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# Bridging the Digital Divide: Ensuring Equity in Access to Online Learning Platforms under NEP 2020

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**Abstract**

The growing use of online learning platforms has transformed education by enabling access to learning resources anytime and anywhere. However, this shift to digital learning has also revealed considerable inequalities, which are generally known as the "digital divide"; the gap between people who have access to digital technology and internet connectivity, and those who do not. This disparity is caused due to factors which include varying socioeconomic backgrounds, infrastructural disparities, geographical locations and different degrees of digital literacy, affecting marginalized groups. With the growing integration of online learning in education, millions of learners from disadvantaged backgrounds struggle to get the resources they need to succeed academically and professionally. Among the key barriers are - poor internet infrastructure, expensive devices, high data plans, and a lack of training in digital skills for both teachers and learners. These challenges lead to limited participation in online learning, lower academic achievement and limited access to a variety of educational tools and platforms. To this note, this paper tries to explore strategies to promote equity in online education and reduce the digital divide and its impact on learners, particularly in underserved and marginalized communities. The paper also assesses the role of governments, non-governmental organizations, and private sector initiatives in addressing these gaps through policy interventions, community-based solutions, and innovative technologies like mobile learning and offline content delivery. Furthermore, it delves into the intersection of equity and inclusion, emphasizing the need for culturally relevant and linguistically inclusive online learning platforms. The paper uses a comprehensive review methodology to analyse the existing literature related to online learning platforms contributing to reduce the digital divide. The findings aim to inform educators, policymakers, and other stakeholders in crafting strategies that uphold education as a universal right in this digital era.

***Keywords:*** *Digital Divide, Equity in Access, Online Learning Platforms, Learners, NEP 2020*

**"Technology is best when it brings people together."**

- Matt Mullenweg

## Backdrop

The term digital divide entered into the public discourse and became very popular in the last few years of the 1990s (van Dijk, 2000). It is defined as the gap dividing those who have access to computers, ICTs and internet, and those who do not have such access (NTIA, 1999). So, this digital divide brings a form of technological inequality separating the "haves" from the "have nots". In the early 21st century, some theorists re-examined the term digital divide in an attempt to describe difference in digital literacy among people of different ages or different generations (Prensky, 2001; Waycott et al., 2010). Also, there are young people, the so-called techno-natives who are born in the era of digital technology such as, contemporary learners who seem to

have been adopted to the digital world (Selwyn, 2009), and on the other hand, there are the techno immigrants, older generations, which include such as, in-service teachers who find it difficult to integrate their activities into the new social context (Bristow, 2009; Thinyane, 2010).

The digital divide has multiple connotations in varied contexts. When initially employed on determinism of an element or component of technology, it led towards technological determinism. The technological determinist focuses on technology-led theory of social change (Smith & Marx, 1996). While, the Organization for Economic Cooperation and Development OECD (2001) explored the digital divide as a distinction between individuals, companies and regions related to the access and usage of information and communication technologies (ICTs). Thus, digital divide, in this context, refers to the unequal distribution of ICT between and within nations. Additionally, different forms of ICT implementation create a significant inequality with reference to the level of usage and applications of these ICT tools which has enhanced this so called 'digital divide'. Furthermore, different international organisations have attempted to quantify the digital divide in terms of e-indices, which helps to measure the gap created by uneven access and distribution of ICT such as Information Society Index (ISI), World Economic Forum Networked Readiness Index (NRI), international telecommunication unions' Digital Access Index (DAI), and so on.

