Online and Digital Education: Ensuring Equitable Use of Technology

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Abstract:
The integration of online and digital education has revolutionized the traditional educational landscape, offering unparalleled opportunities for learning regardless of geographical constraints. However, ensuring equitable access to these technologies remains a paramount concern. This paper examines the challenges and strategies associated with ensuring fair and inclusive utilization of technology in education. It explores the disparities in access to digital resources among different socio-economic groups and geographic locations, highlighting the importance of bridging the digital divide. Furthermore, the paper delves into various approaches and interventions aimed at promoting equitable use of technology in education, such as policy initiatives, infrastructure development, and community engagement. Additionally, it emphasizes the significance of addressing not only access but also digital literacy and skills development to empower all learners. By evaluating these facets, this paper underscores the imperative of fostering an inclusive digital educational ecosystem that caters to diverse learners and promotes equitable opportunities for all.

Keywords: *Online and digital education, Technology*

1. Introduction

In this technology-enabled world, every difficulty is an opportunity to invent/improvise. This pandemic has challenged us to look for different modes of teaching apart from the usual in-person traditional mode. The National Education Policy 2020 recognizes the importance of leveraging technology, while also acknowledging the potential drawbacks at the same time. While implementing NEP is important, it also calls for measures to be taken to mitigate its downsides. We need to optimise the existing digital platforms and ICT-based educational initiatives to meet the current and future challenges in providing quality education for all.

One of the prime challenges is eliminating the digital divide in the country. We need concerted efforts such as the Digital India campaign and the availability of computing devices for that. There is a need to ensure that the use of technology for online and digital education should adequately address the concerns of equity.

For tutors & online educators: Effective and suitable online training modules need to be introduced. A good teacher in a traditional classroom might not be able to teach well in an online classroom. There is a need for change required not just in teaching methods, but also in online assessments. Other than these, there are numerous challenges to conducting online exams such as network and power disruptions. There are few courses like performing arts and science practical that are challenging, but innovative measures can help overcome them. Online education needs to blend with experiential and activity-based learning. Otherwise, it will end up in disseminating screen-based education with a limited focus on social and psychomotor dimensions of learning.

The National Education Policy understands these challenges and leverages technology for teacher learning at different levels, from school to higher education. Here are a few recommended key initiatives under the policy:

2. Key initiatives under NEP-2020

2.1 Pilot Studies
Identify and allot appropriate agencies like CIET, NIOS, IGNOU, IITs, and NITs to conduct pilot studies while evaluating the benefits of integrating education with digitisation and mitigating the downsides. Also, study things such as student device addiction, the most preferred format of e-content, etc. The results of pilot studies need to be communicated publically and used for continuous improvement.

2.2 Evolvable Digital Infrastructure
Invest in creating an open, interoperable public digital infrastructure that can be used by multiple platforms and provides solutions to diversity, complexity, and device availability issues in India. An evolvable digital infrastructure will ensure that the technology-based solution does not become outdated with the rapid advancements.

2.3 Platforms & Tools
Existing platforms like SWAYAM and Diksha provide online tutor structures and user-friendly tools to monitor the learners' progress. A two-way audio/video tool is necessary for an online class, which has become an important requirement during this pandemic.

2.4 Digital Repository
Development of a digital repository of content will include creating coursework, learning games, simulations, augmented reality, and virtual reality. Gamification apps for fun-based learning in multiple languages with clear operating instructions to be created. Furthermore, a reliable backup mechanism for disseminating e-content to be provided to the learners.

2.5 Understanding and Addressing the Digital Divide
A substantial segment of the population has limited digital access. For this segment, the existing mass media, such as television, radio, etc., needs to be amplified. Educational programs to be made available 24/7 in different languages to cater to the varying needs of the student population. Digital content needs to reach the teachers and students in their preferred medium of instruction as far as possible.

2.6 Virtual Labs
To address the concern of teaching practical subjects, the existing platforms SWAYAM, Diksha, and SWAYAMPRABHA can be leveraged as virtual labs, which will give access to quality practical, hands-on, and experiment-based learning experiences.

2.7 Training Tutors
Rigorous training is to be done for teachers to become high-quality online content creators using online teaching platforms and tools.

2.8 Online Assessments
A set of appointed bodies like the National Assessment Centre or PARAKH, school boards, NTA, etc., will design and implement assessment frameworks to encompass design standardised assignments and assignment analytics.

2.9 Establishing standards
With the emergence of online/digital education, NETF and other appointed bodies will set up content, technology, and teaching conduct for online learning. These standards will help in formulating

guidelines of e-learning for state boards, schools, HEIs, etc.

3. Conclusion

Online education is a journey and not a destination, and to orchestrate this journey, a dedicated unit in the Ministry is appointed. This unit will ensure the building of online infrastructure, digital content, and capacity building. This dedicated unit will look after creating world-class digital infrastructure, educational digital content, and the capacity to look after the e-education needs of both school and higher education. With technology growing so rapidly, a vibrant ecosystem has to be encouraged to create solutions that solve India's challenges of scale, diversity, equity, and evolve in keeping with the rapid changes in technology.

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