

Teacher Education in India: Institutional Architecture and Scheme-Based Development : An Analytical Review of Institutional and Programme-Based Change

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Abstract: Teacher education is a comprehensive process that aims to prepare and equip teachers with the knowledge, attitudes, behaviours, and skills needed to be effective in classrooms, schools, and the wider community. The process involves a range of policies, procedures, and programmes designed to help teachers develop expertise in their subject areas, understand the learning needs of their students, and engage with the diverse social, cultural, and economic contexts of their communities. The contemporary meaning of teacher education goes beyond pre-service training; it now includes in-service learning, continuous professional development, mentoring, technology-enabled learning, and quality assurance. This paper examines teacher education as an ecosystem rather than as a single programme or institution. It argues that national bodies such as UGC, NCERT, NCTE, SCERTs, and DIETs provide the structural and academic foundation of teacher education, while schemes and other initiatives such as SSA, RMSA, Samagra Shiksha, PMMNMTT, DIKSHA, NISHTHA, and the National Mission for Mentoring operationalize it at large scale. The present paper reviews and analyses secondary data including official policy documents, institutional sources, and published literature. The findings of the paper show that teacher education in India has moved from fragmented training events to a more coherent architecture of preparation, regulation, mentoring, digital learning, and standards-based professional development. It concludes that the central challenge, therefore, is no longer only the expansion of teacher education opportunities, but the effective alignment of institutions, schemes, and professional learning processes with classroom practice, so that teacher education can contribute meaningfully to improved teaching quality and, ultimately, better learning experiences and outcomes for students.

Keywords: Teacher Education, Institutional Architecture, Teacher Development, NCERT, NCTE; SCERT; DIET, IASEs, SAMAGRA SHIKSHA, DIKSHA, NISHTHA, Professional Standards.

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Introduction

Teacher education occupies a central place in any educational system because the quality of schooling is closely linked to the quality of teachers and their professional preparation. In contemporary education, the teacher is no longer viewed merely as an information provider. The teacher is expected to act as a facilitator, guide, mentor, a classroom organizer, and a professional who must respond to inclusion, digital learning, assessment reform and the changing needs of learners. According to the Secondary Education Commission (1952-53), the key element in educational reform is the teacher - their personal qualities, educational qualifications, professional training, and role in the school and the wider community. A skilled teacher has the power to bring any curriculum to life and achieve success through the right teaching methods. The quality of teachers is crucial for educational improvement, and their education must include both practical experience and academic training. This will enable them to take on their responsibilities as members of the educational profession and fulfill their duties more effectively. According to the International

Commission on the Development of Education (UNESCO 1972), the role of a teacher is evolving to become less about imparting knowledge and more about fostering critical thinking. They should act as advisors, researchers, partners, and facilitators who encourage discussion and help students discover conflicting arguments. Because of this changing role, teacher education can no longer be understood as a one-time qualification completed before entering the profession, but it is better understood as a continuous professional journey that begins with pre-service preparation and continues through induction, in-service education, mentoring and continuous professional development. NEP 2020 reinforces this direction by placing strong emphasis on teacher quality, professional standards and continuous development.

So, teacher education in independent India did not remain confined to the training institution as an isolated unit; over the decades it grew into a wider system linked to higher education, research, curriculum work, professional regulation and school-level improvement. The National Council of Educational Research and Training (NCERT), established in 1961, took on the task of

curriculum development and instructional material production, while the National Council for Teacher Education (NCTE), which acquired statutory status in 1995, was given the responsibility of regulating and maintaining standards across pre-service and in-service teacher preparation programmes. At the state level, State Councils of Educational Research and Training (SCERTs) act as the nodal bodies for curriculum design and in-service training, and District Institutes of Education and Training (DIETs) extend this support down to the district level, functioning as the third tier of the resource structure after NCERT and the SCERTs. This clearly shows that teacher education in India has never depended on a single institution; it rests on a layered network in which national, state and district-level bodies each carry a distinct but connected responsibility.

