



Online Education Among Senior Secondary Students of Rural Area of Varanasi District: Prevalence and Challenges

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ABSTRACT

During COVID-19 pandemic lockdown, online education emerged as an essential component of the education system to ensuring the continuity of learning. In India, where online education wasn't traditionally integrated into the primary education system, it is imperative to assess its influence on students. Understanding its effects is crucial for enhancing the quality of online education and gauging its impact on mental health. Our study aimed to evaluate the challenges encountered by senior secondary students in rural schools during the COVID-19 pandemic regarding online education. We examined the prevailing conditions and obstacles faced, while also analyzing the extent to which online education was adopted among them. The study was conducted in year 2022, among 431 senior secondary students. The selection of the students was made through multistage sampling from two blocks of Varanasi i.e. Kashi Vidyapeeth and Chiraiya. The results show that 39 per cent of students were not much aware of the online classes prior. The majority of students (94.9%) had been using mobile devices to attend classes and for learning purpose. 52.2 per cent expressed concerns about the students' mental health, and a large majority (95.4%) of students themselves worried about their academic careers.

INTRODUCTION

In the year 2020, COVID-19 has created chaos in everyone's life. Social distancing and Lockdown, a non-pharmaceutical approach aimed to limit interactions between potentially infected individuals. School closures were implemented as a response to the COVID-19 pandemic. In response to government directives, numerous higher education institutions (HEIs) and schools began dedicating their efforts to leveraging technology to facilitate remote learning, distance education, and online learning amidst the COVID-19 pandemic. Online learning, also referred to as Distance Learning or Distance Education, is an educational approach that facilitates instruction for students and instructors who are geographically separated (University of Houston, n.d. 2024). Instructional technologies utilized in online learning encompass a range of

mediums, including the internet, broadcasting (both open and closed circuit), cable, satellite, wireless communication, audio conferencing, and multimedia formats such as DVDs and CD-ROMs (Abuhassna & Yahya, 2018; Chun et al., 2016). Distance education traces its origins back to the 1800s in the United States, when educators and learners from the University of Chicago, situated in disparate locations, endeavored to establish connections through correspondence initiatives (Pregowska et al., 2021). The emergence of the World Wide Web (WWW) in 1991 served as an important driver in advancing online education, signifying a significant milestone in the rapid growth and advancement of online education (Kolokytha et al., 2015). Subsequently, educational institutions throughout the United States and globally have extended their offerings beyond mere online courses to encompass complete degree programs delivered via the internet (Hope Kentnor, 2015),

but a significant shift was seen in online education system during COVID-19 lockdown, especially in developing country like India. Online education was not only implemented in higher education but also in primary to senior secondary education. During times of calamity and crises, whether they are caused by humans or nature, educational institutions must show flexibility and explore alternative methods to sustain teaching and learning activities (Chang-Richards et al., 2013).

Online education came as alternate when the Government of India announced lockdown to curb the spread of the virus and there is no doubt that Online education has assisted students in coping with unforeseen setbacks by providing flexibility and accessibility. It allowed students to continue their studies regardless of unexpected circumstances along with a resilient and adaptable learning environment that has helped students navigate unpredictable losses and maintain their educational pursuits as the interruption of education puts children in danger of being subjected to child labor, Early marriage (Briggs, 2018). However, transition from traditional face-to-face learning to online learning was an entirely different experience for the learners and the educators too, and those who have been deprived of books and technology or from remote and rural areas may have face difficulties. The availability of services and devices needed for online education in rural areas could be limited, with a significant portion of families living in poor socio-economic conditions and lacking access to necessary devices (Jafar et al., 2023).

METHODOLOGY

The study was conducted in rural area schools of Varanasi district, Uttar Pradesh. Students from the 11th and 12th class were included in the research after explaining them the purpose of the study. They were included after taking the informed consent from them. Multistage sampling was adopted to select the study participants. Participants were selected in the three stages, in the first stage block, in the second stage schools and in the third stage students were randomly selected respectively. Varanasi district has eight blocks, out of the eight blocks, two blocks were chosen for the study, namely Kashi Vidyapeeth and Chiraigoan through random sampling. Total ten co-ed Secondary government schools were selected from these two blocks for further study, five schools from each block through simple random sampling. A sample size of 431 was calculated through Yemen's formula and via proportional allocation methods, students from classes 11th and 12th, irrespective of their stream, was selected for the participation in this study through simple random sampling. As class 11th and 12th are often considered pivotal years in a student's life, serving as the foundation for their future endeavors.

