Multi-Disciplinary Journal
ISSN No- 2581-9879 (Online), 0076-2571 (Print)
www.mahratta.org, editor@mahratta.org

# The Digital Divide In Education: A Descriptive Study On The Challenges And Opportunities After The Pandemic

*Prem Sagar Gompa, Research Scholar, Tilak Maharashtra Vidyapeeth, Pune 37*
*Dr. Pranati Tilak, Tilak Maharashtra Vidyapeeth, Pune 37*
*Dr. Nitin Vaidya, Tilak Maharashtra Vidyapeeth, Pune 37*

## Abstract
The pandemic hit hard and fast which left most people wondering when this would end as everything around them came to a standstill. The most important things to the sustenance of life were hard to come about and so was education. Education being a major component of life began to see a setback as there were few opportunities and many takers, few devices and many users, few trained, and many needing to be trained. The purpose of this study is to find out if the challenges faced by students and teachers prior to the pandemic in relation to digital divide still exist or if the pandemic created opportunities for this disparity to fade away. In the search for answers to this topic, interviews were conducted among teachers as well as students who were from lower income groups as well as from well to do families to find out their challenges as well as opportunities they faced during the pandemic in relation to learning online. Apart from this, literature was also looked at to find out what other researchers were able to find out in the same topic. The major hurdle to overcome in the education system was to accept the need to upgrade to new skills both on the part of the educators as well as the learners. Slowly but surely this need was bridged. By the end of two years, most teachers have mastered the skill of teaching online. Students were also able to cope with the need to learn new skills. There was still a gap between those who had access to and those who did not have access to information technology. Mostly those students from the rural areas as well as the lower income groups were not able to access technological requirements. In order for this study to be completed, interviews were conducted with students as well as faculty members and their inputs highlighted the challenges and opportunities.

**Keywords:** pandemic, digital divide, educators, online learning, learning management system

## Introduction
We all have experienced the pandemic with different levels of difficulty. Be it health, finance, relationships, or education. No two people had the exact same story to tell. All of us have had similar stories though and all of these stories were based on our experiences and reaction to these experiences.

Education is a primary need for most people in India. Parents in India are very conscious of where their children need to study. There are parents who can afford to send their children to schools where the fees are beyond the reach of most citizens whereas there are parents who can only afford to send their children to government schools. This gives us an idea of affordability in terms of finance. Prior to the pandemic, parents needed to purchase books as the basic need for education. After the pandemic hit, parents had to purchase more than books. A laptop, desktop, or mobile device became a need and not a want any longer, and so did the need for the internet. Teachers as well as students now needed to invest time and money along with the desire to learn this new skill of online learning.

In this journey, students had a better jump start as they were already updated with the latest trends in the market. Most teachers had to learn a new skill as most teachers did not have access to smart classes in the past and therefore were new to technology. Teachers had to leave black or whiteboards in their classrooms and go on digital platforms such as Zoom, Google Meet, Microsoft Teams, Cisco Webex, and the like to interact with students. Along with these platforms, teachers had to also pick up

and learn new skills on how to manage a Learning Management System. With finances being a major concern, there were some schools that could not afford to purchase a Learning Management System and the teachers there did not face this type of challenge as they were using the good old Pen and Paper method of creating lesson plans and class materials. The Schools that could afford to purchase and implement LMSs were getting their teachers trained to accept this as the future.

## Literature Review

**What is Digital Divide?**

Van Dijk, J. (2020) states that before the term digital divide was coined in the year 1995, there were many terms used to describe the same. Terms such as information society, (in)equality, and knowledge gap were used in addition to some other terms. The common definition used at the time was 'a division between people who have access and use of digital media and those who do not.'

**Challenges faced**

Rogers, E. M. (2001) in the article 'The digital divide' elaborates that whenever there is a new technological advancement in communication, this is always going to have an advantage to some and a disadvantage to others. He goes on to state that, presently the digital divide shows a difference between lower-income groups and those who come from higher-income groups in America.

