Transforming Education through Technology: NEP 2020

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Abstract: *Online and Distance Learning (ODL) mode of education is predicted to serve 3 basic nonetheless distinct functions of Equity, growth and Excellence in education to realize our national goal of 'Education for All,' while not compromising on quality of education. Republic of India has emerged as a world leader in ICT (Information and Communication Technology). we have a tendency to area unit moving towards a digital society and data economy through 'Digital Republic of India' campaign. Role of education is significant during this transformation wherever usage and integration of technology in the least levels are going to be of preponderating importance. This paper examines the provisions of technology initiatives adopted by National Education Policy (NEP) 2020 for education sector generally and for ODL mode of education especially. It conjointly discusses its doubtless fall-out effects.*

Keywords: Online Distance Learning (ODL), three E's in Education (Equity, Expansion, Excellence), Technology, National Education Policy (NEP) 2020, info and Communication Technology (ICT)

I. INTRODUCTION

The National Education Policy, 2020, disclosed by the Ministry of Human Resource Development, is revolutionary in each sense. whereas the policy focuses on multiple aspects, together with the requirement for infancy care, comprehensive education and revamping of the present program, associate degree inherent thread that runs through the policy is the interaction of education and technology. Over the last decade, India

Over the last decade, the Republic of India has reworked itself into associate degree 'information intensive society' and there's a growing demand to embrace the usage of technology within the field of education. During this regard, the Policy notes that one amongst the central principles steering the education system are going to be the 'extensive use of technology in teaching and learning, removing language barriers, increasing access similarly as education designing and management'.

In the current 'pandemic circumstances', with virtual learning exchange in-person learning experiences, students and lecturers are compelled to re-imagine standard learning and teaching techniques. Introduction of the Policy at such a important juncture is critical, because it details the vision of education for future generations and can be an illustration tool towards building a 'self-reliant' Republic of India.

Information and Communication Technology may be a prime resource to beat the restrictions in ODL mode of education like remote location of the learners UN agency area unit in massive numbers whereby the establishment should give numerous services to the learners at totally different stages of a student-learning life cycle with restricted human resources on the market. The assorted stages of the student learning life cycle are: one. Admission stage two. Learning stage three. analysis stage four. Certification stage

ODL mode of education needs ICT infrastructure to cater to numerous stages of a student lifecycle. There is a unit following subcomponents of the ICT infrastructure: one. The network of infrastructure two. The computing infrastructure three. The system and application code four. web|the web|the net} Service supplier (ISP) and internet information measure five. the protection infrastructure half-dozen. The policy framework

II. ASPECTS

We have mentioned below a number of the key aspects of the Policy coping with technology.

2.1 Primary Education

The Policy recognises the importance of technology in aiding lecturers, bridging the roadblock between lecturers and students, making digital libraries, popularizing learning similarly as making certain larger access to education (specifically for differently-abled children). It's jointly planned that commitment to writing be introduced at school curriculums as a crucial ability that students should develop. The Policy conjointly notes that technology will be a good tool in facilitating teacher education and encourages the utilization of technology platforms for on-line teacher-training.

2.2 Professional and Better Education

The need to embrace technology in skilled education (legal/health) similarly because the incorporation of technology to expedite the aim of achieving 100 percent acquisition (by introducing quality technology-based choices for adult learning) has conjointly been advocated.

The Policy recognises the importance of technology in addressing numerous social group challenges and seeks to market knowledge base analysis and innovation. For example, teaching establishments ("HEIs") are inspired to line up start-up incubation centers and technology development centers, and a National analysis Foundation is additionally planned to be created to cultivate a culture of analysis. The Policy envisages the institution of the National instructional Technology Forum ("NETF"), that shall operate as a platform for free of charge exchange of concepts on the utilization of technology to reinforce learning, assessment designing and administration for college and better

2.3 Administration of Education

The creation of tutorial the Bank of Credit to digitally store academic credits obtained from numerous HEIs to facilitate the grant of degrees supported credits attained over a amount of your time, is additionally a progressive step introduced by the Policy.

An interesting aspect of the Policy is its concentrate on utilizing technology to make sure potency and transparency of restrictive bodies like the State college Standards Authority, the upper Education Commission of Republic of India similarly as its four verticals (National teaching restrictive Council, National enfranchisement Council, teaching Grants Council and therefore the General Education Council).

