

ATTITUDE OF UNDERGRADUATE STUDENTS TOWARDS E-LEARNING DURING COVID-19 PANDEMIC

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ABSTRACT

The uprise of the coronavirus in December 2019 endangers the human species. The highly contagious deadly coronavirus is spreading rapidly. For this reason, the governments of different nations announce lockdown and social distancing. This scenario changed the basic livelihood a lot, the education system also changed due to the pandemic caused by the coronavirus. Thus, the education sector becomes very much dependent on technologies. All the institutions of various nations become dependent on the e-learning method and in India e-learning becomes prevalent for a long period since 15 March 2020. E-learning which was being taken as an important modern way of teaching and learning in theories becomes active for more than 1 year and the students got the privilege to study using that method. Now after having practical experience of more than 1 year on the e-learning method it becomes necessary to get feedback from those students about this new teaching-learning method. For this reason, this study intended to explore the attitude toward e-learning among undergraduate college students during the Covid-19 pandemic period. The sample of the study is 150 undergraduate college students of the Purulia district of West Bengal, India. A mixed-method of research is being applied to analyze the data. This study revealed there is significant difference exists in the attitude toward e-learning between male and female undergraduate college students of Purulia district of West Bengal. This study also found that there is no significant difference exists in the attitude toward e-learning based on students' location, stream, and caste.

Keywords: *E-learning, Attitude, Covid-19 pandemic, Higher Education, Mixed Method Research.*

Introduction

"To bring the world to the classroom, to make universally available the services of the finest teachers, and unfolding world events which through radio may become as a vibrant and challenging textbook of the air" (Norton, et al., 2001).

The rise of the highly contagious disease named Corona creates an unprecedented situation of fear and crisis of life. Almost all the schools, colleges, and universities across the globe announced to be closed overnight, which affects about 1.57 billion students among 191 countries (IESALC, 2020; Ray & Subramanian, 2020). Thus, the pandemic causes various types of challenges in the education sector (Aggarwal et al. n.d.; Agormedah et al., 2020; Mohapatra, 2020). All the major stakeholders of the education system such as the institutional administrators, planners, teachers, and policymakers opted for one solution which is to continue the education system in online mode with the help of e-learning (CAE Team, n.d.; Ali, 2020). With this decision, the traditional educational institutions are being forced and transformed into virtual schools for full-time (Lancker & Parolin, 2020; Vitoria, 2018). Many colleges and universities around the world have already started to use various e-learning methods like the internet and other smart electronic gadgets for educational purposes for easy, comfortable, and effective teaching and learning far before the pandemic (Usun, 2003; Ravenscroft, 2001). Many universities have already applied the e-learning procedure in the teaching-learning process and found significant positive results before the lockdown period (Govindasamy, 2001). Thus, the applicability and effectiveness of e-learning are increasing day by day. Also, e-learning is widely appreciated by learners also (Blas & Fernandez,

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2009). In all educational institutions using the internet and other smart appliances in the form of e-learning has become an indispensable part as it has gained a specific place in the teaching-learning process. Smart electronic gadgets like mobiles, laptops, and computers also play a very significant role in productive teaching-learning. The structure of the educational process is being maintained and the nature of the educational process is also improved through e-learning. The scenario of teaching-learning is quite changed due to the Covid-19 pandemic period. It snatches the normal livelihood of a person. Thus, the prevalent classroom teaching also changed at every level viz., schools, higher education, coaching, and certifications (Bansal & Mehera, 2021). The main determination of e-learning was to increase the availability of teaching-learning materials and to make collectively available the service of the finest teachers (Norton, et al., 2001). A new era of distance education has been initiated with the inclusion of e-learning. The main feature of the e-learning environment is that it is independent of space and time and it supports the collaborative approach of education in the distance mode also. Moreover, e-learning can challenge the prevalent dominant outlook towards distance education, as it can change the worldview towards distance education by making it independent, interactive, and self-instructional learning (Garrison & Anderson, 2003). The Mode of e-learning has become such an essential portion everywhere and it also become a potent communication tool and it also increases communications. The teaching-learning process is being transformed by the Covid-19 pandemic. The entire education system becomes entirely dependent on the e-learning model of education. For continuing the education system numerous measures have been taken by governments to confirm the steadiness of education. Out of all those measures e-learning is placed in the foremost position (Nicola et al., 2020).

