



Secondary School Teachers' Views on Online Learning Implementation Barriers during the COVID-19 Pandemic

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Abstract

The purpose of the present study was to examine the views of secondary school teachers on online learning implementation barriers during the COVID-19 pandemic at four barrier levels, namely, teacher, school, curriculum and student. Furthermore, it also explored the relationship among different barrier levels. The study was both descriptive and correlational in nature. The sample was taken from fifteen schools in Aligarh and consisted of 150 teachers. Data was collected online using standardized questionnaire. The collected data were analyzed using descriptive statistics and inferential statistics. The statistical results clearly indicated that different barrier levels had significant impact on using online learning. In addition, different level barriers showed significant positive correlations with each other. The study showed that teachers' demographic variables had no significant impact on the level of barriers. This study stimulates further discussion on how to overcome barriers whilst simultaneously maximizing benefits of online learning during this pandemic.

Keywords: secondary school teachers, views, online learning, barriers to online learning, COVID-19

Introduction

The World Health Organization (WHO) declared COVID-19 a global emergency on January 30th, 2020 and a global pandemic on March 11th, 2020 (WHO, 2020). Educational institutions in India have been temporarily closed since March 14th, 2020. This closure has forced schools, colleges and universities to adopt online teaching and learning suddenly without proper preparation and planning. Online learning, also referred to as e-learning or electronic learning (learning that is enabled electronically), is a modern and digital teaching-learning process where the acquisition of knowledge takes place through electronic



technologies and media. Typically, online learning is conducted on the Internet, where teachers teach and provide learning materials using online learning platforms like Google Meet, Zoom, Microsoft Teams, Google Classroom, Moodle, etc. and students can learn and access these materials online at any place and time.

As online teaching is a new and complex phenomenon, both teachers and students have been facing a number of challenges or difficulties due to their limited knowledge, skills and experiences related to online mode. As compared to students, teachers may be facing more challenges as they are digital immigrants. In this study, these difficulties or challenges are referred to as barriers as they may act as an obstacle for teachers not only in achieving their desirable teaching objectives but also in ensuring satisfactory academic performance of their students (Schoepp, 2005).

Background and Rationale of the Study

A number of experts have suggested various systems of classification for e-learning implementation barriers which are named as online learning implementation barriers in this study. For instance, Ertmer (1999) had classified barriers into first order and second order barriers. First order barriers are related to hardware or equipment, access, and technical support while the second order barriers are related to pedagogy, attitudes, beliefs or personal preferences. Pelgrum (2001) had divided e-learning barriers into material and non-material barriers. Material barriers refer to the absence or lack of Information and Communication Technology (ICT) resources/assets while non-material barriers relate to teachers' knowledge, aptitude and skills.

Assareh and Bidokht (2011) categorised e-learning barriers on the basis of four integral aspects they influence, namely, students, teachers, curriculum and schools. Students-related barriers include financial problems, motivation, assessment and evaluation, isolation from peers, inadequate online learning skills and experiences, affection and social domain. Teachers-related barriers consist of various aspects such as knowledge limitations and challenges associated with assessment and evaluation. Curriculum barriers comprise of ambiguity, quality, resources, teaching process, and evaluation. Finally, barriers faced by schools comprise hierarchical, organizational and structural factors. Also, Quadri, Muhammed, Sanober, Qureshi, and Shah (2017) investigated barriers affecting online learning implementation. They classified barriers into four areas: students, instructors,



infrastructure and technology, and institutional management. The study reported that the most significant barrier was infrastructure and technology while the least significant was students. Their study showed that limited time to develop online learning was the most significant factor that hinders online learning implementation, whilst lack of students' ICT skills was the least significant factor. Similarly, Hadija and Shalawati (2017) investigated barriers that teachers encountered when using e-learning. Lack of time to prepare a lesson using technology was a major challenge that teachers experienced. Other important limitations were lack of adequate professional development concerning technology, limited physical resources, inadequacy of resources, limited access to technology, lack of technical support, competence and confidence.

Most of the research studies on e-learning implementation barriers have been conducted in normal circumstances (Assareh&Bidokht, 2011; Hadijah&Shalawati, 2017; Juliane, Arman, Sastramihardja, &Supriana, 2017; Quadri, Muhammed, Sanober, Qureshi, & Shah, 2017). These studies had been conducted to assess the effect of e-learning on enhancing the conventional teaching-learning process. Only a few studies have focused on e-learning barriers but only at the level of higher education (Al-Harbi, 2011; Astri, 2017; Kabilan& Khan, 2012; Osman, 2018; Panda & Mishra, 2007; Rabiee, Nazarian, &Gharibshaeyan, 2013). Studies investigating e-learning use during pandemic are scarce (Ash & Davis, 2009; Mailizar, Almanthari, Maulina, & Bruce; 2020; Octaberlina&Muslimin; 2020). The researcher has not found any such study conducted in India at school level. This obviously creates a pertinent topic for the present study by highlighting the importance of investigating online learning barriers faced by teachers during pandemic in India.