According to Selwyn, N. (2004), ICTs see a wide range of technology that is diverse and not only the internet and computers. The use of this technology is also diverse ranging from education to entertainment, from employment to leisure too. At the same time, policymakers need to watch over the affordability of technology while comparing it to the everyday needs of individuals as well as their desires to use it for their personal growth.

Hargittai, E. (2002) in the article 'Second-level digital divide' shares with us the idea that most young people get around with the online use of technology at a much easier pace than their older counterparts, this is due to the fact that they have been exposed to technology at a much earlier age. More time spent online, helps with mastering the art of using the internet and the advantages it comes with. Most people though spend less time online than others after they do not find the resources that they need online and this discourages them from using online resources.

Van Deursen, A. J., & Van Dijk, J. A. (2014) state that the use of internet is contained in the following main categories, leisure, news, gaming, commercial transaction, social interaction, and information in the Netherlands. They state that individuals who are from lower levels of education use the internet more often and for much more time than those with medium or higher levels of education. They also notice that these are the same people who are more interactive on social platforms and gaming.

Lai, J., & Widmar, N. O. (2021) studied how the digital divide balanced out during Covid-19 and found that a major challenge of access to the internet was faced by the rural population. Lack of internet access was already a thing, covid-19 made things worse as having access to the internet was made mandatory for all. Most individuals were working from home and their children were studying from home too. This took a toll on the bandwidth. Internet access is better in the urban areas whereas the rural areas see a lack of such resources.

Coleman, V. (2021) studied the digital divide in UK during Covid 19 and states that remote education as needed during tis period could be accessed using different forms but dring this time, technological involvement became mandatory. Students and teaches saw the inequality in finding sources of learning. This led to "digital inequality". This was moreso for the disadvantaged students who were

effects the most. There is a lack of information to take care of the digital divide in education even though there is a lot of evidence to show this divide. There is a lot of effort that needs to be put in place to consider studies on digital skills and their needs amongs students, parents and teachers.

Liu, J. (2021) found out that China also like the rest of the world when shutting down the education system to offline classes witnessed a huge learning barrier due to inequality. Looking at this inequality, it can be safely said that the future of education seems to be unequal keeping the present in mind. The world needs to wake up and rethink the educational policies to remove these inequalities and implement safeguards against these digital divide toward protecting the future of learning. This can only be achieved when the policy makeres see the disparity in education with digital divive in mind.

Alvarez Jr, A. V. (2021) states that even when economic reformists were finding for ways to increase digital inclusion during the pandemic, digital inclusion in accessing education became a “luxory and a privilege”. The world needs to wake up to realize that education needs to be inclusive for everyone and not just for those who can afford the digital access of education. Societal status should not dictate the type of or the right to become digitally literate and should also assure quality education.

Sosa Díaz, M. J. (2021) appreciates the “emergency remote education (ERE) model” of education right after the pandemic had hit the world but it came with its own flaws and this was particularly evident with the creation of “socio-digial inequalities among students”. This was very evident among students based on the socio-educational level and the rural or urban availability to education. The pandemic made things very evident where students needed to have access to digital devices and teachers needed training on how to teach with digital competencies.

Gu, J. (2021) seeks for the government to get involved in solving the disparity in the digital divide especially seen during the pandemic. This is not just for a single country but this is seen amongst all countries in the world where the students who come from lower income families do not have access to digital devices as well as the internet. Many online education platforms have musroomed and promised of lower cost of education for all. This has not solved the digital divide that was very evident in the midst of the pandemic.

van de Werfhorst, H. G., Kessenich, E., & Geven, S. (2022) studied social economic status (SES), migration background and gender to look at their digital readiness during covid 19. Girls from higher SES background and no migration background had higher ICT skills. Results were seen where students who came from higher SES used ICT more for school than those who were not from higher SES.

