TECHNOLOGY IN INDIAN EDUCATION: NEED OF THE HOUR

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Abstract

The National Education Policy (NEP), unveiled on 29 July 2020 by the Ministry of Human Resource Development (MHRD), is revolutionary in every sense. After a 34-year hiatus, changes have been made to India's education policy. As per the changes introduced, the MHRD has been renamed as Ministry of Education (MoE). The NEP 2020 focuses on a number of issues, including the need for early childhood care, comprehensive education, and curriculum reform. India has evolved into an "information intensive society" over the last decade, and there is an increasing need to adopt technology in the field of education. In this regard, the policy also emphasizes on the use and integration of technology to improve multiple aspects of education that will be supported and adopted. Also, a dedicated e-education unit & National Educational Technology Forum (NETF), an autonomous body, will be established to provide a forum for the free exchange of ideas on the use of technology to improve learning, evaluation, planning, administration, and other aspects of education in both schools and higher education. It has become even more relevant in the current COVID pandemic situation when virtual learning is the new normal &also the need of the hour, to re-imagine conventional learning and teaching techniques. The Policy outlines a vision of education for the next generation that will aid in the development of a self-sufficient India.

Keywords: *NEP 2020, Integration of Technology, National Educational Technology Forum (NETF), COVID pandemic.*

Introduction

"Technology will not replace great teachers but technology in the hands of great teachers can be transformational."

George Couros

Old policies that no longer met educational needs and demands have been revamped in order to implement much-needed educational reforms. Following 1986, the National Education Policy (NEP) 2020 is the first omnibus policy. The response to the changes

in the policy has been mixed. They do, however, strive to ensure that education is of high quality and accessible to everyone. In an age where degrees are no longer sufficient, there is an emphasis on skill-building in a variety of fields, and art has been viewed as a topic rather than a hobby. Another important change is the revision of the 10+2 structure of school curricula is a 5+3+3+4 curricular structure. This refers to the ages of 3 to 8, 8 to 11, 11 to 14, and 14 to 18, respectively. It will consist of 12 years of formal education and three years of Anganwadi and pre-school education. Many thoughtful additions and policy reforms point to a brighter future in which India's educational expectations are at their highest.

India is a global leader in ICT &in other domains(Bava, 2007). The Digital India Campaign is assisting in the transformation of India as a technologically driven society with an information economy. Although education will be crucial in this transition, technology will also play a significant role in improving educational processes and outcomes. Embracing technology in the field of education has become a need of the hour. It is beyond time to ensure that children and teachers alike have access to digital technology and devices that do not discriminate and are both accessible and affordable. The COVID-19 pandemic has taught us to stay vigilant in the face of such threats and to never stop learning. The government should create the basic conditions, strengthen academic authorities, facilitate technology viable environment and then let school accountability work of regulating quality because every child has a right to appropriate education of high quality.

According to NEP 2020, one of the main drivers of the education system will be 'extensive use of technology in teaching and learning, removing language barriers, increasing access as well as education planning and management'. The section of NEP that presents 'Technology Use and Integration' gives vision for the role of technology in a new and enhanced education field. It's a good sign that India's leaders are now recognising the disruptive effects of technology on education. Securing digital infrastructure, improving digital skills, and fostering digital safety are all important aspects of realising the potential of technology in education. It also wants school management committees to have more authority and play a more active role.

Objectives of the Study

This paper is prepared based on the following objectives

i. To highlight the suggestion of National Education EP to establish NETF.

ii. To list various aspects of NEP 2020 dealing with technology

iii. To discuss key initiatives suggested by NEP &problems in their implementation.

National Educational Technology Forum (NETF)

The NEP 2020 suggests to create a National Education Technology Forum (NETF) to boost digital content, infrastructure and capacity building. The aim of the NETF is to ease in decision-making on technology induction, deployment and make it easier by offering the most up-to-date information and research to educational leaders, state and federal governments, and other stakeholders, as well as the ability to collaborate and share best practises. The NETF will perform the following tasks:

a) To provide independent evidence-based advice to Central and State Government agencies on technology-based interventions.

b) To build intellectual and institutional capacities in educational technology.

c) envision strategic thrust areas in this domain.

d) To articulate new directions for research and innovation.

The NETF will maintain a daily inflow of authentic data from various sources, including educational technology innovators and practitioners, and will collaborate with a diverse group of researchers to analyse the data to stay important in the fast-changing field of educational technology.

The NETF will host a number of regional and national conferences, seminars, and other events to gather input from national and international educational technology scholars, entrepreneurs, and practitioners in order to promote the creation of a vibrant body of knowledge and practise.

Key Aspects of Nep 2020 Dealing with Technology

Primary Education

a) Recognizing technology as a teaching aid, bridging language gaps between teacher and student, creating digital libraries, and allowing greater access to education, especially for differently abled children.

b) Coding will be taught in schools as an important skill for students to learn.

c) Online teacher preparation and teacher education will also benefit from technological advancements.(Singh, 2020)

Professional & Higher education

a) Professional education (legal/health) should include technology.

b) It has been suggested that technology be used to achieve 100% literacy. This will necessitate the introduction of high-quality technology-based adult learning opportunities.

c) Recognizing the role of technology in solving various societal problems and encouraging interdisciplinary research and development. Setting up a National Research Foundation, for example, has been suggested to foster a research community, and HEIs have been encouraged to open start-up incubation centres and technology development centres.

d) NETF will be developed as a forum for the free exchange of ideas about how to use technology to improve learning, evaluation, and administration.

