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Chapter 15

Digital Inequities and Digital Inclusion in Education: An Agenda for the Post-COVID-19 World

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ABSTRACT

COVID-19 exposed a wide range of challenges hidden unnoticed in the promise of digital education. Digital education was once promised as the grand equalizer of access and inclusion in education. However, the massive deployment of digital tools in the educational realm during COVID-19 provided significant counterevidence to this promise. If education is a fundamental right and if digital technologies are the only way to gain access to education, it is important that these technologies be made available to everyone for effective use. However, as COVID-19 would demonstrate to us, this has not been the case. There have been stark and widespread inequities in the availability and quality of digital technologies for education, and the need for purposeful efforts to bridge the gap was felt prominently. In the backdrop of COVID-19, this chapter identifies some of the key equity issues and proposes solutions to address them.

INTRODUCTION

The future of the public sphere is digital and successful migration to digital processes and experiences would determine the competitive excellence of enterprises (George & Paul, 2020). The Covid-19 pandemic exposed gaps in our preparations in this regard; it also exposed the shallowness of our optimism

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(Beunoyer, Dupéré, & Guitton, 2020; George & Mahar, 2020). The pandemic also highlights the importance of a scientific understanding of how it impacts society and communicates the same without bits and pieces of information going viral; the inadequacy in this area has led to a ‘digital epidemic’ situation (Chiolero, 2020). While we have no dearth of ideas on how education could respond to the pandemic and beyond, only a few of these ideas are backed by any level of scientific thinking.

Worldwide disruptions caused by Covid-19 underlined the fact that there are stark and widespread digital inequities in the availability and quality of digital technologies (Zawacki-Richter, 2021). When education worldwide had to be converted to online teaching and learning overnight, an urgent need for purposeful efforts to eliminate these inequities and bridge the gaps in digital literacy levels became an obligation for all educational institutions (Burns, 2020). Suppose education is a fundamental right, and digital technologies have become the only way to gain access to education due to disruptions. In that case, it is fundamental that these technologies be made available to all stakeholders, and digital literacy is a priority for effective practices in instruction and learning (Nair & George, 2016). Likewise, a digital repertoire of knowledge accessible for everyone should be a fundamental right (Khatun, George, & Dar, 2021). In the backdrop of the pandemic, and based on the observations and teaching notes of the presenters and student narratives, we will first discuss whether digital education can be leveraged as a tool to challenge the prevailing inequities in every other spectrum of digital engagements in society; then, address some of the key issues related to digital inequities and its impact on education such as awareness, access, availability, quality, urban and rural areas, and finally, address the strategies to improve digital inclusion.

DIVIDES AND WAYS TO BRIDGE THEM: A FRAMEWORK

Digital equity is “the” precondition for a just society in our times. The digital divide is an enemy of peace and manifests in economic, social, and cultural divides (Vishkaie, 2020). Digital inequities create the haves and the have-nots in the 21st century. The internet can create a just world; ironically, it ended up widening the gap between the rich and the poor (Norris, 2020). The three broad kinds of digital divides in education are:

- Access Divide: Inequitable access to technologies and knowledge content
- Use Divide: Inequitable training to use the available technologies
- Leverage Divide: Inequitable preparation to make use of the knowledge content

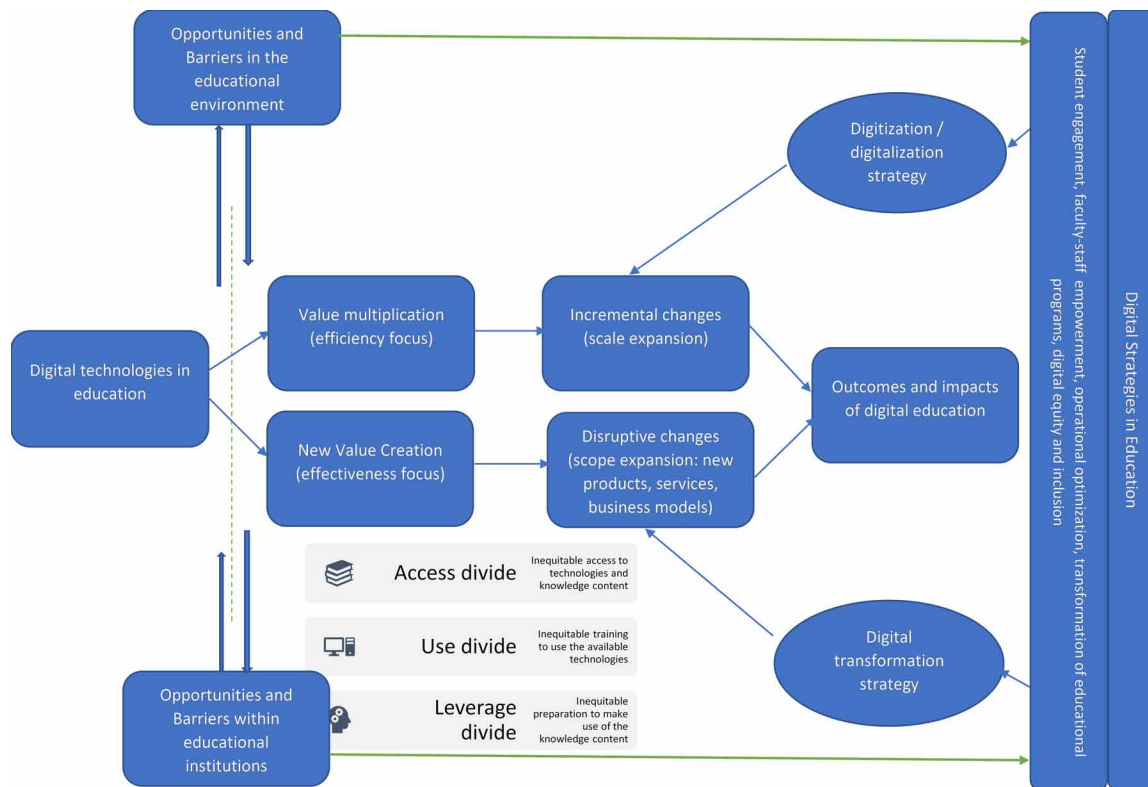
In the light of these divides, the following conceptual framework encompasses the central problem of digital equity in education (See Figure 1):

