Determinants of Digital Platform Preferences and Challenges Faced by Secondary School Students in Kerala: Evidence from Online Schooling during the COVID-19 Pandemic

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Abstract

The present technological era has witnessed transformative changes across various aspects of human life. Particularly in the realm of education, the pandemic highlighted the absence of adequate infrastructure in online schooling, as physical classrooms became inaccessible due to health concerns. The study tried to examine the various determinants of digital platform preferences and challenges faced by secondary school students in Kerala during Online Schooling in COVID-19 Pandemic. It has been found that that WhatsApp as the most leading platform, with 61 percent of teachers and 46 percent of students preferring it for online classes. Google Meet (21% teachers, 32% students) and Zoom (12% teachers, 11% students) also gained substantial attention. The preference of students was mainly driven by ease of use (59%), lesson comprehensibility (18%), and low data consumption (14%), reflecting the centrality of accessibility and convenience in digital learning. The most vital issue faced by the students was poor network connectivity (65%), followed by health-related problems such as headaches (55%) and eye strain (33%), and even sleep disorders. Moreover,

financial hardships in affording data packs and unavailability of appropriate devices (41%) further hampered the learning process.

Keywords: digital platform, online schooling, covid-19 pandemic

Introduction

The present technological era has ushered in transformative changes across various aspects of human life, from advancements in kitchen appliances to cutting-edge space technology. One notable impact of this technological revolution is the significant progress in digital platforms designed for a myriad of applications, including banking, commerce, trade, governance, and education. The COVID-19 pandemic brought global activities to a standstill, profoundly affecting traditional practices. Particularly in the realm of education, the pandemic highlighted the absence of online schooling infrastructure, as physical classrooms became inaccessible due to health concerns. In response to this crisis, innovative educators rapidly implemented online classes as a temporary solution. This shift, while initially a necessary adaptation, quickly became a widespread practice across the globe. However, the transition to digital education was both rapid and unplanned, presenting numerous challenges for students and educators alike. This study aims to investigate the specific challenges and perceptions of higher secondary school students in Kerala regarding the use of digital platforms for online classes during the COVID-19 pandemic.

Objectives of the Study

The study has the following objectives

1. To identify the digital platform frequently used by the teachers for online classes during COVID-19 Pandemic.

2. To study the Students' Preference for Digital Platform used in online classesduring COVID-19 Pandemic.

3. To study the Factors Influencing Students' Preferences for Specific Digital Platformsused in online classes during COVID-19 Pandemic.

4. To Examine the Challenges Encountered by Students During Online Classes Amidst the COVID-19 Pandemic.

Methodology of the Study

The present study is an ex-post facto research, by using an ex post facto research design, the study attempts to investigate how Keralan higher secondary school students from Kerala India perceived, and dealt with digital learning platforms during the COVID-19 pandemic. Without changing any independent variables, this design is suitable for analyzing the impacts of a naturally occurring variable—in this case, the extensive use of online education.

Population and Sample

Students in higher secondary schools from different districts of Kerala who has attended classes through online during the pandemic made up the study's population. A Probability sampling, stratified random sampling technique was used for the collecting the data total sample of 230 students were filled the research tools provided by the investigator. Sample consists of a range of demographic backgrounds, including differences in: School Type (Private, Government, or Aided), Gender (Boys and Girls), Parental Employment (Teachers, Banking, Business and Others.), Location (Rural, Urban).

Research Tools for Gathering Data

The following research Tools were used for data collection purposes.

Self-Developed Questionnaire: To collect demographic data and specifics about the students' online education.

Checklist: To identify issues with device access, internet connectivity, and the learning environment that arise during digital learning.

Perception Scale: The researcher created a Likert-type scale to gauge students' attitudes and perceptions regarding digital platforms and online learning.

Before the final data collection, all tools were piloted on a small sample and subject-matter experts evaluated them for content validity.

