



Systemic educational reform and teacher education in the digital era: Examining the transformative vision of NEP 2020

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Abstract

Education in the twenty-first century is undergoing a profound transformation driven by rapid technological advancements and the growing need for innovation in pedagogy. In this context, the National Education Policy (NEP) 2020 marks a historic milestone in India's educational reform, envisioning a learner-centred, flexible, and technology-enabled education system. The policy recognizes technology as a powerful enabler for achieving inclusivity, accessibility, and quality learning outcomes across diverse social and geographical contexts. Technology Integration and Educational Reform: Evaluating NEP 2020 as a Framework for Transformative Schooling in India explores how the National Education Policy (NEP) 2020 has positioned technology as a catalyst for educational transformation. Using a secondary research method, the study draws on policy documents, government reports, scholarly articles, and digital learning frameworks to critically assess the integration of technology in Indian school education. The study primarily aims to analyse how technology-driven initiatives under NEP 2020 are reshaping teaching-learning practices. It examines key initiatives such as DIKSHA, SWAYAM, which promote blended learning, experiential education, and equitable digital access. These initiatives signify a paradigm shift from conventional teacher-centred instruction to learner-centred, competency-based, and interactive pedagogies. The findings suggest that while NEP 2020 has established a strong policy foundation for technology integration, the success of its implementation depends on effective teacher training, robust digital infrastructure, and context-sensitive pedagogical innovations. The study concludes that sustained investment, continuous evaluation, and collaboration between policymakers, educators, and communities are essential for realizing NEP 2020's vision of transformative, technology-enabled schooling.

Keywords: NEP 2020, technology integration, educational reform, transformative

Introduction

The progress of any society surely depends on its people's education and development. Moreover, social advancement happens when communities work together for common goals. We are seeing that this is only shown in how well people can read and write.

Education access and literacy rates are surely connected to each other. Moreover, when education becomes more available, reading and writing skills improve in the population.

The organization further develops its members itself. Basically, this progress is the same as having a main foundation for everything. Central to this progress are teachers, who must be at the heart of essential reforms within the education system.

NEP 2020 places a strong emphasis on leveraging technology to enhance the learning experience, embracing digital tools and resources. The policy envisions the integration of technology at every stage of education, from classrooms to administrative processes. This emphasis on a technology-driven education system reflects NEP 2020 [2]'s commitment to preparing students for the challenges of the digital age, fostering innovation, and ensuring a globally competitive education for all. In essence, NEP 2020 [2] is a comprehensive and forward-looking roadmap aimed at reshaping India's education landscape to meet the demands of the contemporary world. Teachers should be exposed to diverse teaching methodologies and provided with continuous professional development opportunities to stay abreast of best practices and emerging trends in education.

A well-prepared teaching force, aligned with the vision of NEP 2020 [2], is fundamental to creating an engaging and future-ready learning environment for students across India (Maseeh, 2023). Teacher education, as a cornerstone of educational excellence, occupies a central position in the NEP 2020 [2]'s vision for transformative change. With a focus on revitalizing teacher education programs, NEP 2020 [14] seeks to equip educators with the skills, knowledge, and competencies necessary to meet the diverse needs of 21st-century learners. By nurturing a cadre of empowered and effective educators, NEP 2020 aims to lay the foundation for a robust and progressive education system capable of fostering innovation, creativity, and critical thinking among students. The incorporation of technology into teacher training, as outlined by the National Education Policy 2020 [14], signifies a fundamental change that requires a thorough comprehension of the prospects and difficulties it entails (Kaminskienè *et al.*, 2022) [11].