A tool in the form of several questions related to online education was developed for the purpose of assessing the prevalence of online education and evaluating its current scenario, along with identifying existing hurdles faced by senior secondary students at rural schools. Content validity of the tool was ensured by involving three experts with over 5 years of experience in the field of education and research. Cronbach's alpha coefficient was calculated for each item, and the results indicated that the alpha values were greater than 0.7, demonstrating that the tool is valid

and reliable for studying the prevalence of online education and assessing its current scenario, as well as identifying existing hurdles faced by senior secondary students at rural schools. Validated questionnaire was used to collect the data. The questionnaire comprised data on socio-demographic. Collected data was entered in the Microsoft excel software. Frequency, percentage, mean, and standard deviation was calculated, and chi square test was applied. P value was judged at 5% level of significance.

RESULTS

The data collected on the chosen components are organized into four sections for presentation namely basic characteristics of the participants, Questions related with online classes during corona pandemic, Problem faced by students in doing online class, Association of knowledge of online classes with the socio-demographic variables. In the present study 431 students studying in the senior secondary schools (11th and 12th) class was included.

Students were surveyed about their experiences with online classes during the COVID-19 pandemic, and their responses were recorded. Of the total, 86 per cent of students had their first experience with online classes, while 61.0 per cent stated they were aware of online classes before the pandemic. Gender was found to be significantly associated with know anything about online classes. Among the females 70.3 per cent while among the males 53.4 per cent were know anything about online classes. When asked about their hesitation towards online classes, 46 per cent expressed some level of reluctance, possibly due to their first-time experience and other reasons. Given the initial implementation of online classes in schools during the COVID-19 pandemic, questions were asked about the problems students faced. The most common issues included device availability, internet access, and noisy environments at home (Figure 1). Devices emerged as a major problem for online classes, with mobile phones being the most frequently used device (94.9%).

When questioned about their family members' concerns, approximately half (225) expressed worry about the students'

Table 1. Inquiries concerning online classes amid the COVID-19 pandemic

Questions		Percentage
Know about online classes	Yes	61.0
	No	39.0
Studying online in lockdown was new experience	Yes	86.3
	No	13.7
Studied online during the lockdown	Yes	77.5
	No	22.5
Electronic devices used for online classes	None	0.90
	Laptop	2.1
	Mobile	94.9
	Computer	.50
	Others	1.6
App used for online classes	None	0.90
	Zoom	4.2
	Google meet	13.2
	Others	81.7

Table 2. Question related to hurdles

Questions		Percentage
Hesitation in doing online classes	Yes	43.4
	No	56.6
Faced problem in doing online class	Yes	66.4
	No	33.6
Worried about career during the lockdown	Yes	95.4
	No	4.6
Anyone helped you with online classes	Yes	65.7
	No	34.3
Covid-19 has affected the ability to learn during online class	Yes	23.7
	A little	30.2
	Not at all	4.60
	A lot	41.5

mental health. The study also revealed that 411; 95.4% students were concerned about their career prospects during the lockdown. Additionally, 283; 65.7% students received assistance from others in navigating online classes during the pandemic. Notably, 179; 41.5% students mentioned that COVID-19 had adversely affected their ability to learn during online classes. Moreover, we have also evaluated the impact of socio-economic to the online education. We observed that education of father was found to be significantly associated with know anything about online classes. However, education of mother was not associated with it. Higher educated (education having more than 12th class) father's (67.6%) were having more knowledge about online classes. Socio-economic was found to be significantly associated with know anything about online classes. Among the higher-class students, it was found that 81.3% were Know anything about online classes. Students living in the Pakka house type (75.9%) and students living in the joint family (75.9%) were significantly having high knowledge about online classes. Students of the Class 12th (66.4%) were known more about the online classes as compared with the 11th class (55.5%). Moreover, we have not found Age group, religion, caste,

house status was not associated with the know anything about online classes (Table 3).

DISCUSSION

This study revealed the online learning experience shared by senior secondary students at rural schools. It finds that more than half of the students know about online classes priory., while a significant minority are not, may be due to poor socio-economic class and rural residence. Additionally, majority of the students (86.3%) had first time experience of online classes. Despite significant progress over the past 25 years in getting schools online, rural students' access to get online education is limited in comparison to their peers in urban and suburban areas due to the lack of universal high-capacity broadband access at home and at school, especially for lower-income and minority families(Leichty, 2021).According to the ASER 2018 report (Santosh Phad, 2020) 55.5% of students in rural schools either lack access to or have never utilized advanced learning tools like digital learning, computer education, and non-academic books.

