

Exploring the Role of Technology in NEP 2020: A Comprehensive Analysis

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Abstract

To advance India's educational system and future planning, the Government of India introduced the National Education Policy (NEP) 2020, approved on July 29, 2020. NEP 2020 focuses on significant reforms in school and higher education, emphasizing the integration of technology to meet 21st-century Sustainable Development Goals (SDGs). This paper uses secondary data to examine the role of technology in NEP 2020, highlighting its potential to enhance teaching methods and student learning experiences. A key proposal is the creation of the National Educational Technology Forum (NETF), designed to facilitate discussions on the effective implementation of technology in education, aiming to improve educational practices and outcomes.

INTRODUCTION

The National Education Policy (NEP) 2020, approved by the Indian cabinet on July 29, 2020, aims to transform India's educational system with a future-focused blueprint. This policy proposes extensive reforms across elementary, secondary, higher, and technical education sectors, continuing from earlier policies in 1968 and 1986. NEP 2020 seeks to overhaul the Indian education system to foster a competitive and highly educated nation. Under the BJP's 2014 manifesto commitment, NEP 2020, led by Narendra Modi, fulfils the promise of essential educational reforms.

The Ministry of Human Resource Development (MHRD) formed a committee led by former ISRO chief Dr. K. Kasturirangan, which submitted its report on May 31, 2019. Education is vital for individual growth, equitable communities, and national progress. As India advances economically and socially, it aims to offer quality education to its growing youth population, projected to be the world's largest in the next decade. Being a signatory to the 2030 Agenda for Sustainable Development, India is committed to ensuring inclusive, equitable, and quality education and lifelong learning opportunities.

To meet these goals, NEP 2020 advocates a redesign of the education system to be immersive, scientific, discussion-based, adaptable, and engaging. The policy emphasizes character building, intellectual development, empathy, accountability, and meaningful engagement. Major reforms are necessary to bridge the gap between current outcomes and desired goals, ensuring quality, equity, and integrity at all educational levels.

As the first 21st-century education policy, NEP 2020 calls for a comprehensive overhaul of the education system's structure and governance, aligning with sustainable development goals while reinforcing India's cultural values. Teachers play a central role in these reforms, with NEP supporting their professional development and welfare, ensuring quality education for students. Special attention is given to marginalized and disadvantaged groups to ensure equitable access.

NEP 2020 highlights the integration of technology in education, recognizing it as crucial for improving

teaching methods, student learning, grading, and assessments, and creating a more effective and engaging educational environment.

RESEARCH OBJECTIVE

This paper aims to examine the role and importance of technology in the National Education Policy 2020.

RESEARCH METHODOLOGY

This paper is primarily based on secondary data, drawing from research papers, online news articles, government websites, and official documents.

LITERATURE REVIEW

The National Education Policy 2020 replaces the NEP of 1986. Its goal is to transform India into a global learning hub by focusing on a liberal arts curriculum, value-based education, and the integration of various fields of study.

Author(s)	Study Summary
Aithal and Aithal (2020)	Focus: Contrasts the new education policy with the conventional one. Details: Highlights key features of each.
Jha & Parvati (2020)	Focus: Issues related to universal education. Details: Analyses high-quality education, equal access, and privatization trends.
Suryavanshi (2020)	Focus: Chinese University Model. Details: Discusses improving teacher quality in Indian institutions, advocating for institutional autonomy and research support.
K. Kumar, Prakash, and Singh (2021)	Focus: NEP 2020's impact. Details: Emphasizes the policy's transformative potential, framework for all educational levels, e-learning, and alignment with SDGs, while noting some drawbacks.
Deb (2020)	Focus: Indian philosophy and cultural values. Details: Incorporates these aspects into NEP 2020.
Patil and Patil (2021)	Focus: Ancient Indian education. Details: Highlights value-based education and NEP 2020's promotion of an inclusive, holistic, and Bharat-centric system.
Sharma and Gupta (2021)	Focus: Higher education impacts. Details: Reviews NEP 2020's emphasis on multidisciplinary learning and research.
Rao (2021)	Focus: Vocational education. Details: Analyses NEP 2020's approach to skill development and its integration with academic curricula.
Singh (2021)	Focus: Rural education challenges. Details: Examines NEP 2020's implications for infrastructure and teacher training.