The NEP 2020 aims for an education system that is more experimental, inquiry-focused, learner-centred, and flexible, with technology playing a key role in realizing these objectives (Aithal & Aithal, 2020) [2]. Educators must effectively integrate technology, teaching methods, and subject content (Adalar, 2021) [1]. This incorporation necessitates a diverse strategy that considers not just the technical capabilities of educators but also their beliefs, attitudes, and teaching methods related to technology (Johnson *et al.*, 2016) [10]. Successful incorporation of technology requires a transformation in perspective, seeing technology not just as a tool but as a vital part of the

educational process (Gayur, 2021) [6]. The effectiveness of technology integration depends on offering sufficient training and professional development opportunities for teachers, allowing them to effectively incorporate technology into their classrooms. This type of training must concentrate on enhancing teachers' technological, pedagogical, and content knowledge, enabling them to create and implement technology-enhanced lessons that are consistent with curriculum objectives (Howorth *et al.*, 2024) [7]. Additionally, ongoing support and guidance are crucial for assisting educators in navigating challenges and enhancing their technology integration methods gradually ((Pappa *et al.*, 2024) [15]. This involves fostering a culture of cooperation and information exchange, allowing educators to benefit from one another's insights and receive continuous assistance from technology experts and instructional mentors.

Historical Perspectives on Teacher Education

Understanding the evolution of teacher education in India requires examining the recommendations insights of and various commissions over the years. These commissions have played a decisive role in shaping policies and practices to improve teacher education, aiming to address the unique challenges faced by the educational sector. Their collective wisdom forms the bedrock upon which current and future reforms are built, ensuring that teacher education remains dynamic, relevant, and capable of meeting the demands of 21st century.

The Kothari Commission 1964-66

Asserted that “no system can rise above the status of its teacher,” emphasizing the profound impact of teachers in education. It advocated for encouraging talented young people to join the teaching profession, ensuring favourable service conditions, and granting them the freedom to conduct and publish their research. “The essence of a programme of teacher education is ‘quality’ and in its absence, teacher education becomes, not only a financial waste but a source of overall deterioration in educational standards. A programme of highest importance therefore is to improve the quality of teacher education.” “A sound

programme of professional education of teachers is essential for the qualitative improvement of education. Investment in teacher education can yield very rich dividends because the financial resources required are small when measured against the resulting improvements in the education of millions. In the absence of other influences, a teacher tries to teach in the way in which he himself was taught by his favourite teachers.” commission report).

Chattopadhyaya (Kothari Committee National Commission on Teachers (1983-85)

envisioned the new teacher as one who communicates to pupils “the importance of national integrity and unity, the need for a scientific attitude, a committed work mentality and concern for social concern.”

The Education National (NPE Policy of 1986/92)

“Professional training of teachers to be employed in elementary and secondary schools is a pre-requisite in all parts of the country. A large number of these institutions suffer from inadequate facilities human, physical and academic to provide good professional education. Curricula remain unrevised for years, reading lists out of date and practices adopted by teacher educators in direct contradiction to ones being prescribed to prospective teachers.” Giving particular importance to the training of elementary school teachers, it is envisaged that selected institutions would be developed as District Institutes of Education and Training (DIET), both for pre-service and in service courses of elementary school teachers” (POA 1992).

The Yashpal Committee Report (1993)

Demands the need of nurturing critical thinking and self-learning in the teachers through teacher training programme. As per NCF 2005 teachers are being posed as crucial mediating agents through which curriculum is transacted. NCFTE-2009 states that “teacher is a facilitator who encourages learners to reflect, analyse and interpret in the Process of knowledge construction.”

Historical Perspectives on Teacher Education in India

Commission / Policy / Report	Year	Key Recommendations / Insights	Relevance to Teacher Education Reform
Kothari Commission	1964–66	Emphasized that “no system can rise above the status of its teacher.” Advocated for quality in teacher education, improved service conditions, and encouragement of research among teachers.	Stressed that quality teacher preparation is essential for educational improvement; laid the foundation for professional teacher education.
National Commission on Teachers (Chattopadhyaya Committee)	1983–85	Envisioned teachers as facilitators of national integrity, unity, scientific attitude, and social concern.	Highlighted the teacher’s role in nation-building and the development of social and moral values in students.
National Policy on Education (NPE)	1986 / 1992 (Revised)	Stressed professional training for all school teachers. Established DIETs (District Institutes of Education and Training) for both pre-service and in-service teacher education.	Institutionalized teacher education structures and decentralized teacher training.
Yashpal Committee Report	1993	Emphasized critical thinking, creativity, and self-learning in teacher training programs.	Shifted focus from rote learning to reflective and experiential learning approaches.
National Curriculum Framework (NCF)	2005	Defined the teacher as a crucial mediating agent in curriculum transaction; promoted constructivist and learner-centred pedagogy.	Encouraged autonomy, innovation, and active participation of teachers in curriculum design and classroom learning.
National Curriculum Framework for Teacher Education (NCFTE)	2009	Portrayed the teacher as a facilitator who encourages reflection, analysis, and interpretation in the process of knowledge construction.	Provided a competency-based framework; bridged theory–practice gap and guided NEP 2020 teacher education vision.