Alongside this institutional architecture, the Government of India has increasingly used large-scale schemes and digital programmes to translate policy priorities into teacher development and school-level practice. The National Initiative for School Heads' and Teachers' Holistic Advancement (NISHTHA), launched in 2019 under the Samagra Shiksha framework, marked an important shift towards large-scale, competency-oriented professional development for teachers and school heads. Its subsequent phases expanded the programme across different stages of school education and incorporated areas such as pedagogy, inclusive education, ICT integration, foundational literacy and numeracy, and personal-social development. The use of DIKSHA further enabled these professional-learning programmes to be delivered at scale, providing structured courses, learning resources, assessment and certification, while also allowing states and institutions to adapt content to their contexts.

Viewed together, these developments suggest that teacher education in India has increasingly evolved from a predominantly institution-based model towards a more interconnected system of professional learning. Regulatory institutions, academic and research bodies, decentralized support structures, large-scale training programmes and digital platforms now operate as complementary layers within the broader teacher-development ecosystem. The development of teacher education, therefore, can be understood as a continuous process in which institutional capacity, professional development and technology-enabled learning increasingly intersect to support teachers throughout their professional careers.

Objectives

- To examine the institutional architecture supporting teacher education in India, with particular reference to UGC, NCERT, NCTE, SCERT, DIET, IASE and other relevant institutions.
- To analyze the contribution of major schemes, programmes, policies, digital initiatives and platforms to the development and strengthening of teacher education and professional development in India.
- To explore teacher education as a continuum of pre-service education, in-service education and continuous professional development in response to the changing role and needs of teachers.

Research Methodology

- **Research Approach:** The present study employs a Qualitative document-based review.
- **Research Design:** A descriptive-analytical review design was used to critically examine the evolution and present status of teacher education in India.
- **Sources of Data:** The study relies entirely on secondary data, including Government reports, research articles, books, policy documents, institutional publications, programme documents, and other relevant literature.
- **Data Analysis:** The collected data was analyzed thematically.

Understanding Teacher Education as a Continuum

Teacher education is better understood as a continuum than as a one-time event completed at the end of pre-service training. It begins with pre-service teacher education, which prepares prospective teachers through foundation courses, pedagogical study, practicum and internship. It continues through in-service teacher education, which supports teachers after entry into the profession through orientation programmes, refresher courses, workshops, mentoring and school-based learning. This continuum extends further into continuous professional development (CPD). CPD recognizes that teachers need regular opportunities to update knowledge, refine practice and respond to changing curricular and social demands. Policy developments in India, especially after the National Education Policy 2020, have strengthened the idea that professional growth should be career-long, structured and linked to teacher development. What this shows is simple, teacher quality does not depend only on initial training but also on the institutions, regulations, schemes and support mechanisms that keep teachers learning throughout their careers. That is why the institutional architecture of teacher education matters so much.

Institutional Architecture, Schemes and Initiatives for the Development of Teacher Education in India

The development of teacher education in India cannot be explained simply as a sequence of changes in training programmes or the setting up of individual institutions. It is, at a deeper level, an account of how the country slowly assembled an institutional and policy-backed system capable of preparing teachers, sustaining their professional growth, generating educational resources, regulating standards and adjusting to the changing demands placed on school education. In the years following independence, teacher education steadily moved closer to higher education, educational research, curriculum development, professional regulation and school improvement, a shift reflected in the growing responsibilities assigned to bodies such as NCERT, NCTE, SCERTs and DIETs. Over time, a series of centrally sponsored schemes and national initiatives carried this institutional reach further outward, from training colleges and universities to schools, districts, blocks and, in more recent years, digital platforms such as DIKSHA.

Two closely related processes underlie this development. The first concerns the building and strengthening of institutional structures able to offer academic, regulatory, research and professional support, a role performed jointly by national bodies (NCERT, NCTE), state-level councils (SCERTs) and district-level institutions (DIETs), each operating at a distinct tier but within a

single, coordinated framework. The second process involves schemes and initiatives, such as SSA, RMSA and NISHTHA, through which this institutional capacity has been extended to reach teachers at a large scale, often covering lakhs of educators across states and union territories. These two processes have not

developed in isolation; over the decades they have grown increasingly interdependent, so that teacher education in India functions today less as a set of separate activities and more as an interconnected ecosystem of institutions, policies and large-scale training efforts.