**Factors affecting digital divide**

Most of the studies inquire into the determinants of the digital divide among countries and individuals within countries. Singh (2004) conducted a study on determinants of internet use in Canada. The results indicated that the factors such as, age group between the individuals of 15–34 and 35–54 years old, family income, educational level, and family of single parents with children have positive impact pertaining to internet access. The digital divide is not restricted to access to the technical infrastructure, but also to the social infrastructure which includes socio-demographic factors such as income, age, gender, race, ethnicity, education, and location, that supports ICT (Rooksby, Weckert & Lucas, 2002). Similarly, Cerno and Amaral (2006) used a model to correct the selection bias to estimate determinants of internet demand in Spain and found that income has a positive impact and age has a negative impact for the digital divide. With respect to the sociological and economic perspectives, a number of studies related to theories have been applied to understand the digital divide (Van Dijk and Hacker, 2003). Such as the diffusion of innovation theory, the knowledge gap hypothesis, and public-private spheres. Based on the diffusion theory, as innovative forms of technology, popularity and personal resources of the adopters increase that the innovation is adopted creating digital divide among individuals. Montagnier and Wirthmann (2010) examined digital divide among households and individuals by analysing ICT usage patterns in European countries, Korea and Canada and showed inequalities in computer and internet access as a result of socioeconomic characteristics through regression and multi-linear regression models. Furthermore, income, age, occupation, presence of children in the household, and urban living are the most important factors for internet access. The intensity of internet utilization is influenced by education, student and income. Wirthmann (2010) studied on individual-level databases to verify differences among individuals concerning to access and use of ICT, providing valuable information for the application of measures on the policy level. A number of studies hold up this idea by considering the taxonomy of the institution which has influence over the Govt. policies, regulation and market mechanism of ICTs (Chowdary, 2002; Lim, 2002; Meng & Li, 2002; Wong, 2002; McSorley, 2003; Roseman, 2003; Selwyn, 2003; Sharma & Gupta, 2003, etc.). In addition to this, the digital divide acts as a sequence of disparity along multifaceted dimensions, both at the regional (Beynon-Davies & Hill, 2007) and global levels (Corrocher&Ordanini, 2002; Bagchi, 2005; Hanafizadeh, Saghaei&Hanafizadeh 2009; Emrouznejad, Cabanda and Gholami, 2010).

**Online Learning Platforms**

Online learning can be described as a process for making the teaching-learning more student-centered, flexible and innovative. Online learning can be referred as "learning experiences in synchronous or asynchronous environments using various devices (e.g., mobile phones, laptop, and computers) with internet access." offering students anytime and anywhere access to learn and engage with teachers and other students (Singh & Thurman, 2019). Online learning platforms, or e-learning platforms, are basically the digital spaces wherein students can have access to digital learning materials via internet. Such lessons can be

recorded or programmed live, and they are useful for both group and individual study. Smirnova (2019) defined the "educational online platform" as a software system that allows users of different levels of skills to access educational information (such as MOOCs, text, audio, video recordings, live lecture broadcasts, exams, and so on) via a website interface. Online learning platforms have transformed the educational sector by providing flexible and accessible learning options to a worldwide audience. Platforms such as Coursera, edX, and Khan Academy offer a wide range of courses, from basic skills to advanced professional certifications. Coursera collaborates with premier universities to offer specialized courses, allowing learners to up skill without geographical boundaries (Dhawan, 2020).

**Online Learning Platforms: Some Examples**

There are different kinds of online learning platforms such as Moodle, Coursera, edX, Sakai, NEO LMS, Khan Academy, A Tutor, Blackboard, Udemy, SkillShare, FutureLearn, and so on.

"Moodle" is a free open-source distance learning system, which creates new module for the online platform. Module and resources are present in more than one hundred languages. These modules can be freely downloaded from the internet. This system, which is accessible globally, can be adapted to meet specific needs of students, groups, or teachers, enhancing learning opportunities. The modules are developed immediately for the practical purpose, and can be combined easily with other platforms such as creating presentations or watching webinars, emphasizing its convenience to use. Additionally, the platform allows users to track their study time, frequency of platform visits, and test mistakes (Chung & Ackerman, 2015).

"Sakai" is an open-source platform with usability, flexibility, and compatibility with Web 2.0 tools. It features a design tool for training and an electronic portfolio. Also, it has over 20 languages, offers a personal area for drafting and journaling, and allows synchronous and asynchronous interaction (Kasim & Khalid, 2016).