Rationale for Technology Integration in Teacher Education

The rapid digital transformation of education, accelerated by the COVID-19 pandemic, revealed the need for teachers to possess digital literacy, online pedagogical skills, and adaptive capacities. NEP 2020^[14] underscores technology as an enabler of inclusivity, accessibility, and innovation, ensuring equitable professional development for teachers across diverse regions and socio-economic contexts. The rationale for integrating technology in teacher education lies in preparing teachers for the demands of 21st-century classrooms, where digital literacy and innovative pedagogy are essential. Technology enables teachers to create engaging, inclusive, and learner-centred environments while expanding access to quality professional development. Through digital platforms such as DIKSHA, SWAYAM, and NISHTHA, educators can participate in continuous, self-paced learning that transcends geographical and institutional barriers. It promotes reflective practice, collaboration, and the use of data-driven tools for assessing and improving teaching effectiveness. Moreover, technology integration helps teachers develop competencies aligned with the Technological Pedagogical Content Knowledge (TPACK) framework-blending content, pedagogy, and digital tools effectively. Thus, technology serves not only as an instructional aid but as a catalyst for transforming teacher education into a more dynamic, equitable, and future-ready process, consistent with the vision of the National Education Policy (NEP) 2020^[2].

Technology-enhanced teacher education helps:

- Expand access to quality training through digital platforms.
- Support continuous professional development (CPD) via online modules.
- Encourage collaborative learning and peer mentoring.
- Enable data-driven feedback and personalized learning trajectories.

Per-Service Teacher Education (NEP 2020)^[14]

The NEP 2020, developed after extensive research and consultation, is a thoughtful roadmap aimed at reforming teacher education and the broader education ecosystem. It promotes critical thinking, creativity, and an inclusive approach to learning. The policy focuses on recognizing and fostering each capability, student's emphasizing unique holistic development over rote learning. It seeks to instil values such as empathy, respect, responsibility, and critical thinking, aligning with both academic and non-academic growth, and upholding human and Constitutional values. Teacher education is vital in creating a pool of school teachers that will shape the next generation. Teacher preparation is an activity that requires multidisciplinary perspectives and knowledge, formation of dispositions and values, and development of practice under the best mentors. Teachers must be grounded in Indian values, languages, knowledge, ethos, and traditions including tribal traditions, while also being well-versed in the latest advances in education and pedagogy. (15.1 NEP 2020)^[2]

The National Education Policy (NEP) 2020^[2] introduces several significant reforms for pre-service teacher education to enhance the quality and effectiveness of teacher preparation including restructuring teacher education institutions into multidisciplinary universities, implementing a 4-year integrated B.Ed. program, increasing the duration

and quality of practical training, and developing a flexible curriculum to equip teachers with the necessary knowledge, skills, and dispositions (Kumar *et al.*, 2020)^[14]. To unlock the inherent potential within individuals, all aspects of the curriculum and pedagogy will be revamped.

The NEP 2020 aims to enhance the quality of teacher education through its innovative measures:

