Research Article

Gendered Digital Divide among Secondary Students: The Aftereffects of COVID 19 Pandemic on Offline Education in Greater Guwahati Area

Sudeshna Nath[1], Tajbina Yasin[2] & Fariza Saidin[3]

[1]Assistant Professor, Department of Education, Govt. Model College, Borkhola

[2]Research Scholar, Department of Psychology, Rajiv Gandhi University (A Central University)

Email- yasintajbina@gmail.com

[3]Assistant Professor, Department of Psychology, Assam Down Town University

Abstract

Education can be divided into several contexts: gender being the major one. The present research study has been conducted against the backdrop of the Covid19 pandemic, keeping in mind the intention to study the digital and educational divide on a gender basis and also to find out the aftereffects of gender inequality in both teaching-learning perspectives after returning to traditional classes. The sample consists of 400 students and 40 teachers from the greater Guwahati area to attain their relevant information by the use of a socio-demographic data sheet, a self-constructed questionnaire for students, and an information schedule for teachers. The results revealed inequality among the genders (among males and females) in the case of socio-demographic background. Though in the initial days, slow speed was perceived among males and females but males seemed to outperform females in matters of classroom instruction. A less inquisitive attitude towards online learning among female students is assumed to be the factor for such disparity.

Keywords: Digitalization, Gender disparity, Educational Divide

Introduction

As the grip of the pandemic became stronger, people started adapting themselves to it and continued to work from their homes. Similarly, all educational institutions tried to incorporate the digitization of education and accepted the sudden shift from classroom to online teaching (Das et al., 2020). As now the process of digitization of education entered into the scenario, there were scenes of the digital divide which defined the concept where people neither had equal access nor had equal ability to use ICT. This further enhanced the concept of the variety of digital divides, which took certain specific offshoots as follows: gender divide, age divide, and income divide (Singh, 2010). The utmost concern among the several digital divides is the gender digital divide which implies not understanding the methods and usages of digitalization and moreover not getting equal access to know about it. Men and women are always compared in some or another way, and women's equality in every platform is always compromised. The concept of gender divide has always been a significant inequality, and it has been more hyped by the digital revolution (Saha&Zaman, 2017).

Every human has the right to adhere to education. It is a process that did not gain much importance some four or five decades earlier and was considered rather a choice to opt for it, but in

today's arena, it isn't a choice but a basic right for all. The growth of an individual and the gate of opportunities only get opened through education. A country's national development is dependent upon the educational quality its citizens receive (Singh & Rabindranath,2020). Education is a platform of serving everyone equally. Still, women's participation is prohibited. In India, education for girls is still a matter of consideration. The main concern of this paper is to bring to light that during this pandemic, as all the services have transformed their base from offline to online, educational services also had to be a part of these transformations. The educational institution was active by adopting online measures with the effort of not disrupting the learning culture. But many students were unable to be a part of this online teaching-learning process. Hence, many learners were affected during these persistent lockdown periods (Das et al.,2020), and among these learners, the major setback was in the lap of the girl child. According to the latest National Statistical Survey, the reason is that in India, one in every ten households can purchase a computer, desktop, or laptop, and nearly a quarter of all homes have internet facilities in their devices, which includes smartphones as well (NSO,2020). As the girl child faces a lot of challenges in acquiring education (Singh & Rabindranath, 2020), contributing to its first position in the race of educational divides, also being in a household where there is only one device, the male child gets the primary opportunity of accessing it whereas the female child is considered to be of secondary importance because in India the male plays a primary and the female plays a secondary role (Odomore, 2015). Gender disparity in the platform of education has always been a consistent and underlying problem in Indian society, particularly for girls belonging to lower socio-economic backgrounds (Rekha & Devkaran, 2017). Moreover, in this current scenario, the impact of lower socioeconomic status (Gopalan & Misra, 2020) plays a hindrance in many households making it difficult for many bread earners to provide equal accessibility to their learners, thus contributing to a deeper gap in the digital divide. Hence in the era of digitalization of education combined with the gender gap, it has become a questionable issue in the situation of post lockdown where several schools and colleges had opened after a long gap. So, it would be interesting to study the observable effects on the students and how they are coping with the new normal, and whether this disparity persists.

