SCIENTIFIC CULTURE, Vol. 10, No. 1, (2024), pp 284-290

TRANSFORMING EDUCATION THROUGH INFORMATION AND COMMUNICATION TECHNOLOGY: A STUDY OF NEP 2020

Dr. Imkongsenla Longchara*, Dr. Daikho Manehrii[b]
[a]Assistant Professor, Department of Education, St. Joseph's university, Chümoukedima, Nagaland, India.
[b]Research Assistant, Tokhu Research Foundation, Makhan Centre, Senapati, Manipur, India
***Corresponding Author: e-mail: asenlongchar32@gmail.com**

Abstract

The recommendations of the New Education Policy (NEP) 2020 in fashioning the general curriculum and dynamics of education through the introduction of Information and Communication Technology at every level has brought about a new outlook. It intend to revolutionise the Indian education system putting emphasis on learners' holistic development and creating individuals equipped with 21st century skills. The policy stress for inculcation of innovative technologies that will cater to the needs of the learners promoting conceptual understanding, creativity, critical thinking, and other life skills. In the IT era, the introduction of ICT in education is paramount and it demands for extensive inclusion. This paper aims to discuss the guiding principles of ICT enumerated in NEP 2020 and their implications in the actual classroom situations. The NEP 2020 sought for solutions to cater to the changing dynamics in education bridging the gaps of the conventional and contemporary challenges. Not only shifting the philosophy of education from idealism to experientialism, it also tries to inculcate the essence of futuristic ideals.

Keywords: National Education Policy (NEP) 2020, Information and Communication Technology (ICT), Education, Teaching, learning

Information and Communication Technology (ICT) comprises of a wide spectrum of technologies that facilitate the storage, retrieval, manipulation, and transmission of information data. It consists of both the software and hardware technology and digital assistance used to transmit information. According to UNESCO, Information and Communication Technology refers to set of diverse technological tools and resources to transmit, store, create, share or exchange information which include computers, the internet, live broadcasting technologies, recorded broadcasting technologies and telephony. In today's world, it has revolutionized the way we live, the way we work and the way we communicate. ICT has become an integral part of our lives. Be it in education, healthcare, communication, transportation, business, science and technology, ICT has changed our outlook. The impact of ICT in almost every sector is tremendous. It has become a necessity tool for any progress and development. Integration of ICT in our day to day life has become indispensable. Many of our advancement would be handicapped without the aids of ICT. When it comes to education, it has a lot more to offer. Singh (2023) puts that the integration of advanced technologies, personalised learning, global

accessibility, lifelong learning and credential recognition is shaping a new era of education that is adaptable, inclusive and responsive to the needs of students and demands of the job market.

Information and Communication Technology in NEP 2020

Chapter 23 and 24 in Part III of the NEP 2020 deals exclusively on the transformation of the present education system through ICT. In these chapters-'Technology Use and Integration' and 'Online and Digital Education: Ensuring Equitable Use of Technology', it has fully devoted on the importance of ICT in Educational processes. The policy demonstrated that the Digital India Campaign has to a large extent helps the nation transform into a digitally empowered society. The transformation is credited to the critical role of education which need further development and research in new technologies such as artificial intelligence, machine learning, block chains, smart boards, computing devices and various educational hardware and software.

The policy recommends for an autonomous body, the National Educational Technology Forum (NETF), which will provide a platform for exchanging ideas on the use of technology to enhance learning, assessment, planning, administration in both at school and higher education. The NETF will provide independent evidence based advice to the governments on technology based interventions. It will also build intellectual and institutional capacities in educational technology; envision strategic thrust areas and articulate new directions for research and innovations in educational technologies. On this aspect, to maintain a relevant position in the fast-changing field of educational technology, it will be the duty of the NETF to check the regular inflow of authentic data. The policy then states that "the thrust of technological interventions will be for the purposes of improving teaching-learning and evaluation processes, supporting teacher preparation and professional development, enhancing educational access, and streamlining educational planning, management, and administration including processes related to admissions, attendance, assessments, etc." (NEP, 2020).

