

Challenges and Opportunities in Implementing NEP 2020 through Technology**J. KALAVATHI¹**DOI: <https://doi.org/10.5281/zenodo.17496901>

Review: 01/10/2025,

Acceptance: 12/10/2025

Published: 31/10/2025

Abstract: The National Education Policy (NEP) 2020 is founded on accountability, quality, affordability, equity, and access principles. Technology and education are prioritized in the NEP of India, which acknowledges the potential of digital tools to enhance the quality of education and learning. The policy's objective is to improve access to education by promoting collaborative learning as well as the development of digital skills in students through the utilization of technology. Nevertheless, successful integration of technology into education necessitates a comprehensive of its potential impact and the resulting teaching as well as learning outcomes. The objective of this paper is to investigate the prospective influence of technology on education in India as well as the role of technology in the implementation of new education policies. A comprehensive framework for the development of education in India is the NEP and NEP 2020. Integration of technology into education is a critical component of NEP 2020, as it aims to enhance the quality and accessibility of learning. The focus will be on challenges as well as limitations of technology integration in education, as well as various digital tools along with platforms that can be used to facilitate hybrid learning. Additionally, the discussion will provide guidance for effective implementation.

“Technology can become the “wings” that will allow the educational world to fly farther and faster than ever before – if we allow it.” – Jenny Arledge.

Key Words: NEP, Hybrid Learning, Accessibility, Implementation, digital

Research Objectives

1. The objective of NEP 2020 is universalization of education
2. To identify the aim and importance of technology in education.
3. To describe the effective implementation of the NEP 2020 by integrating technology.
4. To find out the most effective strategies of NEP 2020.
5. To increase the strengthening of teacher training.
6. To aware about the incorporation of latest software and net-working solutions.
7. To enable digital literacy through technology
8. To help in raising academic standards in schools

Need of the Study

1. This study enhances how we can use technology to achieve goals in education.
2. It makes the people aware of its limitations and make vigilant in the utilization of technology.
3. The objective of the investigation is to evaluate the impact of the 2020 education policy as well as technology on the Indian education system, as well as its impact on the quality of life in India.
4. The policy emphasizes the potential utilization of technology in teaching as well as learning to overcome language barriers, increase the accessibility of students with disabilities, planning as well as management education, as well as improving the quality of education.
5. The necessity of integrating educational technologies to enhance the effectiveness, interest, and inclusivity of education.

Method

The survey method and the observation method are the methods that will be implemented through technology to implement NEP 2020.

The survey method involves conducting interviews with individuals or users. Relevant inquiries are posed and responses are documented during this procedure. The questionnaire form must include certain critical inquiries. Engage in discussions with stakeholders.

PRESENTATION**Technology:**

¹ J. KALAVATHI, Research Scholar, Education Department, Andhra University, Andhra Pradesh, India. Email Id: divijchand2409@gmail.com, Mobile. No. 9849211774

Anything that involves the practical application of scientific knowledge (Hlynka& Jacobsen, 2009)

As new scientific information and understanding are developed, physical examples of technology are swiftly evolving, rendering it challenging to establish a precise and unambiguous definition (Cummings & Buzzard, 2002). Technology integration can ensure a more efficient education system. In addition to that it helps education Institutions to create an impressive network of resources and learning capacities for students. Digital tools and processes can help you reduce human error. Technology integration transforms teaching, student engagement, and creates new learning possibilities. Technology based learning, digital tools and platforms for enhancing comprehensiveness, transparency and flexibility education. It can also be used for online courses, assessments, projects and tests. E-Learning saves time and resources for students, teachers and education institution. **“As technology changes the way we communicate, connect, create, consume and innovate, it is democratising access to opportunity. Education is no exception.” – Laura Andreessen.** Before in-person classes, students are given digital study materials such as videos, PPTs, podcasts, and articles. This allows more time for teachers to facilitate discussions as well as co-curricular activities, enhancing the quality of learning. Utilization of technology for Education Planning, Teaching and Learning Assessment, Digital India Campaign, Regulation through public disclosures, Administration and management. There will be a forum that at National Level National Educational Technology Forum(NETF), would beresponsible to create environment.

The NETF will be established as an autonomous entity to facilitate the free exchange of information regarding the utilization of technology to enhance the effectiveness of instruction, learning, evaluation, planning, and administration.

“Technology will never replace great teachers, but in the hands of great teachers, it’s transformational.” – George Couros

Functions of the Forum (NETF):

1. Encourage the professional development of teachers
2. Improve the accessibility of education for marginalized communities
3. Educational planning, administration, as well as management.
4. NETF integrate new technology such for adoptive Computer testing, Block chain, Computer devices, Artificial Intelligence, Mission Learning, Smart Boards,manysoft wares as well as hardwares.
5. NETF will focus on MOOCS, Divyang Friendly Educational Software, e- content in various languages, virtual labs, online assessment as well as examinations, 21st century Skills.

NEP 2020 aims to build a bridge between digital technology and quality education.

This policy aims to enhance transparency and digitize information.

NEP 2020 aims for blended learning through technology, requiring collaboration among stakeholders for effectiveness. Students can access diverse instructional content like simulations, virtual labs, interactive textbooks and video lectures categorizing to different learning styles and encouraging exploration.

The Indian government has implemented several efforts to promote technology in the educational system. These steps not only support digital transformation but also serve as a foundation for students to grow their careers and have a productive learning environment. PM e-Vidya, DIKSHA, E-Patasala, Swayam, SwayamPrabha, National Academic Depository (NAD), and National Internship Portal (established by AICTE) are among the initiatives that the Government of India has implemented. These initiatives are being under the guidance of NETF.