Review of Literature

Das et al. (2020) examined the impact of Covid on sustained online education among students, teachers, and parents of primary, secondary, and tertiary levels. The online survey was used to collect relevant data. The authors highlighted the importance of online pedagogy and its rewarding benefits through a variety of sources but also leave a question of the digital divide in education considering accessibility.

Singh & Rabindranath (2020) examined the gender divide in education to evaluate gender divide in education, emphasizing the need for girl's education. Data were collected from various sources like articles, research papers, journals, the internet, etc., and qualitative research was used to analyses the data. The finding reveals the existence of the gender divide and its effect on girls students. Improving the homogeneity of society through flourishing girls' education is mentioned in this study.

Korlat, et al. (2021) stated in their study that digital learning was immediately required due to the

COVID-19 epidemic, which presented difficulties for all students, but notably for underprivileged groups in a virtual setting. The purpose of this study was to look at gender inequalities in the digital learning environment that students experienced in the spring of 2020 since some studies show that boys and girls continue to use technology and related abilities differently. Biological sex was primarily employed as the only predictor of gender in earlier research looking into gender disparities in digital learning. It has been found that girls outperformed males in terms of perceived teacher support, intrinsic value, and learner engagement, but no significant gender differences were detected in attitudes of competency in digital learning. Their findings also demonstrated the unmistakable advantages of an androgynous gender role self-concept for all examined aspects of digital learning.

Norman, et al. (2022) stated in their study that the COVID-19 epidemic has disturbed approximately 1.6 billion pupils globally and forced the closure of thousands of schools. It has already made the existing digital gaps more difficult and further displaced disadvantaged kids digitally. Various tactics have been employed to address the educational digital gap faced by disadvantaged pupils in an effort to lessen the impact of this problem. In order to better understand this scenario, the current study looks at the digital educational divide for pandemic-vulnerable pupils in terms of access, connectivity, usage, and exploitation. The responses to a survey, which was given to 518 at-risk adolescents in schools between the ages of 10 and 15, were examined. The results show that asynchronous learning is a more powerful concept than synchronous learning and that creativity skills are more important for the learning of vulnerable students than productive skills.

Nayak & Alam (2022) stated in their study that the Covid-19 pandemic and the digital divide negatively impacted the educational system for socially disadvantaged groups like the Adivasis and other vulnerable groups. This research paper tries to analyse the factors combined with worsening the educational system for these groups. The research examines how the Covid-19 epidemic rearranged the pre-existing problems of educational inequality and how the digital divide has developed in a way that has especially impacted young tribal females. The results show that in addition to issues with accessibility and infrastructure, cultural and social factors related to the perceived benefits of education for girls and mindset or beliefs held by parents and teachers regarding the efficacy of digital mode of education delivery also contribute to and reinforce the digital divide for tribal girls living in the hinterlands. The study emphasizes rethinking the digital learning environment and offering policy solutions to address the growing digital gap and educational disparities among socially disadvantaged groups based on the information gathered from the interview.

Guo, C., & Wan, B. 2022, examined that online education has grown in popularity over the past several years in the educational field. The argument over whether online education narrows or expands the gap persists, despite the fact that many people think technology has the potential to reduce inequality. According to the report, there was a digital divide in online education throughout the epidemic. It was mostly discussed in terms of variations in the amount of equipment and network quality, students' capacity for online learning, and their results from offline learning. These results imply that achievement inequalities cannot be

closed just through the expansion of online education. The advancement of educational fairness necessitates the efforts of several stakeholders and interventions that are especially geared toward underprivileged pupils.

Objectives

- To study the pattern of digital and educational divide among the secondary students of greater Guwahati in terms of gender amidst Corona Pandemic.
- To identify the aftereffects of such gender disparity on the learners in offline classes at secondary schools.