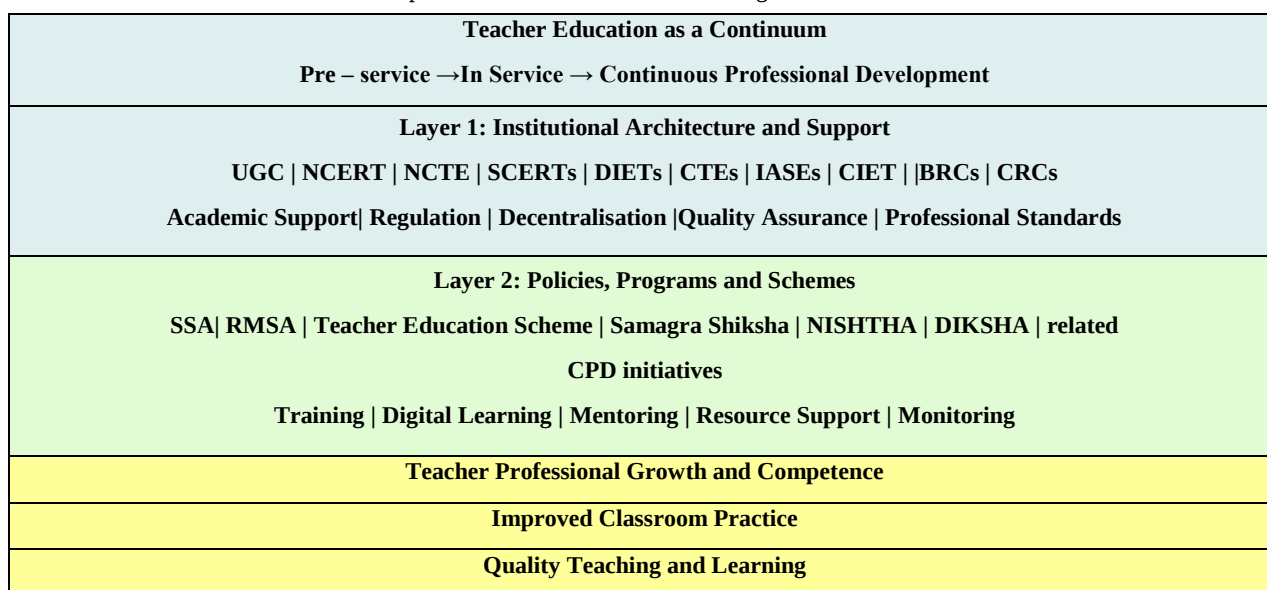


Figure 1. Two-Layer Conceptual Framework for the Development of Teacher Education in India

Figure 1 presents the organizing model for the paper. The institutional layer provides the structure of teacher education through regulation, academic support, decentralization and quality assurance, while the Programme-and-scheme layer operationalizes this structure through large-scale training, digital learning, mentoring and monitoring. The interaction of these two layers supports teacher professional growth and ultimately improves classroom practice and learning quality.

From Institutional Foundations to a System of Teacher Development

One of the most important post-independence developments was the closer integration of teacher education with the wider higher-education system. The University Grants Commission (UGC), established by an Act of Parliament in 1956, was created to coordinate and maintain standards in university education. Its contribution to teacher education is therefore indirect but significant, especially in relation to higher education, research, academic standards, institutional development and faculty development. It offers faculty development programs to help teachers stay updated with the latest technology and advancements in their field.

On 25 December 2014, the University Grants Commission (UGC) set up the Inter-University Centre for Teacher Education (IUCTE) at Banaras Hindu University (BHU) as a dedicated institution focused on teacher education. The Centre emphasizes strengthening capabilities, advancing research and innovation, sharing resources, and nurturing teacher educators and that same year, the Government of India introduced the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMNMNTT), a central initiative designed to enhance teaching quality in higher education through institutional development, faculty training, and professional learning programs. This mission was later restructured and relaunched on 5 September 2023 by the UGC as the Malaviya Mission–Teacher Training Programme

(MMTTP). The revised program prioritizes ongoing professional growth and capacity enhancement for faculty across higher education institutions, aiming to train 15 lakh teachers through a network of 111 Malaviya Mission centers nationwide. Key training components include pedagogy, ethics and human values, Indian knowledge systems, multidisciplinary and critical thinking approaches, ICT-integrated teaching, and other areas supporting professional advancement.