TECHNOLOGY INTEGRATION AND UTILIZATION IN NEP 2020

India is a prominent leader in information and communication technology on the global stage. To solidify this position, the country has initiated the 'Digital India Campaign,' which seeks to transform India into a knowledge-based economy and a digitally proficient society. This campaign underscores the importance of education in achieving these goals, while also highlighting the significant role that technology will play in enhancing educational methods and student learning outcomes.

The 'Digital India Campaign' aims to integrate technology deeply into the educational landscape, creating a synergistic relationship between the two. By adopting advanced technological tools, educational institutions will modernize their teaching approaches and provide students with more effective learning experiences. This integration is expected to improve academic performance and better prepare students for the demands of a digital economy. Consequently, the deployment of cutting-edge technologies in education is anticipated to have a substantial impact on student learning and the overall quality of education.

NATIONAL EDUCATIONAL TECHNOLOGY FORUM (NETF)

According to the Ministry of Human Resource Development (2020), the National Educational Technology Forum (NETF) will be established as an autonomous body to advance the effective use of technology in education at all levels. NETF's main goal is to guide decisions on adopting and implementing educational technology by providing leadership, knowledge, and best practices to central and state educational institutions.

NETF will perform several crucial functions:

- Provide impartial, evidence-based recommendations on technology solutions to government entities.
- Develop intellectual and infrastructural capacities for integrating technology into education.
- Identify key areas for technological advancement.
- Offer new directions for research and innovation.
- Ensure a steady flow of reliable data from educational technology experts and collaborate on data analysis.

NETF will also organize seminars, conferences, and workshops to gather insights from academics and practitioners, fostering a robust knowledge base. The focus will be on improving teaching quality, learning experiences, and assessments, as well as supporting teachers' professional development. Educational software will be created in all major Indian languages, including for students with disabilities, and states will develop regional e-content with support from CBSE, NCERT, and NOS. This content will be accessible on platforms like SWAYAM and Diksha.

NEP 2020 also highlights the role of artificial intelligence (AI) in education, envisioning virtual smart classrooms that facilitate global collaboration and discussions. These classrooms will feature online assessments, quizzes, and other educational tools. The National Research Foundation (NRF) will spearhead AI technology efforts to address challenges in agriculture, health, and climate change. Higher Education Institutions (HEIs) will be crucial in researching disruptive technologies, offering advanced degrees in fields like machine learning, and creating e-learning courses.

During the COVID-19 pandemic, India successfully utilized online learning platforms to provide quality education. NEP 2020 recognizes the importance of technology in education and plans to conduct pilot studies to assess online learning benefits and address its challenges. The policy aims to enhance and expand existing ICT-based educational projects and tackle both current and future educational challenges.

To fully leverage online education, NEP 2020 emphasizes bridging the digital divide through initiatives like the 'Digital India Campaign' and providing affordable computing equipment. The policy also focuses on training teachers to be effective online educators. Key recommendations for integrating digital technologies include:

- Conducting pilot studies by reputable agencies such as IITs, NETF, and NITs to evaluate online education benefits and address drawbacks.
- Investing in digital infrastructure that is open, accessible, and adaptable to future needs.
- Expanding e-learning platforms like Diksha and SWAYAM to offer comprehensive tools for online assessments.
- Creating high-quality digital content, libraries, coursework, learning games, and simulations, with user-friendly apps showcasing Indian art and culture in multiple languages.
- Using traditional media platforms like TV and Radio to broadcast educational content in various Indian languages and address the digital divide.
- Developing virtual labs through platforms like SWAYAM and Diksha to ensure quality learning opportunities for all students.
- Implementing online assessments and standardized tests developed by bodies like NAC, PARAKH, NTA, and school boards, and researching innovative uses of educational technology.
- Promoting blended learning models that include face-to-face, rotation, flex, and online lab instruction modes.
- Establishing standards for online learning content and pedagogy, to be followed by states, school boards, and higher education institutions.

Technology is crucial for improving education quality in India. Thus, building robust digital infrastructure, creating engaging e-content, and enhancing institutional capacities are essential for meeting the educational needs of the 21st century.

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