Research question

- What is the pattern of the gendered digital and educational divide among the secondary students of greater Guwahati amidst the Corona Pandemic?
- Is such a gender disparity creating different parameters of re-adjustment as aftereffects among the learners in the offline classes?

Conceptual Framework of the Study:

The context of the research study focuses on the prevalence of the educational divide due to the existing pandemic triggered by the digital divide. Such digital disparity has given way to an enormous educational gap between males and females owing to various psycho-social perspectives. This phenomenon persists even after schools have reopened, eventually creating an educational lag among female students since some girls could not gather the courage to return to their schools. The rate of regular attendance in online classes has severely impacted their performance in offline physical classroom transactions.

Keeping in view of the prevailing educational scenario, efforts have been made to collect data and information on the existing status of classroom transactions on the basis of gender in the Greater Guwahati area. The responses were collected from the male and female students of classes 8 to 10 studying in Government schools only.

Methodology

Research method

The descriptive Survey method of research has been adopted to conduct the research study as the situational status of education in the government schools was studied. All the necessary data was gathered on the gender responses to education during online and offline classes through the teacher-learner perspective.

Sample and Sampling Technique

The purposive Sampling technique was selected as the sampling technique for making sampling-related decisions. A total of 8 government schools from the greater Guwahati area have been considered for the research purpose. A sample size of 400 students, comprising 200 males and 200 females, was decided, along with 40 teachers, for a better understanding of the data.

Research Tool

The following tools were considered for the research study:

1. A socio-demographic data sheet to collect the demographic profile of the sampled students.
2. Self-constructed questionnaire for students to take an opinion on the recent trend in learning.
3. Information schedule for teachers to extract information on the prevailing gender status in education.

The Data Collection Procedure

After getting approval from the Principals of the Government schools in the region of greater Guwahati, the tools were administered to the sampled students. The responses were collected after the teachers and students were assured of the confidentiality of their respective responses. The necessary scoring of the data and interpretation was done for generalization.

Analysis

Table-1: Socio demographic Profile of students

Demographic variables	Male	Female
Gender	200	200
Category		
General or unreserved	140	133
OBC	35	41
SC	15	13
ST	10	13
Domicile		
Urban	127	115
Semi-urban	73	80
Rural	0	5
Family type		
Joint	71	94
Nuclear	129	106
Siblings		
Yes	155	180
No	45	20
Approximate monthly income		
Above 50,000	45	40
25,000 – 50,000	70	56
15,000 – 25,000	74	86
Below 15,000	11	18
Sources of income		
Only mother	77	91
Only father	71	55
Both the parents	40	33
Other sources	22	21

Table-2: Online learning experiences of students reflecting gender disparity (The learner perspective):

	Favorable	No opinion	Unfavorable
Online experience			
Male	66	65	69
Female	54	55	91
Participation in online platform			
Male	90	20	90
Female	56	47	97
Acquaintance with devices and gadgets			
Male	158	12	30
Female	130	17	53
Accessibility issues (internet, geographical and electricity)			
Male	106	14	80
Female	60	13	127
Familiarity in using apps			
Male	153	13	34
Female	125	11	64
Regularity in online class			
Male	150	0	50
Female	99	10	91

Table-3: Table showing the trend of gender responses in continuity from online learning situations to post pandemic classroom scenario (The teacher perspective):

Themes related to educational divide and gender disparity	Male	Female
Start of online class	Active participation from the first day of online class.	Absence seen in larger percentages during the initial days of online class.
Attendance percentage during online classes	Regularity was observed with a seemingly good percentage.	Irregularity in maintaining attendance affecting the overall female attendance.
Regularity in offline classes	A slow pace was observed in the initial days. With more weeks passing through, a positive trend was observed in their appearance in the school campus.	A much slower pace continues in their presence and participation in the school campus.