DISCUSSION

Prior to the pandemic, the *digital divide* and *digital inclusion* had been the foci of instructor observations and student narratives in various graduate-level online courses (business and education) taught by the three presenters. Long before the pandemic, instructor observations and student anecdotal evidence coming from the field had already been ringing the alarm bells, pointing to major digital challenges (George & Sankaranarayanan, 2007; George, 2018). In 2019, one student responded when asked about digital

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Figure 1. Digital transformation framework in education



inequities in their school: “I think there needs to be plans for low-income individuals to have access to the internet. This policy would allow for digital inclusion in low-income communities. Another policy that I think needs to be in place in communities such as libraries working together to provide hotspots or wi-fi access to the public.” Another student noted: “Unfortunately, before school ended [Spring 2019], we had many students who were not accessing computers even if they have them, they were not able to access because of the internet or they just did not hold strong values with education.” However, another student summarized the entire challenge: “Does it have to take a pandemic to change!” While these are anecdotal, these indicate large-scale challenges that are coming up.

While *digital divide* and *inclusion* caught the attention of a very few prior to the declaration of the pandemic on March 12, 2020 (World Health Organization [WHO], 2020), following the lockdown, these challenges became the foci of every educator and every administrator. Education was transformed overnight, and the notion of best practices was questioned, forcing educators to redefine teaching and learning. The academic world of instructional experts counted as best practices suddenly ceased to be of value. Exogenous players came up, and many of them had better instructional tools and methods than even the best of the brick-and-mortar universities. Many in the latter group were forced to tie up with the technology titans to provide high-quality digital education at scale and scope (Aguilar & George, 2021).

When the 1990s marked the Information and Communication Technology (ICT) revolution, this gave rise to borderless education and massification (democratization) in education, imagining the rate at which these technologies advanced could not have been imagined during those times. Digital equity and

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digital inclusion were not even part of the equation. When the adjective “digital” started to precede many nouns, redefining businesses, and educational practices, the two challenges continued to remain dark. A huge challenge is misunderstanding the term “digital” in digital education. Even experts wrongly assume that it is all about spamming educational experiences with technologies. As a result, digital education has become a competitive display field wherein schools and colleges force these technologies upon the learners. The time immemorial idea that if something could be taught straightforwardly, it should be taught so evaporated in our craze to showcase technology prowess.

Although the National Digital Inclusion Alliance (National Digital Inclusion Alliance [NDIA], 2019) describes *digital equity* as “a unified voice for home broadband access, public broadband access, personal devices, and local technology training and support programs” (para.1), according to the Internet World Stats in 2020 the world average *Internet World Penetration Rates* are significantly low (s 63.2%), even in developed countries like the U.S., making it difficult for “civic and cultural participation, employment, lifelong learning, and access to essential services” (NDIA, para 3). A decade ago, this issue was much less nuanced, the reason being that EdTech was not high-bandwidth-hungry. With richer multimedia content and real-time video communication needs, students would need much more than a basic dial-up connection to become beneficiaries of the digital revolution in education.

Moreover, according to NDIA (2019), *digital inclusion* refers to the activities necessary to ensure that all individuals and communities, including the most disadvantaged, have access to and use of Information and Communication Technologies (ICTs), which include five major elements: 1) affordable, robust broadband internet service; 2) internet-enabled devices that meet the needs of the user; 3) access to digital literacy training; 4) quality technical support; and 5) applications and online content designed to enable and encourage self-sufficiency, participation, and collaboration. However, reviewing the ICT competencies of 2017, less than half of the world’s population even had the basic skills for computer-based activities, including sending e-mails with attachments, moving files, using copy and paste, and transferring files between devices according to the Broadband Commission (2020). Since “digital inclusion must evolve as technology advances,” leaders in educational institutions need to act nimbly to develop “intentional strategies and investments to reduce and eliminate historical, institutional and structural barriers to access and use technology” (NDIA, para 5).