This higher-education foundation was complemented by the National Council of Educational Research and Training (NCERT), which gave a more direct institutional focus to school education and the development of teachers and their professional competencies. NCERT was set up as an autonomous organization to assist the Central and State Governments concerning all aspects of education, particularly educational research, curriculum development, extension, teacher education and institutions. Its mandate encompasses educational research, curriculum and learning resource development, innovative pedagogies, and pre- and in-service teacher education. It collaborates closely with the State Education Departments, Universities, and other institutions, contributing to teacher learning, professional development, curriculum design, teaching and learning processes, and linkages between knowledge and practice.

This institutional base was critically important to ensure that teacher education remained closely connected to curriculum, pedagogy, and actual school contexts – issues that are intimately related to the question of content. Through its educational research, teacher education programs, and involvement in curriculum development and learning resource materials, NCERT has made important contributions to a teacher’s holistic professional development, complementing traditional approaches to teacher education and focusing on broader understandings of teaching and learning processes.

The Central Institute of Educational Technology (CIET), one of the important annexes of NCERT was set up by merging the Centre for

Educational Technology and the Department of Teaching Aids. This particular institute aims at conducting research and development, training and extension activities in education, and develops and utilizes educational technology and materials to enhance the quality of education at all levels”.

Centre for Information Technology (CIET) offers academic and technical support to teachers and teacher educators by helping them acquire skills required to use educational technology in teaching/learning and professional development of teachers. It provides training to the faculty of DIETs, CTEs and IASEs in effective use and integration of educational technology for use in various teacher-education programmes delivered by them. Besides, it develops and shares digital and multimedia resources to strengthen the Teaching-learning process. Through these interventions, CIET contributes to building linkages between teacher education, pedagogy and technology, and thus to strengthening the capacity of teachers and teacher educators.

Regulation and Professional Standards: The Emergence of NCTE

While NCERT contributed primarily through research, curriculum and academic support, another institutional requirement became increasingly important for the regulation and standardization of teacher education. Subsequently, the National Council for Teacher Education (NCTE) emerged in response to concerns not only about regulation and standardization but also about the quality and coordination of teacher education.

NCTE marks the shift from teacher education as a training provision to teacher education as a regulated professional field. Its framework covers major teacher-education programmes and addresses programme duration, curriculum, institutional recognition, practicum, internship, teacher-educator preparation and quality assurance. The 2014 Regulations, for example, increased the duration of major programmes such as B.Ed. and M.Ed. and emphasized theory, practicum and internship as interconnected components of professional preparation. And, this development is very crucial because institutional expansion by itself does not guarantee professional quality. NCTE therefore represents the regulatory dimension of the emerging teacher-education architecture.

Decentralising Teacher Education: SCERT, DIET, CTE and IASE

The development of teacher education did not occur only at a national level. With a view to promoting teacher education closer to the schools and meeting the needs of teachers in diverse contexts, the Centrally Sponsored Scheme of Restructuring and Reorganization of Teacher Education, 1987, formulated in the wake of the National Policy on Education, 1986, aimed to provide an institutional base for both pre-service and in-service teacher education. This scheme provided for setting up of District Institutes of Education and Training (DIETs) for providing academic support and teacher education; up gradation of some secondary teacher-education institutions to Colleges of Teacher Education (CTEs) and Institutes of Advanced Studies in Education (IASEs) to promote their role in providing quality teacher-education at the higher secondary level, and strengthening of State Councils of Educational Research and Training (SCERTs) with a view towards their effective role in academic support and teacher training in the states.

The importance of this initiative in the development of teacher education lies not only in the fact that it led to the creation of more institutions for teacher education but also in the different academic support services that it brought about. The SCERTs, placed at the level of the state, provides academic leadership in terms of research, curriculum development and teacher development, while the DIETs at the district level provide academic support and in-service education. The CTEs and IASEs, on the other hand, are tasked with the responsibility of promoting and fostering quality teacher-education at the secondary and higher levels, respectively. Today, even as these institutions are being visualized as nodes in the national network for teacher education, they continue to be an integral part of teacher development in India.

