

Investigating Socioeconomic Disparities in Digital Education Experiences

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ABSTRACT

This qualitative research study explores the multifaceted nature of socioeconomic disparities in the context of digital education. Focusing on how students from diverse socioeconomic backgrounds coped with the abrupt transition to digital learning, the research aims to provide a comprehensive understanding of these disparities. By conducting semi-structured interviews, the study investigates the challenges and experiences of students, the role of digital literacy and their impact on academic performance and mental well-being. The findings contribute to ongoing discussions on educational equity and inform the development of policies and interventions aimed at reducing the digital divide. Ultimately, this research seeks to enhance the resilience and adaptability of students from underserved communities in the face of digital education challenges, fostering equal opportunities for all in the digital education landscape.

Keywords: *Socioeconomic Disparities, Digital Education, Educational Equity, Digital Divide*

The COVID-19 pandemic forced an abrupt shift to digital education, affecting students from diverse socioeconomic backgrounds differently. This research aims to explore the disparities in digital education experiences, with a particular focus on how students from varying socioeconomic backgrounds coped with the transition. It also seeks to examine the digital divide and access to technology as key factors influencing these disparities.

Digital education is often called "e-learning" or "online education." It is a method of teaching and learning that makes use of technologies and the internet. It includes a vast array of instructional materials, tools, and exercises that are made accessible online. Web-based classes, virtual lecture halls, interactive models, multimedia files, and other digital learning tools are examples of digital education. It's easily accessible, adaptable, and incorporates technology to help achieve learning objectives (Means et al., 2010).

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Received: March 18, 2024; Revision Received: August 10, 2024; Accepted: August 13, 2024

COVID-19 and Digital Education

COVID-19, is a highly contagious and severe respiratory illness, first identified in December 2019 in Wuhan, China, and has since evolved into a global pandemic. From mild or asymptomatic episodes to severe respiratory distress and even lethal pneumonia, the disease can have a wide range of consequences. (CDC, 2020; WHO, 2020).

The COVID-19 pandemic has had far-reaching effects on various aspects of society, including public health, economies, education, and daily life. It has disrupted education systems globally, with school closures affecting billions of students. The pandemic accelerated the adoption of online and remote learning, posing challenges for educators and students (UNESCO, 2020)

The COVID-19 pandemic acted as a unique catalyst, propelling educational institutions globally into a rapid and extensive transition toward digital education. This paradigm shift was necessitated by the need to adhere to social distancing measures and lockdowns, prompting schools and universities to swiftly adopt online and remote learning models. While digital transformation is not a new concept, it has long been associated with higher education institutions. (Adedoyin & Soykan, 2020). Teachers were compelled to explore and implement remote learning strategies more extensively than ever before, reflecting a paradigm shift accelerated by the global health crisis (Kang, 2020).

Socioeconomic Disparity

Socioeconomic disparity refers to the unequal distribution of economic resources, opportunities, and privileges among individuals or groups within a society, primarily based on factors such as income, education, occupation, and social status. (Wilkinson & Pickett, 2009). The results and accessibility of digital education can be significantly impacted by socioeconomic inequality. These differences are especially important in the context of online learning, where socioeconomic status and other factors can affect the quality of educational experiences in addition to technology and internet access specially during the pandemic like COVID-19 (Marmot, 2015).

The effects of socioeconomic disparity during the pandemic include limited technology access, people from lower socioeconomic backgrounds might not have access to computers or high-speed internet connections, two digital tools that are needed for taking part in digital education in an efficient manner (Warschauer & Matuchniak, 2010). Socioeconomic disparities can result in differences in digital literacy, with more affluent individuals having greater exposure to technology and digital skills. This disparity can affect the ability to navigate online learning platforms and resources (Selwyn, 2004). Students' physical home environments can differ greatly; while some have access to peaceful areas for learning, others struggle to concentrate due to noise and poor lighting, which makes it difficult for them to participate in online courses (Van Lancker & Parolin, 2020; Aristovnik et al., 2020). The pandemic made educational inequities worse. Students from wealthy families performed better in online learning, reflecting socioeconomic differences in learning outcomes (Kuhfeld et al. 2020).

