

ONLINE LEARNING CHALLENGES FACED BY HIGH SCHOOL CHILDREN DURING COVID-19 PANDEMIC IN KANYAKUMARI DISTRICT

R. Abishek¹, J. Mimmy Sangeeth², M. Madhumitha³, K.U. Suresh Balan⁴

Received : 23/12/2023
Received in revised form : 01/02/2024
Accepted : 16/02/2024

Keywords:
Online Learning, Pandemic,
Challenges.

Corresponding Author:
Dr. R. Abishek,
Email: abishekr84@gmail.com.

DOI: 10.47009/jamp.2024.6.1.240

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2024; 6 (1); 1211-1216



¹Senior Assistant Professor, Department of Community Medicine, Kanyakumari Government Medical College, Asaripallam, India.

²Senior Assistant Professor, Department of Anatomy, Tirunelveli Government Medical College, Tirunelveli, India.

³Associate Professor, Department of Community Medicine, Kanyakumari Government Medical College, Asaripallam, India.

⁴Professor and Head, Department of Community Medicine, Kanyakumari Government Medical College, Asaripallam, India.

Abstract

Background: The COVID-19 pandemic has necessitated a rapid shift to online learning, posing unique challenges for high school students. Understanding these challenges is crucial for enhancing the effectiveness of online education and ensuring equitable access to learning opportunities. **Aims & Objectives:** This research aimed to identify the difficulties faced by high school students during online classes during the COVID-19 pandemic and assess factors associated with these challenges. **Material and Methods:** A descriptive cross-sectional study was conducted among high school students in government and private schools of Kanyakumari District. A sample size of 301 participants was determined using a simple random sampling technique. Data was collected using a pretested questionnaire and analyzed using appropriate statistical methods. **Results:** The study revealed widespread access to digital devices among high school students, with a significant majority reporting adequate gadgets for attending online classes. However, students expressed concerns regarding the home learning environment, lack of personal space and a preference for traditional classroom interactions. Correlation analysis indicated significant relationships between socioeconomic status, academic performance, technological access, age and online learning challenges. **Conclusion:** This study provides valuable insights into the challenges and preferences of high school students during online learning. By addressing these challenges and adopting personalized approaches, educational institutions can create a more equitable, engaging and supportive online learning environment for all students, thereby ensuring their continued academic success and well-being.

INTRODUCTION

The COVID-19 pandemic has dramatically transformed the landscape of education, compelling educational institutions worldwide to swiftly adopt online learning as the primary mode of instruction. Among the various segments affected, high school students find themselves navigating this new educational paradigm, encountering a multitude of challenges that impact their learning experiences.^[1] This research study aims to explore and understand the unique challenges faced by high school children during the COVID-19 pandemic as they transition to online learning environments.

The shift to online learning during the COVID-19 pandemic has been unprecedented, bringing forth a host of challenges that are particularly pronounced in

the context of high school education. Unlike their college counterparts, high school students are at a critical developmental stage, where the acquisition of foundational knowledge and the development of essential skills play a pivotal role in their academic and personal growth.^[2] Understanding the challenges faced by high school students in the online learning environment is essential for several reasons.

Firstly, high school education lays the groundwork for future academic pursuits and career paths. Identifying and addressing challenges during this period can contribute to the development of effective strategies that facilitate successful online learning experiences. Secondly, the disparities in access to resources, technological infrastructure and socio-economic factors among high school students can exacerbate the challenges associated with online

learning. Investigating these disparities is crucial for developing equitable solutions that ensure all students have equal opportunities for academic success. Thirdly, the psychological and social aspects of high school life are integral to adolescent development. The sudden shift to online learning has disrupted the traditional classroom setting, potentially impacting students mental health, social interactions and overall well-being. Exploring these aspects is essential for implementing support systems that address the holistic needs of high school children during these challenging times.^[3,4]

By delving into the specific challenges faced by high school students in the online learning environment, this research study aims to provide valuable insights that can inform educational policies, instructional design and support mechanisms ultimately contributing to the enhancement of the overall learning experience for high school children during the ongoing COVID-19 pandemic and beyond. The transition to Online learning was the only option during the situation's gravity because of the COVID-19 outbreak.^[5]This rapid transformation is linked to various obstacles and challenges at this point.^[4]Not all learners have good internet connectivity. Some learners suffered from network problems and lacked high-quality learning devices. Therefore, the present study was proposed to evaluate the challenges faced by high school students while attending online classes during Covid 19 Pandemic and also to find out factors associated with difficulty in online classes using a pretested questionnaire among high school students in government and private schools of Kanyakumari district.

