Role of ICT in National Education Policy 2020

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ABSTRACT

Education will play a critical role in transforming the whole nation into a digitally empowered society and knowledge economy, technology itself will play a crucial role within the improvement of educational processes and outcomes; thus, the connection between technology and education in the least levels is bidirectional. it's certain that technology will impact education in multiple ways, just some of which may be foreseen at this time. New technologies involving AI, machine learning, block chains, smart boards, handheld computing devices, adaptive computer testing for student development, and other sorts of educational software and hardware won't just change what students learn within the classroom but how they learn, and thus these areas and beyond would require extensive research both on the technological also as educational fronts.

KEYWORDS: ICT, National, Education, Policy, 2020, technology, computing

INTRODUCTION

According to NEP 2020, an autonomous body, the National Educational Technology Forum (NETF), are going to be created to supply a platform for the free exchange of ideas on the utilization of technology to reinforce learning, assessment, planning, administration, and so on, both for college and better education. The aim of the NETF are going to be to facilitate deciding on the induction, deployment, and use of technology, by providing to the leadership of education institutions, State and Central governments, and other stakeholders, the newest knowledge and research also because the opportunity to consult and share best practices. The NETF will have the subsequent functions:

1. provide independent evidence-based advice to Central and government agencies on technology-based interventions;

2. build proper infrastructure in educational technology;

3. envision strategic thrust areas during this domain; and

4. articulate new directions for research and innovation.

The thrust of technological interventions are going to be for the needs 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 associated with admissions, attendance, assessments, etc. an upscale sort of educational software, for all the above purposes, are going to be developed and made available for college kids and teachers in the least levels. Teaching-learning e-content will still be developed by all States altogether regional languages, also as by the NCERT, CIET, CBSE, NIOS, and other bodies/institutions, and can be uploaded onto the DIKSHA platform. Particular attention will got to be paid to emerging disruptive technologies which will necessarily transform the education system. one among the permanent tasks of the NETF are going to be to categorize emergent technologies supported their potential and estimated timeframe for disruption, and to periodically present this analysis to MHRD. supported these inputs, MHRD will formally identify those technologies whose emergence demands responses from the education system.[1,2]

Given the emergence of digital technologies and therefore the emerging importance of leveraging technology for teaching-learning in the least levels from school to education, this Policy recommends the subsequent key initiatives:

A. Pilot studies for online education: Appropriate agencies, like the NETF, CIET, NIOS, IGNOU, IITs, NITs, etc. will be identified to conduct a series of pilot studies, to evaluate the benefits of integrating education with online education.

B. Digital infrastructure: 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 like SWAYAM, DIKSHA, are going to be extended to supply teachers with a structured, user-friendly, rich set of assistive tools for monitoring progress of learners.

D. Content creation, digital repository, and dissemination: A digital repository of content including creation of coursework, Learning Games & Simulations, Augmented Reality and computer game are going to be developed. A reliable backup mechanism for disseminating e-content to students are going to be provided.

E. Addressing the digital divide: A special focus on content in all Indian languages will be emphasized and required; digital content will need to reach the teachers and students in their medium of instruction as far as possible.

F. Virtual Labs: Existing e-learning platforms like DIKSHA, SWAYAM and SWAYAMPRABHA also will be leveraged for creating virtual labs in order 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 the way to become high-quality online content creators themselves using online teaching platforms and tools.

H. Online assessment and examinations: Appropriate bodies, like the proposed National Assessment Centre or PARAKH, School Boards, NTA, and other identified bodies will design and implement assessment frameworks. They will also design required competencies, portfolio, rubrics, standardized assessments, and assessment analytics.

I. Blended models of learning: For implementing digital learning in education, the importance of face-to-face in-person learning is fully recognized. Accordingly, different effective models of blended learning are going to be identified for appropriate replication for various subjects[3,4]

DISCUSSION

Futuristic Approach Towards Education

The NEP aims to increase the Gross Enrolment Ratio in higher education including vocational education from 26.3% (2018) to 50% by 2035.This is likely to increase the admissions in colleges and hence increase work for the faculty members in terms of admissions, fees collection, teaching, exam evaluation and several other tasks.

Autonomy In Institutes

The NEP 2020 encourages the colleges to become autonomous. An autonomous college is required to carry out college activities independently beginning from curriculum, to teaching methods and conducting exams. These colleges have to process a large number of student data and reports from over several years. This data is confidential and very important for the colleges, hence should be handled with high security. The institutes should be able to store and retrieve it at any time required. This gives rise to the need for a software solution which can handle and compile all these tasks and processes of the institute.

Further, several institutes are applying for accreditation as it has been made compulsory by the government for the colleges to get accredited by the year 2022. The accreditation process requires handling large amounts of data and generating reports as per the requirements. Further, for the colleges to get accreditation, they must offer the highest quality of education as per the education policy along with maintaining the technology infrastructure and innovation in the institutes. The institutes will look forward to offering distance education to the students. Hence, managing complex procedures and innovations in ways of teaching require a high quality ICT infrastructure in the colleges to manage, and store the data in most efficient ways.

