



Constraints Confronted in Online Education during COVID-19 Pandemic in Tamil Nadu

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJAEES/2023/v41i92055

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://www.sdiarticle5.com/review-history/102242>

Original Research Article

Received: 20/04/2023
Accepted: 26/06/2023
Published: 09/07/2023

ABSTRACT

Online learning was adopted by all the educational institutions worldwide due to the outburst of COVID-19 pandemic. It has wreaked havoc on numerous areas of the economy, and the education sector is no exception. The lockdown imposed by the Union and State Governments to stem the spread of the virus and mitigate its effects has taken the academic community by surprise. University Grants Commission (UGC) insisted Higher Educational Institutes to take online learning during lockdown period. This study was aimed to enumerate the constraints confronted by students and teachers participated in online education. The study was conducted among 275 Undergraduate students and 150 teachers in Tamil Nadu Agricultural University. Constraints were collected in the form of open ended responses and tabulated in to different dimensions based on multiple responses. The constraints from students has been enlisted into six dimensions namely technical constraints, institutional constraints, socio-emotional constraints, health constraints, learning

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constraints and environmental constraints. The constraints from teachers have been enlisted into five dimensions namely teaching constraints, monitoring constraints, evaluation constraints, socio-emotional constraints and learner constraints. Necessary steps need to be taken to improve the quality of online learning in case of pandemic situation in future scenario.

Keywords: Online learning; students; teachers and COVID19 pandemic.

1. INTRODUCTION

Mahyoob [1] reported that nearly half of the students (48.00%) faced difficulty in internet connection because most of the students are from remote areas and they experienced poor network. Shetty et al., [2] found that three fourth of students (75.00%) faced severe eye strain. It was due to increased screen time while attending online classes.

Anwar et al., [3] found that students faced technical problems like poor internet connection, plagiarism issue, and late submission of assignments. Muslimin and Harintama [4] found that half of the students (50.00%) confronted internet connectivity problems. Barrot et al., [5] found that more than two fifth of students (43.00%) were faced problems related to teaching and learning quality due to the lack of preparation for the transition to online platforms.

Rasmitadila et al., [6] revealed that teachers faced majorly technical obstacles during online learning. It was due to poor internet connection, lack of digital literacy among teachers. Erawati et al., [7] found that more than half of the teachers (60.00%) faced difficulties in determining the methods and media to be used when carrying out online learning, experiencing problems when conducting student assessments, unstable networks etc., Kruszewska et al., [8] found that three fourth of teachers (75.00%) faced the difficulties like lack of Internet and computer, difficulties to explain new material, health problems (back and spine pains, eye pains) in online teaching. Fauzi and Khusuma [9] found

that one fourth (25.00%) of teachers think that not all students have the communication tools to do online learning. It is the main obstacle found in implementing online learning in elementary schools. Ayu and Pratiwi [10] found that nearly two third of teachers (73.00%) have problems when using E-Learning (Rumah Belajar) to teach English. The teachers feel this website will be useful if they have enough training for online teaching.

From all these studies it was evident that students and teachers faced technical difficulties like poor internet connectivity, access to digital device etc., It leads to physical problems like eye strain, tiredness and psychological problems like stress, anxiety due to work load. Considering this in view current paper aimed to enumerate the constraints confronted by students and teachers participated in online education during COVID-19 pandemic.

2. METHODOLOGY

This study was conducted among 275 Undergraduate students from two degree programs viz., B.Sc. (Hons) Agriculture & B.Sc. (Hons) Horticulture from four campuses and 150 teachers from the respective campus in Tamil Nadu Agricultural University which was shown in Table 1. Students and teachers has been selected through proportionate random sampling technique from each campuses. The response was collected from students and teachers in the form of open ended questions and response has been tabulated.

Table 1. List of colleges selected for study in Tamil Nadu Agricultural University

Colleges Selected	Degree Programme
Agricultural College and Research Institute, Madurai	B.Sc. (Hons) Agriculture
Agricultural College and Research Institute, Coimbatore	
Horticultural College and Research Institute, Periyakulam	B.Sc. (Hons) Horticulture
Horticultural College and Research Institute, Coimbatore	

3. RESULTS AND DISCUSSION

3.1 Constraints Confronted by Students Participated in Online Education

The constraints from students has been enlisted into six dimensions namely technical constraints, institutional constraints, socio-emotional constraints, health constraints, learning constraints and environmental constraints.

