEP 2020 explicitly commits to bridging social category gaps through inclusive interventions, including digital and hybrid PD to reach remote regions (Ministry of Education, 2020; National Guidelines on Equitable and Inclusive Education, 2023). Yet, persistent barriers-such as poor internet infrastructure, language mismatches, and time constraints in rural Odisha and similar contexts-limit participation (IJRTI, 2024; TIJER, 2025). Policies should prioritize low-bandwidth, offline-capable platforms, localized training hubs (e.g., district-level DIETs), and incentives like travel reimbursements or credit-linked career progression. Global evidence from OECD countries underscores that targeted equity measures (e.g., subsidies for marginalized teachers) reduce disparities and improve overall system quality (OECD, 2020). In India, aligning with Sustainable Development Goal 4 (quality education) and SDG 10 (reduced inequalities), NEP 2020's vision demands accelerated rollout of multimodal PD-combining face-to-face workshops, AI-supported self-paced modules, and peer networks-to ensure no teacher is left behind (IJFMR, 2024; Research Gate, 2025).

In summary, policy frameworks must integrate sustained funding, curricular alignment, and equity mechanisms to realize NEP 2020's transformative potential in social sciences teacher education. Recommendations include: (1) enacting multi-year PD funding laws at state/central levels; (2) developing subject-specific PD guidelines under NPST; and (3) establishing monitoring dashboards to track rural/marginalized access rates. These steps will empower social sciences teachers to deliver meaningful, inclusive education, ultimately contributing to informed citizenship and societal progress in India and beyond.

11. Conclusion

Professional development and teacher education in the social sciences play a decisive role in shaping the overall quality of education, enhancing teacher effectiveness, and ensuring meaningful student learning outcomes. In an era marked by rapid social change, evolving knowledge systems, and diverse classroom contexts, the professional growth of teachers has become not merely desirable but essential. Well-designed professional development programmes

strengthen teachers' pedagogical competencies, subject knowledge, and professional attitudes, enabling them to respond effectively to the complex demands of contemporary classrooms.

The study highlights that professional development initiatives grounded in continuous learning, collaboration, contextual relevance, and reflective practice are more likely to produce skilled, confident, and adaptive teachers. Collaborative learning opportunities such as peer mentoring, professional learning communities, and school-based workshops encourage the sharing of best practices and collective problem-solving. Similarly, reflective practices enable teachers to critically examine their instructional strategies, assess student responses, and make informed pedagogical adjustments. When professional development is aligned with real classroom contexts and learners' socio-cultural backgrounds, its impact becomes both sustainable and transformative.

Despite these benefits, significant challenges related to implementation, accessibility, and quality persist. Limited practical exposure, time constraints, insufficient institutional support, and a lack of contextual alignment often undermine the effectiveness of professional development programmes. Addressing these challenges requires strategic policy interventions, including adequate resource allocation, flexible PD structures, strengthened school-institution partnerships, and the integration of research-based and practice-oriented training models. Teacher education institutions and policymakers must work collaboratively to ensure that professional development is viewed as a continuous process rather than a one-time intervention.

Future research should focus on examining the longitudinal impact of professional development on teacher practices and student outcomes, particularly within diverse and under-resourced educational settings. There is also a need to explore innovative PD models that effectively bridge the gap between educational theory and classroom realities, including technology-enabled learning, action research, and blended professional development approaches. Such efforts will contribute to building a resilient, reflective, and professionally empowered teaching workforce, ultimately strengthening the quality and equity of education in the social sciences.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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