Purpose of the Study

The purpose of the current study is to investigate online learning implementation barriers experienced by secondary school teachers during the COVID-19 pandemic. On one hand, the findings from this study will help to develop a deep understanding of such barriers in the Indian context at secondary school level and also offer useful suggestions for modifying and improving the on-going online learning practices. But on the other hand, they will fill in the existing research gaps in Indian online learning literature as such research studies are not being carried out in India before and during the pandemic period. Therefore,



in order to achieve the purpose as mentioned above, this study aims at answering the following research questions:

1. What are the barriers that teachers view as significant to online learning implementation during the COVID-19 pandemic?
2. Is there any significant relationship among different levels of barriers to online learning implementation?
3. Are there any significant differences in teachers' views on barriers to online learning implementation with respect to their demographic variables?

Research Methodology

Both descriptive and correlational methods of research were employed to answer questions raised up in the present study regarding the current conditions or status of participants and relationship among their demographic variables.

The main variable was teachers' views on online learning implementation barriers. Other variables were demographics associated with teachers such as gender, educational qualifications and training certification.

Sample

A non-probability sampling technique, the purposive convenient sampling, was employed with a purpose to select a sample of secondary school teachers. The sample consisted of 150 teachers selected from fifteen secondary schools in Aligarh, Uttar Pradesh.

Tool used for Data Collection

A self-constructed questionnaire was adapted from the standardised questionnaire developed by Mailizar, Almanthari, Maulina and Bruce (2020). It was used for online collection of data using Google Forms. It consists of four scales, namely, school level barriers, teacher level barriers, student level barriers and curriculum level barriers. Its content validation was done by a team of experts. Its internal consistency reliability, using Cronbach's alpha, was found 0.80.

Statistical Techniques used for Data Analysis

Descriptive statistics (namely, mean and standard deviation) and inferential statistics (namely, independent-samples *t*-test and Pearson product-moment correlation) were employed for analysing the quantitative data in accordance with the nature of variables involved and research questions of the study.



Data Analysis and Interpretation

Results concerning the views of secondary school teachers on online learning implementation barriers

Descriptive statistics were calculated in order to identify the most significant and dominant barriers the teachers viewed as significant to online learning implementation during the COVID-19 pandemic. Results are presented in Table 1.

Regarding the teacher level barriers, the results showed that the top two barriers were lack of teachers' knowledge (Mean = 3.76) and skill (Mean = 3.46) respectively in online teaching-learning process. Furthermore, the lack of time for preparing online teaching-learning materials (Mean = 3.00) and lack of confidence in using online teaching-learning (Mean = 2.96) were found to be ranking at third and fourth positions respectively. Their experience in using it (Mean = 2.88) was the barrier of least importance.

For school level barriers, the result showed that the top two barriers were lack of trained technical staff for organising and facilitating online learning (Mean = 3.62) and lack of online learning system (Mean = 3.58) respectively. Further, lack of internet connection (Mean = 3.42), lack of trained and experienced administrators in online learning (Mean = 3.02) and Lack of appropriate hardware and software for online learning (Mean = 3.00) were found at third, fourth and fifth ranks respectively. Furthermore, lack of emphasis on integration of technology into teaching of academic subjects (Mean = 2.92) was observed as the least significant barrier under school level barriers.

Results of the curriculum level barriers revealed that the lack of appropriateness of syllabus for online learning (Mean = 3.52), lack of appropriate textbooks for online learning (Mean = 3.48) and lack of online formative and summative assessments (Mean = 3.46) were the top three barriers. This was followed by lack of teaching-learning resources required for online learning (Mean = 3.42) and Lack of provision for appropriate reinforcement and feedback (Mean = 3.38) respectively.

With respect to student level barriers, the two top barriers were students' lack of internet connection (Mean = 3.84) and lack of access to devices such as laptop, tablet or mobile (Mean = 3.80) respectively. Moreover, students' lack of interest in online learning (Mean = 3.76) and Lack of skills in using online learning (Mean = 3.68) were ranked third



and fourth respectively, whilst the lowest barrier was students' lack of online learning knowledge (Mean = 3.66).

Table 1

Descriptive statistics for teachers' views on online learning implementation barriers