Based on our teaching experiences, our observations, and our student anecdotes, our findings verified the NDIA descriptions and suggestions of digital equity and digital inclusion. The digital divides were plentiful. The first divide was described as inequitable access to technologies and knowledge content. The second divide was the *User Divide* concerning inequitable training. There were wide gaps between those who could use technology to achieve goals and those who needed continual assistance. The third divide was the *Leverage Divide* which concerned the inequitable preparation to use the knowledge content. Various peer-reviewed studies agree with these characterizations at varying degrees (Buzzetto-Hollywood, Elobeid, & Elobaid, 2018; Van Dijk, 2020; Van Deursen & Van Dijk, 2019; Vishkaie, 2020).

Once the early shock of the first phase of the pandemic started to wear off, rapid responses were trying to remedy the situation. What was once the pre-pandemic digitized education: “absence of prior training, modeling of best practices, or easily accessed technical support” (McQuinter, 2020, p. XXX), turned into a rapid shift offering relationship, support, and building agency (employing teacher-leaders, looking for short/long-term solutions as needed – individual differences in each school’s needs (Peterson et al., 2020). The following eight action items are not exhaustive but provide us with a starting point for further reflections.

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- Invest in the development of thinking skills of individuals
- Increase the affordability of technology and knowledge content
- Produce high quality online open-access content and open-source technologies
- Empower the technology use skills of individuals
- Make content and its access friendly to differently-abled groups
- Make available technology documentation and knowledge content in multiple languages
- Share technologies across organizations and communities
- Strive for net neutrality

Thinking skills are one of the unique possessions of humankind; while machine learning aims to mimic this, there is an element of creativity and compassion in human thinking, and this cannot easily be ported to A.I. – or thus we hope. Regardless, we must equip our future generations with superior thinking skills. Digital education could do a lot in systematically training learners in various thinking skills (Özen & Duran, 2021). There are digital apps already in existence that aim to do this. While doing so, we must also keep in mind the important dimension of affordability. Let the promises of digital education not further cleave our already divided societies and communities. One major solution to the capitalist crisis in education that limits the reach of education only to those who can afford it is the proliferation of open educational resources (OER) and open-source educational technologies (Emejulu & McGregor, 2019).

Governments and philanthropic groups should invest more in educational technologies to make them accessible for differently-abled groups of learners. Corporations, too, could do a great deal in this regard. Accessibility definitions should be broad and must think beyond the limiting legal definitions (Pacheco, Yoong, & Lips, 2021). To speed up the innovation process, leaders should be willing to adopt and embrace technologies originally developed for other purposes (e.g., embedded use of Google Translate to make educational content accessible for non-English speaking audiences). From the perspective of sharing benefits, it is also important to widely offer the source codes and open-source educational products' content. Finally, we must recognize that ideologies, particularly the political ones, always find their path into education, and digital education is not an exception. It is critically important to recognize this and build defenses against it intentionally. Digital education is too important to be left to political ideologies (Baig et al., 2019).

CONCLUSION

There are numerous unanswered questions regarding digital equity and inclusion in the context of Covid-19. Is it true that the urgency for the *availability* of digital technologies for instruction overshadows the corresponding urgency for the *quality* of these technologies? Is it possible that heavy stress on technologies that help *transmit* the digital educational content (e.g., Zoom, WebEx, MS Teams, Google Meet) resulted in significant neglect about digitizing the knowledge elements without losing quality? Did the prevailing inequities of access to technologies in different societies mirror the digital equity issues in education observed during Covid-19? Alternatively, did those prevailing inequities amplify or mitigate the digital educational inequities? Could digital education be leveraged as a tool to challenge the prevailing inequities in every other spectrum of digital engagements in society? Did international students study in the U.S. encounter a greater digital divide during Covid-19? How could U.S.-based universities help increase digital inclusion? Intercultural education is expected to be one of the key ben-

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efits of international education. Did the digital exclusion result in reduced opportunities for intercultural engagements? What are some innovative ways universities help strengthen intercultural ties even as education happens remotely, mediated by digital technologies? Could the digital divide experienced by the students be used as a pedagogical device to sensitize them of the importance of digital equity and inclusion? How could ed-tech businesses built around maximizing profits be made to respond to the need for digital equity? Is there a market logic for it? Or should governments mandate affirmative action from these companies regarding digital equity? All of these are important questions for the scholarly community and practitioners. We have very briefly touched upon some of these items in our paper. More investigation is needed to address them better.

Most of us would agree that the world of education continues to remain in a state of unrest (Almeyda, M., & George, 2018; Korstanje & George, 2020; Shima & George, 2014). The central, transformative promise of the 2030 agenda for the U.N. Sustainable Development Group (United Nations, n.d.) is “Leaving No One Behind,” and Sustainable Development Goal (SDG) 4 is about nations working to ensure inclusive and equitable quality education and promote life-long learning. Can we afford to wait for this transformation in a world where the digital divides continue to widen and fast? What is our moral obligation as educators? If the pandemic has shown us all, one thing that is that disruptions can be unexpected and paralyzing and require forecasting and acting nimbly, meeting the disruption halfway.

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