Statement of the Problem

The problem is presented specifically as:

“An Investigation on attitude towards E-Learning of Undergraduate College students During Covid-19 Pandemic Period”.

Literature Review

Online learning or e-learning is any learning which is delivered by using any technological mode to promote learning (Clark and Mayer 2011). E-learning or online learning is a very much popular modern method of teaching and learning which attracts the eyes of new generation researchers, as it provides ample amount of advantages as it is efficient, convenient, and flexible (Dumford & Miller, 2018; Zaveri et al., 2020). The literature review gives the mixed response regarding the attitude towards e-learning as from the study of Kishore & Shah (2019), it is being established that the parents of the children are demanding an alternative but similar method of teaching should be introduced for the children along with school education. So, this study ensures that parents are ready to accept the process of e-learning if it can enhance learning opportunities. Where another research done by Dong, C. et al. (2020) on the initiation days of the lockdown in China states that the introduction of online education during the pandemic period is problematic as neither the students nor the parents are trained for this new course. Abbasi, S. et al. (2020) have done a study on the perceptions of students regarding E-learning during Covid-19 at a private medical college to determine the perceptions of students towards e-learning during the pandemic period. From the study, the researchers revealed that 77% of students possess a negative attitude towards e-learning. 85% of students active perception feel traditional learning is better than e-learning. The key finding stated that students were not ready for e-learning in the early stages of the pandemic. Yan, L. et al. (2021) have conducted a study to observe the reaction of students to full-time online programs at the start of the pandemic in China. The result of the study describes students face various challenges regarding online classes. The problem of the digital divide is one of the major problems faced by students in accessing online classes in e-learning mode (Agung et al., 2020, Barbour, 2013, Basuony et al., 2020, Berge, 2005, Rice, 2006). Another study done by Cuervo et al. (2021) demonstrated that students feel that learning from online platforms is limited compared to traditional face-to-face learning. as the pandemic was unprecedented for the students as well as the teachers, both have to give some extra effort to handle the extra pressure of online classes. Patier et al. 2021 have claimed in their study that progressive technologies such as virtual field trip platforms are effective for delivering practice-based knowledge and enhancing the learning experience. Lei & So (2021) have conducted a study with the view of comparing the teacher and students' perceptions and found that the use of suitable technology ensures a positive awareness of learning online, moreover in online learning teacher's performance is considered the important factor that affects students' online learning.

By reviewing the literature, the following information are revealed about this topic:

- E-learning has been extensively implemented throughout the COVID-19 epidemic to confirm the persistence of education.
- Numerous complications were being faced by the students associated with the distribution of learning in online mode.
- This paper is going to complement about:
 - Identify the time spend on the internet during the covid-19 pandemic period
 - Find the purposes of using the internet during the covid-19 pandemic period.
 - Provide empirical evidence about the attitude towards e-learning experiences among undergraduate students.

Significance of the Study

This study will help to understand that how the internet has become an essential part of the life of the undergraduate college students of the Purulia district of West Bengal. The present article will be helpful as it demonstrated that how e-learning plays an important role in the covid-19 pandemic period. From this paper, the educational planners will be encouraged for focusing on the advancements of e-learning as it may be proved as an effective measure for learning in the present era.

