

NEP 2020 and Challenges Related to Technology Integration in Teacher Training Institutes

Dr. Preeti Sangwan*

Abstract

The National Education Policy 2020 presented a holistic view of improving Indian education system. One of NEP2020 major objectives is that we can effectively integrate technology into our teaching, learning, assessment, administration, and teacher education. The policy represented the idea that technology integration in education can enhance the access, equity, quality, and efficiency. Now its responsibility of Teacher Training Institutes to prepare such would be teachers who should be technologically competent and must be capable of using various digital tools to improve classroom learning.

This paper is an effort to highlight which are the different challenges Teacher Training Institutes in India continue to face in integrating technology effectively into teacher education programs.

Copyright © 201x International Journals of Multidisciplinary Research Academy. All rights reserved.

Keywords:

NEP 2020;
Technology Integration;
Teacher Training;
Challenges in NEP 2020;
NEP Implementation.

Author correspondence:

Assistant Professor in Teaching of Mathematics,
Rao Lal Singh College of Education
NH-48, Sidhrawali, Gurugram (Haryana)
Email: drpreetisangwan81@gmail.com

1. Introduction

In India's National Education Policy (NEP) 2020, technology is reflecting as a potent tool for enhancing education's effectiveness. The policy places an emphasis on incorporating technology into teacher education, curriculum development, assessment, administration, and professional development as well as other aspects of education. It envisions a technology-enabled educational system that will focus on preparing students and educators for the challenges of the 21st century. We have noted that the promotion of online education and digital learning is one of NEP 2020's primary focuses.

The policy encourages educational establishments to make use of digital platforms and online resources to offer learning opportunities that are adaptable and accessible. Digital learning will remove geographical and social barriers to education by allowing students and teachers to access educational content at any time. Additionally, technology-enabled teacher education is supported by the policy. It is anticipated that Teacher Training Institutes will provide future educators with the knowledge and abilities necessary to successfully incorporate technology into classroom instruction. Digital tools, learning management systems, educational applications, and online instructional strategies should be taught to teachers to improve student learning experiences.

* RAO LAL SINGH COLLEGE OF EDUCATION, SIDHRAWALI, GURUGRAM, HARYANA

These technologies can facilitate personalized learning, enhance conceptual comprehension, and encourage interactive learning. AI-based tools, on the other hand, can help with individualized instruction and assessment, and virtual laboratories, for instance, provide students with the opportunity to carry out experiments in a secure and cost-effective setting. The use of blended learning methods is another important recommendation made by the policy. Blended learning offers greater adaptability and student engagement by combining online and traditional face-to-face instruction. Using the advantages of both physical and digital classrooms, this strategy enables educators to create more student-centered learning environments. Additionally, digital assessment and evaluation systems are emphasized in the policy. Continuous assessment, real-time feedback, data-driven decision making, competency-based evaluation, and more can all be made easier by technology. Digital assessment tools help teachers monitor student progress more efficiently and provide personalized support based on learning needs.

Another area in which technology plays a significant role is the ongoing professional development of educators. Teachers are encouraged to participate in professional learning communities, online training programs, webinars, digital certification courses, and NEP 2020. Teachers can take advantage of these opportunities to regularly update their skills and knowledge, as well as stay up to date on emerging educational methods and technological advancements. In addition, the policy encourages the production and distribution of digital content of high quality. It is encouraged for educational institutions, teachers, and educational organizations to develop digital learning materials that are inclusive, multilingual, and accessible to a wide range of learners' needs. These resources can support equitable access to high-quality education and enhance the teaching-learning process. As a result, the goal of NEP 2020 is to create a technology-rich educational ecosystem that encourages creativity, collaboration, innovation, and inclusion. These technological initiatives have the potential to significantly alter teacher education and contribute to the modernization of India's education system if implemented correctly.

2. Importance of Technology Integration

In the twenty-first century, technology integration has emerged as an essential component of teacher education. Teachers need to be able to use digital tools effectively to improve teaching and learning in order to adapt to the ever-changing educational environment. Teacher Training Institutes (TTIs) have the responsibility of preparing future teachers with the technological competencies required for modern classrooms.