- **Multidisciplinary Institutions:** To ensure teachers receive training in both high-quality content and pedagogy, all teacher education programs must be conducted within multidisciplinary institutions by 2030. This approach incorporates inputs from fields such as psychology, sociology, and the arts, ensuring a well-rounded education. These multidisciplinary institutions will strive to establish quality education departments offering B.Ed., M.Ed., and Ph.D. degrees in education.
- **Holistic and Multidisciplinary Approach:** NEP 2020 emphasizes a more multidisciplinary holistic approach and to teacher education. This includes integrating arts, sports, and vocational education into the curriculum to ensure teachers are well-rounded and can foster a similar environment for their students.
- **To maintain Quality and Standards:** To fully restore the integrity of the teacher education system, only quality institutes will be maintained and rigorous measures will be taken against substandard stand-alone Teacher Education Institutions (TEIs) in the country, including shutting them down if necessary. (from NEP para 5.22-5.29)
- **Integrated Teacher Education Programme (ITEP):** By 2030, the minimum qualification teaching will for be a 4-year integrated B.Ed. degree, which will cover a broad range of knowledge of content and pedagogy, and include extensive practicum training through student-teaching at local schools to provide a more comprehensive and multidisciplinary education for future teachers. 2-year B.Ed. programs will be available at the same institutions for those who already hold a Bachelor's degree and 1-year B.Ed. programs for individuals who have completed a 4-year multidisciplinary Bachelor's degree or hold a Master's degree in a specialty. These institutions, if accredited for Open and Distance Learning (ODL), may also offer high-quality B.Ed. programs in blended or ODL mode to students in remote or hard-to-reach areas, as well as to in-service teachers seeking to upgrade their qualifications, with appropriate mentoring and practicum training arrangements. (i) All B.Ed. programs will incorporate training in both time-tested (traditional) and modern pedagogical techniques including methods for foundational literacy and numeracy (FLN), multi-level teaching and educating evaluation, children with disabilities, catering to children with special interests or talents, utilizing educational technology, and promoting learner-centred and collaborative learning. Each program will feature extensive practicum training through in classroom teaching at local schools. Additionally, B.Ed. programs will emphasize the practice of the Fundamental Duties (Article 51A) and other Constitutional provisions, along with integrating environmental awareness and

sustainability into the curriculum. (ii) Special shorter local teacher education programs will be offered at BITEs, DIETs, or at school complexes. For this purpose, distinguished local individuals can be hired as ‘master instructors’ to teach with the aim of promoting local professions, knowledge, and skills such as local art, music, agriculture, business, and other vocational crafts. (iii) Shorter post-B.Ed. certification courses will be widely available at multidisciplinary colleges and universities for teachers who want to specialize in any areas, taking on leadership and management roles, or willing to move between foundational, preparatory, middle, and secondary stages.

- **Entrance Examinations:** “In order to maintain uniform standards for teacher education, the admission to pre-service teacher preparation programmes shall be through suitable subject and aptitude tests conducted by the National Testing Agency, and shall be standardized keeping in view the linguistic and cultural diversity of the country.” (Kasturirangan, 2020, p. 44) Beginning with the 2023-25 cohort, the D.El.Ed. program now requires a Bachelor's degree and includes an entrance exam for admission.
- **New curriculum frameworks and standards:** By 2021, the NCTE, in collaboration with NCERT, will develop a new and comprehensive National Curriculum Framework for Teacher Education (NCFTE 2021) ^[1] based on the principles of the National Education Policy 2020 ^[14]. This framework will be created through consultations with all stakeholders, including State Governments, relevant Central Government Ministries/Departments, various expert and bodies. Subsequently, the NCFTE will be revised every 5-10 years to incorporate changes from updated NCFs and emerging needs in teacher education. The NEP 2020 ^[14] emphasizes the need to develop new curriculum frameworks and standards for teacher education that are aligned with the policy's overarching vision of transforming India's education system. This aims to address the rigidities and inflexibilities in the current system, which have led to a disconnection between theory and the practical needs of student teachers in the classroom (Kumar & Ganesh, 2022). By strengthening foundational skills, the policy seeks to create a more adaptable teaching workforce that can better support diverse student learning needs. The new curriculum frameworks will emphasize developing 21st-century skills in teachers, such as critical thinking, problem-solving, creativity, and digital literacy. Investigating Student Engagement in Malaysian Higher Education: A Self-Determination Theory Approach, n.d.)
- **National Professional Standards for Teachers (NPST):** The policy introduces NPST to set clear expectations for teachers at different stages of their careers in teacher preparation, practice, and performance evaluation. The NPST will also inform the design of pre service teacher education programmes. This could be then adopted by states and determine all aspects of teacher career management, including tenure, professional development efforts, salary increases, promotions, and other recognitions. Promotions and salary increases will not occur based on the length of

tenure or seniority, but only on the basis of such appraisal. A system of multiple parameters for proper assessment of performance will be developed based on peer reviews, attendance, commitment, hours of CPD, and other forms of service to the school and the community or based on NPST. (para 5.20 NEP).