This research addresses emerging disparities in digital education, recognizing gaps in understanding student and educator perceptions. Going beyond access issues, it delves into digital literacy, resource quality, and adaptability, capturing experiences through interviews and observations. Acknowledging the wider implications, it provides a holistic view of educational equity, crucial for reducing disparities. In the context of the COVID-19

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pandemic, the sudden shift to digital learning highlighted existing inequalities. This research is vital for immediate policy adjustments and long-term strategies to ensure equitable education, emphasizing the importance of addressing socioeconomic disparities for the well-being and success of all students in the digital era.

Research Objectives

- To understand experiences of students from different socioeconomic families during digital transformation.
- To assess the impact of socioeconomic disparities on mental well-being.

METHOD

Research Design

The research employs a case study design. A case study design allows for an in-depth examination of a specific phenomenon within its real-life context. In this study, the "cases" are the individual participants, representing different socioeconomic backgrounds.

Participants

The study included 18 participants from diverse socioeconomic backgrounds. The classification (upper class, upper middle class, lower middle class, upper lower class, and lower class) is based on updated version in India of modified Kuppaswamy socioeconomic scale (Sood & Bindra, 2022).

Figure- 1 Distribution of Participants based on Socioeconomic status (SES)

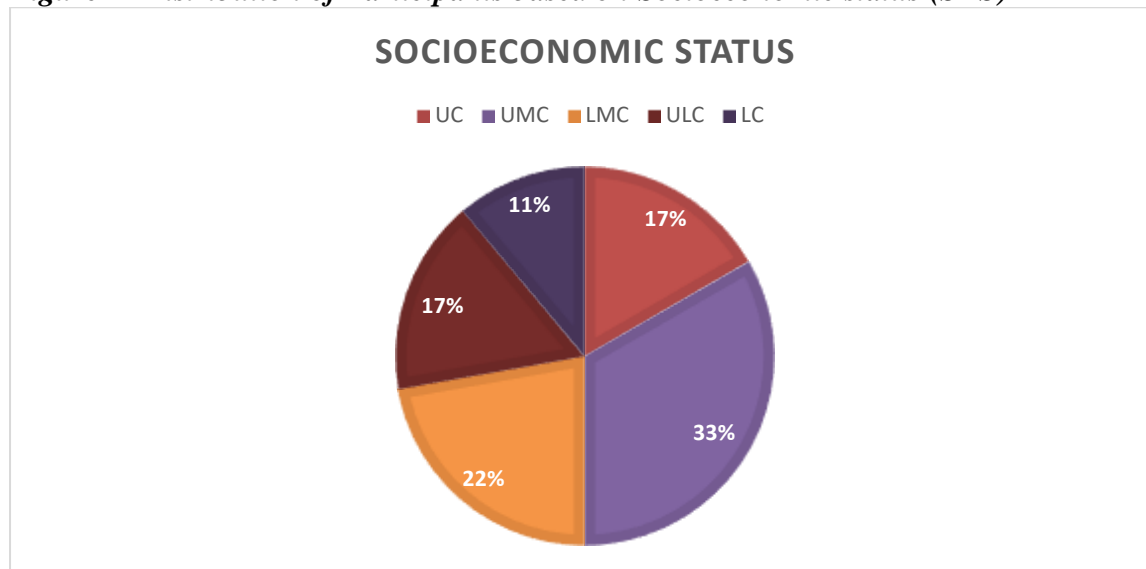


Table 2 Participant Information Sheet

Participant	Age	SES	Gender	Locality	Preferred tools for digital education	Time since using digital education tools
P01	19	Upper Lower Class	Male	Rural	Smart Phone	04
P02	21	Upper Middle Class	Female	Urban	Smart Phones, Laptop	06
P03	20	Upper Class	Male	Urban	Kindle, Laptop, IPad and Smart phones	10