The decentralization of teacher education through such a network of agencies enabled a more comprehensive approach to teacher professional development than the earlier model, in which teacher education was largely the responsibility of a few institutions. It not only facilitated effective in-service education but also created the required institutional machinery for various initiatives undertaken by NCERT, SCERTs and DIETs to promote continuous professional development among teachers. A teacher working in a particular district may face classroom problems that cannot always be addressed through a standard national training programme. District- and state-level institutions provide an opportunity to contextualize professional development, identify local training needs and connect professional learning with actual school conditions.

This institutional structure also extends below the district level through Block Resource Centers (BRCs) and Cluster Resource Centers (CRCs), which provide academic support to schools. Current implementation frameworks place SCERTs, DIETs, CTEs, IASEs, BRCs and CRCs within a broader support network for teacher professional development. Thus, the institutional architecture gradually developed a vertical continuum from national institutions to classrooms.

From Institutions to Large-Scale Teacher Development: The Role of Schemes

The institutional structures described above created the infrastructure for teacher development, but large-scale improvement required mechanisms through which training and professional support could reach large numbers of teachers. This role was increasingly fulfilled by centrally sponsored schemes, such as

Sarva Shiksha Abhiyan: Expanding In-Service Teacher Development

Sarva Shiksha Abhiyan (SSA), was introduced to support universal elementary education, represented an important expansion of the role of teacher development within a large-scale school education programme. Teacher capacity building was treated as an important component of improving classroom processes and learning outcomes. The framework provided for regular in-service training and recognized the need to connect training with classroom practice.

One of the important features of the SSA approach was the attempt to institutionalize teacher training through state, district, block and cluster structures. Training was not intended to remain a one-time event. The framework included institutional training as well as

cluster-level interaction and peer learning, thereby creating opportunities for teachers to discuss classroom experiences and apply new ideas in practice.

SSA therefore did more than expand the number of training opportunities. It linked teacher development more closely to classroom practice, pedagogy, learning outcomes and school improvement.

Rashtriya Madhyamik Shiksha Abhiyan: Extending the Focus to Secondary Education

As attention expanded towards universalization and quality improvement at the secondary stage, the Rashtriya Madhyamik Shiksha Abhiyan (RMSA) provided another important policy platform. Teacher training was included among the quality-improvement interventions supported under RMSA, alongside infrastructure, educational resources, ICT-related interventions, orientation programmes and other measures aimed at strengthening secondary education. It views, access alone is not enough if teachers do not receive support to improve instruction. Professional development therefore became connected with secondary-school quality, pedagogical improvement, technology and inclusive education. The progression from SSA to RMSA also reveals an important shift in treating teacher development only as an elementary-education concern. Rather, it became part of a broader school-education agenda extending across different stages of schooling.

From Fragmented Training to Integrated Teacher Development

In recent years, there has been a noticeable change in the way teacher development is viewed in India. Policymakers and educational administrators have increasingly recognized that teacher education cannot work effectively in isolation from the wider school-education system. There is a growing emphasis on bringing different teacher-development interventions together, sharing institutional resources and strengthening coordination among the agencies involved. This has gradually influenced the way educational programmes are planned and managed at both the national and state levels, leading to a greater emphasis on convergence rather than working through completely separate interventions.

A clear expression of this change can be seen in Samagra Shiksha, which views school education as a continuum from pre-school to Class XII and adopts a more holistic approach to its development. In the area of teacher education, this provides a common framework for connecting teacher-development activities with the broader needs of schools. It also places considerable emphasis on strengthening SCERTs and DIETs and gave SCERT a nodal role in pre-service and in-service teacher training.

The idea of integration becomes even clearer in the Integrated Teacher Training Programme under Samagra Shiksha. Earlier, training for teachers, principals and head teachers, teacher educators and educational administrators was organized through different components. The scheme recognized that such segmentation could limit the effectiveness of professional development and therefore proposed a more comprehensive training arrangement. The programme also sought to bring institutions such as SCERTs, DIETs, College of Teacher Education (CTEs), Institutes of Advanced Studies in Education (IASEs) and

Block Resource Centres (BRCs) into a connected training structure. The purpose was not to make all these institutions perform the same function, but to improve coordination among them and ensure that teacher development received continued academic and institutional support.

The Integrated Teacher Training Programme envisaged an LMS portal and mobile application through which teachers and resource persons could register access training materials and receive support. The system was also intended to help identify training needs and facilitate monitoring, mentoring and tracking of progress.

