

## NEW EDUCATION POLICY NEP 2020: IMPLEMENTATION OF TECHNOLOGY AND STEM EDUCATION

\* *Prof. Alamelu Parameswaran Iyer,*

*\* IT department from Matrushri kashiben motilal patel senior college of commerce & Science, Thakurli East-421201*

### **Abstract:**

*To improve the country's educational system and provide a blueprint for the future, the government of India has come up with National Education Policy 2020. The NEP 2020 was approved by the Indian cabinet on July 29 2020. National Education Policy 2020 emphasizes the use and integration of technology in school and higher education that will enable India to meet the requirements of quality education in line with the SDGs in the 21st century. The use of technology in educational institutions will help enhance pedagogical methods and student learning. NEP 2020 recommends the creation of the National Educational Technology Forum (NETF) to facilitate open dialogue about how to use technology in school and higher education. By replacing the earlier 1986 National Policy on Education. NEP 2020 envisages to provide a comprehensive framework for basic through higher education, as well as vocational training. The current conceptual research article focusses on previous two National policies on education, the background and emergence of NEP 2020, vision, salient features, technological use, it's alignment with promoting STEM (Science Technology Engineering and Mathematics) Education, Systematic Implementation and Challenges. This paper is based on secondary data and highlights technology's scope and significance in NEP 2020.*

**Key words:** *NEP 2020, STEM Education, E-learning platforms, Technology: Implementation.*

**Copyright © 2024 The Author(s):** This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial Use Provided the Original Author and Source Are Credited.

### **Introduction:**

Quality education is critical for realizing one's full potential, creating a more equitable and just society, and advancing national progress. The world's knowledge and job landscapes are rapidly changing right now. In this situation, an educational system must foster character development by teaching students to be ethical, reasonable, compassionate, and caring while also preparing them for profitable employment. It is important to recognize that the gap between present learning outcomes and what is required can be closed through educational reforms. From Early Childhood Care and Education (ECCE) to Higher Education, the reforms are required to bring quality, equity, and integrity to the system. As a result, India needed an education system that provided equal access to high-quality education to all students, regardless of their social or economic status. The National Education Policy 2020 has been formed to improve the country's educational system and to create a blueprint for the future of India. The Indian cabinet approved the National Education Policy on July 29, 2020. The NEP 2020 recommends reforms in elementary, secondary, higher, and technical education in India. India introduced

the first National Education policy in 1968, the second after a lengthy break in 1986, and the most current one under the NDA government in 2020(A. Kumar 2021). NEP has been designed to restructure the Indian education system for making India a competitive and highly educated nation. India is a signatory to the 2030 Agenda for Sustainable Development, which aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all". India needs to restructure and redesign its education system in order to meet all the goals of SDGs 2030. The fast-changing world has compelled India to bring reforms in the education system to make it more immersive, scientific, discussion-based, adaptable, and enjoyable. NEP emphasizes providing quality education to all students, but it gives special focus on marginalized, underrepresented, and disadvantaged groups. The NEP 2020 emphasizes the use and integration of technology in schools and higher education in India. Technology can play a major role in improving teaching methods, students learning, grading, and assessments. The foundational pillars of this policy are access, equity, quality, affordability and accountability. The Salient features are: i) Development of National Curriculum and Pedagogical Framework for Early Childhood Care and Education (NCPFECCE) by National Council of Educational Research and Training (NCERT). iii) To establish, a new National Assessment Centre, PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development). iv) The establishment of a Gender Inclusion Fund, as well as Special Education Zones for underprivileged regions and groups, is emphasized by the NEP.

v) The National Council for Teacher Education will produce a common National Professional Standards for Teachers (NPST) by 2022, in conjunction with NCERT, SCERTs, teachers, and expert groups from all levels and regions. vi) Increasing Enrolment Ratio in higher education, including vocational education, from 26.3 percent in 2018 to 50 percent by 2035, and to add 3.5 crore new seats to higher education institutions. vii) The policy envisions broad-based, multidisciplinary, holistic Undergraduate education with flexible curricula, creative subject combinations, integration of vocational education, and multiple entry and exit points with appropriate certification. viii) Formation of Academic Bank of Credit to digitally store academic credits earned at various higher education institutions so that they can be transferred and counted toward a final degree.

### **STEM Education and Its Importance:**

STEM (Science, Technology, Engineering, and Mathematics) education is a contemporary approach to learning and development that integrates four essential concepts - Science, Technology, Engineering, and Mathematics – in an interdisciplinary and applied way. With changing technology and educational trends, introducing coding and technology concepts at the school level will undoubtedly encourage children to be more innovative and creative. The greatest way to teach children to adapt to the future is to include innovative technology in the curriculum. The new National Education Policy 2020 (NEP 2020) aims to positively reform the educational system of India which was long overdue. Now that it's finally here, let's look at some of the new changes or highlights of the NEP 2020: i. The new structure aims at encouraging experiential learning. The focus would be on critical learning objectives and not on rote learning. ii. Curriculum content will be reduced in each subject to its core essentials – key concepts, ideas, applications and problem-solving. Emphasis on critical thinking and more holistic, inquiry-based, discovery-based, discussion-based, and analysis-based learning. iii. The new