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"All assessment systems shall also be decided by the HEI, including those that lead to final certification. The Choice Based Credit System (CBCS) will be revised for instilling innovation and flexibility" - NEP 2020

NEP 2020 Requirements

Many institutes are likely to implement the blended learning methods which involve a combination of classroom teaching with online lectures. Also, the introduction of a Academic Bank of Credits in the NEP 2020 has given rise to collaborative working among the colleges and universities to offer courses from different institutes to the students and thus manage their credits accordingly. Hence, the futuristic way of education focuses on major integration of technology in education.[5,6]

"Through a suitable system of graded accreditation and graded autonomy, and in a phased manner, over a period of 15 years, all HEIs in India will aim to become independent self governing institutions pursuing innovation and excellence" - NEP 2020

As per the NEP 2020, technology in education shall be given major emphasis. It involves several disruptive technologies which are likely to bring major changes in the ways of teaching and learning in the institutes. The vision for NEP 2020 is "Technology use and Integration" in order to give a pathway for the students to make India a digitally empowered society and knowledge economy around the globe.

Further, the integration of ICT makes education accessible to people in remote areas of the country. It helps the institutes in maintaining the standards of NAAC accreditation. The technology infrastructure has a major focus on eliminating language barriers, streamlining educational management and planning, and increasing access to Divyang students. Hence, several schools are required to plan their upgrades and showcase the minimum infrastructure that is required for the new education system.

If you are a college preparing yourself for the new education policy, here are the infrastructure requirements you must ensure-

1. Research And Implementation Of Disruptive Technology In Higher Education

Disruptive technologies have been used in several industries and the education sector is no exception. Following disruptive technologies have been making major changes in the institutes over the past few years.

Online Learning

Several institutes are adopting distance learning and e-learning which has completely changed the ways of delivering education to the students. It provides access to education for the students in remote areas, unprivileged individuals, disabled students, and others.

Chat-Based Collaboration Platforms

The introduction of a chat-based, video calling application, which gives a provision for screen sharing the presentations or digital boards where the teacher is teaching is gaining large importance among the colleges. It allows people from all over the world to participate in the lectures and gain knowledge.

Competency-Based Education

Every student has a different pace and capacity for learning. Competency-based education gives provision for every student to learn at their own pace.

2. Development Of E-Contents

The development of digital content in the form of presentations or videos, and animated sketches based on one particular topic is an important part of the NEP 2020. The institutes and colleges need to develop strategies to deliver the content to the students in such a way that the students engage with it. To develop such content, the institutes are required to train their teachers on content-ICT-pedagogy integration, which is based on the new pedagogical and curricular structure given in the National Curriculum Framework handbook.

Further, introducing new courses and developing their materials to offer the best possible materials to the students is also an important part of development.[7,8]

3. Constant Capacity To Customize Architecture

There are new updates and courses added by the institute regularly to offer better opportunities to their students. Hence, the college needs to be ready to occupy all the changes in the structures of the website, in the ways of teaching or learning for improving the learning outcomes. Further, the college should have the ability to train the teachers in an efficient way so that same is reflected upon the students.

Further, other requirements of the courses in terms of assignments, practical and equipment required to carry out these projects can also need expansion and up-gradation.

4. Design Online Courses

The switch from traditional teaching methods of pen and paper to online teaching is a major change especially for the students who have been studying in schools and colleges for several years. It is easy to get isolated and feel alone doing a class in the digital form. Several students lose interest and give up on the courses in between. Hence, it is important to create and design the courses in such a way that the students are engaged in them.

The online platforms give the liberty to explain a concept in several different ways such as videos, PPTs, animations, audios, stories, and others. Using the best strategy based on the age group and geography of the students can build their interest and bring them back to attending classes. Further, the students are evaluated using online assessment tools for granting certificates and degrees.

5. Distribution Of Digital Content

The institutes need to be ready for spreading the digital content in such a way that it is accessible to every student in the easiest way possible. The students attend lectures through digital mediums such as mobile applications for video calling. These lectures are recorded by the teachers and the students can access them anytime.

Further, the presentations and concept videos that are created for the students can also be made available in the study materials which are uploaded on the learning management system that is used by the institutes. The institutes can implement a digital library and the students can get access to it using the online portal. Moreover, they can also get access to e-books and PDFs in cases where the students have no access to a library near them. The e-content created should be available to all the students taking formal as well as informal education.

