

## Physical and Financial Challenges in Online Learning Faced by Secondary School Students

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### ABSTRACT

*Online learning is a form of virtual education that encompasses a range of technologies such as email, video conferencing, etc., and various applications such as Google Meet, Zoom, Google Classrooms, etc., which use the internet and gadgets to access it to impart education without involving people physically going somewhere. However, online learning is inseparable from a number of physical and financial challenges which compel both students and teachers to refrain from participating in online learning. This study, entitled "A Study of Challenges Faced in Online Learning by Secondary School Students," categorizes various challenges faced by students during online learning. This research is a descriptive study. Data was obtained through a questionnaire developed by the researcher, which consists of closed-ended as well as open-ended questions. The population for the present study consists of secondary school students of Aligarh district in U.P. The sample for the study comprised 60 secondary school students selected using a convenience sampling technique. The results obtained indicate that students agreed that they were facing various physical and financial challenges in online learning, which created hindrances in participating effectively.*

**Keywords:** Online Learning, Physical Challenges, Financial Challenges.

### Introduction

Online learning is a form of education where students use their home computers through the internet staying away from academic institutions (Ullah et al. 2021). The use of the internet to distribute study material to students in the form of video lessons, presentations, and texts is known as online learning (Wadhwa et al. 2020). All learning activities, such as exams, distribution of teaching materials, and assessment are done via internet technology access, allowing students to participate actively regardless of time and place (Bali and Musrifah, 2020). However, there are various challenges students faced during online learning which creates difficulty to achieve learning outcomes. These challenges have been identified and then classified as physical and financial challenges.

### Physical Challenges

High speed internet and stable electricity are main challenges that is why India is ranked 89th internationally with internet speed and stability. A World Economic Forum survey indicates that merely 15 percent of households has internet connection, while mobile broadband remains available to a limited number and only 5.5 memberships per 100 individuals. Moreover, broadband access comprises approximately 600 million connections, predominantly in 50 to 100 largest cities of India, resulting in inadequate connectivity in rural regions (Jindal and Chahal, 2020).

When students receive online education at home, their physical learning environment (PLE) significantly different from traditional campuses or classrooms where they receive formal education. A home learning environment that allows learning work is as important as access to the internet and ICT equipment for learning of students of all ages (Pietro et al. 2020).

The challenges associated with modern technology range from download errors, installation problems, login problems, audio and video problems, and so on (Dhawan, 2020). Challenges such as inefficiencies of equipment and infrastructure, internet connectivity and electrical problems, data and information confidentiality etc. prevent participation in online education (Hossain, 2022).

### **Financial Challenges**

Financial challenges refer to expenses related to the high cost of internet connection and digital devices that limit the participation in online learning are termed as financial challenges (Hossain et al. 2022).

According to the NSSO (National Sample Survey Organization, India) 2017–2018, only 9 percent of Indian households had access to the digital devices such as internet and computers. Approximately, 90 percent of students do not have access to the digital resources and this affects participation in online learning (Khan et al. 2021).

Abuhammad (2020) addressed the financial challenges, which were categorized into two subthemes: inability to buy expensive technology and internet services, highlighting the difficulties in affording costly laptops and associated technologies necessary for online learning.

Moreover, there is no universal access to infrastructure (hardware and software) and fast broadband home connection facilitates online learning. Children need access to digital devices and resources to participate in online learning. However, there are less than half of rural households and low-income families in most OECD countries. (OECD policy responses to coronavirus, 2020). Thus, financial challenges are observed due to the high cost of internet connection, computers and related equipment

### **Review of Literature**

The present study has been undertaken after a thorough study of related research literature. Both studies from India and abroad, have been reviewed. The researcher has reviewed the following literature to understand the existing landscape of physical and financial challenges in online learning faced by secondary school students.

Hossain et al. (2022) explored the challenges in online and distance learning during pandemic. Data was collected from 2,473 students of Bangladesh. Findings of this study revealed some physical and financial challenges. Physical challenges include limited access to ICT, unavailability and low bandwidth of internet, absence of user-friendly systems and soon. High cost of internet data packages and digital devices create financial challenges in online learning.

Muthuprasad et al. (2021) examined students' perception and preference for online education in India during covid -19 pandemic. The sample comprised of 307 students. The findings indicated that access to uninterrupted internet and lack of connectivity were the main challenges in online learning.

Mishra et al. (2020) conducted a study on 'Online Teaching-Learning in Higher Education in India During Lockdown Period of COVID-19 Pandemic.' 260 students were participated as a sample for the study. The major challenges were the unstable network connection, interrupted electricity connection, intermittent signal issues and lack of sufficient tools.