Analysis of Data, Result and Discussion

The investigator has employed suitable descriptive and inferential statistical methods, on quantitative data to identify variations in perceptions and difficulties among sub-variables such as gender, school type, locality and parental occupation. To obtain significant interpretations, tools like the mean, standard deviation, percentage, t-test, and ANOVA were used. The statistical interpretations based on the score obtained are presented in the following discussions.

Table 1

Demographic Profile of the Sample

Variables	Category	Data in Numbers	Total	Percentage	Total
Type of School	Government	124	230	54	100
	Aided	82		36	
	Private	24		10	
Gender	Boys	83	230	36	100
	Girls	147		64	
Parental Job	Teachers	13	230	6	100
	Banking	16		7	
	Business	53		23	
	Others	148		64	
Locale	Urban	36	230	16	100

CONFLUX
JOURNAL OF EDUCATION

ISSN 2320-9305 (Print)
ISSN 2347-5706 (Online)

Volume 14, Issue 1, December 2025
https://cjoe.naspublishers.com/

Rural	194	84

The present study consists of the samples from higher secondary schools of Kerala. The total sample has been categorized into four groups, like Type of school, Gender, Parental job and Locale of school situated. Among the type of school 124 students (54%) were from government school, 82 students (36%) are from aided and 24 students (10%) are from private schools. In gender category 83 students (36%) are from boys and 147 students (64) are from Girls category. Parents of the students are constitutes 13 Teachers (6%), 16 Bank officers (7%) , 53 Business field (23%) and 148 parents (64%) are belongs to agricultural workers, daily wages and other miscellaneous field. Locale based distribution of sample shows 36 students (16%) are from urban area and 194 students (84%) are from rural area.

Table 2

Frequently Used Digital Platform by Teachers

Sl.No.	Digital Platform	Number	Percent
1	WhatsApp	139	61
2	Google Meet	48	21
3	Zoom	28	12
4	YouTube	9	4
5	TV	6	2
Total		230	100

Table 2 shows the data regarding the frequently used digital platform by higher secondary school teachers in Kerala for taking online classes during the Covid 19 –pandemic. Data shows that 61 percent of higher secondary school teachers depended on whatsApp classes, 21 percent teachers used Google meet and 12 percent teachers used Zoom platform for their classes. Among the total sample 4 percent teachers guided through their students for learning through you tube and remaining 2 percent teachers used the educational broadcasting through Television channels.

Table 3

Students Preference on Digital Platform

Sl.No.	Digital Platform	Number	Percent
1	WhatsApp	106	46
2	Google Meet	73	32
3	Zoom	27	11
4	YouTube	12	5
5	TV	8	4
6	Not Interested at all	4	2
Total		230	100

The table 3 reveals the higher secondary school students interest towards digital platform for availing inline classes. Among the total sample 46 percent students have choose their preference digital platform as   WhatsApp. 32 percent higher secondary school students

liked the classes through Google meet while 11 percent have marked their preference

platform as Zoom. 4 percent of students who marked their preferred online platform for

online classes are Television. 2 percent students displayed their disinterest in online

platform.

Table 4

Reason for liking Particular Platform by Students

Sl.No.	Reasons	Number	Percent
1	Easy for Use	136	59
2	Easily understand	41	18
3	Low data Usage	33	14
4	Escape from Teachers attention	12	5
5	Unaware about other platforms	4	2
6	Power saver	4	2
Total		230	100

The table number 4 illustrates the reasons revealed by the higher secondary school

students in Kerala for selecting particular online platform for their online classes. Most of

the students that is 59 percentages reveal that they have preferred the particular digital

platform because of having the easiness of use of that platform. 18 percentage students reveal

that they prefer the particular platform as that make lesson easily understandable. Low data

usage of the particular platform attracted 14 percentage of higher secondary school student towards their preferred platform. 5 percent students reveal that they like the platform because that is very much useful to escape from teacher's attention while taking classes. Two (2) percentages of students reveals that they liked the platform because they are unaware about other digital platforms which have been available for online classes and two (2) percent teacher's reveals that the particular digital application is most effective power saver application and hence they are on side with.

