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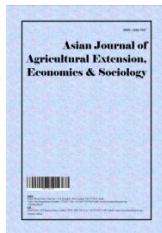
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## **Impact and Perception of Students towards Online Learning during COVID-19**

**M. Deepika <sup>a\*</sup> and J. Pushpa <sup>a</sup>**

<sup>a</sup> Department of Agricultural Extension & Rural Sociology, Agricultural College & Research Institute, Madurai 625 104, India.

### **Authors' contributions**

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

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### **ABSTRACT**

**Aim:** This study aims to analyse the impact and perception of students towards online learning during Covid-19 and the constraints faced by the students.

**Study Design:** Ex post facto research design.

**Place and Duration of the Study:** the present study was conducted among UG, PG & PhD students of TNAU. The study was conducted during January and February month 2021.

**Methodology:** 50 students were randomly selected and interviewed using a pre tested interview schedule to study the impact and perception of students towards online learning during Covid-19 and the constraints faced by them.

**Background of the Study:** The concept of e-learning can be termed as a network enabled transfer of skills and knowledge, and the delivery of education is made to a large number of recipients at the same or different times. Though e- learning resources and online mode of learning was made available long back, it became popular and inevitable only after the storm created by the pandemic, courtesy COVID-19. It has persisted to force and push the students and teachers towards online learning environment for the past one year and continues to garner importance in the current scenario. Though Online-learning mode emerged as a better alternative to the classroom situation, it has its own pros and cons as perceived by the participating students and teachers. Since, it is becoming a more common method of instruction, it is important to assess its impact among the

\*Corresponding author: E-mail: [darshany73@gmail.com](mailto:darshany73@gmail.com), [dpsrishi@gmail.com](mailto:dpsrishi@gmail.com);

stakeholders and to assess the existing gaps. This impact study involving perception of the students regarding online learning can serve as a resource to identify the areas for improvement and betterment of learning situation.

**Keywords:** e- Learning; online learning; perception; readiness; student.

## 1. INTRODUCTION

Online learning, e-Learning, or electronic learning is the delivery of learning and training through digital resources. Although e-Learning is based on formalized learning, it is provided through electronic devices such as computers, tablets and even cellular phones that are connected to the internet. This makes it easy for users to learn anytime, anywhere, with few, if any, restrictions. Basically, eLearning is training, learning, or education delivered online through a computer or any other digital device [1,2].

COVID-19 is a global pandemic caused by SARS COV-2, it caused the global countries to undergo an unprecedented crisis, due to its fast spread and mortality caused to the human kind. Global countries had forced lock down to restrict movement of people to stop the fast spread and it had caused more impact to the people in multidimensional losses. According to the World bank forecast the expenditure of Government of India is expected by reduction of 5.70 per cent from the planned previous estimates [3,4]. Most Government institutions around the world had closed educational institution to control the spread of Covid-19. In the pandemic situation of Covid-19 learning was realised online and knowledge transferred virtually. Online educator compensates by creating a supportive environment for all the students to participate in online learning [5,6]. Amidst these difficult situations, it was important to study the perception towards this online learning. Therefore, the present study was conducted with the objective to study the perception of students towards online learning and to suggest suitable measures for the further pandemic period.

## 2. METHODOLOGY

In this pandemic situation Tamil Nadu Agricultural University conducted online classes for the students. Considering this situation a study was conducted among students pursuing Under Graduation, Post Graduation and Ph.D students who were undergoing classes during the pandemic period in Tamil Nadu Agricultural

University. For this study, 50 students were randomly selected by using Simple Random Sampling technique. The data was collected through online mode using google forms. The parameters were measured using statistical tools like weighted mean score and percentage.

The perception of online learning environment was analysed by listing out statements and the respondents were asked to record their responses in the 5 point continuum scale from 1 to 5 which was scored as 1- for strongly disagree, 2- disagree, 3- neutral, 4- agree and 5- strongly agree.