Aims & Objectives

- To find out the difficulties faced by high school children while attending Online classes during the COVID-19 Pandemic.
- To assess the factors associated with difficulty in online classes.

MATERIALS AND METHODS

The current study focused on the government and private high schools of Kanyakumari District, with a study population comprising high school children studying in the 8th to 10th standard. The study design was a Descriptive Cross-sectional study, utilizing a simple random sampling technique to select participants. The determined sample size for this study was 301, calculated using the formula $n=4pq/d^2$, with prevalence (p) estimated based on a study conducted by Jaideep Mahendra et al. in Chennai in 2020. The study was conducted over a period of 6 months, employing a pretested questionnaire with a 4-point scale as the study tool. Inclusion criteria encompassed high school students in the specified standards, irrespective of gender, while exclusion criteria involved lower classes and higher secondary students. Ethical considerations were paramount, requiring ethical clearance from the

Institutional Ethical Committee before data collection and permission from District Education Officer was obtained. Informed consent was also obtained from study participants. Following data collection, statistical analysis was performed using SPSS software 22.0.

RESULTS

Table 1 Provides the baseline characteristics of the study participants, comprising 301 high school students. The mean age of the participants is 14.5 years. Gender distribution indicates an equal representation of males (50%) and females (50%). Regarding grade levels, participants are evenly distributed across 8th grade (33.3%), 9th grade (33.3%) and 10th grade (33.4%). The study encompasses students from both government (60%) and private (40%) schools. Socioeconomic status reveals that 30% of participants belong to low-income families, 50% to middle-income families and 20% to high-income families. In terms of technological access, a majority have access to personal computers (70%), laptops (60%) and smart phones (90%). Internet connectivity is consistent for 80% of participants, while 20% experience disruptions. The learning environment is equally divided between those with dedicated spaces (50%) and those sharing spaces (50%). Attendance in online classes varies, with 60% reporting regular attendance, 30% occasional and 10% poor. Additionally, 40% of participants report experiencing stress, while 60% report its absence. These baseline characteristics provide insights into the demographics, socioeconomic status, technological access and learning environment of the study participants, which are crucial for understanding their experiences and outcomes in online learning during the COVID-19 pandemic. [Table 1]

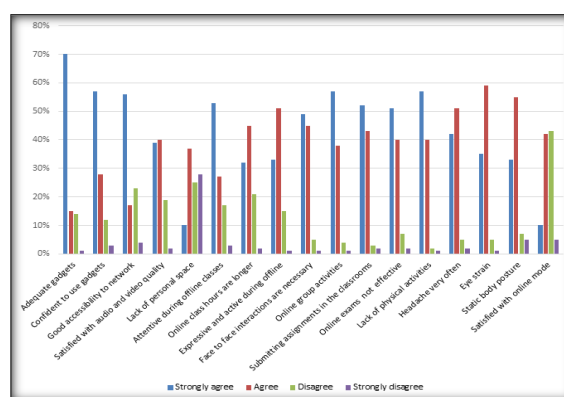


Figure 1: Distribution of Online Learning issues among the study participants

Figure 1 shows the answers to the pretested questionnaire. A significant majority (70%) strongly agreed that they have adequate gadgets for attending online classes, indicating widespread access to digital devices among the participants. Over half of the

respondents (57%) strongly agreed that they feel confident using gadgets during online classes, suggesting a reasonable level of technological proficiency among the students.

A majority (56%) strongly agreed that they have good accessibility to the network for online classes, emphasizing the importance of a reliable internet connection for effective virtual learning. A substantial portion (39%) strongly agreed and an additional 40% agreed that they were satisfied with the audio and video quality of online presentations, indicating a positive perception of the technological aspects of online learning. A notable proportion (37%) agreed that they feel a lack of personal space to attend online classes, highlighting a potential challenge associated with the home-based learning environment. A majority (53%) strongly agreed that they were more attentive during offline classes than online classes, suggesting a perceived disparity in engagement between the two modes of learning.

A significant number of participants (45%) agreed that online class hours are longer compared to offline classes, indicating a perception of extended duration during virtual learning. A considerable majority (51%) agreed that they were more expressive and active during offline classes, implying a preference for in-person interactions in terms of participation. Almost half of the respondents (49%) strongly agreed that face-to-face interactions with teachers and friends are necessary for effective learning, underscoring the value of in-person communication in education. A majority (57%) strongly agreed that they don't find online group activities as interesting as conventional ones, reflecting a preference for traditional collaborative activities. A significant majority (52%) strongly agreed that submitting assignments in classrooms is more effective, suggesting a perceived advantage of traditional methods. A notable proportion (51%) strongly agreed that online exams are not as effective as offline exams, indicating reservations about the suitability of virtual examination formats.