2.4 Adapting to AI

The Policy recognises challenges arising on account of the widespread use of computer science ("AI") and highlights the requirement to adopt changes occurring on account of exaggerated use of AI across sectors. It tasked the NETF with characteristic and categorizing emerging technologies that supported their 'potential' and 'estimated timeframe for disruption' and to give a periodic analysis similar to the MHRD, UN agency shall then formally establish such technologies that need acceptable responses from the education system. In light of the rising 'disruptive technologies', the Policy is pioneering because it notes the requirement to get awareness similarly to conduct analysis on numerous aspects of the rising troubled technologies, together with considerations concerning knowledge handling and protection.

2.5 Digital India

The Policy imply investment in digital infrastructure, development of on-line teaching platforms and tools, creation of virtual labs and digital repositories, coaching lecturers to become top quality on-line content creators, planning and implementation of on-line assessments, establishing standards for content, technology and pedagogy for on-line teaching-learning. The Policy envisages the creation of a fanatical unit for the aim of fashioning the event of digital infrastructure, digital content and capability building to supervise the e-education desires

2.6 Digital Asian country

The Policy requires investment in digital infrastructure, development of on-line teaching platforms and tools, creation of virtual labs and digital repositories, coaching lecturers to become prime quality on-line content creators, planning and implementation of on-line assessments, establishing standards for content, technology and pedagogy for on-line teaching-learning. The Policy envisages the creation of an avid unit for the aim of fashioning the event of digital infrastructure,

digital content and capability building to supervise the e-education wants of each college and better education.

Technology Initiatives in NEP2020 for Education Sector NEP-2020 talks regarding the transformational role of education for creating Asian country, a digitally driven society and data based mostly economy. whereas education is going to be at the core of this transformation, technology can improve the method of education and its outcome. Thus, usage of technology and its integration into education becomes fully essential. rising technologies like computing, machine learning, AI and automation, web of things, block chain, cloud computing, good boards, hand-held devices, e-proctored exams square measure exponentially increasing and impacting teaching-learning strategies among the room and on the far side of the room. This needs in-depth analysis on each of the fronts. In light-weight of the higher than, NEP-2020 has suggested formation of National instructional Technology Forum (NETF) to facilitate higher cognitive process on induction, readying and usage of applicable technology in instructional establishments by providing evidence-based recommendation to central and authorities agencies. the main target of technological advancements are going to be for enhancements of teaching, learning and analysis methods; coaching of teachers; up instructional access; instructional governance; management, administration, admission, attendance, evaluations, etc. a mess of multilingual instructional computer code are going to be customized, tested and created accessible for college students and lecturers in the slightest degree levels. Tech-enabled education platforms like DIKSHA/SWAYAM are going to be integrated into the education system. troubled technologies like computing, 3D/7D video games are going to be embedded into the education system from time to time once a periodical review by NETF.

Higher Education establishments (HEIs) can prepare basic versions of educational materials and on-line courses in last domains for up-skilling the scholars towards job readiness. It's necessary to emphasize moral problems and legal problems related to computing based mostly technologies and information handling, information protection, etc. alternative technologies impacting our lives square measure renewable energy, conservation, property farming, soil protection, environmental preservation and inexperienced initiatives. These could also be tutored to the scholars.

Technology Initiatives in NEP2020 for ODL Mode of Education: making certain just Use of Technology NEP-2020 drives the purpose to reap the advantages of ODL mode of education whereas addressing the drawbacks. The ODL mode of education ought to adequately address issues of equity. lecturers within the standard education system would require special coaching for on-line teaching, interactions, and online e-proctored examinations. on-line teaching needs to be embedded with experiential and activity based mostly learning to create it wholesome and effective.

III. KEY CONCERNS

Although the Policy has done a stellar job in imbibition technology in 'education', within the Indian context, this conjointly raises bound issues, which require to be thought-about.

As per a government survey conducted for the amount July 2017 to June 2018 and revealed in Gregorian calendar month 2019, in rural Asian country, only 4.4% of households have computers as against 23.4% of urban households and nearly fourteen.9% of rural households have web facility as against 42..0% of urban households. As per identical survey, in rural areas, among persons aged five years and higher, 9.9% were ready to operate a laptop as against thirty two.4% in urban areas, and 13.0% of rural users were ready to use the web as against thirty seven.1% in urban areas. analysis has shown that web penetration in urban areas is higher, however rural penetration is growing at a quicker rate. Even then, access to the web was nearly always through mobile phones in urban and rural areas.

In the context of education, it's necessary that every student, in urban and rural areas, has access to digital hardware, whether or not within the variety of smartphones, computers or tablets, solely for his or her use. As of these days, the majority of scholars from under-privileged economic backgrounds have restricted or no access to exclusive digital devices/ internet/ or perhaps electricity.

