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Digital Access and Digital Divide in Education: An Analysis and Overview in the Context of India

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ABSTRACT: -

Education has always been a necessity for overall socio-economic development. Standing in the 21st century and the era of globalization, a lot has changed; there have been massive technological advancements to make our lives easier, and education is no exception. The digital revolution and Digital integration have largely shaped today's education system, making the teaching-learning process highly innovative and accessible. Since 2015, India has developed the idea of Digital India, intending to emerge as a smart power. However, it is debatable whether every segment of society can have equal access to such digital platforms or devices. Moreover, the existence of the digital divide remains a persistent concern regarding unequal participation in the digital revolution, particularly among marginalized communities and low-income groups, which often creates disparities and widens the learning gap.

In this regard, the paper aims to explore the concept of Digital equity in the context of education and analyse the reasons behind unequal access to digital technologies. The findings of the study shall emphasize that achieving equality in digital access is indispensable for ensuring inclusive and quality education for all.

Keywords- Digital Access, Digital Divide, Equity, Education Policy, Marginalised Groups.

Introduction

India, as a country, has been immersed in the traditional education structure from the beginning. Similar to the diversification of culture, language, and customs, the country also adopts a heterogeneous education system based on the model of examination (Ramaswamy, 2014). The structure tries to focus on the efficacy and prodigy of both the institutions and the young minds. But with the evolution of time and with the advent of globalization, things started becoming digitalized. The rapid innovations of new technologies and techniques revolve around every space and have changed the meaning of life. Among all perspectives, education is a necessity and is considered a basic condition for living.

Long back, education was gendered in the Indian Subcontinent. Within the traditional Hindu culture, the knowledge of Vedas and Shastras was restricted to men and often led to the emergence of male chauvinistic ideas. Although the dynamic nature of time resulted in the upliftment of the human race, which made society realize the importance and contribution of all, irrespective of sex and gender. Hence, with the emergence of India's independence, the constitution focuses on the primary basis of providing education to every stratum of society.

With the rise in the concept of digitalization shift has taken place towards the advancement of science and technology; hence, a paradigm of progress. Yet, simultaneously, it has been noticed that somewhere it is bridging the gap from above, but has failed to reach deep inside the process. As John Stuart Mill propounded, seeking pleasure needs to be both quantitative and qualitative, and only focusing on the quantity would not define the essence; similarly, introducing new techniques needs to reach the quality of education. The art of quality education is diminishing, and data reveals that the Research and Development sector is teetering on questioning (Jornitz and Engel, 2021). Studies have shown that India, with the urge to extend and rise as a smart power, is indeed contributing to the development, but at the same time, it is lagging in its accessibility to its heterogeneous population. Despite technological advancements, there lies a disparity between the people living in urban and rural areas and among various communities, where their existence and presence remain ambiguous (Bagchi, 2010). At present, commercialization has become the foundation of every aspect. Economically, socially, and culturally, society is constructed based on the model of investment and making profits (Clemens and Biswas, 2019). Hence, the locus should be based on the upliftment and exploration of education for the overall population by bringing equity and bridging the digital divides. Constructing and developing new ideas and phenomena should reach the broader arena because economic expansion and financial growth from a certain concentrated population would not lead to actual development. India, with its aim of emerging as a developed nation, should focus on the gaps or apertures that are limiting the country within the framework of a developing nation.

Digital Equity and Its Implications

The emergence of new social movements has led to the beginning of digital transformation, with the initiative of introducing the country as 'technologically competent' in every aspect of the societal framework and the pursuit of modernity. Adopting such a culture has become convenient for this generation, but a little difficult to process within the existing traditional social structure. In India, the education system is structured and follows certain patterns, but is also adaptable from time to time. The most essential factor for digitalization is the implementation of proper skills among the youths who are constructing and carrying forward their innovations within the digital society. In India, it was since 2015 government has taken the initiative to make rapid progress through digitalisation. Hence, various initiatives have been implemented where the government can directly connect to its citizens through technological innovations. The use of internet connections has definitely increased over the years, with people from both urban and rural sectors gaining access to various facilities and digital platforms. By promoting technological upgradation and economic development, the strategy has minimized the disparities that existed among marginalized communities and tribal groups and enhanced digital connectivity (Adcock, 2014). The idea of boosting e-commerce, introducing various apps relating to transport, food business, and hospitality has widened the arena and has made the reach accessible. The boom in social media has created opportunities for showcasing creativity and new innovative ideas, but at the same time, it has also resulted in a matter of concern due to its detrimental uses.