Shreedha and Jani (2020) investigated issues and challenges in online learning based on secondary sources and revealed that own devices and good frequency internet connectivity with free of cost or at reasonable cost were not available to students.

Dhawan (2020) conducted a study based on secondary sources 'Online Learning: A Panacea in the Time of COVID-19 Crisis.' This study noted that lot of time and cost is involved in e-learning and not all the teachers and students have access to all digital devices, internet, and Wi-Fi connection. Access to the devices and technology, maintaining the equipment, training human resources, and generating online content all require significant cost.

Ullah et al. (2021) addressed the challenges in online learning encountered by the students of Pakistan. A sample 550 students was drawn. Findings of the study stated most students did not have access to high speed or reliable internet services.

Nazir and Khan (2021) explored barriers to online learning during Covid 19 in Pakistan. Sample size of 12 students was considered. Findings of the study confronted that students of rural areas were unable to attend online classes, download online lecture recordings, submit online assignments and quizzes, and upload exam paper solutions due to frequent power cuts daily.

Xhaferi. B and Xhaferi. G (2020) explored online learning benefits and challenges during the covid 19 pandemic faced by students of North Macedonia. Responses of 65 students were considered. Findings of the showed that online learning community was different from the traditional setting and too much homework was given to the students was the challenge faced by students.

Ja'ashan (2020) conducted a study on 'The Challenges and Prospects of Using E-Learning among EFL Students in Bisha University, Saudi Arabia.' The sample included 261 EFL students. This study highlighted the challenges such as inadequate ICT, internet access and connection, inadequate home internet access and complicated software.

Soni (2015) conducted a study on prospects and problem in e- learning in India. 300 students were selected as a sample size. Findings of the study revealed that the main barriers to widespread adoption of e-learning were high cost of digital libraries, internet connection, computer and its accessories and power supply. Moreover, appropriate technology/software required for online learning is not available, environment does not motivate for online learning and internet connectivity is not accessible 24\*7.

### **Context of the Study**

The population for the present study consists of secondary school students of Aligarh district in U.P. The sample for the study comprised of 60 secondary school students. They were selected using convenience sampling technique. Students of IX and X standards from 9 schools in Aligarh were selected on random basis as per the convenience. Schools were chosen on convenience basis from Aligarh district in U.P. Aligarh is a District of Uttar Pradesh, India. It is mostly known as a university town where the famous Aligarh Muslim University is located. There are total 57 secondary schools in Aligarh including both government and private. In this study schools were selected using convenience sampling technique.

### **Need for the Study**

As online learning is currently trending, NEP (2020) stressed on developing infrastructure for online learning and virtual labs to practice theoretical knowledge. NEP (2020) focused on ICT that in future there will be scope of online learning.

According to the survey conducted by all India NSO survey in 2017-18 three-fourths of students in India did not have access to the internet at home. The share of those who did not have computers, including devices such as palm-tops and tablets, was much greater is 89%.

The online survey conducted by Learning Spiral in 2021 showed that 75 percent children not having reliable internet connection and being unable to afford data. Moreover, 3 out of every 4 students faced challenges due to unequal access for all students, unoptimized software for mobile devices and security issues.

In order to understand the challenges that obstruct secondary school students to participate in online learning, researcher realizing that a study on challenges of online learning faced by secondary school students is needed in India especially in Aligarh. Achieving maximum participation during online learning and attaining learning outcomes in online leaning is more challenging for school children which is why it is important to know the challenges that create hindrance in online learning so to address these challenges and make teaching learning process effective. In future online learning may be a necessity that's why it is important to know its challenges to make it easier for students and to cope up with those challenges so that teaching learning process become easy, accessible and affordable.

### **Research Question**

What are the main physical and financial challenges faced by secondary school students during online learning?

### **Objectives**

- To study the physical challenges faced by secondary school students during online learning.
- To study the financial challenges faced by secondary school students during online learning.

### **Research Methodology**

#### **Population**

The population for the present study comprised of secondary school students of Aligarh district in U.P.

- **Sample**

The students of secondary school level were identified for the present study. The sample for the study comprised of 60 secondary school students. Students of IX and X standards from nine different schools in Aligarh were selected using convenience sampling technique. Schools were chosen on convenience basis from Aligarh district in U.P.

- **Tools and techniques used for data collection**

For achieving the objectives of the present study, questionnaire was developed by the researcher based on various related literatures. Self-developed Questionnaire was comprised of closed-ended questions.