Lag observed in educational tasks and classwork	Due to slow momentum in class activities online, they seemed to be lagging in certain areas of their class activities. With continued classroom instruction although, males have better equipped with bridging the essential academic gaps.	The irregularity in attendance affected their grip on academic activities and class works. The persistent gap seems to increase with lower academic output.
Lack of confidence and self esteem	Academic confidence and level of attention was poor due to sudden transition in classroom transaction. Might require some reasonable amount of time to build up the previous momentum.	Academic confidence and focus was very poor compared to the males. Absence from class and inactivity eroded their courage to attend classes again in the offline mode.
Exam anxiety	Lack of a proper routine and classroom discipline has been causing anxiety issues while dealing with evaluation sessions physically after a long time.	Exam anxiety was higher among the females leading to withdrawal from examinations. Such anxiety also drives them to cause further absence in schools.
Maladjustment in physical classroom	Adjustment capacity was mediocre. An urge was observed among the males to attend physical classes for assimilation with the classmates.	Adjustment with the transition was poor. It was observed that females had the urge to avoid more and more physical classroom interactions.
Inability to build emotional rapport with teachers	The emotional element in interaction was missing for both the teachers and the students. After a long disruption and mediation of electronic means, the emotional rapport among the males has taken a backseat.	The same was observed in case of females too. The only factor different from males was that their irregularity negatively impacted their rapport with their teachers.
Physical and mental fatigue	Physical fatigue observed as classes have restrained their freedom compared to online classes	Mental fatigue was observed compared to physical tiredness as the class work seemed too overburdened

Laboratory work	Lag observed in execution of practical classes. Output is negligible	Similar pattern of lag observed.
Time management	Time management skills weakened. The efforts are on to bring them to normal pace of learning within restricted settings.	Time management worsened due to poor participation in class activities. Efforts are on to increase their attendance for discipline and regularity.

Findings and discussion

Opinions were gathered from an equal number of male and female students as well as teachers on the status and quality of education received by the students amidst corona pandemic. The responses were categorized on the basis of their frequency, highlighting their impact on the digital and educational divide between boys and girls. Further revelations on the continuity in disparity in offline classroom mode were also analyzed qualitatively with a brief discussion on the scenario in the government schools of greater Guwahati city. Certain psycho-social factors have emerged as major demarcating determinants of gender experiences in the offline education context.

Discussion on gender disparity owing to the digital and educational divide:

On the assessment of the socio-demographic profile of the sampled students, it was found that few students belonged to reserved and backward communities. Most of the students were from the general or the unreserved section of society. While some girls had residences in rural areas, the majority of the girls and boys belonged to urban and suburban locations. Even most of the girls belonged to joint families and boys to nuclear families. Girls were found to have more siblings than boys. Mothers were the only sources of income for both genders, but girls especially were found to be in the lower economic group. The disparity is evident among the genders in the case of socio-demographic background. Girls are in the inferior category, which might be a major cause for digital disparity on a gender basis.

On taking into account their online class experiences, it was observed that males showed active participation from the first day of online class, and regularity in attendance was maintained. In the case of females, the absence was seen in larger percentages during the initial days of online classes; thereby inducing irregularity in overall female attendance. The overall online experience was very favorable among males supporting their participation in online classroom interaction. The girls showed lesser acquaintance with devices and gadgets compared to boys. The males were also ahead of the girls in using updated learning applications on both mobile phones and laptops. Such digital disparity has, of course, given rise to the educational divide along the lines of gender differences. The unavailability of technological devices and technical assistance has lowered the curve of learning progress among female students, making it an educational divide between males and females in the path of learning (Korlat et al. 2021). It has created an educational lag in the females showing consequences in the offline mode of teaching-learning transaction.

Such a gender disparity puts females in the more disadvantaged category and vulnerable category compared to their male counterparts. Such a disadvantaged state can also be viewed as an extension of the pre-existing gap that exists between the learners on the basis of gender affiliations long before the pandemic. The pandemic has transitioned the school structure into cyberspace, but the girls' problems have not been lodged even an inch considering the change involved (Guo& Wan, 2022).

While there is a host of research done to validate how much technological interventions in the educational scenario have widened the learning gap between girls and boys, there are studies that are in stark contrast to the data we have extracted from the sample data. Ruiz et al. (2020) observed that instruction laced with ICT allowed for more fluidity in the learning of sciences among women when compared with their performance in the traditional methods. The desirability of such a transition did not get affected by gender lines. Social theories could be better suggested for more inclusion of females in the education sector and filling up the digital gender gaps with better policy-making (David & Philips, 2020).

