Educational Quest: An Int. J. of Education and Applied Social Sciences: Vol. 14, No. 01, pp. 23-28, April 2023
DOI: 10.30954/2230-7311.1.2023.4
Peer Reviewed Journal

NEP 2020: Analysis of Technological Education and a Way Forward

Pinki Malik

Assistant Professor, School of Education, Shri Lal Bahadur Shastri National Sanskrit University, New Delhi, India

Corresponding author: p.mannkuk@gmail.com

Received: 10-01-2023 **Revised:** 20-03-2023 **Accepted:** 01-04-2023

ABSTRACT

The vision of NEP 2020 is to restructure and change the education system and structure in the country. But the COVID-19 pandemic has created unexpected challenges in India's educational setting. Schools and colleges have switched to remote learning and started online education system. The pattern of education has changed all of a sudden, and digital learning has emerged as the primary alternative. This sudden switch and overdependence on technology has come with its fair share of constraints. Expectedly, the NEP 2020 policy proposes several measures for promoting digital learning and enhancing infrastructure requirements. However, identified the socio-economic and regional diversity of India, there exist multiple roadblocks to accessibility and the capability of widespread adoption of online teaching and learning, some of which are discussed in present research paper.

Keywords: NEP, online education system, learning, technology

NEP 2020 Views Regarding Online and Digital Education

The current period is driven by digital technology and whole globe come under the influence of internet and World Wide Web. The internet equipped both the education seeker as well as education provider and laid them together under the virtual roof. Due to which the concept of virtual classroom is already popularized across the world. Therefore, in the modern era, the role of online technology in providing the education is vital and with its flexible nature the online educational technology has gained popularity. National Education Policy 2020 recognizes the significance of leveraging the advantages of technology while acknowledging its potential risks and dangers. The existing digital platforms and ongoing ICT-based educational initiatives must be optimized and expanded to meet the current and future challenges in providing quality education for all.

Given the emergence of digital technologies and the emerging importance of leveraging technology for teaching-learning at all levels from school to higher education, this Policy recommends the following key initiatives:

(a) **Pilot Studies for Online Education**: The NEP 2020 proposed that appropriate agencies, such as the NETF, CIET, NIOS, IGNOU, IITs, NITs, etc. will be identified to conduct a series of pilot studies, in parallel, to evaluate the benefits of integrating education with online education while mitigating the downsides and also to study related areas, such as, student device addiction, most preferred formats of e-content, etc. The results of these pilot studies will be publicly communicated and used for continuous improvement.

How to cite this article: Malik, P. (2023). NEP 2020: Analysis of Technological Education and a Way Forward. *Educational Quest: An Int. J. Edu. Appl. Soc. Sci.*, **14**(01): 23-28.