## 3. RESULTS AND DISCUSSION

The data regarding profile of the students were collected, analysed and presented in table were collected in Fig. 1 and Fig. 2

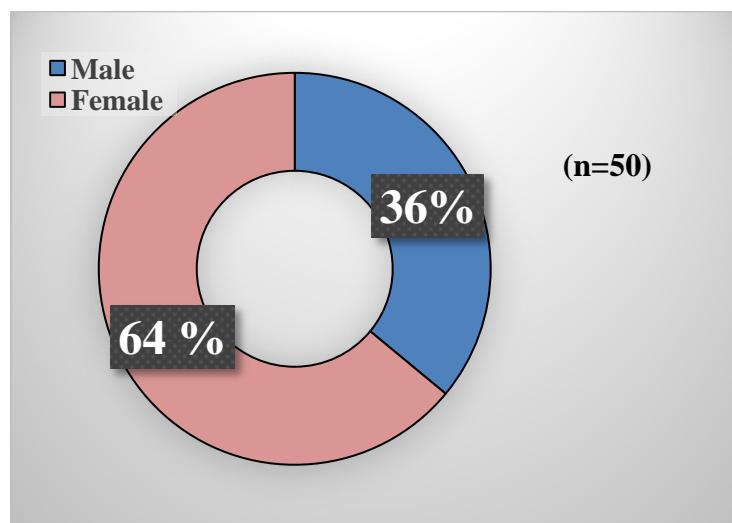
### 3.1 Profile of the Respondents

From the above figure, it could be inferred that less than two-thirds (64.00%) of the respondents were female and 36.00 per cent were male.

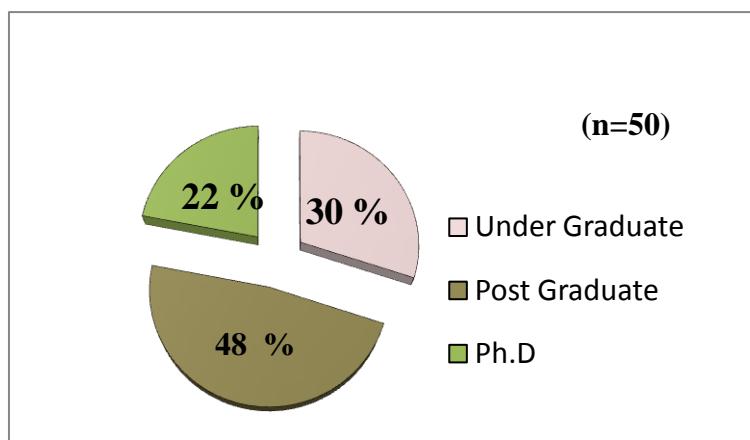
From the Fig. 2, it is found that less than half (48.00%) of the respondents were pursuing post graduate followed by 30.00 per cent and 22.00 per cent were pursuing under graduation and Ph.D respectively.

## 4. PERCEPTION OF ONLINE LEARNING ENVIRONMENT

The objective of this research is to investigate student perceptions of the effectiveness of online learning. Perceived effectiveness was chosen because of the difficulties of measuring learning, student perceptions may be more important than reality and perceived learning will contribute to our knowledge of learning effectiveness. To measure the perception towards online learning 15 statements were formulated and assessed their perception by using weighted mean and ranked them.



**Fig. 1. Distribution of respondents according to their gender**



**Fig. 2. Distribution of respondents according to their degree**

**Table 1. Distribution of respondents according to their perception towards online learning**

S. NO.	Statement	Weighted Mean	Rank
1.	Learning can be done using audio and video materials	3.58	I
2.	E-learning rapidly delivers information to the learners.	3.36	II
3.	E-learning system is easy to use	3.28	III
4.	E-learning boosts learner's learning interests	3.16	IV
5.	Interaction with e-learning system is clear and understandable	3.12	V
6.	E-learning limits access to educational resources	3.08	VI
7.	E-learning is efficient way of learning	3.02	VII
8.	Interacting with e-learning system does not require a lot of mental effort	2.88	VIII
9.	It is not easy to get the e-learning system to do what one's want it to do	2.82	IX
10.	E-learning is not convenient and flexible	2.74	X
11.	The web based activity/e-learning system is irritating	2.66	XI
12.	Learning from website is difficult	2.6	XII
13.	Learning how to use an e-learning system is not easy	2.36	XIII
14.	To use websites one has to be highly qualified	2.36	XIV
15.	E-learning is waste of time	2.14	XV