Discussion on the persisting gender disparity in offline classes at schools:

With the reopening of schools after a prolonged duration of COVID threats, students were obliged to make the transition to offline classes again. In this context, a slow pace was observed in the initial days among both male and female students. Although a positive change was observed in the case of males in the later working days. A lag in educational tasks was observed, but with continued classroom instruction, males seemed to bridge the academic gaps better. The irregular attendance broadens the persistent gap among females affecting their academic confidence and retention level. Anxiety issues developed among the students while dealing with evaluation sessions physically after a long time. Exam anxiety was higher among the females leading to withdrawal from examinations and causing further distancing from schools. After a long disruption of physical transactions and mediation of electronic means, emotional adjustment among the males has taken a backseat. The same was observed in the case of females, too, but their adjustment capabilities were poorer, negatively impacting their rapport with their teachers. Females were mentally more fatigued than males, who, on the other hand, were more tired physically. Lag was observed in both genders, equally keeping up with the practical classes. Time management skills worsened in the new restrictive schedule of the schools. Here females were found to be less accommodative in the fixed schedule due to lesser participation in academic interactions.

Such an extensive lockdown period has already accustomed the girls to the so-called "gendered expectation" of doing household chores, taking care of the younger siblings, looking after the house, and other related gender biases in the family. Due to degrading family income among the lower income group due to the pandemic, boys were selected over girls to continue their education after the situation started normalizing (Nayak&Alam, 2022). Girls have been found to be constrained with regard to the learning space when shared with male students in schools both online and offline. Such a shift back and forth into the new digital ecosystem has further impacted the inclusion of girls giving a severe blow to equity in educational opportunities (Mathrani et al. 2020).

Conclusion

In India, women's participation in education is still a matter of consideration. As all the services have transitioned from offline to online, educational services were active by adopting online learning culture. But females were severely affected during the lockdown of schools. A gender gap is still being observed in the status of education even after the reopening of schools. Most importantly, females were less inquisitive towards the online learning trends creating obstacles in their later adjustments in face-to-face interaction with the teachers in the physical classroom settings. The inclusion of technology in education is here to stay, suggesting the new normal in education. Now the time has come to work on social inclusion and develop better policies for implementation.

References

Das, M., Bhuyan, C., & Sultana, F.S. (2020), 'COVID-19 Pandemic-Induced Teaching-Learning Experiences: Some Realities from Assam (India)', *International Journal of Innovation, Creativity and Change.14* (6), 353 – 376.

Ford, K.(2021). Addressing the gender digital divide is critical to ensure no one is left behind from COVID-19 RETRIVED FROM https://www.thehindu.com/news/national/nso-report-shows-stark-digital-divide-affects-education/article32554222.ece

Gopalan, H. S., & Misra, A. (2020). COVID-19 pandemic and challenges for socio-economic issues, healthcare and National Health Programs in India. *Diabetes & metabolic syndrome*, *14*(5), 757–759. https://doi.org/10.1016/j.dsx.2020.05.041

Guo, C., & Wan, B. (2022). The digital divide in online learning in China during the COVID-19 pandemic. *Technology in Society*,102122. https://www.thehindu.com/news/national/nso-report-shows-stark-digital-divide-affects-education/article32554222.ece

Korlat, S., Kollmayer, M., Holzer, J., Lüftenegger, M., Pelikan, E. R., Schober, B., & Spiel, C. (2021). Gender differences in digital learning during COVID-19: competence beliefs, intrinsicvalue, learning engagement, and perceived teacher support. *Frontiers in psychology*, *12*, 637776.

Kumari, S.A., &Manukonda, R. (2020) Gender Divide in Education in India: A CriticalStudy Based on Functionalist Theory of Education. *Journal of Critical Reviews*, *7* (2),574-578.

Nayak, K. V., &Alam, S. (2022). The digital divide, gender and education: challenges for tribal youth in rural Jharkhand during Covid-19. *DECISION*, 1-15.