- **Questionnaire**

The researcher developed a questionnaire based on research studies includes Hossain et al. (2022), Ullah et al. (2021), Khaferi. B and Khaferi. G (2020), Ja'ashan M (2020) and Soni (2015). Some items were adapted and then modified from these studies and some items were developed by the researcher to attain the objectives of the study. Permission was taken through mail from the author of the study for using their items in the development of the questionnaire.

The questionnaire was based on 5- point Likert Scale from strongly disagree to strongly agree. This section consists of total 18 questions on the physical and financial challenges in online learning. 10 questions were related to physical challenges and 8 questions were related to financial challenges

- **Analysis and Interpretation**

For analysing closed- ended questions the responses were categorised according to 5 point – Likert scale that is strongly disagree, disagree, neutral, agree and strongly agree. The participants rated their level of preference with the questionnaire statements using a 5- point Likert scale. The analyses of closed ended questions were done by calculating percentage, mean mode and standard deviation. The calculation was done using google sheet and excel. The data were represented by table according to the findings. The minimum and maximum length of the 5 point -Likert scale was also determined by the researcher to make equal distance apart (Lapada.A, 2018). For this range was calculated by the researcher. On the basis of the range, the length of the scale was determined as: 1.0- 1.79- Strongly Disagree, 1.80-2.59- Disagree, 2.60-3.39-Neutral, 3.40-4.19- Agree, 4.20-5.00- Strongly Agree.

**Analysis of Objective 1: To study the physical challenges faced in online learning by secondary school students**

**Physical challenges faced in online learning by secondary school students**

S. NO.	Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	S.D.	Mode
		F	F %	F %	F %	F %			
1	Unfamiliar to appropriate software required for online learning.	5 8.3%	10 16.7%	3 5%	30 50%	12 20%	3.6	1.2	4
2	Unfamiliar to appropriate hardware required for online learning.	7 11.7%	11 18.3%	4 6.7%	32 53.3%	6 10%	3.3	1.2	4
3	Lack of training to use the necessary software/hardware used for online learning.	7 11.7%	14 23.3%	2 3.3%	26 43.4%	11 18.3%	3.4	1.4	4
4	Online platforms are too complicated to use off.	7 11.7%	19 31.8%	4 6.7%	18 30%	12 20%	3.2	1.4	2
5	Difficulty in time management during online classes.	5 8.3%	10 16.7%	2 3.3%	23 38.4%	20 33.3%	4.3	1.1	4

6	Internet is unstable and is not available for 24*7 hours during online learning.	5 8.3%	10 16.7%	2 3.3%	24 40%	19 31.8%	3.7	1.3	4
7	Difficulty in attending classes due to inappropriate home environment.	3 5%	7 11.7%	3 5%	23 38.3%	24 40%	3.9	1.2	5
8	Experiences enjoyed in traditional classes are lost in online learning.	3 5%	7 11.7%	3 5%	23 38.3%	24 40%	3.9	1.2	5
9	Unstable power supply during online learning.	2 3.3%	13 21.7%	0 0%	21 35%	24 40%	3.9	1.1	5
10	Lack of tools to make class engaging.	3 5%	5 8.3%	6 10%	22 36.7%	24 40%	3.8	1.2	5
<b>Overall</b>							<b>3.7</b>	<b>1.3</b>	<b>4</b>

Statement *difficulty in time management during online learning* (mean= 4.3, S. D= 1.1, mode= 5) shows that it has highest mean value. This statement denotes the less deviation from mean which revealed that participants strongly agreed with this statement. Findings of this statement are incoherence with the study of Ullah et.al (2021) as 75% students answered yes which implies that most of the students cannot effectively manage time in online learning. Statement *difficulty in attending classes due to inappropriate home environment* (mean 3.9, S. D= 1.2 and mode=4) followed by *experiences enjoyed in traditional classes are lost in online learning* (mean= 3.9, S.D =1.2, mode=5) and *unstable power supply during online learning* (mean= 3.9, S.D =1.1, mode=5) shows the second highest mean value. These statements denote the less deviation from mean which revealed that participants agreed with this statement. Findings of the statement *experiences enjoyed in traditional classes are lost in online learning* are in consonance with the study of Xhaferi B and G (2020) most of the students believed that traditional classroom differs from online learning moreover, traditional classroom resources were lost in online learning.

Statement *unfamiliar to appropriate hardware required for online learning* (mean= 3.3, S. D= 1.2, mode=4) shows the second lowest mean. This statement denotes the lower standard deviation which revealed that participants were neutral on this statement. Furthermore, statement *online platforms are too complicated to use off* (mean=3.2, S. D= 1.4, mode=2) shows the lowest mean and mode value. This statement denotes less deviation from mean which revealed that participants were neutral on this statement. Findings of this statement is not so much agreeable with the study of Ja'ashan (2020) as it stated that students have basic computer skills and required training in technical to use the necessary software and hardware as online learning software is too complicated to use.