Norman, H., Adnan, N. H., Nordin, N., Ally, M., & Tsinakos, A. (2022) discuss two factors in relation to digital divide in education. These are “access and connectivity and use and exploitation”. There are four sub-contracts that are related to the above two such as “synchronours learning, asynchronous learning, productivity skills and creativity skills”. It had been discovered that asynchronous learning was greater for access and connectivity in comparison to synchronous learning and creativity skills were greatly more than productivity skills in comparison to the use and exploitation factors.

Azionya, C. M., & Nhedzi, A. (2021) studied university students and how they faced digital divide during the pandemic. There are some overlaps between those students who were from marginal and privileged institutions, the major differences were relating to their socioeconomic status, historical barriers and spatial context of their universities. The main difference were lack of resources. The

outcome of the educational system during the pandemic led to inequality of university education for those students who attended marginalised universities.

**Opportunities found**

Azubuike, O. B., Adegboye, O., & Quadri, H. (2021) recognized the challenges of going digital with education during the pandemic but have heard some great stories from parents of these students who have been able to learn well online as well as develop their digital skills which to be honest are very essential in the post covid period.

Buzzetto-Hollywood, N. A., Elobeid, M., & Elobaid, M. E. (2018) studied a minority college in Maryland, USA and found that most students appreciate the value of adding technological courses to their curriculum but do not already have the technological skills. These students understand the importance having these courses to benefit them in their professional lives. They suggest that an ongoing assessment of how technology has evolved and how the school or college has motivated the students to grow using technology is very important.

Singh, S., Singh, U. S., & Nermend, M. (2022) in the paper "Decision analysis of e-learning in bridging digital divide for education dissemination" states that by adopting e-learing, the digital divide in education can be bridged but that can only happen when technology, training, infrastructure, equipment and resources are available to all.

## Methodology

A Qualitative method of research was adapted in the study of this topic. Due to the qualitative nature of the study, interviews became the main tool to collect data. Students and faculty members who faced challenges as well as those who did not face challenges were selected for the interviews.

I was able to meet with a 63 students as well as a 15 faculty members from three educational institutions and interview them personally and so was able to ask them questions that were relevant to the semi-structured interview protocol. In this process I was able to ask a few more questions to those from whom I was able to extract more information. I had interviewed students both from well to do families as well as some from not so well to do families. The objective of this study was explained to them and their voluntary involvement was gathered prior to interviewing them. I will not be divulging the personal information of these students and faculty members, but will be talking about the overall findings in the findings section.

I have asked the students of the difficulties they faced during the online classes as well as what are the opportunities they see with these online classes, or lack of opportunities if any in either case. Faculty members were also asked similar questions.

## Findings

After interviewing the stakeholders, I have noticed that 85% of the students as well as faculty members still see a huge digital divide. This was especially the case in low income families as mentioned by Sosa Díaz (2021), Gu (2021) in their articles. The interviews also showed that there are challenges that teachers faced too as this was not just a financial issue but a completely new learning experience for most of the teachers who were used to the traditional classroom teaching methods and were not able to cope up with this sudden change. Financial issues were voiced out too which was similar to the findings of Coleman (2021), who mentions that even teachers were having difficulties in finding easy access to teaching materials to teach students. This goes without saying that even though teaching materials were available online, these came at a cost and most teachers were not able to meet that cost to avail these resources.

There were opportunities that showed up though and were studied by Azubuike, Adegboye, & Quadri (2021) and Buzzetto-Hollywood, Elobeid, & Elobaid, (2018) who were able to see that the students became more tech savvy and were able to help in accepting digital education. Students were also appreciative of the technological skills that they picked up in the tech related courses they learnt in the past that helped them ride the covid disparity in education. This was true to students and teachers that I interviewed too as they were able to accept technological advancement as an opportunity to overcome the challenges that they faced at a much easier pace than if they did not have these skills in the past. This could have been the outcome of the training sessions that teachers went through at the beginning of the pandemic which helped in integrating technological pedagogy into the classroom.