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Participant	Age	SES	Gender	Locality	Preferred tools for digital education	Time since using digital education tools
P04	17	Lower Class	Female	Sub-Urban	Smart phones	03
P05	16	Lower Middle Class	Female	Rural	Smart phones	05
P06	17	Upper Middle Class	Female	Sub Urban	Laptop, Smart phones	08
P07	22	Lower Middle Class	Male	Urban	Laptop	01
P08	20	Upper Lower Class	Female	Urban	Laptop, Smartphone	01
P09	35	Upper Middle Class	Female	Urban	Laptop, Smartphone	09
P10	19	Lower Middle Class	Male	Urban	Smartphone	01
P11	35	Upper Lower Class	Female	Urban	Smartphone	1.5
P12	22	Upper Middle Class	Female	Urban	Laptop, Smartphone	03
P13	23	Upper Middle Class	Female	Rural	Laptop, Smartphone	02
P14	23	Lower Middle Class	Female	Urban	Laptop, Smartphone	04
P15	35	Upper Class	Female	Urban	Laptop	02
P16	22	Upper Middle Class	Female	Urban	Laptop, Smartphone	4
P17	23	Upper Class	Male	Sub-Urban	Laptop	1.5
P18	20	Lower Class	Female	Sub-Urban	Smartphone	01

Data Collection: Semi-structured in-depth interviews were conducted with participants to gain insights into their experiences, challenges, and strategies during the transition to digital education.

Results and Discussion

There are four emergent themes in the present research mentioned below in Table 3. This research aimed to explore the socioeconomic disparity due to digital education and its impact on mental health.

Table 3 Showing major themes and codes

Themes	Codes
1. Access to Technology	Limited device availability Lack of reliable internet access Technical assistance
2. Digital Literacy	Awareness and Adaptation to new digital platforms Shift in learning perspective
3. Teaching Framework	Teacher-student interaction Accepting diverse student needs
4. Mental Wellbeing	Social Isolation Technostress and anxiety Addictive behaviour

Theme 1- Access to technology

Access to technology is a central and pivotal theme in the context of socioeconomic disparities in digital education. The critical role that technology plays in shaping the learning experiences of students and how disparities in access can significantly impact educational equity. It directly impacts a student's ability to participate fully in digital education and realize their academic potential. Participants expressed their access to technology in following ways:

"We have one laptop at home, and my siblings also need it for their schoolwork." (P01)

"During the pandemic we all were living in the same house, students with their parents, some students were not able to manage their devices due to financial problems, and having one device shared among siblings, network issues and chaos in the background." (P09)

Participants reported that students with lower socioeconomic status may have faced difficulty with lack of devices or shared devices among each other, whereas middle class and upper-class did not.

"I am grateful and privileged enough to get all the devices in time." (P12)

"It's okay for everyday use, but when I needed to attend online classes and my parents are working from home, it can be really frustrating sometimes." (P05)

"We have Wi-Fi connection before Covid because my parents had work from home." (P06)

Participants shared that network issue was the major problem during digital education. As observed in previous studies (Smith et al., 2021; Johnson, 2021), economic barriers contribute significantly to the digital divide, affecting students' ability to access educational resources (Yardi and Bruckman, 2012).

Theme 2- Digital literacy

Digital literacy is a central theme in the context of socioeconomic disparities in digital education. Proficiency in using digital tools, online safety awareness, and adaptation to new platforms are skills that transcend the immediate educational context and have practical relevance in the digital age. Socioeconomic disparities in digital literacy can exacerbate the overall divide in digital education, impacting students' academic performance, mental well-being, and overall educational equity. Participants expressed their digital literacy in following ways:

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"I wasn't aware about online safety before, but now my friends, and social media have taught me a lot." (P01)

"Some students were not technologically advanced due to which they faced many problems, like when we were asking them to open white board or open PDF, they couldn't." (P09)

Participants who are teachers faced difficulty initially, they reported that online education is not healthy for students to learn because online education has less attention span as compared to offline education.