By providing educators with novel approaches and resources that enable them to explain concepts in a manner that is both more understandable and interactive, technology improves the efficiency of education. Teachers can use digital resources like multimedia presentations, simulations, educational applications, and online resources to present complex ideas in a way that is engaging and easy to understand. Teachers can also use a variety of instructional strategies to meet the needs of different students thanks to technology. By making learning more interactive and centered on the learner, technology integration increases student participation and engagement. Students are encouraged to actively participate in the learning process through the use of collaborative tools, videos, digital platforms, and other forms of media. Learners become active participants who explore, create, and apply knowledge rather than passive recipients of it. Technology also supports personalized learning by allowing teachers to address individual differences among learners. Digital learning platforms can provide customized content, adaptive activities, and immediate feedback based on students' learning levels and needs. Teachers can use this strategy to create inclusive classrooms where each student receives the appropriate support. Another important benefit of technology integration is the promotion of collaborative learning experiences. Digital projects, online discussion forums, and collaborative platforms let students and teachers collaborate across time and space. Such experiences develop communication skills, teamwork, problem-solving abilities, and social interaction among learners.

A major requirement of modern education is for teachers to acquire digital literacy skills. Future teachers must understand how to select, evaluate, and use digital resources responsibly. Teachers who

possess digital competence are better equipped to lead students in the safe and ethical use of digital resources and to effectively manage classrooms that are supported by technology. Teachers who integrate technology are better prepared for today's classrooms, where technology-supported instruction, blended learning, and digital learning are becoming increasingly common. Teachers who have received training in educational technology are able to effectively adapt to shifting educational requirements and implement novel teaching methods. Online libraries, open educational resources, digital courses, and global learning platforms all make educational resources more accessible thanks to technology. This helps overcome restrictions on the availability of teaching materials, textbooks, and other physical resources. Furthermore, technology encourages innovation and creativity among both teachers and learners. It encourages students' critical thinking and creativity while also allowing educators to experiment with various pedagogical approaches and design novel learning experiences.

As a result, Teacher Education Programs (TEPs) must make certain that future educators acquire the necessary knowledge, abilities, and positive attitudes regarding the use of technology. Technology ought to be seen as more than just a tool; rather, it should be seen as an essential component of efficient pedagogy that promotes quality, equity, and lifelong learning.

3. Challenges to Integrate Technology to Teacher Training Institutes

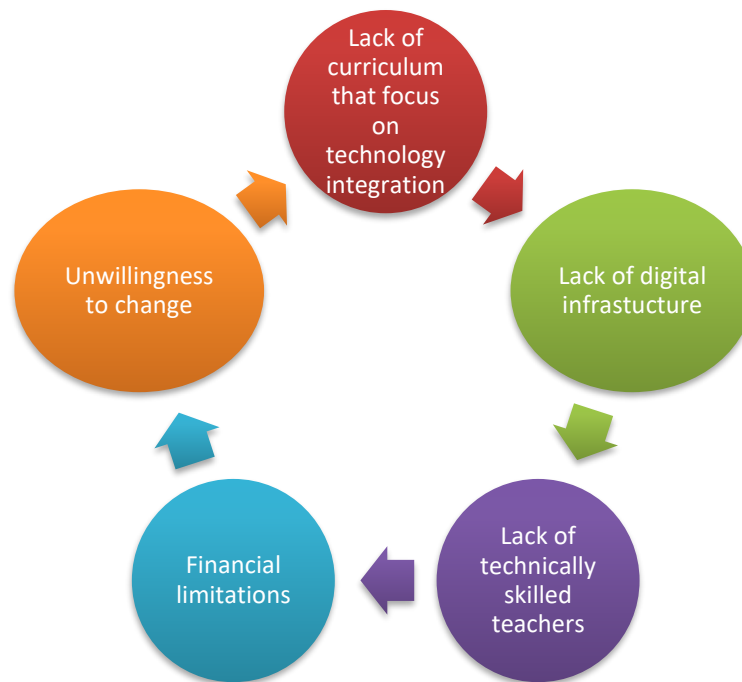


Figure 1. *Challenges*

3.1 Lack of a curriculum that integrates technology- Digital pedagogy, educational technology, and hands-on technology-based teaching experiences are not adequately covered in many teacher education programs. The curriculum ought to be updated to incorporate technology-based classroom practices, AI awareness, online learning strategies, and digital teaching methods.