More common devices for attending online classes were smartphone (94.9%). The study conducted by (Hamid et al., 2020; Muthuprasad et al., 2021; Rahman, 2021) also reported that majority of the students used smartphones for the online classes compared to other devices. In this study, about 2% students used laptops and computer for online classes. The high use of the smartphone for the online classes could be associated with the availability of the device within the family and socio-economic status of the student's family. Additionally, in this study, majority of the students came from the poor socio-economic background (Efriana, 2021) (Nashruddin et al., 2020). The present study observed that WhatsApp application was the most used app among the students as their teachers used to send their recorded lecture, so that students do not miss learning due to unavailability of device or internet related issues. Similar results were found by(Dhanwal et al., 2022; Pandey et al., 2020). The most preferred recreational sites of government school students were WhatsApp

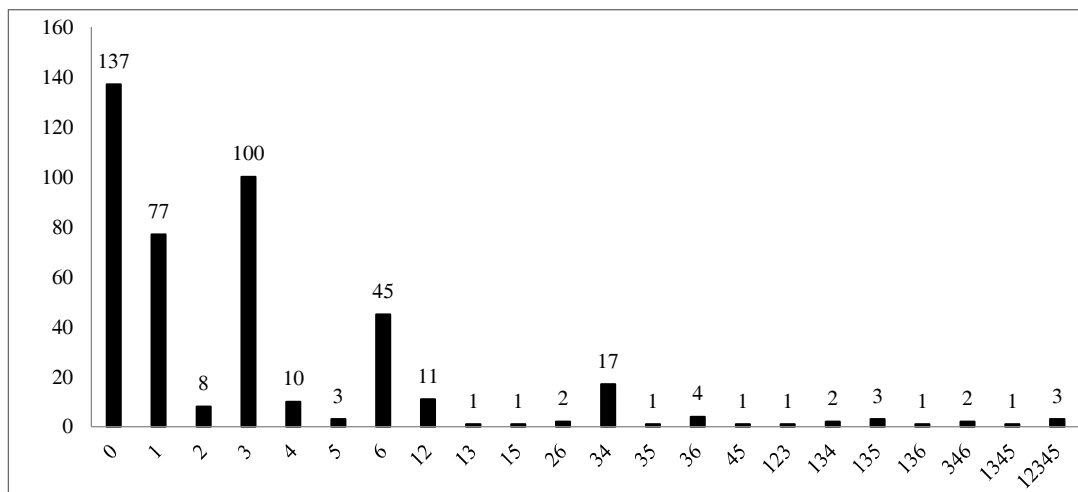


Figure 1. Problem faced by students in online class

Indication - 0: Device related issue, 1: Internet related problem, 2: Electricity related problem, 3: There was noisy atmosphere in the house, 4: Financial problem, 5: Emotional stress, 6: Others

Table 3. Association of knowledge of online classes with the socio-demographic variables.

Characteristics		Know anything about online classes		Chi Square	P value
		Yes (n=263)	No (n=168)		
Gender	Female	137 (70.3%)	58 (29.7%)	12.77	0.000
	Male	126(53.4%)	110(46.6%)		
Age Group	15 Years	39 (66.1%)	20(33.9%)	6.33	0.176
	16 Years	98(60.9%)	63 (39.1%)		
	17 Years	97 (63.0%)	57 (37.0%)		
	18 Years	24 (47.1%)	27 (52.9%)		
	19 Years	5 (83.3%)	1 (16.7%)		
Religion	Hindu	257 (61.6%)	160 (38.4%)	2.01	0.157
	Muslim	6 (42.9%)	8 (57.1%)		
Caste	General	30 (69.8%)	13 (30.2%)	6.95	0.074
	OBC	160 (64.3%)	89 (35.7%)		
	SC	65 (53.3%)	57 (46.7%)		
	ST	8 (47.1%)	9 (52.9%)		
Education of Father	Illiterate	31(59.6%)	21 (40.4%)	9.41	0.009
	Class1-class12	80 (51.9%)	74 (48.1%)		
	Higher Education (>12 class)	152 (67.6%)	73 (32.4%)		
Education of Mother	Illiterate	77 (53.8%)	66(46.2%)	4.64	0.098
	Class1-class12	105 (64.4%)	58 (35.6%)		
	Higher Education (>12 class)	81 (64.8%)	44 (35.2%)		
Socio-economic status	Class I	13(81.3%)	3(18.8%)	9.47	0.050
	Class II	34(64.2%)	19(35.8%)		
	Class III	41(50.0%)	41(50.0%)		
	Class IV	123(65.4%)	65(34.6%)		
	Class V	52(56.5%)	40(43.5%)		
House Type	Pakka	151(75.9%)	48(24.1%)	44.22	0.00
	Kachcha	44(63.8%)	25(36.2%)		
	Pakka-kaccha	68(41.7%)	95(58.3%)		
House status	Rent	30(66.7%)	15(33.3%)	0.673	0.412
	Own	233(60.4%)	153(39.6%)		
Family Type	Joint	85(75.9%)	27(24.1%)	14.07	0.000
	Nuclear	178(55.8%)	141(44.2%)		
Students of the Class	11 th class	117 (55.5%)	94 (44.5%)	5.39	0.020
	12 th class	146 (66.4%)	74 (33.6%)		