S. No.	Construct	N	Mean	SD
Teacher Level Barriers				
1.	Lack of knowledge regarding online teaching-learning	150	3.76	1.04
2.	Lack of skills in using online teaching-learning	150	3.46	1.12
3.	Lack of experience in using online teaching-learning	150	2.88	1.00
4.	Lack of confidence in using online teaching-learning	150	2.96	1.64
5.	Lack of time for preparing online teaching-learning materials	150	3.00	1.42
School Level Barriers				
1.	Lack of an online learning system	150	3.58	1.17
2.	Lack of internet connection	150	3.42	1.23
3.	Lack of emphasis on integration of technology into teaching of academic subjects	150	2.92	1.12
4.	Lack of appropriate hardware and software for online learning	150	3.00	1.57
5.	Lack of trained technical staff for organising and facilitating online learning	150	3.62	1.15
6.	Lack of trained and experienced administrators in online learning	150	3.02	1.44
Curriculum Level Barriers				
1.	Lack of teaching-learning resources required for online learning	150	3.42	1.31
2.	Lack of online formative and summative assessments	150	3.46	1.28
3.	Lack of provision for appropriate reinforcement and feedback	150	3.38	1.27
4.	Lack of appropriate textbooks for online learning	150	3.48	1.19
5.	Lack of appropriateness of syllabus for online learning	150	3.52	1.23
Student Level Barriers				
1.	Lack of knowledge regarding online learning	150	3.66	1.23
2.	Lack of skills in using online learning	150	3.68	1.08
3.	Lack of access to devices (i.e., laptop, tablet or mobile)	150	3.80	1.21
4.	Lack of interest in online learning	150	3.76	1.12
5.	Lack of internet connection	150	3.84	1.03

Table 2 presents a summarised overview of online learning barriers at each level. The results indicated clearly that the most significant online learning barriers, as per the view of teachers involved in the present study, were at the student level (Mean= 3.74).

Whereas, the curriculum level barriers (Mean=3.45) and the school level barriers (Mean= 3.26) came second and third respectively. The least significant barriers were at the teacher level (Mean= 3.21).

Table 2

Summary of descriptive statistics for barriers at each level

Construct	N	Mean	SD
Teacher Level Barriers	150	3.21	1.24
School Level Barriers	150	3.26	1.28
Curriculum Level Barriers	150	3.45	1.25
Student Level Barriers	150	3.74	1.13

Results concerning the relationship among different levels of barriers to online learning implementation

The relationships among different levels of barriers was assessed using Pearson product-moment correlation coefficient. As shown in Table 3, there were moderate to very strong and positive correlations between different levels. The strongest correlation was noticed between teacher and school level barriers, $r(148) = .783, p < .01$. Further, the second strongest correlation was observed between curriculum and student level barriers, $r(148) = .746, p < .01$. Furthermore, the third strongest correlation was found between teacher and curriculum level barriers, $r(148) = .560, p < .01$; followed by the correlations between teacher and student level barriers $r(148) = .504, p < .01$; between school and curriculum level barriers $r(148) = .421, p < .01$; and between school and student level barriers $r(148) = .384, p < .01$ respectively.

Table 3

Correlation matrix for barriers at each level

	Teacher Level Barriers	School Level Barriers	Curriculum Level Barriers	Student Level Barriers
Teacher Level Barriers	1	.783**	.560**	.504**
School Level Barriers	.783**	1	.421**	.384**
Curriculum Level Barriers	.560**	.421**	1	.746**
Student Level Barriers	.504**	.384**	.746**	1

** Significant at 0.01 level (2-tailed)

Results concerning the differences in teachers' views on barriers to online learning implementation with respect to their demographic variables

In order to find out the impact of each demographic variable (namely, gender, educational qualifications and training certification) on teachers' views on barriers, an independent-samples *t*-test was conducted separately. Results are presented in Table 4.

The results showed that there was no significant difference between male and female teachers concerning their views on barriers, $t(148) = .606, p < 0.05$. Further, there was no significant difference between teachers with undergraduate degree and teachers with post-graduate degree regarding their views on barriers, $t(148) = .241, p < 0.05$. Furthermore, there was no significant difference between the views of trained teachers and untrained teachers, $t(148) = 1.88, p < 0.05$.

Table 4

Results of independent-samples *t*-test with respect to demographic variables

Demographic Variables		N	Mean	SD	df	t	Sig. (p)
Gender	Male	60	2.90	0.55	148	.606	.545
	Female	90	2.83	0.69			
Educational Qualifications	Graduation	105	2.87	0.62	148	.241	.810
	Post-Graduation	45	2.84	0.68			
Training Certification	Yes	120	2.91	0.64	148	1.88	.061
	No	30	2.66	0.62			

Note. *t*-values not significant at 0.05 level

Conclusion and Implications

From the results of the present study, it can be concluded that barriers at different levels had significant impact on online learning. Moreover, different levels of barriers had positive and significant relationships with each other. Overall, this study reveals that different barriers had created a number of difficult and challenging situations for secondary school teachers, irrespective of their demographic backgrounds, in using online learning during school closures as a result of the COVID-19 pandemic. Moreover, these findings



indicate very clearly that students, teachers and schools were not well-prepared for using online learning before this pandemic.

The findings of this study suggest that policy makers, particularly schools, should design, develop and implement comprehensive strategies for training both teachers and students in using online learning. These strategies might include providing students with gadgets (mobiles or tablets) either for free or at affordable rates, along with free internet connection. In addition to providing teachers and students with technical support for smooth running of online classes, policy makers and educational administrators should ensure proper internet connectivity in both rural and urban areas. They should design and modify curriculum and multimedia-based books or study materials as per the nature and demands of online learning.

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