3.1.1 Technical constraints

From Table 2, it was found that more than half of the students (56.36%) faced internet connectivity problems while attending online classes. This was the major technical constraint faced by students. It was because majority of the students have rural background and network connectivity was not good in those remote locations.

Followed by internet connectivity constraint, one third of students (33.45%) felt that internet cost was high because they need to opt monthly data pack and additional data pack if incase the data limit was over. Data limit was another constraint confronted by 31.63 per cent of students because they got insufficient data pack (1.5GB/2GB data per day).

3.1.2 Institutional constraints

It was found that three fifth of the students (60.36%) reported that lack of training was a major institutional constraint. It was because COVID-19 pandemic happened accidentally. Institution was not in a position to provide enough training required for the students to access online learning. Additionally institution might have felt that it was easy for students to access online learning. More than one third of

Table 2. Constraints confronted by students participated in online education (n=275)

S. No	Constraints	No	%	Rank
I	Technical constraints			
1.	Internet connectivity issues due to remote location of students	155	56.36	I
2.	Data limit per day	87	31.63	III
3.	Mobile hanging due to the application	76	27.63	IV
4.	Recorded sessions were not provided	59	21.45	VI
5.	High cost of mobile data	92	33.45	II
6.	Device incompatibility due to lack of specific features	63	22.90	V
II	Institutional constraints			
1.	Lack of training for attending online classes	166	60.36	I
2.	Lack of technical proficiency among teachers	98	35.63	II
3.	Lack of infrastructural facilities in the campus to provide better learning environment	82	29.82	III
III.	Socio – emotional constraints			
1.	Sense of isolation among classmates	92	33.82	III
2.	Emotional instability among students during online classes	138	50.18	I
3.	Lack of self confidence among students	102	37.09	II
4.	Lack of satisfaction towards online education	77	28.00	IV
IV.	Health constraints			
1.	Eye strain due to long screen time	179	65.09	I
2.	Headache and burnout syndrome due to continuous classes without break	96	34.90	II
3.	Weight gain due to physical inactivity during online classes	72	26.18	III
4.	Worsening of existing health issues	65	23.63	IV
V	Learning constraints			
1.	Lack of concentration among students	122	44.36	I
2.	Unable to make notes out of classes	110	40.00	II
3.	Lack of understanding in practical skills	88	32.00	III
VI	Environmental constraints			
1.	Poor learning environment due to noise from surroundings	122	44.36	II
2.	Lack of separate room and desk/table to attend online classes	83	30.18	IV
3.	Electricity problem	96	34.90	III
4.	Social media distraction	154	56.00	I

*- Multiple responses obtained

students (35.63%) felt that teachers lack in technical proficiency and it was second major institutional constraint. It might be because they have not experienced online learning through online learning platform before.

3.1.3 Socio-emotional constraints

It was found that half of the students (50.18%) felt emotional instability during online classes which caused fear, boredom, frustration, confusion and anxiety. It was because majority of the students faced psychological distress due to pandemic situation. It was found that more than one third of students (37.09%) lacked in self confidence during online classes due to lack of face-face interaction with teachers and fellow students.

3.1.4 Health constraints

It was reported that nearly two third of students (65.09%) considered eye strain was major among health constraints. It might be because students are exposed to long screen time during online classes. It was found that more than one third of students (34.90%) had headache and burnout symptoms while they undergone online classes. It might happen because they attended continuous classes without any break.

3.1.5 Learning constraints

It was found that more than two fifth of the students (44.36%) lacked concentration in learning while they undergone online classes due to lack of discipline and intent towards online learning. Two fifth of the students (40.00%) reported that they are unable to make notes. It was because they cannot cope up the classes.

3.1.6 Environmental constraints

It was reported that more than half of the students (56.00%) distracted through social media during online classes. It was because smart phone has many social media platforms and students can minimize the online learning tab and they can surf through various social media sites. It was found that more than two fifth of the students (44.36%) experienced poor learning environment due to noise from surroundings.