This approach was further reflected in NISHTHA, which brought teachers, school heads and academic-support personnel into a common professional-development framework, with SCERTs, DIETs and other academic institutions playing important roles in its implementation, therefore provides a practical example of the wider move towards integrated teacher development envisaged under Samagra Shiksha

The movement from fragmented training to integrated teacher development, therefore, is not simply about combining different training programmes. It reflects a broader change in the way teacher development is organized and supported. Greater coordination among teacher-education institutions, school-support structures and different levels of educational administration has become an important part of this approach. Samagra Shiksha thus represents a significant step towards a more connected system of professional development, in which training, institutional capacity-building, mentoring, monitoring and academic support are viewed as interrelated aspects of teacher development.

PMMMNMTT as a Parallel Development

A parallel development, particularly relevant to higher and technical education, was the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT). As a centrally supported initiative, the Mission sought to strengthen teacher preparation, teacher supply, faculty development and institutional capacity across higher education. Its broad policy direction reflects the same larger shift visible in school education and views teaching as a continuing professional responsibility rather than a one-time qualification.

Although PMMMNMTT primarily addresses teacher development in higher education, it is important in the broader narrative because it demonstrates the expansion of teacher-development policy beyond schools and into the wider educational system.

Digital Transformation: DIKSHA and NISHTHA

The emergence of digital platforms created another major transition in teacher professional development. DIKSHA (Digital Infrastructure for Knowledge Sharing) provides a national digital infrastructure through which teachers and learners can access educational resources and professional-development opportunities. Its significance lies not simply in moving training online, but in creating a common digital platform for resource sharing, course delivery, assessment, collaboration and mentoring.

The COVID-19 pandemic accelerated this transition. When face-to-face educational activities were disrupted, digital platforms became significantly important for maintaining continuity in teacher learning. One of the most visible examples was the online delivery of NISHTHA through DIKSHA. The transition of

NISHTHA to a digital platform demonstrates how institutional structures and schemes can interact with technology. The programme supplied the professional-development content and training framework, while DIKSHA supplied a scalable digital infrastructure through which training could be delivered, monitored and accessed across geographical boundaries. Official government information indicates that around 24 lakh teachers completed NISHTHA online training at the elementary level by June 2021, and that NISHTHA 2.0 for secondary and senior secondary teachers was also later launched online on DIKSHA.

Digitalization has expanded the reach of professional development, but technology alone cannot guarantee effective teacher learning. Access, interaction, contextual relevance, mentoring, opportunities for application and reflection remain important. For that reason, digital teacher development needs to be understood as part of a broader institutional and pedagogical ecosystem rather than as a purely technical solution.

From Training to Continuous Professional Development

The combined development of institutional structures, large-scale schemes and digital platforms has gradually changed the meaning of teacher development. Teacher education can no longer be understood only as a pre-service qualification obtained before entering the profession, rather a contemporary model incorporating pre-service preparation, induction, in-service education, mentoring and continuous professional development. This shift recognizes that professional learning must continue throughout a teacher's career. Training becomes meaningful when it is recurrent, contextual, supported by institutions and connected to classroom practice. In this sense, the historical development of teacher education in India mirrors the conceptual idea of teacher education as a continuum.

Professional Standards, Monitoring and the Emerging Teacher Professional Model

The more significant dimension of the evolving architecture is the growing emphasis on professional standards and monitoring. The National Professional Standards for Teachers (NPST) represents a public statement of teacher quality and career-stage competencies. It identifies what teachers should know, how they should perform and what kinds of competencies are required across the teaching career. This marks an important shift from viewing teacher development only as training to viewing it as a standards-based professional process.

In this context, monitoring and support are not meant merely as bureaucratic controls. They are intended to create a system in which teachers receive developmental feedback, institutional support and clearer expectations for professional growth. The emerging teacher professional model therefore combines training, standards, mentoring, regulation and reflective practice.

Institutional Architecture and Scheme Perspective: An Integrated View

The overall discussion shows that teacher education in India has evolved from a relatively fragmented set of training arrangements towards a more integrated ecosystem. The institutional layer provides the regulatory, academic and decentralized infrastructure, while the programme-and-scheme layer provides the mechanisms through which this infrastructure reaches teachers at large scale. These two layers are mutually dependent; institutions need schemes to extend their reach, and schemes need institutions to sustain quality and continuity.