"Blackboard" is a licensed platform that supports students, teachers, and universities, with a complex and expensive setup, offering numerous tools and services, requiring annual license renewal (Kasim & Khalid, 2016).

"DIKSHA" launched by NCERT and MHRD, is a digital platform, to enhance Indian schooling. It provides e-books, assessment tools, and a variety of interactive content in 32 languages. "One Nation, One Digital Platform" is a title given to DIKSHA, which is an open-source initiative, mentioned as a key component of NEP 2020. With approximately 168 million course enrollments and 137 million course completions, it was widely used during the COVID-19 epidemic. The platform was developed to be flexible and evolving, offering a range of solutions that are designed to satisfy the needs of different states and UTs. The website is easily navigable for diverse people with disability, contributing to an inclusive learning environment, providing implications for teachers, administrators, and policymakers for inclusive learning practices. (Kar, 2023; Madala & Pradhan, 2024).Another excellent digital learning platform in India is "Unacademy", one of the best apps for competitive examinations. The Unacademy provides classes for the UPSC, JEE, NEET, SSC, and Bank exams. With regular live lectures, practice and review, and live mock examinations, the app supports in the comprehension of subjects. Although Unacademy offers a small selection of free courses, it is also a paid service (Kaur, 2023).

The Indian government has launched the "SWAYAM" programme to achieve three key Education Policy ideologies: equity, quality, and access. The program aims to provide maximum teaching and learning resources to all learners, using an IT platform to host courses from Class 9th to post-graduation. These courses are prepared by the best teachers in India and are available to everyone, with over 1,000 faculties and teachers participating (Aslam & Sonkar, 2019).

Similarly, with approximately twenty-three million users, "Coursera" is a digital learning platform committed to providing the best online training programmes to individuals worldwide. Through partnerships with top universities and companies, it provides students with the opportunity to get certificates from trusted institutions after the successful completion of the paid online courses. For individual lessons, advanced courses, and degree programmes, Coursera offers video lecture, peer-reviewed assignments, homework activities, online tutorials, assessment activities and group discussion forums (Kaur, 2023).

**Importance of Online Learning Platforms**

Several studies undertaken in this field highlight that online learning platforms serve a great means for education system as a whole. Liu et al. (2020) emphasized the importance of online learning platforms in the modern education. They took consultation from teachers and students who use online platforms for learning so as to clarify its potential on academic performances. Further the study found significant improvements in the achievements of students earlier with unsatisfactory results through the help of distance learning system and online platforms which made education more accessible and convenient.

In another study, Abuhassna et al. (2020) explored and investigated potential factors influencing students' achievement and satisfaction in using online learning platforms. This study examines students' academic achievements on online platforms using Bloom's theory, focusing on understanding, remembering, applying, and analyzing components. The empirical findings strongly supported the theories in relation to using online learning platforms with improving students' satisfaction and academic performances which will help the planners and decision makers in universities, higher education, and colleges to plan, assess and implement online learning platforms in their institutions.

Furthermore, Rabe-Hemp, Woollen & Humiston (2009) conducted a comparative study on engagement, learning and satisfaction of students in lecture hall and online learning settings. The study found, in addition to participating more actively in class discussions and demonstrating more reflective learning behaviours, students in the online course devoting more time to individual study. Students in the traditional lecture hall, in contrast, reported working more collaboratively with their peers during class.

**Challenges of Online Learning Platforms**

An analysis on Turkish universities' online learning platforms found that emerging technologies like Augmented Reality and Virtual Reality have transformative potential in online education. These technologies enhance instructor control, create interactive environments, and enable students to apply theoretical concepts, making digital education more engaging and effective. While online education programs offer advantages, they also face challenges such as limited instructor control, monotony, and lack of experiential learning (Yılmaz & Erol, 2019).