Focusing on educational transformation highlights the innovations, more accessibility, and fuels the learning process, which impacts positively, but at the same time is associated with various factors like costs involved, demand in the market, and most importantly, the quality and efficacy of the system. This new technology supports new innovative ideas of students and helps them to self-organize. In India, the New Education Policy prioritizes the engagement of the new generation irrespective of their sex and gender, but focuses more on their ability and efficiency in upgrading digitalization and enhancing gender equality. In contemporary times, the engagement is often presented with the hope of employment because India has surpassed China and is now the largest populous country in the world. Hence, it is necessary to provide proper training and equip professionals with the skills to handle the system and make the structure efficient.

Factors Influencing the Digital Divide

In the present increasingly advanced digital world, access to information and communication technology (ICT) is no longer a luxury but a necessity—especially in education. India, as an emerging smart power, has taken a massive leap in digital transformation in various sectors, including education. One novel step in this regard has been the Initiative of Digital India in the year 2015 to make India a leading power in digital revolution and knowledge hub. The Indian Government has introduced various online digital initiatives in education to make the teaching-learning process highly innovative and personalized. However, with the advancement in digital technology, there have also been rising inequalities (digital divide) in accessing digital devices and reaping desired benefits. In education, the term Digital Divide essentially means the lack of equal opportunity to access Digital tools, internet connectivity and digital literacy among students, teachers and educational institutions.

The crisis and question of digital divide was very much apparent during the infamous COVID-19 pandemic, when, in order to contain the overspreading of the virus, all educational institutions transitioned to online learning. This pandemic actually brought the issue to the forefront, as students belonging to underprivileged sections were unable to own digital devices and lacked internet or reliable internet connectivity, thus pushing them into significant distress to catch up with the new concept of digital learning, therefore highlighting how technology access is deeply or inextricably linked to socio-economic and geographic inequalities. This digital divide manifests in various interrelated ways, including disparities in owning digital devices, accessing high-speed internet, and possessing the adequate skills (know-how) to use technology for learning.

1.Socio-Economic Factor

Socio-economic factor is one of the major determinants influencing the digital gap and disparities in education. In a country like India, which is already plagued by persistent socio-economic inequality, the issue of digital divide further widens the gap of persisting disparity with the rising technological world. A three-judge panel of the Supreme Court of India in 2021, consisting of Justices D.Y. Chandrachud, Vikram Nath, and B.V. Nagarathna, warned that the digital divide would undermine every impoverished child's basic right to an education. Not only is it impoverished, but also the isolated and challenging-to-reach regions have continued to be disconnected from the internet. In India, the access to digital devices is highly shaped by the socio-economic status of a family, as often people falling below the poverty line and low-income groups often lack adequate resources to purchase digital tools like laptops, tablets, even smartphones, and other necessary tools, thereby creating a digital divide in par with those who are already at a socially and economically advantageous position. Further, much educational content digitally available is mostly in English or Hindi, which may not be the first language for many children in socially and economically marginalized communities. This barrier in language therefore contributes to another set of exclusions for those already struggling with minimum or no resources to access necessary digital tools and platforms.

According to Oxfam's assessment of the digital divide in India, one of the significant reasons for the issue is economic inequality. The gap between the wealthy and the impoverished is reflected in economic inequality that already exists in our country, and therefore economic privilege highly shapes the major question of ownership and equal access to digital platforms, and hence it remains a major impediment for economically disadvantaged sections to have equal opportunity to access and avail themselves of tools and resources. The survey also points out that while 67% of Indians living in cities use the internet, only 31% of people in rural areas utilize the internet.