"In my opinion, digital education is not for students because it impacted their learning." (P11)

"Now days children even from class 6th-7th are using phone, tablet, laptops for entertainment, they know how to use it, how to operate it. But shifting completely to these devices for education and study purpose was difficult." (P13)

"Initially when we were not that much aware of the technology, we faced lot of problems, like many students joined the class who were not the part of the class, they used to disturb the class." (P15)

Through these verbatims participants shared that shifting to online mode of learning and teaching was a major shift for everyone, students, teachers and parents. These findings align with the previous works (Tamulee, 2021; Datta & Mete, 2023).

Theme 3- Teaching Framework

Teaching framework is a central theme in understanding the impact of socioeconomic disparities in digital education. It delves into how the instructional methods, teacher-student interactions, and the overall approach to teaching affect students from diverse socioeconomic backgrounds. Understanding the teaching framework is essential in addressing socioeconomic disparities in digital education.

"there's a lot of difference in online and offline teaching as well as learning. I do not think that we as teachers treated any student differently based on their socioeconomic status." (P11)

"Teachers faced much difficulty than us, because we realised that there are certain things which are not possible online, like practical subjects, practical is supposed to be conducted in labs." (P17)

Participants reported that they missed student teacher interaction in online mode of learning. Students were supportive for teachers as they understand that it was new for teachers.

"Everything in our class is the same for everyone. Hardly we had classes, we couldn't explore more because we were supposed to complete our syllabus first. It's not anyone's mistake, may be its school and the environment." (P04)

"The evaluation was not proper due to digitalisation. Post pandemic it was observed that students lack the basic knowledge. This is easier for sure but we can't use it completely. Student teacher interaction is necessary for better learning." (P09)

"Teacher tried their best, we used to get our coursework on time, but I don't think that would have made any difference in their teaching based on financial status of students." (P14)

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“since shift in total digitalisation in COVID-19 was not easy, initially we faced a lot of problems, because we never used apps for teaching.” (P15)

Teachers tried to adapt and accept the different needs of students during the online education. Teacher-student interaction was identified as a critical factor influencing students' engagement and understanding. Present study is supported by previous literature (Gultome & Suhartini, 2020) which states that Teacher-Student Interaction is an important factor in online learning among higher education.

Theme 4- Mental Well-being

In terms of digital education, mental well-being stands out as a pivotal theme that intricately intertwines with socioeconomic disparities, shaping and being shaped by students' experiences. The concept of social isolation explains the perceived or actual separation from social interactions and a sense of belonging that traditional, in-person learning environments often provide. Technostress and Anxiety, delve into the stress and anxiety associated with technology use, a pertinent issue in the digital education context.

“Students were observed to be lazy post pandemic. They were like, Ma'am please share the pdf we will study, students' absence increased. Their academic performance was also declined.” (P09)

“I think people from lower socioeconomic status had to think a lot while using their phones or laptops because there were many problems around them apart from education.” (P18)

Participants shared that digitalisation has isolated them more as compared to before. But there is no particular digital divide in this context.

“To a certain extent digitalisation has affected mental health. I saw my friend's getting anxiety because during early stages he did not know how to use certain apps.” (P10)

“students lack attention in online class. It created extra burden on parents.” (P11)

“Definitely our socioeconomic status has impacted mental health issues.” (P12)

The above verbatims expresses the stress, anxiety due to technology and addictive behaviour post pandemic. Social isolation emerged as a prominent concern, on students' mental health specially when it is associated with SES (Lai et al., 2023). The emergence of addictive behavior in the context of digital education aligns with the literature (Lee et al., 2021).

CONCLUSION

The researcher conducted semi structured interviews on 18 participants from various socioeconomic households. A digital divide was observed among the participants with different socioeconomic status. Even though they were aware of the technology and devices, operating them and using it for education was much bigger shift for each participant. Students with lower SES reported lack of experience in operating digital devices. No particular digital divide was found in teaching framework. Teachers also reported that students faced more stress and anxiety due to technology. Students with lower SES reported this stress higher as compared to middle and upper SES. This research design captures a specific moment, limiting the exploration of how socioeconomic disparities evolve over time.