Apparently, there seems numerous significant obstacles to online teaching and learning such as technological, teachers' attitude, pedagogical and classroom management barrier, including limited internet connectivity, struggle with online resources, and time needed to access technology (Yeh & Tsai, 2022).

Nawrot & Doucet (2014) conducted a study on time management on online learning platforms. The study explores the high dropout rate (90%) in Massive Open Online Courses (MOOCs), which aim to provide free learning materials and support educational research. The primary reason for this is poor time management. In this paper, the authors suggest that MOOC platforms should offer tools to optimize time usage and develop metacognitive skills for effective learning management. Addressing this issue is crucial for MOOC providers' sustainability and long-term growth.

Numerous students encounter significant challenges as a consequence of inadequate digital devices and unreliable internet connectivity, which restrict their ability to actively participate in online learning. This problem is made worse in rural regions, where learners may become frustrated when attempting to access learning materials due to slow internet connections. Furthermore, during the shift to massive distance education, some students have limited or no access to electric power, which further restricts their studying prospects (Muthuprasad et al., 2021; Almanthari et al., 2020).

## Possibilities and Solutions: Equity in Access to Online Learning Platforms for reducing the Digital Divide

### Infrastructural Development

Besides everything discussed so far, an effective infrastructural support is crucial to reduce the digital divide. Especially in rural areas, governments and private organisations should invest in expanding broadband networks. For example, India's BharatNet Project aims to connect over 250,000 Gram Panchayats (Village Councils) with high-speed internet. Similarly, initiatives like Starlink's satellite internet services provide connectivity to hard-to-reach locations (Musk, 2020).

### Making the Technology Affordable

Subsidizing the real cost of products like computers, laptops, tablets, and smart phones can help low-income populations to gain access. Governments can work with tech companies to produce inexpensive equipment. For example, the One Laptop per Child (OLPC) project has distributed low-cost laptop computers to children in underdeveloped nations (Kraemer et al., 2009).

### Public Wi-Fi and Community Centres

For bridging the accessibility gap, community centres, educational institutions, and libraries can provide free or low-cost public Wi-Fi. The establishment of digital hubs in schools of Kenya, includes the government's Digital Literacy Programme (DLP) (Werimo & Muthee, 2022).

### Digital Literacy Programmes

Promotion of digital literacy through formal and informal educational programs plays an important role. India's Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA) aims to make 60 million rural residents digitally literate (Government of India, 2021). These programs should focus on teaching fundamental computer operations, internet safety, and information verification.

### Content in Local Languages

To ensure inclusivity, developing online content in multiple languages is crucial. Different platforms like Google, Moodle, DIKSHA, and Wikipedia initiated content translation projects to support indigenous languages. Additionally, for offering educational contents in different regional languages, government of India launched e- Pathshala (NCERT, 2020).

### Gender-Inclusive Policies

For reducing the digital divide, promoting gender equity through different programmes like "Connected Women Initiative", empower women through mobile internet access and online skills training (GSMA, 2020). Addressing socio-cultural barriers preventing women from accessing digital technology is essential.

### Public-Private Partnerships

For enhancing resource distribution and funding, collaborative efforts between governments, private companies, and NGOs should be undertaken. Country like United States provides partnership to extend broadband access to underserved localities through the "Microsoft Airband Initiative" (Smith, 2019).

## Conclusion

Achieving digital equity is crucial for socio-economic growth and ensuring that no one is left behind in this digital age in our country. The digital divide manifests is apparently evident in multiple manifestations, including infrastructural disparities, unequal skill levels among individuals, digital accessibility, and so on. Bridging this divide is crucial for achieving social equity, educational inclusion, and economic growth, which requires a multidimensional approach involving various factors such as, infrastructural development, making technology affordable for everyone, promoting digital literacy, and implementing inclusive policies for everyone. In addition, a collective effort on the part of every stakeholder is an essential prerequisite. Addressing the underlying causes and implementing effective solutions, societies can close the gap and enhances inclusive development.

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