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 Agenda2030. *Sustainability*, *14*(16), 10332.

Palomares-Ruiz, A., Cebrián, A., López-Parra, E., &García-Toledano,E.(2020).ICT Integration into Science Education and Its Relationship to the Digital Gender Gap. *Sustainability*, *12*(13), 5286. MDPI AG. Retrieved from http://dx.doi.org/10.3390/su12135286

Raluca David &Toby Phillips (2022) The gender digital gap: shifting the theoretical focus to systems analysis and feedback loops, Information, Communication & Society, DOI: 10.1080/1369118X.2022.2069507

Saha, S.R.,&Zaman, 0. (2017) Gender Digital Divide in Higher Education: A Study on University of Barisal, Bangladesh. *OSR Journal of Humanities and Social Science*. *22*(1), 11-17.

Soomro, K.A., Kale, U., Curtis, R. et al. (2020). Digital Divide Among Higher Education Faculty. *Int J EducTechnol High Educ17*, 21.

ANNEXURE

Participant Demographics Questionnaire

Instructions

Complete the following demographic information. Please note that all personal information will be kept completely confidential, and none of the responses you provide will be connected to your name, email address, or other identifying information.

Socio-Demographic Datasheet

1. Gender
   - Male
   - Female
2. Category
   - General or Unreserved category
   - OBC
   - SC
   - ST
3. Domicile
   - Urban
   - Semi-urban
   - Rural
4. Family type
   - Joint
   - Nuclear
5. Siblings
   - Yes
   - No
6. Approximate monthly income
   - Above Rs. 50,000
   - Rs. 25,000 – 50,000
   - Rs. 15,000 – 25,000
   - Below Rs. 15,000
7. Sources of income
   - Only mother
   - Only father
   - Both the parents
   - Other sources

Student Questionnaire on Recent Trends in Online Learning

Introduction

Thank you for participating in this questionnaire. Your valuable opinions and insights will contribute to our understanding of the recent trends in online learning. Please take a few minutes to answer the following questions. All responses will remain confidential and will be used for research purposes only.

1. How was your online experience in learning during the covid-19 pandemic?
   - Favourable
   - Unfavourable
   - No opinion
2. How would you rate your participation in the different online platforms like Zoom, Google Meet, Teachmint, etc?
   - Favourable
   - Unfavourable
   - No opinion
3. What was the status of the accessibility standards (electricity, internet facilities, geographical concerns) during online classes?
   - Favourable
   - Unfavourable

- No opinion

4. Were you comfortable in using the different applications both in the laptop and mobile phones?
    - Favourable
    - Unfavourable
    - No opinion
5. Would you say that your participation in the online platform was regular?
    - Favourable
    - Unfavourable
    - No opinion

Information schedule for teachers to extract information on the prevailing offline education based on gender status

Thank you, teachers, for participating in this questionnaire, which aims to gather information about the prevailing offline education system based on gender status. The purpose of this research is to understand any existing disparities, challenges, and opportunities related to gender in the field of education. Your responses will be treated confidentially, and the aggregated data will be used for statistical analysis and research purposes only. Please answer the following questions to the best of your knowledge and experience. Please note that the answers need to be gender specific only.

a. Can you state the status of the students on the first initial days of online class and instruction?

b. What was the status of the online attendance of students?

c. What was the status of the regularity of the students in offline classes?

d. Discuss the gap observed in the regular classroom tasks and homework given to the students.

e. Do you think there is considerable deterioration in the students' self-confidence post-pandemic? If yes, why?

f. Have you observed stress and anxiety related to classroom evaluation?

g. What is the quality of adjustment levels among the students in the physical infrastructure as opposed to the virtual environment post-pandemic?

h. Do you think online and virtual classes have disrupted the emotional element of a classroom? If so, why?

i. Have you observed any kind of lethargy or tiredness among the students during long hours of school? Please elaborate.

j. Do you think there is a drift from regular laboratory work?

k. Give your comments regarding the time management skills of the students.