While the Policy will note the existence of those limitations and therefore the have to be compelled to eliminate it through conjunct efforts, like the Digital Asian country campaign and therefore the convenience of reasonable computing devices, it's necessary that sensible solutions square measure found around these problems which efforts square measure supplemented with access to alternative amenities like power provide, basic infrastructure also as general awareness on the importance and usage of technology.

The 'human-element' of education cannot be unmarked ANd technology are often used solely as an auxiliary tool to amplify the training expertise. it's conjointly pertinent to assess the manner technology is employed, processed, transferred, hold on and necessary safeguards be inbuilt shield|to guard|to shield|to safeguard} the privacy of the users and protect against information thefts.

NEP-2020 recommends following key initiatives for mixing ODL mode of education with regular or standard education:

1. Pilot studies for on-line education by national agencies for review of results and continuous improvement.
2. Digital infrastructure, that is open, inter-operable, evolvable to be used on multiple platforms to supply multi-point solutions.
3. On-line teaching platforms and tools. SWAYAM/DIKSHA are often extended. Two-way audio-video on-line categories is that the would like of the hour. A digital repository of work content, simulations, games, augmented reality and video games are going to be developed for dissemination and use.
4. Addressing Digital Divide: tv, Radio, Community Radio are going to be deployed for telecasts and broadcasts. Such instructional programmes are going to be created accessible around the clock throughout the year in numerous languages.
5. Virtual Labs: Existing elearning platforms like DIKSHA, SWAYAM, SWAYAMPRABHA are going to be deployed for making virtual labs for sensible and active expertise for college students.
6. Coaching and incentives for teachers: academics are going to be trained so they'll produce top quality on-line content by mistreating on-line teaching platforms and tools.
7. On-line assessment and examination: National Assessment Center can style and implement assessment frameworks. New technologies like e-proctored exams are going to be embraced.
8. Homogenized models of learning: ODL mode of education is going to be appropriately unified into face-to face, head to head learning.
9. Egg laying down standards: NETF and different statutory agencies shall set-up content standards, technology and methodology for on-line teaching learning. NEP-2020 recommends creation of a singular national-level center for building of state-of-the art digital infrastructure, digital instructional content and capability clubbed with effective delivery mechanism to the beneficiaries.

IV. Conclusion

Integration of technology in ODL could be a step within the right direction. NEP-2020 drives technology initiatives within the education sector and within the ODL mode of education especially. Whereas ODL mode of education provides equity and scope for enlargement, plenty must be done towards achieving excellence during this mode of education. A hundred universities as per NIRF Rankings (2020) have already been allowed by UGC to launch ODL mode of education. Post COVID-19 pandemic, a replacement homogenized model of education can emerge, that is important and inevitable. Stakeholders like trade partners, content and book suppliers, education-technology players, aided technology players, ICT infrastructure suppliers have plenty to supply to instructional establishments in terms of analysis & Development (R&D), ecopartnerships, collaborations, MOUs, content creation, delivery mechanisms, proctored examinations, helpful devices and plenty of additional. instructional establishments in turn can profit in terms of quality content creation and its effective delivery by the academics to the scholar beneficiaries. it's imperative to place the technology initiatives and implement identical step by step. Efforts ought to be cooperative. I'm certain it might be a win-win scenario for the stakeholders concerned within the education system.

While the Policy could be a novel and progressive document, acknowledging the priceless role of technology in facilitating learning and teaching, it's essential to develop a coherent arrange of action for fostering technological proficiencies to assist thriving engagement with technology (and its future advancements), whereas providing effective safeguards for knowledge protection and knowledge privacy.

In this regard, ed-tech corporations are unambiguously positioned to help with the execution of varied goals visualized beneath the Policy. It's calculable that by 2022, the K-12 ed-tech market in India is going to be priced at USD one.7 billion, and the post K-12 ed-tech market is going to be priced at USD one.8 billion. The ed-tech corporations will

collaborate with instructional establishments additionally to develop tailored on-line platforms/courses to extend reach among Indian students.

The Policy conjointly presents a big chance for cooperation between the assorted trade stakeholders and restrictive authorities/educational establishments. During this regard, the web and Mobile Association of India has counseled a partnership between the ed-tech trade and therefore the NETF, which is able to facilitate contour analysis and modify the NERF to adopt industry-led best practices.

Overall, the success of the Policy is going to be dependent on the means and mode of its implementation, additionally because the ability to effectively integrate the objectives of the Policy, among existing initiatives and interest of the relevant stakeholders within the effective delivery of the Policy. The Policy is aware that education within the future can involve bigger dematerialisation and digitalization of content. For a until now conservative instructional system of India, this heedfulness is itself an interesting exploit.

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