Therefore, overall mean value of the dimension physical challenges faced in online learning (mean= 3.7 S. D= 1.3 and mode= 4) revealed that participants were agreed with the physical challenges faced in online learning. This indicates that most of the secondary school students faced some physical challenges in some or other way in online learning.

#### **Analysis of objective 2: To study the financial challenges faced in online learning by secondary school students**

##### **Financial Challenges faced in Online Learning by Secondary School Students**

S. NO.	Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean	S.D.	Mode
		F %	F %	F %	F %	F %			
1	Online learning technology is a costly affair.	4 6.7%	12 20%	7 11.6%	21 35%	16 26.7%	3.6	1.3	4
2	Unavailability of Wi-Fi connection due to financial instability.	5 8.3%	10 16.7%	1 1.7%	24 40%	20 33.3%	3.8	1.3	4

3	Costly internet data packages.	4 6.7%	4 6.7%	2 3.3%	25 41.6%	25 41.6%	4.1	1.1	5
4	Costly communication devices (mobile, laptop, headphone).	2 3.3%	4 6.7%	2 3.3%	27 45%	25 41.6%	4.2	1.0	4
5	High repairing cost of devices and internet connection used for online learning.	4 6.7%	4 6.7%	5 8.3%	23 38.3%	24 40%	3.9	1.2	5
6	Family is incapable to provide financial assistance for online learning.	5 8.3%	17 28.5%	3 5%	20 33.3%	15 25%	3.4	1.4	4
7	Cost of electricity is high in your area.	2 3.3%	12 20%	8 13.3%	19 31.7%	19 31.7%	3.7	1.2	5
8	High cost of hardware used in online learning.	5 8.3%	7 11.7%	5 8.3%	27 45%	16 26.7%	3.7	1.2	4
<b>Overall</b>							<b>3.7</b>	<b>1.3</b>	<b>4</b>

Statement *costly communication devices* (mean= 4.2, S.D = 1.0 and mode= 4) shows the highest mean value. This statement denotes less deviation from mean which revealed that participants strongly agreed on this statement. Furthermore, *costly internet data packages* (mean= 4.1, S. D= 1.1 and mode=5) shows second highest mean value. This statement denotes less deviation from mean which revealed that participants agreed on this statement. Findings of these statements is in coherence with the study of Hossain (2022) as students have identified costly communication devices and costly internet data packages are major financial obstacle in online learning.

Statement *online learning technology is a costly affair* (mean= 3.6, S.D = 1.3 and mode= 4) shows the second lowest mean value followed by the statement *family is incapable to provide financial assistance for online learning* (mean= 3.4, S.D = 1.4 and mode= 4) shows lowest mean value. These statements denote less deviation from mean which revealed that participants agreed on these statements. Findings of the statement *online learning technology is a costly affair* is consistent with the study of Soni (2015) as majority of the respondents strongly believed that this is a key problem associated with e-learning in India. Therefore, overall mean value of the dimension financial challenges faced in online learning (mean= 3.7 S. D= 1.3 and mode= 4) revealed that participants were agreed with the financial challenges faced in online learning. This indicates that most of the secondary school students faced some financial challenges in some or other way in online learning.

## Findings

### To Study Physical Challenges Faced in Online Learning by Secondary School Students

- Findings indicated that respondents strongly agreed on difficulty in time management during online learning, as uncovered by obtained the highest mean and mode value (mean= 4.3, S. D= 1.1, mode= 5)
- It was revealed that students found agreed on difficulty in attending classes due to inappropriate home environment as suggested by obtained the mean and mode value (mean 3.9, S. D= 1.2 and mode=4) followed by students agreed with experiences enjoyed in traditional classes are lost in online learning, as assisted by obtained the mean value (mean= 3.9, S.D =1.2, mode=5) and participants were also agreed with unstable power supply during online learning, as uncovered by obtained the mean value(mean= 3.9, S.D =1.1, mode=5)
- However, students were found neutral on unfamiliar to appropriate hardware required for online learning, as uncovered by obtained the mean value(mean= 3.3, S. D= 1.2, mode=4). Furthermore, students were also found neutral to online platforms are too complicated to use off, as suggested by obtained the mean value(mean=3.2, S. D= 1.4, mode=2)
- The results showed that participants were agreed in almost all the statements of physical challenges faced in online learning, as disclosed by overall mean and mode value (mean= 3.7 S. D= 1.3 and mode= 4). This indicates that most of the secondary school students faced some physical challenges in some or other way in online learning.