2. Digital Illiteracy

Digital illiteracy in India refers to the inability to use computers, other digital devices, and the internet effectively. The lack of proper awareness and knowledge regarding the use of digital devices results in minimal outcomes. However, the question and concern lie not in the point of accessibility—

those who have and those who have not—nor it is the question of possession. It concerns the development of knowers, know-nots, doers, and do-nots; those who are able to communicate with the outside world and those who are unable to. Although India has made remarkable achievements in internet penetration and digital transformation in several sectors, including education, a considerable number of the population, especially in rural areas, remain digitally illiterate, thus limiting their genuine right and ability to access digital devices and online digital programs. Educational portals and apps launched by governments at the national and state levels provide a lot of digital learning content, but those students lacking digital literacy are severely excluded from availing themselves of these resources.

Despite having digital tools and devices up front, the inability to use them results in inadequate utilization of digital platforms, further resulting in low educational outcomes and a digital divide on par with those who are digitally literate to use and utilize the digital tools and devices in accessing required resources. This disparity creates a digital divide impacting various aspects of educational attainment. Digital literacy remains higher in urban areas at 61%, while rural areas lag behind at just 25% digital literacy—thus revealing the contrasting gap and divide between urban and rural. At just 21%, Scheduled Tribes have the lowest household-level digital literacy.

3. Digital Infrastructure

Digital infrastructure forms the basic foundation for any successful digital education system. It constitutes reliable electricity, high-speed and reliable internet connectivity, adequate digital devices, and institutional ICT support (like smart classrooms or computer labs). In India, the absence and inadequacy of such infrastructure, especially in rural and underdeveloped regions, significantly contributes to the digital divide in education. The lack of Internet access severely jeopardizes the very mission of transition to make digital learning accessible. A major rural and backward region in India often grapples with poor, intermittent, or no internet at all. While urban areas are well and truly connected with fast and reliable internet connections, placing them in an advantageous position compared to rural areas. These regional disparities (urban-rural gap) in seamless access to reliable internet create a digital divide, often hindering access to online digital resources.

The issue is further highlighted in the Oxfam Inequality Report 2022 on Digital Divide in India, which states that a higher percentage of students in urban areas of India have access to a computer with internet (21 percent) than in rural areas (4 percent). In a similar vein, metropolitan India had far better access to the internet via any device (44%) compared to rural India (17%), which exacerbated the ongoing digital divide.

Moreover, the Ministry of Education's UIDSE report for 2023-24 reveals that while many schools are equipped with basic facilities like electricity and toilets, digital infrastructure like functional computers and internet access remains limited.

4. Gender Inequality

One of the main causes of the educational digital divide is gender inequality. In India, this inequality is significant, where females face more systemic barriers and discrimination than males in accessing digital devices, ownership of digital tools, and digital skills. In male-dominated (patriarchal) societies like India, long-standing gendered social conventions and traditional beliefs frequently prevent and impact women and girls from having equal access to technology, particularly those from marginalized, underprivileged, and resource-poor backgrounds. The Mobile Gender Gap Report 2019 highlights that only about 35% of Indian women are active mobile internet users, and also women are 56% less likely than men to utilize mobile internet.

Also, some reports further highlight that while 43% of Indian men own a mobile phone, women's ownership of mobile phones stands at just 28%. The situation is made worse by the innate patriarchal mindset and long-standing traditional societal norms that prohibit women's access to public areas, including community internet centers, co-ed schools, and training facilities. Many believe that women and girls are at risk from the Internet and new digital gadgets, and that the current social order may be threatened. Furthermore, most women and girls' access to gadgets and the internet is often controlled or restricted by male gatekeepers in their families and communities; this discrepancy is especially noticeable in rural and underdeveloped areas.

Conclusion

The legacy of 200 years of colonization paved the way for Western-style education within the country. Before that, India had no idea about the education system of the West, and initially, the country adopted Western education to drive significant reforms and modernization within the country. With the emergence of globalization in every arena, massive efforts have been directed towards the process of digital integration in all sectors, including education. The digital integration in education has brought about considerable changes in the teaching-learning process to making it highly accessible and innovative. However, various factors rooted in socio-economic inequality, Digital illiteracy, Gender inequality, and Poor Digital Infrastructure contribute to and influence the digital divide in education.

Although the issue of Digital Divide persists in a structured and unstructured manner, what is relevant is to be responsive to changes and flexible to open and new ideas so that a level playing field can be made, further ensuring digital equity in education. For any kind of upliftment, it is necessary to provide value education, which would result in the betterment of the entire society and nation as a whole.

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