**Table 2. Distribution of respondents according to the Perceived Usefulness****n = 50**

<b>S. No.</b>	<b>Statement</b>	<b>Weighted Mean</b>	<b>Rank</b>
1.	Everyone, who are part time students or are working full time, can take advantage of web-based learning.	3.80	I
2.	E-learning resources can be used from anywhere and at any time	3.70	II
3.	E-learning helps in better concept building via YouTube, Blogging, etc.	3.66	III
4.	The e-learning system is useful for students	3.64	IV
5.	It offers only theoretical knowledge	3.58	V
6.	The e-learning system makes it easier to keep track of one's weekly tasks	3.54	VI
7.	The e-learning improve one's learning performance	3.38	VII
8.	E-learning is cost effective and time saving	3.36	VIII
9.	E-learning reduces educational costs	3.34	IX
10.	E-learning system has the potential to provide effective collaborative learning	3.30	X
11.	E-learning increases academic productivity	3.26	XI
12.	E-learning does not facilitate classroom-based learning	3.26	XII
13.	E-learning has the potential to improve quality of education	3.24	XIII
14.	Student assessment and feedback is limited in e-learning	3.20	XIV
15.	It is only learner centered	3.08	XV
16.	E-learning is an active and interactive mode of learning	3.04	XVI
17.	E-learning does not help to develop critical thinking	3.04	XVII
18.	Using the e-learning system increases the efficiency of routine daily work	3.02	XVIII
19.	E-learning hinders social life	3.00	XIX
20.	E-learning is inconvenient as it is accessible virtually	2.98	XX
21.	E-learning produce better learning result than traditional teaching	2.94	XXI
22.	E-learning does not promote creativity	2.88	XXII
23.	E-learning does not make it easier to study course content	2.86	XXIII
24.	E-learning improves teacher-learner interactions	2.84	XXIV
25.	The e-learning system does not allow to better schedule time	2.80	XXV
26.	E-learning does not help to improve quality of communication	2.76	XXVI
27.	E-learning does not help us remain update in our subject/field/area	2.74	XXVII
28.	E-learning deteriorates the competitive capacity of the learner	2.70	XXVIII
29.	E-learning is unimportant for academic achievement	2.66	XXIX
30.	Students lack face to face interaction unlike direct learning	2.60	XXX

From the Table 3, it could be concluded that perception percent by the learner can be done using audio and video materials ranked number I and followed by e-learning rapidly delivers information to the learners ranked II and e-learning is a waste of time ranked the last. This might be due to the fact that video materials helped to bring the attention of learners.

From the Table 2 it could be found that, "e learning is beneficial for the students who are working full time or part time" ranked number I with mean score of 3.80 and rank II was e-learning resources can be used from anywhere and at anytime with mean score of 3.70 and e learning helps in better as it can be learned anywhere and at anytime with mean score of

3.70. e-learning helps in better concept building via You Tube, Blogging etc as III rank. The findings are in line with Colchester et al. [7].

Unlike the direct learning, e- learning deteriorates the competitive capacity of the learners and students feel that e-learning is not that important for excelling in academics, it depends on one's own interest and also e-learning lacks the one to one interaction. These statements were ranked XXVIII, XXIX and XXX respectively.

## 5. FACTORS INFLUENCING PERCEPTION OF ONLINE LEARNING

The factors influencing perception of online learning viz., self efficiency and attitude towards online learning are presented in Tables 3 and 4.