Moving on to the various technology based educational platforms, the policy seeks the existing bodies/institutions such as the NCERT, CIET, CBSE, NIOS to develop the teaching-learning e-content in all regional languages accessible by students in remote areas and *Divyang* students. It also sought for integration of technology based educational platforms across school and higher education, and to create user friendly and qualitative content which can be made easily available to teachers and students. The policy also draws concern on the disruptive technologies brought about by the internet which could lead to adverse effect both individually and nationally. In this regard, the role of NETF to assist in raising awareness to the general public has become a necessity. It will also have to keep track with the disruptive technologies such as Artificial Intelligence (AI) 3D/7D Virtual Reality by categorising the emergent technologies basing on their potential and estimated time frame and present it to MHRD for further analysis.

To expand the research effort in educational technology, the National Research Foundation (NRF) will oversee the emerging disruptive technologies. It will consider three-pronged approach-advancing core AI Research, developing and deploying application based research, and advancing international research efforts to address global challenges using AI. The role of HEIs in conducting research on disruptive technologies keeping in mind the impact on professional education while creating instructional materials. HEIs will take initiatives to blend online courses with conventional teaching in vocational and undergraduate programmes

to support AI based technologies. The policy also advocates to raise awareness on the ethical issues surrounding the development and deployment of AI-based technologies, in which the role of education is crucial.

Major Recommendations of NEP 2020 for ICT in Education

The policy recommends in regards to online and digital education and ensuring equitable use of technology are pointed as follows- a) Pilot studies for online education; b) Digital infrastructure; c) Online teaching platform and tools; d) Content creation, digital repository, and dissemination; e) Addressing the digital divide; f) Virtual labs; g) Training and incentives for teachers; h) Online assessment and examinations i) Blended models of learning j) Laying down standards. These recommendations holds as a testament for further, development and advancement in the education system. To bring light to the recommendations, it was during the covid-19 pandemic, the importance of online education was clearly seen and experimented. Now, the need to integrate in the present system in order to encounter such situation in future is the way forward. Maximum introduction of advance technology which could serve as learner friendly need to be put to test and continuously carried out. While taking a tour at the digital facilities provided in schools and colleges, most of the schools is still in developing stages. Leaving aside the IITs, NITs and institutions of eminence, most of the higher education institutes still lacks basic digital infrastructure. There lies the need to build a robust system of digital infrastructure. This calls for strong determination be it from the political end as well as from the academician. The introduction of digital library like Shodhganga, shodhgangotri, etc. has help researchers at a great deal. Likewise, more reformed based platform for secondary and graduate students need to be establish at the earliest.

At present, the government has taken strong initiation of online teaching platform such as DIKSHA, SWAYAM, etc. However, this need to be supported with mass dissemination to the rural mass and digital literacy has to be elevated. A lot of content development and digital repository are undergoing and it will be the future. The only problem now is to identify the authenticity and originality. When it comes to those that requires practical in laboratory, huge challenge arise of the developers. Yet, there has been breakthrough in many areas. There is still requirements for such highly developed studies and importance.

One big question on the digital rise is the imbalance in the accessibility. In urban areas, the development is always ahead, while the rural areas face the brunt of any new advancement. To curb this divide, the government should invest more on the rural as compared to the urban. And when it comes to equitable and inclusive education the policy put forth that ‘In particular, assistive devices and appropriate technology-based tools, as well as adequate and language-appropriate teaching-learning materials (e.g., textbooks in accessible formats such as large print and Braille) will be made available to help children with disabilities integrate more easily into classrooms and engage with teachers and their peers.’ (NEP, 2020)

The policy take note of the professionalism of the teachers as well. It says that with the new inculcations of technology, teachers need to be trained accordingly. Resources in terms of financial, infrastructure and human capital has to be taken into due considerations for the purpose. They have to be given awareness and trained by experts to translate it to the students. Blended models has enter the classroom teaching learning process. It will not take much to blend the conventional method with the online or digital form of teaching and learning. As the policy emphasised on the online development, due consideration is laid on the standard and

quality of the ICT tools. A set of criteria or standard of procedure to be followed in every processes and transactions. On this aspect, the NETF and other appropriate bodies will set up standards of contents, technology, and pedagogy for online or digital teaching learning.