- **Teacher Eligibility Tests:** TETs will be strengthened to inculcate better test material, both in terms of content and pedagogy and will be extended to cover all stages of school education (Foundational, Preparatory, Middle, and Secondary). Recruitment of subject teachers will consider suitable TET or NTA scores. Teacher hiring will also include classroom demonstrations or interviews to assess passion and motivation. Private school teachers must early similarly qualify through TET, interviews, and demonstrations.
- **Emphasis on Learner Centric Education:** NEP 2020 ^[2] acknowledges the vital role of teachers in shaping this approach. The policy aims to empower teachers to foster a more engaging, inclusive, and effective learning environment that centres on students. Real-world classroom experiences and practical training are highlighted to ensure teachers effectively facilitate active student engagement with both the content and their peers.
- **Inclusive and equitable education:** Under NEP 2020 ^[2], teacher training emphasizes promoting inclusive and equitable education. It ensures educators are equipped to address the diverse and extensive needs of all students, including specialized instruction methods and strategies for learners with unique requirements.
- **Focus on Indian Values and Traditions:** Teacher education will include grounding in Indian values, languages, knowledge, and traditions, alongside the latest advances in education and pedagogy.
- **Creation of Digital Resources:** NEP 2020 envisions teachers creating digital resources, lesson plans, and instructional materials. The aim is to equip educators with 21st century skills through resources, video modules, and interactive training sessions. Teachers will receive rigorous training in learner-centric pedagogy and high-quality online content creation using teaching platforms and tools.
- **Increased Use of Technology:** NEP 2020 encourages the use of technology in teacher training programs. This includes online courses, digital resources, and virtual classrooms to make training more accessible and effective.
- **Research and publication:** NCERT will study, research, document, and compile diverse international pedagogical approaches and methods. They will then make recommendations on how these approaches can be integrated into the teaching practices used in India.

In-Service Teacher Education (NEP 2020) ^[14]

- **Continuous Professional Development (CPD):** NEP 2020 mandates that every teacher participate in a minimum of 50 hours of CPD annually. These

opportunities will be designed for self-improvement, pedagogical innovation, subject enrichment, and integration of technology in teaching-learning.

- **School Complexes as Learning Hubs:** Teacher development will be anchored in school complexes and clusters, which will serve as local centers for peer learning, workshops, mentoring, and resource sharing. This promotes collaborative professional growth and contextual relevance.
- **Role of National and State Institutions:** Institutions such as the National Mission for Mentoring (NMM), SCERTs, DIETs, and NCERT will play central roles in planning, implementing, and monitoring in-service teacher education. The National Professional Standards for Teachers (NPST) will guide competencies and career progression.
- **Use of Technology:** Digital platforms like DIKSHA, SWAYAM, and NISHTHA (National Initiative for School Heads' and Teachers' Holistic Advancement) will provide accessible, high-quality online training resources. NEP 2020 emphasizes blended learning and data-driven feedback for effectiveness.
- **Focus on Pedagogical Innovation and Inclusion:** In-service education will include modules on multilingual education, inclusive classrooms, experiential and competency-based learning, 21st-century skills, environmental awareness, and gender sensitization.

Technology-Enhanced Teacher Education as per NEP 2020^[14]

- **Establish Strong Digital Infrastructure:** A strong and inclusive digital infrastructure is the cornerstone of effective technology integration in education. Providing reliable internet connectivity, uninterrupted electricity, and access to digital hardware such as computers, tablets, and projectors is essential to ensure that both teachers and students can participate meaningfully in digital learning environments. In many parts of India, particularly in rural and remote areas, the lack of basic connectivity continues to be a major barrier to implementing NEP 2020's vision of technology-enabled schooling. Therefore, bridging the digital divide must begin with infrastructural investment and coordinated policy efforts to equip every school (urban or rural) with the necessary technological foundation. Smart classrooms represent the next step in modernizing educational spaces. Setting up smart classrooms equipped with interactive whiteboards, digital projectors, and audio-visual tools transforms the traditional teaching-learning process into an interactive and immersive experience.
- **Develop Inclusive Digital Platforms:** Expand access to user-friendly platforms like DIKSHA, SWAYAM, and e-Pathshala that provide multilingual and multimedia content. Ensure platforms are accessible to differently-abled students through assistive technologies such as screen readers and text-to-speech tools.