## Conclusions

From this research, I was able to see that the challenges of digital divide in education still exist post Covid but they seem to be mitigated to an extent at an easier pace except in the cases of those from lower income families. Evidently the need to share a digital device among family members was a huge challenge for each of them.

Given the findings of this study, I can state that a system where teachers are involved in setting up standards to include technological use in everyday teaching as well as involving students to participate in submitting assignments online as well as using technology for class quizzes as well as presentations on a regular basis needs to be thought of when looking at the digital education system. Where policy makers and educators need to come together to see how to bridge the gap betweek learning and technology where these two can be used to remove the divide in education.

One of the major needs for this to be addressed is easy access to a device in low income families. The next is in formulating and implementing a strategy where access to licenced software, course materials and teaching materials could be accessible at a lower cost to the end user who can then maximize on the use of these materials to bridge the gap between technology and education. This could include deviating for the old school of thought of only paper and pen, and adapting to facilitate adequate internet access in classesses and schools as well as develop education around more computer centered classrooms and create more computer lab access to students.

## Bibliography

1. Alvarez Jr, A. V. (2021). Rethinking the digital divide in the time of crisis. *Globus Journal of Progressive Education*, *11*(1), 26-28.
2. Azionya, C. M., & Nhedzi, A. (2021). The digital divide and higher education challenge with emergency online learning: analysis of tweets in the wake of the Covid-19 lockdown. *Turkish Online Journal of Distance Education*, *22*(4), 164-182.
3. Azubuike, O. B., Adegboye, O., & Quadri, H. (2021). Who gets to learn in a pandemic? Exploring the digital divide in remote learning during the COVID-19 pandemic in Nigeria. *International Journal of Educational Research Open*, *2*, 100022.
4. Buzzetto-Hollywood, N. A., Elobeid, M., & Elobaid, M. E. (2018). Addressing information literacy and the digital divide in higher education. *Interdisciplinary Journal of e-Skills and Lifelong Learning*, *14*, 077-093.
5. Coleman, V. (2021). Digital Divide in UK Education during COVID-19 Pandemic: Literature Review. Research Report. *Cambridge Assessment*.
6. Gu, J. (2021). Family conditions and the accessibility of online education: the digital divide and mediating factors. *Sustainability*, *13*(15), 8590.
7. Hargittai, E. (2002). Second-level digital divide.
8. Lai, J., & Widmar, N. O. (2021). Revisiting the digital divide in the COVID-19 era. *Applied economic perspectives and policy*, *43*(1), 458-464.

9. Liu, J. (2021). Bridging digital divide amidst educational change for socially inclusive learning during the COVID-19 pandemic. *Sage Open*, *11*(4), 21582440211060810.
10. Norman, H., Adnan, N. H., Nordin, N., Ally, M., & Tsinakos, A. (2022). The Educational Digital Divide for Vulnerable Students in the Pandemic: Towards the New Agenda 2030. *Sustainability*, *14*(16), 10332.
11. Rogers, E. M. (2001). The digital divide. *Convergence*, *7*(4), 96-111.
12. Selwyn, N. (2004). Reconsidering political and popular understandings of the digital divide. *New media & society*, *6*(3), 341-362.
13. Singh, S., Singh, U. S., & Nermend, M. (2022). Decision analysis of e-learning in bridging digital divide for education dissemination. *Procedia Computer Science*, *207*, 1970-1980.
14. Sosa Díaz, M. J. (2021). Emergency remote education, family support and the digital divide in the context of the COVID-19 lockdown. *International Journal of Environmental Research and Public Health*, *18*(15), 7956.
15. van de Werfhorst, H. G., Kessenich, E., & Geven, S. (2022). The digital divide in online education: Inequality in digital readiness of students and schools. *Computers and Education Open*, *3*, 100100.
16. Van Deursen, A. J., & Van Dijk, J. A. (2014). The digital divide shifts to differences in usage. *New media & society*, *16*(3), 507-526.
17. Van Dijk, J. (2020). *The digital divide*. John Wiley & Sons.