education policy lays particular emphasis on the development of the creative potential of each child. It aims at producing engaged, productive, and contributing citizens for building an equitable, inclusive, and plural society.iv. The NEP 2020 introduces subjects such as Artificial Intelligence (AI) and Design Thinking.v. An emphasis on mathematics and computational thinking for AI, machine learning (ML), and data science, which will start in the foundational stage (starting with age 6). These are executed through innovative methods, which include regular use of puzzles and games that make mathematical thinking more enjoyable and engaging.vi. Activities involving coding will be introduced in the Middle Stage (starting with age of 11). This will encourage children to be more innovative and creative. vii. Concerted curricular and pedagogical initiatives, including the introduction of contemporary subjects such as Artificial Intelligence, Design Thinking, Holistic Health, Organic Living, Environmental Education, Global Citizenship Education (GCED), etc. at relevant stages will be undertaken to develop these various important skills in students at all levels.

#### **E-learning Platforms and implementation of technology:**

India started the 'Digital India Campaign' to make India a leader at the global level. This campaign aims at making India a knowledge-based economy and digitally enabled society. Education will be essential to this shift, but technology will also play a major role in enhancing prelogical methods and students' learning results. This shows that the connection between education and technology is mutually beneficial. The use of new technology in educational institutions will impact students' learning. During the Coronavirus pandemic, India managed to provide quality education to students through online e-learning platforms. NEP 2020 realized the need to leverage technology in the education sector. NEP 2020 plans to conduct a pilot study to know the advantages of online learning and how to address its drawbacks. NEP 2020 aims to expand and improve the existing ICT-based educational projects. It also addresses the present and future difficulties of delivering excellent education to everyone. NEP 2020 believes that the benefits of online education can only be fully leveraged if the digital gap is removed through coordinated initiatives such as the 'Digital India Campaign' and affordable computer equipment. NEP 2020 focuses on providing training to teachers so that they can become effective online educators. The NEP 2020 recommends the following initiatives for leveraging digital technologies in school and higher education: a)NEP 2020 will leverage online e-learning platforms such as SWAYAM, Diksha for creating virtual labs to ensure access to all students for high-quality learning opportunities.b)NEP emphasizes online assessments, examinations, and standardized tests. These will be developed and implemented by relevant bodies such as NAC, PARAKH, NTA, and school boards. The research will be conducted to discover the novel ways of using ed-technology to emphasize skills relevant to the modern world.c)NEP also stresses blended learning models, including multiple instruction modes such as face-to-face, rotation, flex, online lab, etc. NETF and other appropriate bodies will lay down standards of content, and pedagogy for online learning.

#### **Research Objective:**

This paper attempts to study the scope and significance of technology in National Education Policy 2020.

#### **Research Methodology:**

This paper is entirely based on secondary data. The author has relied on research papers, online news articles,

governmental websites, and documents.

**Literature Review:**

The National Education Policy 2020 supersedes the NEP of 1986. The aim of NEP 2020 is to make India a center for learning across the globe by emphasizing on liberal arts curriculum, value-based education, and integration of different fields of study.

Author(s)	Study
(Aithal and Aithal 2020)	The study contrasts the new education policy with the conventional one by focusing on the most salient features of each.
(Jha & Parvati 2020)	This article provides a short analysis of some of the pertinent issues surrounding the provision of high-quality universal education, equal access to education, and the growing trend toward privatisation.
(Suryavanshi 2020)	The study highlights the Chinese University Model for the improvement of teachers in Indian institutions. It highlights that freedom should be given to colleges and universities to choose their pedagogy and they should receive assistance for research and innovation.
(K. Kumar, Prakash, and Singh 2021)	The study focuses that the NEP 2020 will be a game changer in Indian education system. NEP provides comprehensive framework for overall education such as primary, secondary, college, university, Business and technical education. NEP also provides the provisions for internet-based e-learning which is a shift from traditional approach. NEP aims to provide access, fairness, accountability, affordability and quality in line with SDGs. NEP also has drawbacks but the policy is up to date.
(Deb 2020)	The study highlights incorporating Indian philosophy and its cultural values into NEP 2020.
(Patil and Patil 2021)	The study emphasizes that ancient Indian education was value-based which benefitted the mankind in large. The NEP 2020 has brought some major changes in Indian education system. NEP 2020 has promoted Indian value-based education system that is all-inclusive, holistic and Bharat-centric.

**References:**

Aithal, P. S., and Shubhrajyotsna Aithal. 2020. “Implementation Strategies of Higher Education Part of National Education Policy 2020 of India towards Achieving Its Objectives.” SSRN Electronic Journal, December <https://doi.org/10.2139/SSRN.3741425>.

Kumar, Alok. 2021. “Dr. Wayne B. James Dr. Cihan Cobanoglu Dr. Muhi in Cavusoglu.” *Advances in Global Education and Research* 4: 1–17.

Varsha Kiran, and Kiran D. Patil. 2021. “Traditional Indian Education Values and New National Education Policy Adopted by India.” *Journal of Education*, 10–13. <https://doi.org/10.1177/00220574211016404>.

**Cite This Article:**

**Prof. Iyer A.P. (2024).** *New Education Policy NEP 2020: Implementation of Technology and STEM Education.* In *Educreator Research Journal*: Vol. XI (Number I, pp. 34–37). **ERJ.** <https://doi.org/10.5281/zenodo.10753102>