Source of Support: None; **Conflict of Interest:** None

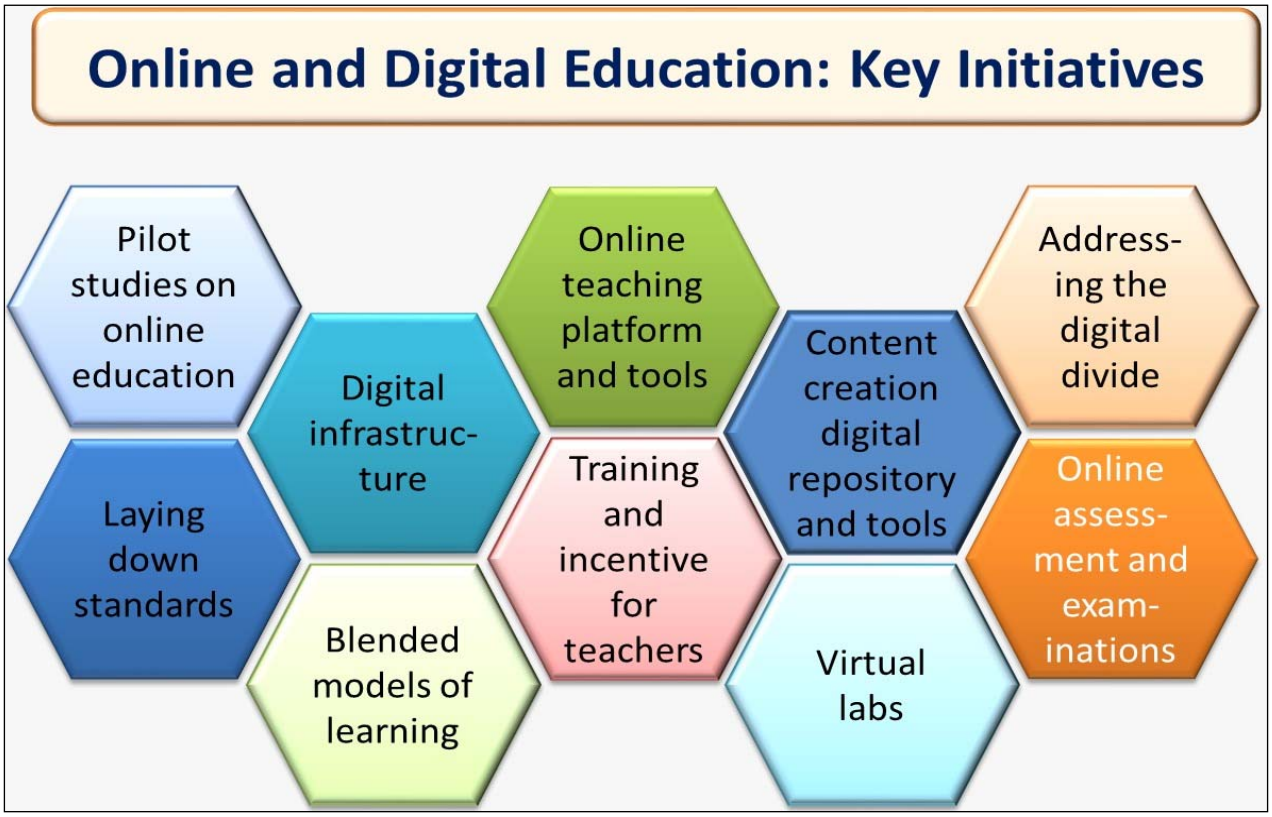

Fig. 1

(b) **Digital Infrastructure**: the policy talked about need to invest in creation of open, interoperable, evolvable, public digital infrastructure in the education sector that can be used by multiple platforms and point solutions, to solve for India's scale, diversity, complexity and device penetration. This will ensure that the technology-based solutions do not become outdated with the rapid advances in technology.

(c) **Online Teaching Platform and Tools**: Appropriate existing e-learning platforms such as SWAYAM, DIKSHA, will be extended to provide teachers with a structured, user-friendly, rich set of assistive tools for monitoring progress of learners. Tools, such as, two-way video and two-way-audio interface for holding online classes are a real necessity as the present pandemic has shown.

(d) **Content Creation, Digital Repository, and Dissemination**: A digital repository of content including creation of coursework, Learning Games & Simulations, Augmented Reality and Virtual Reality will be developed, with a clear public system for ratings by users on effectiveness and quality. For fun based learning student-appropriate tools like apps, gamification of Indian art and culture, in multiple languages, with clear operating instructions will also be created.

(e) **Addressing the Digital Divide**: Given the fact that there still persists a substantial section of the population whose digital access is highly limited, the existing mass media, such as television, radio, and community radio will be extensively used for telecast and broadcasts. Such educational programmes will be made available 24/7 in different languages to cater to the varying needs of the student population.

(f) **Virtual Labs**: Existing e-learning platforms such as DIKSHA, SWAYAM and SWAYAMPRABHA will also be leveraged for creating virtual labs so that all students have equal access to quality practical and hands-on experiment-based learning experiences.

(g) **Training and Incentives for Teachers**: Teachers will undergo rigorous training in learner-centric pedagogy and on how to become high-quality online content creators themselves using online teaching platforms and tools. There will be emphasis on the teacher's role in facilitating active student engagement with the content and with each other.

(h) **Online Assessment and Examinations**: Appropriate bodies, such as the proposed National Assessment Centre or PARAKH, School Boards, NTA, and other identified bodies will design and implement assessment frameworks encompassing design of competencies, portfolio, rubrics, standardized assessments, and assessment analytics.