DIKSHA (Digital Infrastructure for Knowledge Sharing):

Launched by the Ministry of Education, DIKSHA serves as a national digital platform designed to support teachers in both pre-service and in-service training. It provides open-access learning materials, teaching aids, lesson plans, and interactive courses aligned with national and state curricula. The platform hosts resources in multiple Indian languages, ensuring inclusivity and contextual relevance. For teachers, DIKSHA offers structured professional development modules under initiatives such as NISHTHA (National Initiative for School Heads' and Teachers' Holistic Advancement), which aim to enhance pedagogical practices, subject knowledge, and digital competencies. By offering self-paced and competency-based learning opportunities, DIKSHA empowers educators to continuously upgrade their skills and adopt innovative teaching methodologies. It also allows for data-driven tracking of teacher participation and progress, supporting policy-level monitoring and accountability (Ministry of Education, 2021)^[1].

SWAYAM (Study Webs of Active Learning for Young Aspiring Minds)

SWAYAM is a Massive Open Online Course (MOOC) platform that democratizes access to quality education by offering free online courses developed by premier Indian institutions such as IITs, NITs, and Central Universities. In the context of teacher education, SWAYAM provides diverse courses on pedagogy, educational technology, curriculum design, classroom management, and subject-specific enhancement. Teachers can pursue SWAYAM MOOCs for professional upskilling and certification, contributing to the Continuous Professional Development (CPD) requirement mandated by NEP 2020. The platform also fosters lifelong learning, enabling educators to remain updated with global best practices and innovations in digital pedagogy. Its interactive components—such as discussion forums, video lectures, and assessments—create a collaborative learning environment that bridges the gap between theory and practice.

e-Pathshala:

Developed jointly by NCERT and the Ministry of Education, e-Pathshala functions as a repository of digital textbooks, audio-visual resources, and supplementary materials that can be accessed by teachers, students, and teacher educators. It provides open educational resources (OERs) in multiple languages and across educational levels, promoting inclusive and equitable access to quality content. For teacher education, e-Pathshala offers curriculum-aligned digital content and exemplars that support educators in designing innovative classroom strategies and developing context-based learning materials. It is especially beneficial for pre-service teachers, who can explore model lessons and understand how NCERT frameworks are transacted in classroom settings. Furthermore, by integrating ICT into lesson preparation and classroom practice, e-Pathshala strengthens teachers' capacity to deliver blended and competency-based education in line with NEP 2020^[14]'s vision.

▪ Promote Teacher Training and Professional Development

Provide regular training programs to equip educators with the skills needed to use technology effectively in classrooms. Develop online communities of practice for teachers to share best practices and resources.

▪ Blend Learning Approaches

Combine traditional teaching methods with technology-driven tools for hybrid learning models. Encourage the use of Flipped Classrooms, where students access lectures online and engage in activities during class time.

The Flipped Classroom model represents a transformative pedagogical shift that aligns closely with the learner-centred and technology-enabled vision of the National Education Policy (NEP) 2020 [2]. In a flipped classroom, the traditional sequence of instruction is reversed content delivery happens outside the classroom, often through digital platforms, while active learning and application take place during classroom sessions. This approach emphasizes interaction, collaboration, and problem-solving, moving away from passive knowledge transmission to an experiential, inquiry-based mode of learning.

▪ AI-driven Adaptive Learning Systems

AI-driven adaptive learning systems use data analytics and machine learning algorithms to create customized learning paths for each student. By continuously assessing learners' interactions, performance patterns, and areas of difficulty, these systems automatically adjust the content level, instructional pace, and type of feedback provided. For instance, if a student struggles with a particular concept, the AI platform can offer supplementary tutorials, practice exercises, or alternative explanations until mastery is achieved. Conversely, advanced learners can be presented with higher-order tasks to maintain challenge and engagement. This data-informed personalization not only promotes mastery learning but also allows teachers to make evidence-based instructional decisions, focusing their attention on students who need targeted support. In teacher education, exposure to adaptive systems helps future educators understand the potential of data-driven pedagogy and encourages them to integrate similar approaches in their classrooms.