Institutional Foundations UGC NCERT CIET National academic support
Regulation and Professional Standards NCTE
Decentralized Support Structures SCERTs DIETs CTEs IASEs BRCs CRCs
Large-Scale Teacher Development SSA RMSA Teacher Education Scheme
Integrated School - Education Framework Samagra Shiksha
Digital and Blended Professional Learning DIKSHA + NISHTHA
Continuous Professional Development Training + Mentoring + Resources + Reflection
Professional Standards and Monitoring
Teacher Professional Growth
Improved Classroom Practice
Quality Teaching and Learning

Figure 2. Evolution of Teacher Development from Institutional Support to Professional Growth.

Figure 2 synthesizes the historical evolution by showing how institutional foundations, regulatory control, decentralised support structures, large-scale schemes, integrated school education, digital learning and professional standards have gradually converged into a more coherent system of teacher development.

Present Scenario: From Expansion to Quality and Coherence

The current scenario of teacher education in India shows a transition from expansion to emphasizing quality, relevance, and coherence. The various institutional and programmatic interventions examined above have contributed to a comprehensive system that caters to pre-service and in-service teacher education, continuing professional development, digital up skilling, mentoring, and professional standards. Samagra Shiksha, for instance, addresses teacher education within the framework of a broader school-education policy and highlights the role of SCERTs, DIETs, and integrated training in building a resilient education ecosystem. The initiative recognizes the segmentation of teacher-education programs and seeks to build coherence into professional development. Notably, the current discourse on teacher education seeks to transform classrooms by improving the quality and efficacy of teaching and learning. As such, the focus is on professional learning that facilitates classroom practices in which teachers use their agency and engage in inquiry, collaboration, reflection, and action to achieve educational goals.

The emphasis on quality classroom practice has important implications for professional learning in teacher education. Evidence suggests that there is a need to focus on intensive and sustained professional development programs that include active learning strategies and collaborative inquiry, sufficient time for planning, teaching, and reflection, and alignment with curricular goals and teaching practice. professional learning must be transformative, responsive to diverse contexts and needs, and leverage technology to promote active teacher participation and engagement.

Enhancing classroom practice requires creating conditions that allow teachers to incorporate professional learning into practice. For instance, teachers can use new knowledge and skills to facilitate inclusive, responsive, and contextualized learning in their classrooms. Similarly, they can integrate professional learning insights into lesson planning, assessment design, and use of resources, including technology. The importance of professional standards in guiding teacher education and development cannot be underestimated. The National Council for Teacher Education's (NCTE) National Policy on Teacher Education (NPTE) and National Curriculum Framework for Teacher Education (NCFTE) provide a useful framework for understanding teaching quality. According to NPST, teaching quality is defined by professional knowledge, practice, values, and commitment and is intrinsically linked to educational quality. As a result, it is pertinent to assume that quality teaching and learning underpin the entire education system.

In the digital era, teacher development is no longer dependent only on physical institutions. DIKSHA, NISHTHA and other digital platforms have widened access to content and training, while the institutional system continues to provide regulation, academic support and quality assurance. The challenge now is not merely to expand access but to ensure coherence, continuity and meaningful classroom impact. The National Education Policy 2020 has further

reinforced the need for continuous professional development, career-long learning and higher-quality teacher preparation. NCTE's current focus on initiatives such as the Integrated Teacher Education Programme (ITEP), the National Professional Standards for Teachers (NPST) and the National Mission for Mentoring aim to achieve that.

The above discussion highlights the centrality of quality and coherence in the present scenario of teacher education. The system has evolved from a focus on expanding access to education to one that emphasizes enhancement of capacity, with the ultimate aim of improving learning outcomes. As such, the current agenda for teacher education reform must be informed by the need to make training, mentoring, digital resources, and professional standards responsive to the needs of educators and learners. The effectiveness of the reforms will depend to a large extent on professional learning translations into improved classroom practice and quality education.