(i) **Blended Models of Learning**: While promoting digital learning and education, the importance of face-to-face in-person learning is fully recognized. Accordingly, different effective models of blended learning will be identified for appropriate replication for different subjects.

(j) **Laying down Standards**: As research on online/digital education emerges, NETF and other appropriate bodies shall set up standards of content, technology, and pedagogy for online/digital teaching-learning. These standards will help to formulate guidelines for e-learning by States, Boards, schools and school complexes, HEIs, etc.

The above future perspective is given by NEP 2020 regarding online and digital education but the question arises- How will these to be implemented in a diverse country like India? There are several questions arises about its successful implementation. There is a need to look into the matter. Are we ready to face the challenges in this field?

Analysis of Technological Education

As NEP 2020 has given an exhaustive list of spread of areas and benefits of digitalization in education sector for future generation but in spite of all these there are several roadblocks in the journey of use of technological resources in education which are described here as under:

Lack of Clear Approach

A lack of strategy with adopting new technology can be a challenge. When a large school faces obstacles to completing tasks with the help of the latest technology, it can be challenging to learn and achieve a goal.

Insufficient Virtual Labs

To establish and maintain the virtual labs and smart classroom in every school of India is not possible. Huge funds are required and we can see how much funds in a budget year are spending on education. It is not sufficient to provide structure only but maintenance is also matters.

Inadequate Digital Infrastructure

Digital transformation in the education industry needs new equipment and technology infrastructure for learners, direct instructors, and educational institutes. Choosing the platform that provides easy access, course creation, seamless integration is another obstacle educational institute's face. Therefore, Digital transformation requires technology infrastructure to develop an engaging learning culture.

Lack of Electricity

In rural India electricity is the major barrier in bringing digital education. Even in some urban areas it hurdles the digital facilities.

Lack of Internet Facility

Internet is not approachable to the whole population and as well it is costly. A poor man cannot afford easily. Another reason is its speed which is not even normal. Low speed creates so many problems while using the digital tool.

Ignorance towards Online Teaching Platform and Tools

Insufficient knowledge and unawareness of digital platforms and tools will also hurdle the success of such kind of education**.**

Lack of Digital skills

Digital transformation cannot be successful unless instructors do not have the skills to operate the technology. As per the Indian Telecom Services Performance Indicators for July-September 2020, on 30 September 2020, the total number of internet subscribers per 100 people in India stands at 57.29, with this number being around 3 times higher for urban India (101.74) compared to rural India (33.99).

Non-availability of digital Content

Digital Content is not available in so many languages as NEP prescribes multilingual education and availability of digital content in various Indian languages. Software in different languages is not still available. According to NEP 2020 '*A reliable backup mechanism for disseminating e-content to students will be provided'* what will be that.

Unsatisfactory results of Online Assessment and Examinations

After Covid -19 pandemics we can analysis the performance of the students that was resulted into unsatisfactory level. There was no any control during the attemptation of the exams. Student copied the answers and submitted the same. The real evaluation of all kind of students at all levels was missing.

All above cited digital problems or challenges can be summarized into three categories:

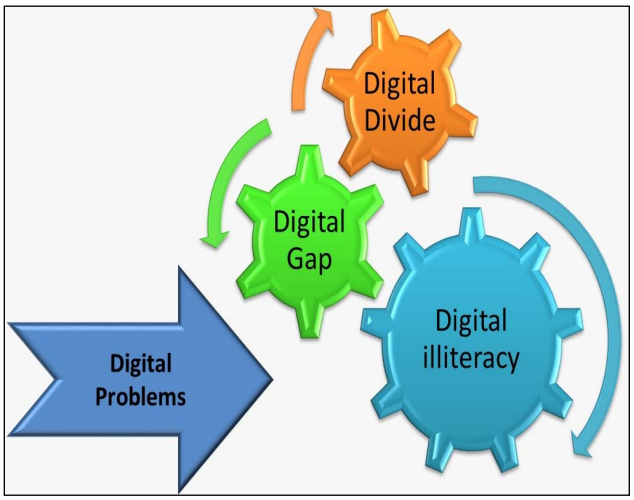

Fig. 2

1. Digital Divide

The digital divide is the unequal access to digital technology, including smart phones, tablets and the internet. The digital divide's effects can be measured based on an individual's amount of time spent on the internet and skill of conducting activity online. While the Covid-19 pandemic has accelerated the pace at which technology is becoming commonplace in our lives, it has also exposed a stark digital divide, leaving a large proportion of India's population out of this paradigm shift. In terms of access to the internet, 42% of urban households have access to the internet while the corresponding figure for rural households is only 14.9%.