### To Study Financial Challenges faced in Online Learning by Secondary School Students

- In accordance with the findings students strongly agreed with costly communication devices, as disclosed by obtained the highest mean value (mean= 4.2, S.D = 1.0 and mode= 4). However, students were found agreed on costly internet data packages, as supported by obtained the mean value(mean= 4.1, S. D= 1.1 and mode=5).
- Furthermore, students were found agreed with online learning technology is a costly affair, as uncovered by obtained the mean value and mode value (mean= 3.6, S.D = 1.3 and mode= 4). Students were also agreed with family is incapable to provide financial assistance for online learning, as supported by the mean and mode value (mean= 3.4, S.D = 1.4 and mode= 4).
- The results showed that participants were agreed in almost all the statements of financial challenges faced in online learning, as disclosed by overall mean and mode value (mean= 3.7 S. D= 1.3 and mode= 4). This indicates that most of the secondary school students faced some financial challenges in some or other way in online learning.

### Discussion

Findings from the present study suggested that students have experienced both physical and financial challenges during online learning. Among the physical challenges, time management during online learning, inappropriate home environment, experiences enjoyed in traditional classes are lost in online learning, unstable power supply during online learning were the major hindrance acts as challenges faced by students in online learning. Furthermore, costly communication devices and costly internet data packages revealed that online learning technology is a costly affair. Moreover, family is incapable to provide financial assistance for online learning. Study revealed that most of the secondary school students faced some physical challenges and financial challenges in some or other way in online learning. Khaferi.B and Khaferi.G (2020) pointed out that resources in traditional classes are lost in online learning. Online learning cannot be effective as conventional classes as most students are not able to access the good internet facility due to physical as well as financial issues. This study addressed challenges faced by students in online classes. Most students do not have access to high speed or reliable internet services and are thus struggling with online learning. Nazir and Khan (2021) confronted that students of rural areas were unaware to use online tools and unable to attend online classes, download online lecture recordings, submit online assignments and quizzes, and upload exam paper solutions. Ja'ashan (2020) highlighted the challenges such as complicated software, poor internet connectivity, inadequate ICT infrastructure and home internet access. Ullah et al. (2021) stated that most students did not have access to high speed or reliable internet services and cannot effectively participate in online learning. Soni (2015) revealed some key challenges in online learning such as high cost of digital libraries, internet connection, computer and its accessories and power supply. Furthermore, inappropriate technology/software, inconsistent internet connectivity and environment does not motivate for online learning. Hossain et al. (2022) pointed out financial challenges and physical challenges. Students from low-income and remote rural areas were incapable to use digital devices and resources due to high cost of internet data packages and digital devices. Moreover, physical challenges include lack of faculty resources, limited access to ICT, unavailability and low bandwidth of internet, absence of user-friendly systems and so on. Therefore, this study identified the challenges faced by secondary school students during online learning in terms of physical and financial aspects. However, it does not include the measures to overcome those challenges and suggestions to improve online learning. Furthermore, it just gives the overview that what are the main challenges students were facing during their online learning. This study did not consider the gender discrimination in terms of physical and financial challenges during online learning so that male and female students were facing same challenges in online classes. Present study is limited to one district which comes in urban area that's why it does not consonant with the challenge that internet connectivity is not accessible to 24\*7. The present study was conducted on a limited number of students and specifically focused on lower secondary students' level.

### Conclusion

Online learning now become a necessity in the world of education for offering education to students. However, there are some unavoidable challenges that impede the participation of students in online learning. Therefore, the investigator wanted to study the main challenges that students faced during online learning. Among all challenges the most prominent challenges were in appropriate home environment, unstable power supply during online learning, costly communication devices and costly internet data packages. The present study highlighted the challenges faced in online learning and

classified these challenges into 2 dimensions that is physical and financial. The result of this study leads to conclusion that most of the students faced physical and financial challenges in online learning and these challenges affected student's participation and performance in online learning.

#### **Suggestions for the Future Studies**

- This study is confined to two dimensions of challenges in online learning, further studies may include more dimensions of challenges in online learning.
- This study is based on student's perspective regarding challenges faced in online learning, further studies may include teachers and other faculty members perspective on challenges faced in online learning.
- This study is limited to school level, further researchers may include respondents from institutes such as teaching training institutes, engineering and medical institutions etc.
- Present study is limited to one district, further studies may conduct on state, national and international level.

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