Many educational software is developed and made available to teachers and students to make teaching-learning and evaluation effective. All these soft wares will be available in all Indian languages and also available to all the students and users living in all remote areas. Tools will be available to teachers in schools so that teachers can appropriately incorporate in their teaching-learning process.

“We can close the gap and improve what happens in the classroom by using educational technology that is the same high quality everywhere.” – Major Owens.

NEP 2020 helps to increase the encouragement among students, teachers, schools and colleges to learn digitally Empowered and feel completely flexible, comprehensive. With the advancement of Technology, there have been many changes in education. We follow the latest trends and methods are always on the lookout for new thing. We cannot imagine a classroom without technology NEP recommends the following key initiatives(for integration of technology)

1. Blended mode of learning
2. Pilot studies for online education
3. Addressing digital divide
4. Investment in digital infrastructure

5. Content creation, digital repository and dissemination: Gamification App
6. Digital infrastructure – Open, interoperable, evolvable
7. Online teaching platform and tools: SWAYAM, NROER, DIKSHA, CIET but still existing learning platforms. SWAYAM, DIKSHA platforms will extend to provide teachers and student.
8. Virtual Labs
9. Online assessment and examinations
10. Laying down standards: NETF, HEI (Higher Education Institutions) - standards of contents technology, pedagogy and digital and online teaching and learning
11. Gamification

VISION OF NEP: NEP 2020 is the educational and learning policy of the 21st century. Access, equity, quality, affordability, and accountability are the five traditional pillars upon which NEP 2020 is founded to address the educational requirements of twenty-first-century learners. The objective of the 2020 NEP is to elevate the GER by 2030. Education has undergone a revolutionary transformation as a result of technology. The digitally empowered society is the objective of technology that is achieved through digital initiatives. NEP 2020 is a comprehensive and revolutionary initiative that emphasizes the incorporation of technology into education

ADVANTAGES OF INTEGRATION OF TECHNOLOGY:

1. To improve teaching, learning and evaluation process
2. Build and strengthen capability
3. Provide better chances for personal improvement, upgrading and retraining.
4. Expanding educational Axis beyond Geographic borders
5. To enhance educational access
6. To support teacher preparation and professional development
7. It explains educational planning, management and administration.
8. Holistic assessment of students
9. Regulation for transparency and accountability

LIMITATIONS OF INTEGRATION OF TECHNOLOGY:

1. Technical problems may occur during the course.
2. The teacher's failure to teach.
3. Maintaining an ICT Lab (equipment and room) is very expensive.
4. In formal and rural schools, there is no direct access to the internet.
5. Students become distracted when they are bored.
6. Social Isolation.
7. Addiction.
8. Students can do other activities while studying in the ICT Sector.
9. Students can practice difficult tasks online

CHALLENGES ASSOCIATED WITH THE INTEGRATION OF TECHNOLOGY:

1. The concept of digital divide
2. Lack of timely technical support
3. It requires continuous power supply
4. The ratio of computer for student is insufficient
5. Establishment is cost effective infrastructure
6. Insufficient funds
7. Lack of updated Software and Hardware facility

How teachers can be using technology in the classrooms

1. Utilize digital classrooms
2. offer varied learning experiences, enhance student engagement
3. embrace interactive technology
4. Prioritize student choice in demonstrating mastery
5. Keep the family active
6. Improve academic performance
7. Teach 21st-century skills

8. Use AR and VR for immersive learning
9. Teach digital citizenship
10. Encourage social sharing and foster collaboration and critical thinking skills.

Conclusion

Implementation of NEP 2020 through technology will empower Education. Integration of Technology enhances education quality and relevance, moving beyond NEP 2020 compliance. From the overall study, it can be concluded that NEP 2020 focusses on Modern Education through technology. Digitalization has the potential to significantly improve the quality of education and enhance the quality of life of students. It is important to approach the implementation of NEP through technology to ensure equitable access to digital tools, learning materials and resources. It is an innovative vision of education policy.

“In education, technology can be a life-changer for kids. It can bring textbooks to life. It can connect students to their peers in other parts of the world. It can bridge the quality gaps.” – Queen Rania of Jordan.

India must focus on offering technological education. NEP 2020 urges technology integration in high schools for interactive learning. Digital resources, online assessments, virtual labs, blended learning, as well as teacher training are recommended. This aims to provide quality education aligning with 21st-century demands. The integration possesses the possibility to modernize Indian education and equip students with the skills necessary for success in the digital era.

“Technology is just a tool. In terms of getting the kids working together and motivating them, the teacher is most important.” – Bill Gates.

Suggestions

Teachers are crucial and integrating Technology into teaching as well as learning. They must adopt utilization of technology effectively in their instruction to bring about anticipated pedagogical improvements. Government should focus on as well as provide comprehensive training to Teachers and school administrators. Funds should be invested in training to help teachers and administrators make the right decisions.

References

1. Ministry of Human Resource Development India. National policy on Information and Communication Technology (ICT) In School Education Department of School Education and Literacy Ministry of Human Resource Development Government of India contents. 2012.
2. Taylor, H & Hogenbirk, P. (2001). Information and communication Technologies in Education: The School of the Future Amsterdam: Kluwer.
3. National Education Policy 2020 module, Ministry of human development, Government of India
4. Pedagogy across curriculum and ICT integration, D. El. Ed Telugu Academy book, Hyderabad
5. Pedagogy across curriculum and ICT integration, D. El. Ed first year textbook, 2019
6. Physical science handbook, SCERT Amravati, dt. 15.05.2017
7. Guidelines for position papers for the development of NCF, 2020
8. Technology in Education, <http://ncf.ncert.gov.in>.
9. Patra, S. and Sahu, K. K., 2020, Digitalization and the decoupling debate: can ICT help to reduce environmental impacts while the economy keeps growing? Sustainability, 12(18), p.7496.