2. Digital Gap

It is a gap between demographics and regions having access to modern information and communications technology (ICT) and those not having access. It exists between developed and developing countries, urban and rural populations, young and educated versus older and less-educated individuals, and men and women. In India the urban-rural divide is the single biggest factor in the Digital Gap.

3. Digital Illiteracy

The Ministry of Electronics and Information Technology defines digital literacy as "the ability of individuals and communities to understand and use digital technologies for meaningful actions within life situations. Any individual who can operate computer/laptop/tablet/smart phone and use other IT related tools is being considered as digitally literate." Based on this definition, we define households as being digitally literate if at least one person in the household has the ability to operate a computer and use the internet (among individuals who are 5 years of age and older). Based on the above definition, we find that only 38% of households in India are digitally literate. In urban areas, digital literacy is relatively higher at 61% relative to just 25% in rural areas. The unlimited access to technology without concerning space and time will bring digital equity. But this could also deepen the inequality in access to learning between geographies and students with socio-economic conditions. For example, students located in rural or mountainous areas will face difficulty accessing high-quality education and have limited resources available for study.

In some surveys it was found that—

- In a study in 2021 by the Azim Premji Foundation showed that almost 60 % of school children in India cannot access online learning opportunities.
- In another study by Oxfam India found that even among students of urban private schools, half of the parents reported issues with Internet signal and speed. A third struggled with the cost of mobile data.
- The Ministry of Education informed Lok Sabha that less than 10% of schools are equipped with Information and Communication Technology (ICT) tools or Digital Tools, in at least 10 states of India.

The data was sourced from the Unified District Information System for Education Plus 2020-21, which significantly showed that as the country