which contrasted with the study of (Rahman, 2021) who found that google meet was most used platform among students in Assam. There was other common online learning platform among student such as Physics Wallah, Unacademy, Telegram, YouTube, Physics Galaxy, Zoom, Google meet (Efriana, 2021). In another study by Gupta et al., revealed that Majority of the students (58.65%) shared that in starting Zoom app was used for online classes by teachers. This was closely followed by WhatsApp (50.27%) (Gupta & Sharma, 2020). A significant portion of respondents have hesitation about participating in online classes, while a majority do not have such hesitation. This may imply various factors such as concerns about technology, effectiveness of online learning, or personal preferences for traditional classroom settings. A majority of respondents experienced difficulties or challenges during online classes.. Similar results shown (Das et al., 2022) discuss the dynamics of online learning amidst the COVID-19 pandemic. Their research indicates that while the majority of

students express satisfaction with online learning, those residing in rural areas with internet connectivity issues, encountering untrained teachers, experiencing financial constraints leading to reduced expenditure, and achieving lower academic grades tend to hold negative perceptions towards online classes.

Career stress among secondary school children during the COVID-19 pandemic has been emerged as significant concern. Mostly (95.4%) students were worried about their future and career. Study done by Das et al., (2022) reveals that factors such as psychological, economic, and psychosomatic issues related to COVID-19 have been found to be positively associated with career anxiety and distress (Das et al., 2022). (Shobhit, 2020). Study also revealed that COVID-19 has had a substantial impact on their ability to learn during online classes, with a notable number indicating it has affected them “a lot”. This study shown that the majority of students experienced device-related issues (Figure 1). They had only one gadget at home and had to share

it with their siblings, or they missed their classes because their parents needed the mobile for their work. Similar results were found (Efriana, 2021) that some students do not have devices for online learning, if any, they belong to their parents. To study online, a student often has to take turns using it with their parent. After their parent leaves for work, another student occasionally takes a turn using the device later in the day. While some students' parents return home at night, the online learning schedules for students typically commence in the morning and extend until noon. Research carried out by (Nashruddin et al., 2020) confirmed that certain students reside in remote rural areas where internet coverage is unavailable. Moreover, their cellular network frequently experiences instability owing to the considerable distance from signal coverage. This issue is prevalent among many students engaged in online learning, potentially impacting the effectiveness of its implementation. Srinivasan et al., (2021) conducted the in-depth interview and identifies six major problems of rural students: inadequate technology, unacquainted academic atmosphere, digital disconnect, physical well-being, the distractions inherent with the medium, and digital illiteracy. All the respondents reported at least one sort of technological inadequacy (poor internet connectivity, lack of gadgets like mobiles phones or laptops) while accessing online classes. Other problems reported by Srinivasan et al., (2021) were lack a proper study atmosphere, lack of concentration due to the noisy atmosphere and they would be interrupted by the family members in between the online class hours, digital disconnect, problem of digital illiteracy, most of the respondents were first time users of smartphones or laptops, lack peer discussion, unable to grasp concepts, difficulty in clarifying doubts, and difficulty in communicating in real-time interaction (Srinivasan et al., 2021).

The Present study found the association between gender and online classes (p -value = 0.000). A higher percentage of females (70.3%) have knowledge of online classes compared to males (53.4%). Study conducted (Yu, 2021) opines that female students may achieve better learning outcomes due to their higher levels of determination and dedication compared to males. (Alghamdi et al., (2020) opined that females tend to exhibit stronger self-regulation compared to males, resulting in more significant learning outcomes for females.

CONCLUSION

The study of 431 students from grades 11th and 12th revealed both challenges and adaptations during the shift to online learning due to COVID-19. While many students lacked prior knowledge of online classes, most participated and encountered various problems, especially with device and internet connectivity. Mobile phones were the primary learning device. Interestingly, over half of the families expressed concerns about the students' mental health, and a large majority of students themselves worried about their academic careers. Additionally, factors like gender, parental education, socioeconomic status, housing conditions, and class level influenced students' prior knowledge of online classes. These findings emphasize the need to address the diverse challenges and anxieties students face in online learning environments, while also exploring strategies to improve its quality, accessibility, and

potential impact on mental well-being and academic success.

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