Discussion

The overall analytical review highlights the evolution of teacher education in India, from the initial emphasis on infrastructure and expansion to a more integrated approach of professional development. It is noteworthy that this development has occurred through multiple interlinked domains and not through the efforts of any one institution or programme. Strengthening higher education created an ecosystem in which university-based teacher education and research could flourish, while NCERT linked teacher development with school education, curricular transaction, research, and learning resources. The addition of CIET provided an important educational-technological link, while NCTE created the regulatory framework that underpinned teacher-education norms, standards, and programmes.

The second important feature that emerges from the review is the evolution of a more decentralized support system. The Teacher Education Scheme of 1987 provided a much-needed fillip to SCERTs, DIETs, CTEs, and IASEs, which in turn provided academic support to pre-service and in-service teachers, as well as schools. This reduced the teacher-development responsibility of the state and university-based systems and created multiple levels of support structures. The Samagra Shiksha framework retains this multi-tiered approach to teacher education and professional development by giving a significant role to SCERTs, DIETs, CTEs, IASEs, BRCs, and CRCs in teacher education and academic support.

The third important trend is the expansion of teacher-development opportunities through large-scale programs like SSA and RMSA created linkages between teacher education and school education, while the Teacher Education Scheme built institutional capacity for such linkages. PMMMNMTT then added a new dimension to the professional development of teachers in higher and technical education by focusing on teacher education, faculty development, capacity building, and leadership development. It is significant that the focus of professional development is moving away from training to a more integrated approach to education and learning.

The most important of these trends is exemplified by Samagra Shiksha, which seeks to unify the various fragmented approaches to teacher education and professional development. Its integrated approach to teacher training and education recognizes the need to move away from the vertical segmentation of the previous

approaches and to create coherence between teachers, teacher educators, school heads, and academic support systems. It is noteworthy that the framework gives a significant role to SCERT and DIET and emphasizes the use of technology for training, monitoring, mentoring, and need assessment.

The subsequent introduction of DIKSHA and NISHTHA represents an important step in professional development by providing opportunities for teachers to enhance their knowledge and skills through digital and blended modes of learning. NISHTHA, launched as an integrated teacher training programme in 2019, was later migrated to DIKSHA during the COVID-19 period, when online education was the only viable option. Some studies recognize the limitations of online education and envisage the need for blended approaches to teacher development.

The latest initiatives related to NPST, NMM, and ITEP suggest that the focus of teacher development in India is gradually moving from quantity to quality, participation to professional growth, and training to mentoring. The latest NCTE guidelines propose that NPST, NMM, and ITEP fall under its framework, with NPST focusing on teacher quality and professional development and NMM aiming to strengthen mentoring within the professional development framework. This is entirely in keeping with the current NCERT focus on continuous professional development, classroom-connected learning, and mentoring.

The overall discussion indicates that India has made significant progress in terms of institutional infrastructure, regulatory frameworks, decentralized support systems, large-scale teacher training schemes, and digital resources for professional development. However, such a focus needs to be tempered with caution, as the mere presence of these mechanisms does not guarantee quality education or classroom transaction. The most important question is whether these interlinked teacher education mechanisms can provide coherence and support to teachers so that their professional development translates into improved classroom practices. The literature on digital and continuing professional development suggests that this would be possible only if relevance, interaction, reflection, and follow-up dominate the teacher education process.

It has also been examined that the changing perceptions about teacher education in India, as the system moves from a focus on infrastructure, training, and capacity building to one that emphasizes professional development, mentoring, and standards of teaching and learning. However, it is required to ensure that institutional mechanisms, schemes, digital resources, mentoring, and standards work together to provide continuity to professional development and improve classroom practices.

Conclusion

The development of teacher education in India reflects a long movement from institutional formation and fragmented training towards an interconnected system of regulation, academic support, decentralized structures, large-scale programs, digital professional learning and continuous professional development. Institutions such as the UGC, NCERT, NCTE, SCERT, DIET, CTE, IASE, and CIET created the structural base, while schemes such as SSA, RMSA, the Teacher Education Scheme, Samagra Shiksha, NISHTHA and DIKSHA translated that base into professional learning opportunities at scale.

Teacher education in India should therefore be understood not as a one-time qualification but as a career-long professional continuum supported by an evolving institutional architecture. The challenge for the present and future is to strengthen this continuum to make teacher learning continuous, context-sensitive, standards-based and closely linked to improved classroom practice and better learning outcomes.

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