REFERENCES

- Adedoyin O.B. and Soykan E., (2020) "Covid-19 pandemic and online learning: the challenges and opportunities," *Interact. Learn. Environ.*
- Aristovnik, A., et al. (2020). "COVID-19 and remote e-learning: Experiences of parents with children during the pandemic." *Quality & Quantity*, 55, 1369–1391.
- Centers for Disease Control and Prevention (CDC). (2020). "Symptoms of Coronavirus." [Datta R. & Mete J., (2023). Socio Economic Status in the Context of Online Education in India.
- Gultom, A., & Suhartini, S. (2020). Student interaction, teacher competence, and technology in online learning: Does it create a meaningful learning. *Advances in Social Science, Education and Humanities Research*, 541, 169-180.
- Johnson, B. T. (2021). *Inservice Teachers' Perceptions of Barriers to Information Literacy Instruction in Poverty Environments*. The University of Memphis.
- Kang B., (2020). "How the COVID-19 Pandemic Is Reshaping the Education Service," *Future Serv. Post-COVID-19 Pandemic*; Vol. 1(15–36).
- Kuhfeld, M., et al. (2020). "Estimates of Learning Loss in the 2019-2020 School Year." *Educational Researcher*, 49(9), 685-695.
- Lai, E. T. C., Ho, S. C., & Woo, J. (2023). Social isolation, socioeconomic status, and development of functional impairments in Chinese older adults aged 70 years and over: a cohort study. *Aging clinical and experimental research*, 35(1), 155–165.
- Lee, J., Lim, H., Allen, J., Choi, G., & Jung, J. (2021). Smartphone Addiction and Depression among Low-Income Boys since COVID-19: The Moderating Effect of Being an Only Child. *Healthcare (Basel, Switzerland)*, 9(10), 1350.
- Marmot, M. (2015). "The Health Gap: The Challenge of an Unequal World." Bloomsbury Publishing.
- Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2010). "Evaluation of Evidence-Based Practices in Online Learning: A Meta-Analysis and Review of Online Learning Studies." U.S. Department of Education, Office of Planning, Evaluation, and Policy Development.
- Selwyn, N. (2004). Reconsidering political and popular understandings of the digital divide. *New media & society*, 6(3), 341-362.
- Smith, E. M., MacLachlan, M., Ebuenyi, I. D., Holloway, C., & Austin, V. (2021). Developing inclusive and resilient systems: COVID-19 and assistive technology. *Disability & Society*, 36(1), 151-154.
- Sood, P., & Bindra, S. (2022). Modified Kuppaswamy socioeconomic scale: 2022 update of India. *Int. J. Community Med. Public Health*, 9, 3841.
- Tamulee, P. (2021). *Embedding Digital Technologies in Teaching And Learning-A Comparative Study Of School Systems in Singapore And Scotland*. Walnut Publication.
- UNESCO. (2020). "COVID-19 Educational Disruption and Response."
- Van Lancker, W., & Parolin, Z. (2020). "COVID-19, school closures, and child poverty: A social crisis in the making." *The Lancet Public Health*, 5(5), e243-e244.
- Warschauer, M., & Matuchniak, T. (2010). New technology and digital worlds: Analyzing evidence of equity in access, use, and outcomes. *Review of research in education*, 34(1), 179-225.
- Wilkinson, R., & Pickett, K. (2009). "The Spirit Level: Why Greater Equality Makes Societies Stronger." Bloomsbury Publishing.
- World Health Organization (WHO). (2020). "Coronavirus Disease (COVID-19) Pandemic."

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Yardi, S., & Bruckman, A. (2012). Income, race, and class: exploring socioeconomic differences in family technology use. In Proceedings of the SIGCHI conference on human factors in computing systems (pp. 3041-3050).

Acknowledgment

The author(s) appreciates all those who participated in the study and helped to facilitate the research process.

Conflict of Interest

The author(s) declared no conflict of interest.

How to cite this article: Vashistha, D., Chandel, P.K. & Gaur, S. (2024). Investigating Socioeconomic Disparities in Digital Education Experiences. *International Journal of Indian Psychology*, 12(3), 1001-1009. DIP:18.01.096.20241203, DOI:10.25215/1203.096