▪ Digital Equity

Achieving the transformative goals envisioned by the National Education Policy (NEP) 2020 [2] requires that

technology-enabled education be inclusive and equitable, leaving no learner behind due to socio-economic disparities. One of the most critical steps toward this goal is ensuring universal access to digital devices, internet connectivity, and learning resources, particularly for students from marginalized and economically disadvantaged backgrounds. Providing subsidized or free devices such as tablets, laptops, or smartphones, along with affordable or complimentary internet access, is essential for bridging the digital divide that separates privileged learners from those in under-resourced communities.

Develop High-Quality Digital Content

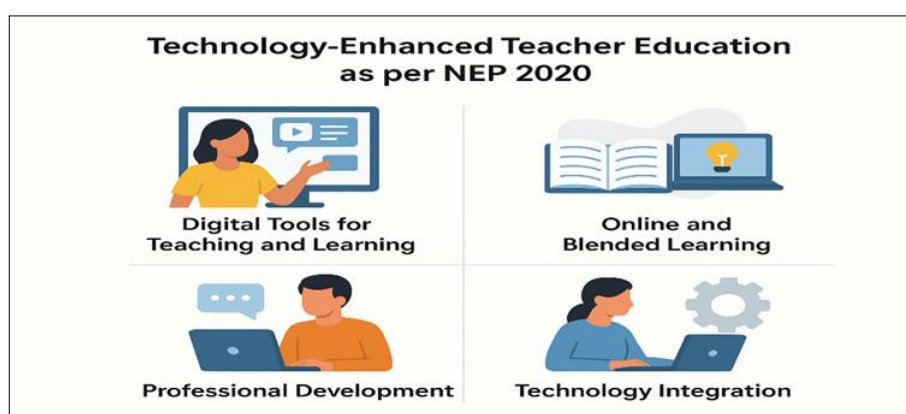
Create engaging multimedia resources, including videos, simulations, and virtual labs. Incorporate regional languages and culturally relevant materials to cater to diverse learners.

Robust Assessment and Feedback Systems

A robust assessment and feedback system is essential for tracking learner progress and enhancing educational outcomes in technology-driven environments. NEP 2020 [2] emphasizes formative, competency-based, and continuous assessment over rote, summative evaluation. Using online assessment tools—such as quizzes, adaptive tests, and digital portfolios teachers can evaluate students' understanding in real time and provide timely, personalized feedback.

Foster Collaboration between Teachers- students through Technology

Technology also serves as a powerful enabler of collaborative learning, fostering interaction, co-construction of knowledge, and peer support among learners and educators. Platforms such as Google Workspace for Education, Microsoft Teams, and various Learning Management Systems (LMS) provide digital spaces where students and teachers can communicate, share resources, and collaborate on projects in real time. Such platforms support teamwork through shared documents, breakout rooms, discussion boards, and group assignments, promoting 21st-century skills like communication, cooperation, and digital citizenship.



Conclusion

The National Education Policy (NEP) 2020 [2] presents a visionary framework for reimagining Indian education through the strategic integration of technology, placing teachers and learners at the heart of reform. By emphasizing learner-centred pedagogy, continuous professional development, and digital inclusivity, the policy seeks to bridge gaps in access and quality while nurturing 21st-

century competencies such as creativity, critical thinking, and collaboration. Technology integration, as outlined in NEP 2020, transforms teaching and learning from a content-transmission model to a participatory, inquiry-based process, thereby democratizing knowledge and enhancing engagement. However, realizing this vision requires more than policy intent—it demands sustained investment in digital infrastructure, teacher empowerment through robust

training, and contextually relevant pedagogical innovations. The success of technology-enabled education depends on ensuring equity across socio-economic and geographic divides, fostering collaboration among stakeholders, and embedding technology as a pedagogical ally rather than a mere tool. Ultimately, NEP 2020 offers an unprecedented opportunity to align India's educational system with global standards while preserving its cultural ethos, positioning technology as a catalyst for transformative, inclusive, and future-ready schooling.

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