Online assessment and examinations are becoming more standardised and efficient for public exams. In the same way, it has slowly penetrated into many ODL and online courses. Now, in order to make it reliable for academic purposes is just a few steps away. Many assessment has already found its validity and reliability in this context. 'AI-based software could be developed and used by students to help track their growth throughout their school years based on learning data and interactive questionnaires for parents, students, and teachers, in order to provide students with valuable information on their strengths, areas of interest, and needed areas of focus, and to thereby help them make optimal career choices.' (NEP, 2020). An Academic Bank of Credit (ABC) shall be established which would digitally store the academic credits earned from various recognized HEIs so that the degrees from an HEI can be awarded taking into account credits earned.' (NEP, 2020)

Challenges in the Implementation of NEP 2020

There are three main challenges in the implementation of NEP 2020 besides other difficulties. The country is vast and diversified in many aspects. Moreover, the barrier of language and poor infrastructure holds back the pace of the progress in many situations. Though the policy recommends the futuristic goals and demands of the changing scenario of education globally, it needs to find its way to position the sustainability.

1. Diversity

The diverse composition of the country is nothing new to any development. The introduction of ICT to diverse background is being received with varied responses. The urban rich gets easily adapted with the newly launched equipment, however, the rural poor remain aloof from acquiring such innovative introduction. Likewise, the higher sections of the society are able to enjoy the facilities, but the lower sections remains clueless in many aspects. This phenomenon of diverse population continues to pose challenge at many stages. Though the policy has laid foundation to provide and uplift the various strata, it remain sceptical as seen in precedent policy implementations.

2. Language barrier

Another major concern of the policy implantation is the language problem. The issue of language in India is ongoing and creates a complicated situation on many occasions. The language formulas proposed and practice are still unable to provide a proper stand. With the introduction of ICT based tools, it is going to cause many issues such as developing separate tools for each scheduled languages as well as the existing unscheduled languages. The problem of language adaption is going to affect the financial situation as well as emotional preparedness of the individual.

3. Infrastructure

In terms of infrastructure, the preparedness is still ill-equipped and vague at many levels. A few highly develop institutes have well-equipped facilities while the rest are in poor conditions. From lack of regular power supply to inadequate facilities, it lacks physical resources and support in most situations. Accessibility is another major concerns which requires proper attention as the few well equipped institutes are located in urban areas alone.

The most important i.e. financial support to start the planed policies which somewhat seem bleak at present.

Implications of ICT in Education

The NEP 2020 has stated clearly the recommendations on how the education system will be transform with the changing demands and dynamics of the classroom environment. There will be significant implications of ICT in transforming the education system of the country.

a. Holistic and Competency-Based Learning: The NEP 2020 emphasises on building overall development of the learners in terms of cognitive and social skills aligned with critical thinking, problem solving, collaboration, innovations and creativity. This can be achieve through the integration of technologies at various levels to suit the 21st century order.
b. Skill and vocational Oriented: The move towards the skill based and vocational oriented education points to the inculcation of ICT. It will yield maximum result only when the skilling of the resource is meticulously mitigated.
c. Digital Pedagogy-Text books: Digital pedagogy is the new introduction to the In regard to creating national textbooks with local content and flavour the policy has laid that 'Access to downloadable and printable versions of all textbooks will be provided by all States/UTs and NCERT to help conserve the environment and reduce the logistical burden.' (NEP, 2020).
d. Multi-dimensional Assessment: A vibrant assessment system is being proposed by the policy. It highlights the assessment to learners in 360 degree format. How far this could be achieved lies in the intelligent use of the information and communication technologies.
e. Digital Classroom-AI Classroom: Slowly the emergence of digital classroom is on the rise. In such classroom it will be powered by AI-classroom where the students may not require physical teacher.
f. Digital infrastructure- Library-INDL-DIKSHA-SWAYAM/NPTEL/ODL/MOOCS: The digital infrastructure is already in place for some section such as the DIKSHA for the primary education. There are already SWAYAM portal for online learning courses and refreshing knowledge.
g. Administrative Re-invention: There will be a major reforms in the administrative organisation with the support of ICT. There is already in practice in many institutions in regard to data management of the students and profile. This inculcation reduces the resources in large scale and minimise the resource se as well. In the future, it is going to be more robust and potentially a better for administration and management.
h. Continuous Professional Development: The NEP 2020 has laid that there will be continuous professional development for teachers all throughout the year. In this professional programmes, the importance of ICT and online teacher development programmes is emphasised.