6. Academic Bank Of Credit

It is likely that all the institutes do not have the infrastructure or capital to make the college ready to offer education based on NEP 2020. Hence, the colleges can work in collaboration with each other where the students have the provision to take up different courses from different institutes. The government has also introduced the credit-based system named 'Academic Bank of Credit' (ABC) to allow the transfer of credits from one institute to another as per the courses. The state-level colleges can collaborate and coordinate with each other so that all of them can converge their efforts and offer best practices to the students.[9,10]

RESULTS

The National Policy on Education 1986, as modified in 1992, stressed the need to employ educational technology to improve the quality of education. The policy statement led to two major centrally sponsored schemes, namely, Educational Technology (ET) and Computer Literacy and Studies in Schools (CLASS) paving the way for a more comprehensive centrally sponsored scheme – Information and Communication Technology @ Schools in 2004. Educational technology also found a significant place in another scheme on upgradation of science education. The significant role ICT can play in school education has also been highlighted in the National Curriculum Framework 2005 (NCF) 2005.

Use of ICT for quality improvement also figures in Government of India's flagship programme on education, Sarva Shiksha Abhiyan (SSA). Again, ICT has figured comprehensively in the norm of schooling recommended by the Central Advisory Board of Education (CABE), in its report on Universal Secondary Education, in 2005.

With the convergence of technologies, it has become imperative to take a comprehensive look at all possible information and communication technologies for improving school education in the country. The comprehensive choice of ICT for holistic development of education can be built only on a sound policy. The initiative of ICT Policy in School Education is inspired by the tremendous potential of ICT for enhancing outreach and improving quality of education. This policy endeavours to provide guidelines to assist the States in optimizing the use of ICT in school education within a national policy framework.

The Government must allocate sufficient funds for ODL to procure modern technologies. It can empower institutes in the form of grants, so they are able to provide a seamless learning experience to students. The smart classrooms should be redesigned and lecture theatres be made compatible with online delivery and to make sessions interactive. It should be equipped with recording devices for providing access of these sessions to students later. There is a need to invest on remote labs and virtual labs to impart training to students. In the context of education, it is important that each student, in urban and rural areas, has access to digital hardware, whether in the form of smartphones, computers or tablets, exclusively for their use. As of today, majority of students from under-privileged economic backgrounds have limited or no access to exclusive digital devices/internet/or even electricity. In this direction, UP government has planned to distribute a total of 9.74 lakh tablets and smartphones to eligible students/beneficiaries across the state with an aim is to familiarise them with the latest technology and make them technologically capable. The Punjab government had distributed basic smartphones to students of Class 11th and Class 12th. The government is also providing free digital access to students along with the gadgets, making online education more accessible. There is an urgent to need to ensure internet access to rural and remote areas of the country. The existing infrastructure of panchayats and municipalities can be used. For example, the Uttar Pradesh government has decided to provide free Wi-Fi facility to people in 217 public places of 17 municipal corporations across the state. The online higher education must pair the "right" course content with the "right" formats to capture students' attention. It is also necessary to develop interest among students. It should incorporate group activities and mix course formats, offering both live classes and self-guided, on-demand lessons. The areas for capacity enhancement and skill development of faculty should cover learning videos, e-content, online assessment and examination and discussion form besides integrating the Open Educational Resources with the learning materials. To

limit malpractices in online education, proper surveillance and security are needed. Proper authentication, authorization process should be followed to ensure that the right candidate is appearing for the exam in a secure environment without any malpractices. Since every exam has its own question pattern and marking scheme, it is quite challenging to incorporate all the formats in a single exam builder. The questions should be prepared in a standard format to conduct exam. There should be an introduction of advanced proctored tests for assessment and evaluation for online students.[11]

CONCLUSION

One of the key tenets of the NEP 2020 is the acceptance of ODL as a mainstream delivery mechanism. The transition from traditional to digital learning has been witnessed as a smooth one. With the help of social media and other technologies, students and teachers are able to grasp online education. It is an undeniable fact that ODL will remain an important element of present and future education and training system. ODL has its place, especially for students who could not otherwise attend college and given the health risks. In the upcoming future, ODL is going to be a part of every person's life. It's not just an option anymore but a need. With the help of new technologies, the government needs to reach out to every student and provide them with the necessities of water, shelter, and education. As per the Regulation 22 of the UGC (Open and Distance learning Programmes and Online Programmes) Regulations, the degrees at the undergraduate, the postgraduate and, the post graduate diplomas awarded through ODL or Online mode by Higher Educational Institutions, shall be treated as equivalent to the corresponding degrees and post graduate diplomas offered through conventional mode. The method of ODL provides a more flexible and dynamic environment for the students. It has been noticed that ODL provides a more practical approach to learning, unlike the traditional norm. It has become mandatory for any Higher Educational Institutions to seek NAAC accreditation with minimum score of 3.01 or above for offering ODL and online mode programmes/courses.[13] The concerns regarding quality and standard in ODL have already been addressed. Hence, there is no denying the fact that NEP-2020 has opened a new horizon for ODL and Online education.[12]

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