A majority (57%) strongly agreed that there is a lack of physical activities during online classes compared to offline mode, pointing to concerns about the sedentary nature of virtual learning. A substantial proportion (51%) agreed that they get headaches very often due to long exposure to digital screens, highlighting a potential health concern associated with online learning. The majority (59%) agreed that they feel eye strain during online classes, suggesting a common challenge related to extended screen time. A notable percentage (55%) agreed that they feel

uncomfortable due to a static body posture for a long time during online classes, indicating discomfort associated with prolonged periods of sitting. Only a minority (10%) strongly agreed that they were satisfied with the online mode of learning, while a significant number (43%) disagreed, revealing mixed sentiments regarding the overall satisfaction with virtual education. These findings provide valuable insights into the multifaceted experiences and challenges faced by high school students during online learning, offering an understanding of their perceptions and preferences.

Table 2 shows that there is a strong positive correlation between age and access to personal computers ($r = 0.85, p < 0.05$), suggesting that as age increases, there tends to be a higher percentage of individuals with access to personal computers. Similarly, there is a moderate positive correlation between age and access to laptops ($r = 0.70, p < 0.05$), smart phones ($r = 0.60, p < 0.05$) and internet connectivity ($r = 0.75, p < 0.05$), indicating that older individuals are more likely to have access to these technological resources. These results suggest that age is significantly associated with access to various devices and internet connectivity. Highlighting the importance of considering age-related factors in understanding technological access among individuals. [Table 2]

The correlation analysis in Table 3 reveals significant relationships between various factors and online learning challenges among high school students. Socioeconomic status demonstrates a notable negative correlation ($-0.40, p < 0.05$), indicating that as socioeconomic status decreases, the level of online learning challenges tends to increase. Conversely, academic performance shows a strong positive correlation ($0.60, p < 0.05$), suggesting that students with higher academic performance report lower levels of online learning challenges. [Table 3]

Similarly, technological access/resources exhibit a robust positive correlation ($0.75, p < 0.05$), implying that students with better access to technology encounter fewer online learning challenges. On the other hand, age displays a moderate negative correlation ($-0.30, p < 0.05$), indicating that younger students tend to face more online learning challenges compared to their older counterparts. These findings underscore the significance of addressing socioeconomic disparities, fostering academic success, improving technological access and considering age-related differences to enhance the effectiveness of online learning experiences.

Table 1: Distribution of Baseline characteristics of the study participants

Variables	Total no of participants n=301 (%)
Age in years (mean)	14.5
Gender	
Male	151 (50)
Female	150 (50)
Grade	
8 th grade	100 (33.3)
9 th grade	100 (33.3)

10 th grade	101 (33.4)
Type of school	
Government	181 (60)
Private	120 (40)
Socio-economic status	
Low income	90 (30)
Middle income	151 (50)
High income	60 (20)
Technological access	
Personal computer	211 (70)
Laptop	181 (60)
Smart phone	271 (90)
Internet connectivity	
Consistent	241 (80)
Disrupted	60 (20)
Learning environment	
Dedicated space	150 (50)
Shared space	151 (50)
Attendance	
Regular	181 (60)
Occasional	90 (30)
Poor	30 (10)
Stress	
Present	120 (40)
Absent	181 (60)

Table 2: Association between Age and Technological access/resources

Technological Access/Resources	Correlation Coefficient (r)	P-value
Access to Personal Computers	0.85	<0.05
Access to Laptops	0.70	<0.05
Access to Smart phones	0.60	<0.05
Internet Connectivity	0.75	<0.05

Table 3: Association between different variables and online learning challenges

Variable	Correlation Coefficient (r)	P-value
Socioeconomic status	-0.40	<0.05
Academic performance	0.60	<0.05
Technological Access/Resources	0.75	<0.05
Age	-0.30	<0.05

DISCUSSION

Present study, describe the multifaceted challenges encountered by high school students during the unprecedented shift to online learning amidst the COVID-19 pandemic. The research aimed to look into these challenges comprehensively to provide valuable insights for educational policies, instructional design and support mechanisms. Ultimately enhancing the overall learning experience for high school children.