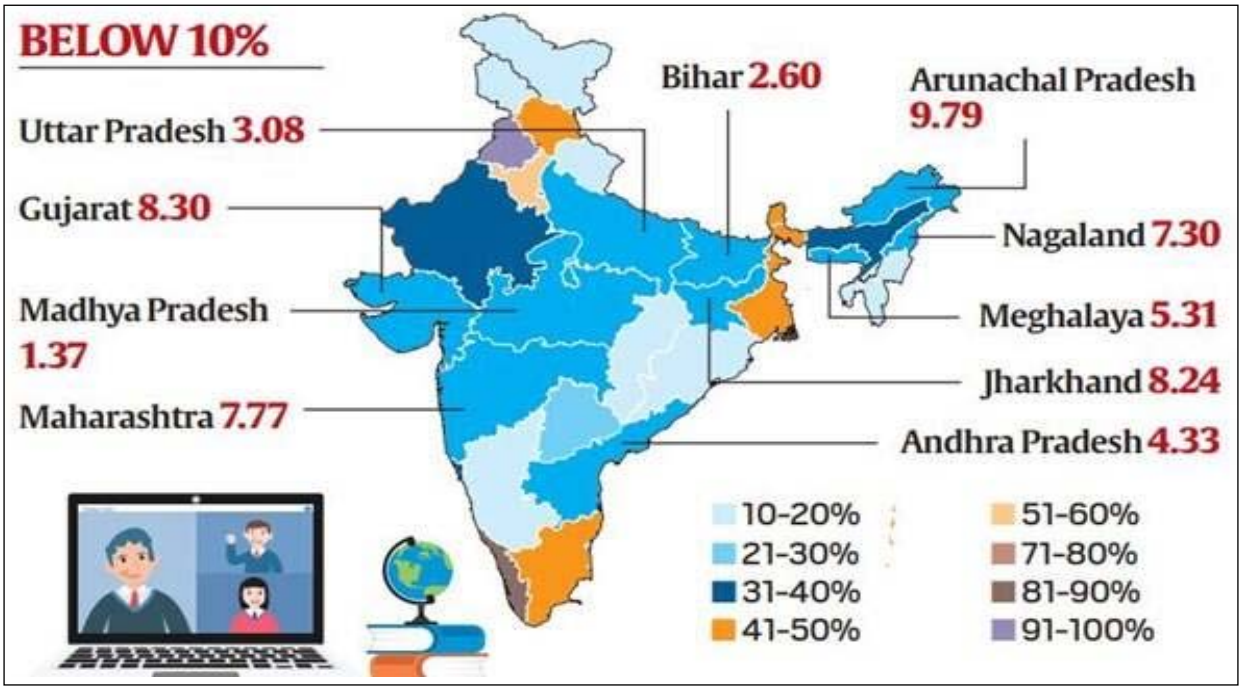

Fig. 3

entered the covid pandemic and classrooms turned virtual, few children had prior exposure to ICT.

WAY FORWARD

- Governments can become powerful instruments in bridging the digital divide by ensuring affordable, easy-to-use technologies. The high cost of internet connectivity, the price of technological devices, electricity tariffs, and taxes are major contributors to the digital Gap for both teachers and students.
- Teachers and students need to be fully skilled on how to efficiently use what the internet and modern technologies have to offer. The fewer students can use these tools, the more the digital divide widens. Therefore, instructors should be updated with skills to guide and watch students during learning. Also, they need the support of technical staff and experts in the process to ensure that teaching goes smoothly. At the same time, students also need to be continuously up skilled to keep up with the changing technology
- Educational online content creators should aim to make information available in as many languages as possible. When the users are confident that they can see content in their native or local languages, they are more inclined to use similar tools that provide personalised benefits.
- There is a special need to reduce the gender digital divide. Barriers and constraints in accessing the internet impede women›s and girls› full involvement in the social and economic progress of their communities and countries.
- Electricity problems need to be sorted to a great extent. Only than the digital platforms can be utilized adequately.
- Affluent range of educational software in all major Indian languages and will also be accessible to Divyang students.
- Promote and expand DIKSHA as well as other education technology initiatives.
- Suitable equipment for suitably integrate e-contents into teaching learning practices can be used.
- Making vigorous strategies can help schools accomplish significant points and focus on achieving their purposes.
- Some special kind of Software can be manufactured and use to supervise the students during online exams so that cheating

and copying the answers can be stopped. Assessment can be possible in real sense.

- Need to raise the educational funds to a great extent.
- Supervision and maintenance must be mandatory.
- E-literate programmes must be organised speedily to remove the digital illitracy. Certain programmes may be helpful like PMGDISHA. Up skilling India through such programmes is beneficial for all. This is the world's largest digital literacy programme with a target of making 60 million people in rural areas digitally literate, involving 40% of rural households with one member per household being trained under the programme.

CONCLUSION

It can be concluded that though the National Education Policy 2020 offers some progressive initiatives for development of e-learning tools for digital/online education and seeks to encourage equal access to technology, it misses the mark when it comes to addressing the grave structural challenges that characterise digital learning in India. Going forward, it is essential to bring about convergence between the goals of the NEP and schemes like Digital India that seeks to expand access to communication infrastructure and internet connectivity across the country. A key focus, therein, has to be on bridging the gender gap in internet usage and access to smart phones, and concurrently making digital learning disability-friendly.

REFERENCES

https://www.education.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf

https://en.wikipedia.org/wiki/Digital_literacy

https://www.techtarget.com/whatis/definition/digital-divide

https://www.ideasforindia.in/topics/governance/the-digital-dream-upskilling-india-for-the-future.html

https://www.highereducationdigest.com/nep-2020-and-online-education-a-paradigm-shift/

https://www.careerindia.com/general-knowledge/essay-on-online-education-in-india-digital-education/articlecontent-pf10762-032336.html

https://www.drishtiias.com/daily-updates/daily-news-analysis/digital-gap-in-education

https://indianexpress.com/article/education/india-government-schools-digital-tools-8067061/

https://udiseplus.gov.in/assets/img/dcf2021/UDISE+2020_21_Booklet_English.pdf