3.2 Lack of digital infrastructure- The absence of adequate digital infrastructure in a lot of Teacher Training Institutes (TTIs) is one of the most significant obstacles to technology integration. The use of technology in education is hindered by a lack of computers, smart classrooms, projectors,

digital laboratories, and dependable internet connectivity. Institutions should beef up ICT infrastructure, upgrade digital facilities, and make sure that technological resources are regularly maintained.

- 3.3 There is a gap in teacher educators' digital literacy.** Utilizing digital tools, online platforms, and emerging technologies is a challenge for many educator educators. This limits their ability to integrate technology into teacher preparation programmes. Teacher educators should participate in regular professional development programs, ICT training, and hands-on workshops.
- 3.4 Students' access to technology is limited.** Digital learning resources, high-speed internet, and digital devices are not readily available to all student teachers. A digital divide is caused by differences in economics and geography. Educational establishments ought to provide devices support, digital resource centers, computer facilities, and affordable access to online learning platforms.
- 3.5 Unwillingness to Change Some teacher educators and institutions** continue to prefer traditional teaching methods and may hesitate to adopt technology-based approaches due to lack of confidence or familiarity. Digital methods can be accepted with awareness campaigns, motivation, institutional support, and examples of successful technology practices.
- 3.6 Financial Limitations-** Integration of technology necessitates significant expenditures in hardware, software, internet services, upkeep, and training. Financial constraints affect many institutions. Partnerships with technology organizations, increased funding, government support, grants for educational technology, and other means can assist in overcoming financial obstacles.
- 3.7 Problems with Online and Blended Education-** Due to technical issues, a lack of interaction, issues with student engagement, and a lack of digital teaching skills, implementing online and blended learning strategies can be challenging. Teacher educators ought to receive instruction in digital pedagogy, effective blended learning strategies, and online course design.
- 3.8 Problems with Data Privacy and Cyber-security-** Data security, privacy, cyber threats, and the misuse of online resources are just some of the risks brought about by the growing use of digital platforms. Institutions ought to develop cyber-security policies, provide training on digital safety, and encourage responsible technology use.
- 3.9 Difficulties in Digital Evaluation and Assessment Technology-**based learning outcomes may not be accurately measured by conventional assessment methods. Conducting online assessments and upholding academic integrity may be difficult for teachers. Digital assessment tools, e-portfolios, online feedback systems, and competency-based evaluation methods ought to be implemented by educational establishments.
- 3.10 Rapid Technology Changes-** It is hard for institutions to keep their systems and skills up to date as technology continues to change quickly. Continuous adaptation is required for new developments like artificial intelligence, virtual reality, and digital learning platforms. Teacher preparation programs ought to promote lifelong learning, ongoing professional development, and regular technological resource updates.

In the end for the purpose of realizing the goals of NEP 2020 and preparing future educators for classrooms in the digital age, it is essential for Teacher Training Institutes to incorporate technology. However, obstacles like a lack of digital skills, financial constraints, and resistance to change must be overcome. Planning, investing, training, and institutional support can help teacher education institutions successfully implement technology and raise teacher preparation standards.

4. Conclusion

Integration of technology is an essential component of NEP 2020 and a requirement for contemporary teacher education. In spite of the fact that Teacher Training Institutes in 2026 have made progress toward implementing technology-enhanced teaching and learning methods, a number of obstacles persist. Limitations in the infrastructure, a lack of digital competence, financial constraints,

resistance to change, and concerns about cyber-security remain significant obstacles. Strategic planning, adequate funding, ongoing professional development, curriculum reform, and collaborative efforts from all stakeholders are required to address these obstacles. Teacher Training Institutes can achieve NEP 2020's vision of preparing technologically savvy educators who can transform education in the digital age by overcoming these obstacles.

References

- [1] Arora, C., & Chander, S. (2020). Integrating technology into classroom learning. *Indian Journal of Educational Technology*, 2(1), 84–105.
- [2] Chakraborty, P., Mittal, P., Gupta, M. S., & Yadav, A. (2021). Digital learning in India: Challenges and opportunities in the post-NEP era. *Journal of Educational Technology Systems*, 50(1), 45–62.
- [3] Ministry of Education, Government of India. National Education Policy 2020.
- [4] National Educational Technology Forum (NETF) Reports.
- [5] National Council for Teacher Education (NCTE) Guidelines