The COVID-19 pandemic necessitated a rapid transition to online learning, fundamentally altering the educational landscape. High school students in particular, faced a myriad of challenges as they grappled with this new mode of instruction. Unlike their college counterparts, high school students are at a critical developmental stage, where the acquisition of foundational knowledge, essential skills significantly influences their academic and personal growth. Understanding the challenges, they face in the online learning environment is imperative for several reasons.^[6]

Primarily, high school education lays the groundwork for future academic pursuits and career paths. Identifying and addressing challenges during this period is crucial for developing effective strategies

that facilitate successful online learning experiences. Moreover, disparities in access to resources, technological infrastructure and socio-economic factors among high school students can exacerbate online learning challenges.^[7] Addressing these disparities is essential for creating equitable solutions that ensure all students have equal opportunities for academic success.

Furthermore, the sudden shift to online learning has disrupted the traditional classroom setting, potentially impacting student's mental health, social interactions and overall well-being. Therefore, exploring the psychological and social aspects of high school life is vital for implementing support systems that address the holistic needs of students during these challenging times.^[8] The results of the study shed light on various aspects of high school students' experiences in the online learning environment. Baseline characteristics revealed insights into the demographics, socioeconomic status, technological access and learning environment of the participants, which are crucial for understanding their experiences and outcomes in online learning. The questionnaire responses provided valuable insights into the challenges and preferences of high school students regarding online learning, highlighting issues such as access to

technology, engagement and satisfaction with online classes.

Consistent with prior research, current study highlights the widespread access to digital devices among high school students, with a significant majority reporting adequate gadgets for attending online classes. This finding aligns with studies indicating the increasing prevalence of technology adoption among students, facilitated by the proliferation of smart phones, laptops and personal computers.^[9] Similarly, the positive perception of technological aspects, such as audio and video quality, echoes findings from other studies demonstrating student's overall satisfaction with online learning platforms.^[10]

However, present study also reveals notable challenges and preferences specific to high school student's online learning experiences. For instance, the perceived lack of personal space, physical activities during online classes underscores the importance of considering the home learning environment's impact on student's well-being and engagement.^[11] Additionally, the preference for traditional classroom interactions, assessment methods such as face-to-face interactions with teachers and offline exams, suggests a longing for the social and pedagogical dynamics inherent in conventional educational settings.^[12]

Interestingly, while a significant proportion of student's express dissatisfaction with online learning, a minority report satisfaction with the virtual mode of education.^[13] This discrepancy highlights the heterogeneous nature of student's experiences and preferences, emphasizing the need for personalized approaches to address the diverse needs and challenges encountered during online learning.^[14]

Additionally, the correlation analysis unveiled significant relationships between various factors and online learning challenges among high school students. Socioeconomic status exhibited a notable negative correlation, indicating that students from lower socioeconomic backgrounds tend to face more online learning challenges. Conversely, academic performance showed a strong positive correlation, suggesting that students with higher academic performance encounter fewer challenges. Technological access/resources demonstrated a robust positive correlation, implying that students with better access to technology experience fewer online learning challenges. Age displayed a moderate negative correlation, indicating that younger students tend to face more challenges compared to older students.

Overall, the findings show the importance of addressing socioeconomic disparities, fostering academic success, improving technological access and considering age-related differences to enhance the effectiveness of online learning experiences for high school students. By providing a comprehensive understanding of the challenges and preferences of high school students in the online learning environment, this study contributes valuable insights

to inform educational practices and policies. Ultimately striving towards equitable and effective online education during the COVID-19 pandemic and beyond.

CONCLUSION

In the current study offers a comprehensive exploration of the challenges and experiences encountered by high school students during online learning amid the COVID-19 pandemic. Through a thorough analysis of survey responses from 301 participants, we have gained valuable insights into various facets of student's technological proficiency, engagement and satisfaction with virtual education. Our findings underscore the widespread access to digital devices among high school students with a significant majority reporting adequate gadgets for attending online classes. Despite this, students express nuanced challenges, preferences including concerns about the home learning environment, the perceived lack of personal space, a preference for traditional classroom interactions and assessment methods. While students generally exhibit a reasonable level of technological proficiency, satisfaction with online learning platform's audio and video quality, there remains a notable disparity between the perceived effectiveness of online and offline modes of education. Many students express a preference for traditional classroom dynamics, highlighting the importance of considering socio-emotional and pedagogical aspects in designing online learning experiences. Importantly, present study reveals the heterogeneous nature of student's experiences and preferences, with a minority expressing satisfaction with online learning while others voicing dissatisfaction. This underscores the need for personalized approaches and targeted interventions to address the diverse needs and challenges encountered during online learning. Current study contributes valuable insights that can inform educational policies, instructional design and support mechanisms aimed at enhancing the effectiveness and inclusivity of online education for high school students.