Conclusion

To sum it up, the overall emphasis of the National Education Policy 2020 pose for reformation in education, keeping the holistic development of the learners at the core. With

regard to integration of ICT, the policy widely divulge on the early augmentation to the education fold. Through the recommendations of the policy in shaping the overall curriculum, there will be significant impact and paradigm shift in the classroom as well in teaching learning transactions. These recommendations clearly envisages the urgency and futuristic outlook towards catering the needs of the learners. Not only that, as one divulge into how ICT can transform the education scenario, re-reading and putting into practice the recommendations will bring out its essences. Henceforth, the policy will enable students to come forward with greater motivation and optimistic outlook. It would impact them to a great extent in innovative growth contributing towards the nation as well as in globally. The policy will also help enable the teachers to be more well-equipped and professional in their facilitation; and it will also help the administration and management swifter and seamless in the process.

References

Aithal, P.S. & Aithal, Shubhrajyotsna. 2020. "Analysis of the Indian National Education Policy 2020 towards Achieving its Objectives." *International Journal of Management, Technology, and Social Sciences (IJMTS)* 5 (2): 19-41

Alam, Aftab. 2021. "National Education Policy-2020 and Integration of Information and Communication Technology with Education." *Digital Education: Post COVID Era*. Ed. Nexus Publication 112-119

Garg, Divya and Dwivedi, Kant. 2021. "Transforming India into a Global Edcation Hb as envisioned by NEP 2020." *Multidisciplinary Approach to Sustainable Development Goal (SDG) 8*. Ed. 1 96-100

Kadge, Swapnali and Jain, Megha. 2022. "Analysis on use of Technology and its Integration in NEP 2020." *International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)* 2 (5):

Kumar, Akhash. 2022. "Digital Education: Vision, Perspectives and problems in Changing Paradigms of NEP-2020." *BHAVAVEENA* 19 (9): 111-117

Mir, Aijaz Ahmad, 2023. "The Scope of Technology in National Education Policy 2020: A Study." *Madhya Bharti- Humanities and Social Sciences* 83 (12) 1-4

Muralidharan, Kunnummal, Shanmugan, Kulandaivel and Klochkov, Yury. 2022. "The New Education Policy 2020, Digitalization and Quality of Life in India: Some Reflections." *Education Sciences* 12 (75) 1-21

Prathap, S. 2024. "NEP 2020 and the Infrastructure for ICT-based Teaching Learning." *International Journal for Multidisciplinary Research (IJFMR)* 6 (1): 102-104

Sarkar, Biplab. 2023. "Online and Digital education in the light of National Education Policy on Education 2020: An Interpretation." *Multidisciplinary Approach to Sustainable Development Goal (SDG) 8*. Ed. 1 74-80

Sharma, Anchal. 2022. *Role of Information and Communication Technology in Improving Equity and Quality of Education in India*. CSD Working Paper Series: Towards a New India Model of Information and Communication Technology-led Growth and Development. Centre for Sustainable Development Earth Institute/ Columbia University. ECON STOR

Singh, Mayank. 2023. "The future of online degrees for learning; examining the role of ed-tech in higher education." *Financial Express*, October 29, 2023.
National Education Policy (NEP), 2020.

Usou, Rokuonuo and Joseph, Sunny. 2022. "NEP 2020 and ICT in Teacher Education*." Global Journal of applied Engineering in Computer Science and Mathematics (GJAECSMA)* Spl. Eds, 53-57