Administration of education

a) The Academic Bank of Credit will be created, which will store academic credits earned from various HEIs in a digital format. These credits can be used to award degrees if they are received over a period of time.

b) Focus on using technology to ensure that regulatory bodies like the State School Standards Authority and the Higher Education Commission of India, as well as its four verticals, are efficient and transparent (National Higher Education Regulatory Council, National Accreditation Council, Higher Education Grants Council and the General Education Council).

Adapting to Artificial intelligence (AI)

a) Recognizing the challenges posed by the widespread use of Artificial Intelligence, the Policy emphasises the need to adapt to changes brought about by the widespread use of AI across industries.

b) The NETF will classify and categorise emerging technologies based on their potential for disruption and expected time line, and will present a periodic analysis to the Education Ministry, which will formally identify the related technologies.

c) The Policy is a forerunner in recognising the need to raise awareness and conduct research on various aspects of emerging disruptive technology, including data handling and security issues(Hassan, 2022).

Digital India

a) The policy calls for investments in digital infrastructure, the development of online teaching platforms and resources, the establishment of virtual labs and digital libraries, teacher training to become high-quality online content creators, the design and implementation of online evaluations, and the establishment of content, technology, and pedagogy standards for online teaching-learning.

b) The policy calls for the establishment of a dedicated unit to plan for the advancement of digital technology, digital content, and capacity building in order to oversee the e-education needs of both schools and universities.

Key Initiatives Suggested by NEP and Challenges in their Implementation

This Policy proposes the following main measures in light of the advent of digital technologies and the growing value of leveraging technology for teaching and learning at all levels, from elementary to higher education:

a) **Pilot studies for online education:** Appropriate organisations, such as the NETF, CIET, NIOS, IGNOU, IITs, NITs, and others, will be listed to perform a series of pilot studies in parallel to assess the benefits of combining education with online education while minimising the drawbacks, as well as to investigate related areas such as student computer addiction, most preferred formats of e-content, and so on. The challenge is data of pilot studies is needed. Also, the proper implementation of this is the hard part.(MHRD, 2020)

b) **Digital infrastructure:** To address India's size, diversity, complexity, and device penetration, there is a need to invest in the development of transparent, interoperable, evolvable public digital infrastructure in the education sector that can be used by multiple platforms and solutions.No doubt that India has accelerated digitation in the Covid pandemic, but the economy is really in the lows in these tough times. The government has no money to invest on digital infrastructure when there is a health crisis going on in the country.

c) **Online teaching platforms & tools:** established e-learning platforms, such as SWAYAM and DIKSHA, will be enhanced to provide teachers with a standardised, user-friendly, and comprehensive collection of resources for tracking learners' progress. As the current pandemic has shown, tools such as two-way video and two-way audio interface like google meet & zoom for conducting online classes are a real necessity. The challenge in conducting online classes is of absence of good internet connectivity & the compatibility of teachers and students in using these online platforms. Most of the teachers who taught physically in classrooms find it very difficult to operate from a virtual system.

d) **Content creation & digital repository**: A digital repository of content will be created, including coursework design, Learning Games & Simulations, Augmented Reality, and Virtual Reality, as well as a transparent public system for user ratings on effectiveness and quality. There will be a secure backup system for disseminating e-content to students. Reading an e-content is easy if done to some pages but some students find it difficult to read a whole book on PC or mobile phones. Sitting in front of laptop and doing work can be hectic sometimes. The majority of teachers are digital migrants who were born after the turn of the century. So, the creation of good

quality content requires a lot practice& thus is difficult. It requires proper training & time to create a generation of digitally equipped teachers.

d) **Online assessment and examinations:** Appropriate bodies to develop and enforce evaluation systems that include design of competencies, portfolios, rubrics, structured tests, and assessment analytics, such as the proposed National Assessment Centre or PARAKH, School Boards, NTA, and other established bodies. The poor internet connectivity is a hinderance in attempting online exams for many. The security & proper communication is also a big issue. These problems will only be solved when there is proper planning & investment in digitisation.

e) **Virtual labs:** Existing e-learning platforms, such as DIKSHA, SWAYAM, and SWAYAMPRABHA, will be used to build virtual laboratories, ensuring that all students have access to high-quality realistic experiment-based learning experiences. But Physical, practical skills that are expected of an engineer are not honed properly in virtual labs.

Conclusion

The suggestion by National Education Policy deserve appreciation , as the experiences of recent years have illustrated the need for a more equitable approach to education. Although the Policy is a novel and forward-thinking document that recognises the critical role of technology in promoting learning and teaching, it is critical to establish a cohesive plan of action for fostering technical proficiency in order to facilitate successful interaction with technology (and its potential advancements) while ensuring effective data security and privacy safeguards.

Overall, the Policy's effectiveness will be determined by the means and mode of implementation, as well as the ability to efficiently incorporate the Policy's goals into existing policies and engage relevant stakeholders in the Policy's successful delivery. The NEP 2020 is a significant step forward in recognising that education will increasingly dematerialize and digitalize content in the future, and in working to remain ahead of the curve. This is a remarkable achievement for a nation steeped in a conventional educational system like India.

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