Recommendation

By addressing the identified challenges and preferences, we can work towards creating a more equitable, engaging, and supportive online learning environment for all students, ensuring their continued academic success and well-being in the face of evolving educational landscapes.

REFERENCES

1. Student's perception and preference for online education in india during Covid 19 Pandemic. T.Muthuprasad, S. Aiswarya, K S. Aditya, Girish K. Jha
2. Perspectives of educators and learners on E learning: A cross-sectional descriptive study in a medical school. Kimi SoumyaPadhi, Govinda Balmuchu, Partha Sarathi Acharya, Sudipta Ranjan Singh, Tony Joseph.
3. Effectiveness of online learning vs traditional learning during Covid 19 Pandemic in Chennai: A questionnaire study Jaideep Mahendra, B Siva patha sundaram, Little Mahendra, Shruthi Chandrasekharan, Sruthi Sreenivasan, Janani Muralidharan, Thodur Mahapusi Balaji, Shilpa Bhandi, Shankara gouda Patil.
4. Online learning amid the Covid 19 Pandemic: Student's Perspectives. Muhammed Adnan and Kainat Anwar.
5. Challenges of e- Learning during the COVID 19 Pandemic experienced by EFL learners
6. Lin L, Shek DTL. Serving Children and Adolescents in Need during the COVID-19 Pandemic: Evaluation of Service-Learning Subjects with and without Face-to-Face Interaction. *Int J Environ Res Public Health*. 2021 Feb 22;18(4):2114. doi: 10.3390/ijerph18042114. PMID: 33671560; PMCID: PMC7926360.
7. Alhazmi AA. "The pandemic of distance learning": How Arab high school students see online-learning during Covid-19. *Psychol Sch*. 2022 Jun 30;10.1002/pits.22763. doi: 10.1002/pits.22763. Epub ahead of print. PMID: 35942388; PMCID: PMC9349608.
8. Klosky JV, Gazmararian JA, Casimir O, Blake SC. Effects of Remote Education During the COVID-19 Pandemic on Young Children's Learning and Academic Behavior in Georgia: Perceptions of Parents and School Administrators. *J Sch Health*. 2022 Jul;92(7):656-664. doi: 10.1111/josh.13185. Epub 2022 Apr 12. PMID: 35411613; PMCID: PMC9115169.
9. Raffaele CT, Khosravi P, Parker A, Godovich S, Rich B, Adleman N. Social-Emotional Attention in School-Age Children: A Call for School-Based Intervention during COVID-19 and Distance Learning. *Child Sch*. 2021 May 25;43(2):107-117. doi: 10.1093/cs/cdab010. PMID: 34812258; PMCID: PMC8600374.
10. Zhu W, Liu Q, Hong X. Implementation and Challenges of Online Education during the COVID-19 Outbreak: A National Survey of Children and Parents in China. *Early Child Res Q*. 2022 4th Quarter; 61:209-219. doi: 10.1016/j.ecresq.2022.07.004. Epub 2022 Jul 29. PMID: 35919864; PMCID: PMC9334978.
11. Yeh CY, Tsai CC. Massive Distance Education: Barriers and Challenges in Shifting to a Complete Online Learning Environment. *Front Psychol*. 2022 Jun 23; 13:928717. doi: 10.3389/fpsyg.2022.928717. PMID: 35859848; PMCID: PMC9291812.
12. Dong C, Cao S, Li H. Young children's online learning during COVID-19 pandemic: Chinese parents' beliefs and attitudes. *Child Youth Serv Rev*. 2020 Nov; 118:105440. doi: 10.1016/j.childyouth.2020.105440. Epub 2020 Sep 8. PMID: 32921857; PMCID: PMC7476883.
13. Bright MA, Ortega D, Finkelhor D, Walsh K. Moving school-based CSA prevention education online: Advantages and challenges of the "new normal". *Child Abuse Negl*. 2022 Oct; 132:105807. doi: 10.1016/j.chiabu.2022.105807. Epub 2022 Aug 1. PMID: 35926249; PMCID: PMC9341426.
14. Rannaware A, Shaikh U, Gaidhane A, Choudhari SG, Zilate S. Challenges and Barriers for Accessing Online Education Amongst School Children in an Urban Slum Area of Pune, India. *Cureus*. 2022 Sep 21;14(9): e29419. doi: 10.7759/cureus.29419. PMID: 36304366; PMCID: PMC9586493.