3.2 Constraints Confronted by Teachers Participated in Online Education

The constraints from teachers have been enlisted into five dimensions namely teaching

constraints, monitoring constraints, evaluation constraints, socio-emotional constraints and learner constraints.

3.2.1 Teaching constraints

From Table 3, it was found that more than four fifth of the teachers (88.00%) felt lack of face-face interaction with students was a major teaching constraint. It might be because teachers felt that it was hard to know understanding of students with lack of face-face interaction. More than two third of the teachers (68.00%) felt that it was difficult to conduct practical classes through online mode because many of the practical class involves lab/field experiment and it was difficult to impart practical skills through online. More than three fifth of the teachers (64.00%) felt that time management was difficult during online classes because it took more time for presenting lectures through online mode.

3.2.2 Monitoring constraints

It was found that nearly three fourth of the teachers (73.33%) felt that students were not actively present in online classes. They might be merely present in online learning platform but not participated in any classroom discussions. More than three fifth of the teachers (61.33%) felt it was difficult to track students' progress through online classes due to lack of face-face contact with students.

3.2.3 Evaluation constraints

It was found that nearly two third of the teachers (65.33%) felt that conducting online examination was difficult because proctoring online examination was tedious process and teachers need to keenly observe students activities during examination. Half of the teachers (50.00%) felt that there was high chance of malpractice in online examination because many students got backlog due to malpractice in online examination.

3.2.4 Socio-emotional constraints

It was found that nearly three fifth of the teachers (58.66%) felt that online teaching was stressful because of excessive work load and it was hard for teachers to prepare the content through digital mode. More than two fifth of the teachers (42.66%) felt that satisfaction of teaching through online mode was low because teachers were not able to see the understanding level of students.

Table 3. Constraints confronted by teachers participated in online education (n=150)

S. No	Constraints	No	%	Rank
I	Teaching constraints			
1.	Lack of face-face interaction with students in online classes	132	88.00	I
2.	Time management was difficult during online classes	96	64.00	III
3.	Conducting practical class was difficult through online	102	68.00	II
4.	Lack of regular feedback from students in online classes	76	50.67	V
5.	Excessive workload for content preparation in online classes	84	56.00	IV
II	Monitoring constraints			
1.	Tracking students' progress through online mode was difficult	92	61.33	II
2.	Clarifying queries was difficult in online classes	62	41.33	IV
3.	Assignments are not submitted on time by students	73	48.66	III
4.	Students were not actively present in online classes	110	73.33	I
III	Evaluation constraints			
1.	Conducting examination through online was difficult	98	65.33	I
2.	Students lack in subjective knowledge while preparing for examination	56	37.33	III
3.	There was a high chance of malpractice in online examination	75	50.00	II
IV	Socio-emotional constraints			
1.	Satisfaction of teaching through online mode was low	64	42.66	II
2.	Teaching through online mode was stressful	88	58.66	I
3.	Teachers lack in motivation of teaching through online	48	32.00	III
V	Learner constraints			
1.	Internet connectivity problem among students	103	68.67	I
2.	Lack of self discipline in attending online classes	57	38.00	III
3.	Lack of concentration among students	79	52.67	II

*- Multiple responses obtained

3.2.5 Learner constraints

It was found that more than two third of the teachers (68.67%) felt that internet connectivity of students was a major learning constraint because students were not able to access the class with lack of proper internet connectivity. More than half of the teachers (52.67%) felt that there was lack of concentration among students during online classes. It was because students were just merely present and cannot able to answer questions if asked during class.

4. CONCLUSION

The constraints from students has been enlisted into six dimensions namely technical constraints, institutional constraints, socio-emotional constraints, health constraints, learning constraints and environmental constraints. Technical constraints can be solved when government support students in providing subsidized internet connection. Institution need to create a special team to provide support to students. The constraints from teachers have been enlisted into five dimensions namely teaching constraints, monitoring constraints, evaluation constraints, socio-emotional

constraints and learner constraints. Teaching-Learning environment need to be improved in online mode to overcome the constraints faced by teachers.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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