Table 5

Challenges Faced during Online Classes

Sl.No.	Challenges	Number	Percent
1	Poor Network	149	65
2	Headache	127	55
3	Eye Diseases	77	33
4	Sleeping disorder	84	36
5	Financial crisis for recharging	82	35
6	No Proper device	95	41
7	Single device and more children	107	46

Table number 5 depicts the various challenges faced by the higher secondary school students during online classes. The main challenges have been faced that the poor network connectivity, which has been opinioned by 65 percentage of sample studied. Among the

sample 55 percent students experienced headache while 33 percent faced eye diseases due to the continuous usage of mobile for online classes. The online classes also caused to sleeping disorder among the students. Another major challenges rose by the students are the financial crisis during the Covid 19 to recharge the data pack in their mobile. Unavailability of the Appropriate devices for online classes is another challenges marked by 41 percent of the students selected for the study. Most crucial issue can be seen as the problems of having only one mobile phone and having more children in the family. It is clear that classes are held simultaneously at a time for most of the classes. Hence 46 percentage students marked that they have been faced the issue of Single device in their home and having more children or siblings.

Conclusion

The current study point out the veracity of online schooling of higher secondary school in Kerala during the COVID-19 pandemic. The analysis of digital platforms used in online schooling shows that WhatsApp as the most leading platform, with 61 percent of teachers and 46 percent of students preferring it for online classes. Google Meet (21% teachers, 32% students) and Zoom (12% teachers, 11% students) also gained substantial attention, while platforms like YouTube and educational television channels were utilized in very less percent. These findings underline the dependency on simple, easily accessible, and

low-data platforms like WhatsApp, which, though not originally designed for formal education, became the backbone of online schooling during the crisis.

The preference of students was mainly driven by ease of use (59%), lesson comprehensibility (18%), and low data consumption (14%), reflecting the centrality of accessibility and convenience in digital learning. A small segment of students used platforms due to lack of awareness about alternatives or to avoid teacher supervision, indicating limitations in digital literacy and engagement.

At the same time, the challenges faced by students were significant. The most pressing issue was poor network connectivity (65%), followed by health-related problems such as headaches (55%) and eye strain (33%), and even sleep disorders. Moreover, financial hardships in affording data packs and unavailability of appropriate devices (41%) further hampered the learning process. A particularly critical challenge was the single-device problem in families with multiple children (46%), which directly limited students' participation in classes. Collectively, these challenges reveal that the digital divide in terms of infrastructure, economic conditions, and access to technology severely affected the effectiveness of online education.

Overall, while online platforms served as a stop-gap arrangement for education during the pandemic, the study reveals that online schooling in Kerala was largely shaped by

accessibility rather than pedagogy. Teachers and students depended on platforms that were easily available, affordable, and less data-intensive, but the experience was marred by infrastructural gaps, health challenges, and socio-economic disparities.

Recommendations

1. **Strengthen Digital Infrastructure:**

   The government should prioritize improving internet connectivity in rural and semi-urban areas to minimize learning disruptions caused by poor networks.

2. **Provide Affordable Devices:**

   Special schemes should be implemented to supply affordable tablets or laptops to students, particularly those from economically weaker sections, to overcome the single-device problem in households.

3. **Subsidized Data Packs:**

   Partnerships with telecom providers can ensure concessional or free data packages for students during crisis situations, reducing the financial burden on families.

4. **Teacher Training and Platform Diversification:**

   Teachers should be trained to use multiple digital platforms (Google Meet, Zoom, LMS tools) to make classes more engaging and interactive, moving beyond the limited scope of WhatsApp.

5. **Health Awareness and Screen-Time Regulation:**

   Schools should provide guidance on healthy digital practices, including limiting screen

time, encouraging breaks, and adopting alternative offline activities to mitigate health issues.

6. **Develop Inclusive Digital Policies:**

   Policymakers must ensure that future online education strategies are inclusive, sustainable, and pedagogically effective, with special support for marginalized groups.

7. **Hybrid Learning Model:**

   In the long term, a blended model combining classroom and digital learning should be promoted to ensure resilience in education during emergencies.

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