**Table 3. Self efficacy on online learning**

S. No.	Statement	Weighted Mean	Rank
1.	I feel confident finding information in the e-learning system	3.34	I
2.	I cannot use learning material available on the e-learning system	3.28	II
3.	I feel self-confident while using e-learning	3.20	III
4.	I cannot download learning material on e-learning system	2.46	IV
5.	I do not have the necessary skills for using an e-learning	2.34	V
6.	I can configure an e-learning system myself	2.22	VI

**Table 4. Attitude towards e- learning**

S. No.	Statement	Weighted Mean	Rank
1.	I am positive towards e-learning	3.34	I
2.	I like to use traditional study material like books,notes,etc. for my learning	3.32	II
3.	Studying through e-learning is a wise idea	3.28	III
4.	I believe e-learning will eventually supersede traditional learning	3	IV
5.	Instructors are not easily contacted via e-learning tools e.g. email, twitter, Whatsapp etc.	2.74	V
6.	E-learning is not student friendly	2.4	VI
7.	I recommended my friends not to use e-learning	2.22	VII

**Table 5. Constraints faced by the students through online learning**

S. No	Constraints	No.	Per cent
1	Network Issues	47	94.00
2	Unable to understand the practical skills	45	90.00
3	Buffering and misunderstanding	45	90.00
4	More audience and less interaction	40	80.00
5	Unavailability of devices	32	64.00
6	Stress	30	60.00
7	Lots of malpractices carried out during exams	29	58.00
8	Couldn't have direct contact with teachers	28	56.00

From the Table 3, it could be inferred that statement with mean score of 3.34 ranked number I stating that a student feels confident finding information in the e-learning system.

### 5.1 Attitude

It refers to an individual's favourable or unfavourable response with respect to the use of e-learning system. It was based on the peoples' belief they had about e-learning system and the importance of those beliefs.

It could be concluded from the Table 4 that students' attitude was positive towards e-learning

with a mean score of 3.34 followed by second rank. The findings is in line with Anusha [8].

### 5.2 Constraints Faced by the Students

The constraints perceived by the students are presented in Table 5.

From the Table 5, it is inferred that network issues was recorded as a major constraint faced by the students with 94.00 per cent and it was difficult for the students with 90.00 per cent as it was difficult to understand the practical skills as everything was online and teachers couldn't explain practical skill properly due to unavailability of resources and

tools. The findings are in line with Leszczyński et al. [9].

## 6. CONCLUSION

- e-learning became inevitable after this pandemic: throws light on how students perceive online learning environment
- It was observed that students had a favourable perception towards online learning except for few constraints like network issues and lack of direct interaction
- Though physical classroom teaching has resumed after a while, the importance and relevance of online learning has not gone down.
- From the academic staff perspective, online learning has improved and diversified their technical knowledge, still the issue of non response from students is one major problem as perceived by them
- Hence it is necessary that we need to improve the online learning environment and make it more comfortable for the students.
- Constraints should be addressed both at the local & policy level so that e-learning moves into a new dimension replacing the traditional classroom teaching

## 7. SUGGESTIONS

### 7.1 At Institution Level

- It is important to create a sophisticated infrastructure for online learning so as to ensure effective learning environment
- Periodical breaks and refresher sessions are to be considered for coping stress among students
- Online exams could be introduced via apps or websites which will have advanced artificial intelligence that could sensitize the eyeball movement, detecting external sounds etc so that malpractice during online semester examination could be avoided
- It's essential to address the network issues concerns by ensuring all the students with better network connection. Academic staffs could be provided with institutional support for creating better online environment

- A proper grievance redressal mechanism should be put in place for the students to report these issues so that the attendance could be adjusted

### 7.2 At Policy Level

- It's essential that policy makers form a comprehensive policy to decide the protocol for online learning.
- Ensure uniformity and streamline the features of existing online learning platforms
- Consider developing a national/state common platform for promoting online learning through the country. Ensure it covers all the educational institutes and courses
- Urge the network companies to increase their band width and improve their services in rural areas

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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