Qualitative Approach

The responses in the questionnaire provided by the students are a reflection of their inner thinking so the reactions which came from the survey method are also analyzed qualitatively. The qualitative approach of analysis helps to contribute to the understanding of complex and subjective issues, such as the reason, purpose, pattern of using something, behaviors, and attitudes. The qualitative analysis of the collected data helps to improve the chance of accurately interpreting the phenomena related to e-learning. Qualitative methods are being used to explore appropriately why and how people opted to engage their time on the internet and e-learning, and it helps to explore their motivations for doing so. Here two type of qualitative method is being used as the first is the literature review which uses the explorative method and analyses the prevalent opinions given by the previous researchers. Another method is the survey method by which the opinion of the students is being discussed, where the respondents' own perspectives are being analyzed and explores how much time is spent on the internet and basically for which purpose the respondents use the internet. And applying this method the researchers intended to measure what is the awareness level of the respondents about e-learning.

- **Quantitative Approach:** The data is being analyzed quantitatively also, by using statistical techniques. As the quantitative method gives empirical proves about the phenomena and solves the problem of biasness and wrong judgments.

Delimitations of the Study

• **Geographical Area**

The investigation was very limited and it has been delimited to only the Purulia district of West Bengal, India.

• **Level of Education**

- The study was restricted to the college students (UG level) in the Purulia district.
- Among the College students, only the science and arts stream students were considered as the subjects of the present study. Commerce students are being excluded in the present study.

Research Questions of the Study

The basic research questions of this research, are:

- How much time does a student spend using the internet of the undergraduate students of Purulia district in the Covid-19 pandemic period?
- What is the purpose of internet use of the undergraduate students of Purulia district in the Covid-19 pandemic period?
- What is the attitude towards E-Learning of the undergraduate students of Purulia district in the Covid-19 pandemic period?

Objectives of the Study

This study consists of the following objectives:

- To know about the time a student spends and uses the internet of the undergraduate students of the Purulia district during the covid-19 pandemic period.
- To understand the purpose of internet use of the undergraduate students of Purulia district during the Covid-19 pandemic period.
- To evaluate the attitude towards e-learning of the undergraduate students of Purulia district during the Covid-19 Pandemic period.
- To know if there is any differentiation between male and female undergraduate students' attitudes towards e-learning in the Purulia district during the Covid-19 pandemic period.
- To distinguish between rural and urban undergraduate students' attitudes towards e-learning in the Purulia district during the Covid-19 pandemic period.
- To identify if there is any differentiation seen between science and arts undergraduate students' attitudes towards e-learning in the Purulia district during the Covid-19 pandemic period.
- To identify if there is any difference exists in attitude towards e-learning based on student's caste (General, S.C., S.T., and O.B.C.).

Hypotheses of the Study

A hypothesis is an assumption to be tested. One directional and some null hypotheses are being created to test the objectives.

The directional hypothesis for the present study is:

H₁: There is a low level of attitude towards e-learning of the undergraduate students of Purulia district in the Covid-19 Pandemic period.

Some null hypotheses of the study are:

H₀₂: There is no significant difference between male and female undergraduate students' attitudes towards e-learning in the Purulia district during the Covid-19 pandemic period.

H₀₃: There is no significant difference between rural and urban undergraduate students' attitudes towards e-learning in the Purulia district during the Covid-19 pandemic period.

H₀₄: There is no significant difference between science and arts undergraduate students' attitudes towards e-learning in the Purulia district during the Covid-19 pandemic period.

H₀₅: There is no significant difference exists in attitude toward e-learning based on student's caste (General, S.C., S.T., and O.B.C.).

The Population of the Study

All the undergraduate college students of the Purulia district of West Bengal (India) are considered as the population of this study.

Sample and Sampling

Four Colleges in the Purulia district from the state of West Bengal were selected randomly as the sample of the study. 150 undergraduate students of the Purulia district were selected randomly as the sample. In this present research stratified random sampling technique is being adopted.

Tools of the Study

For collecting the data from the aforementioned samples self-made questionnaire is being used. The questionnaires are being prepared on the 5-point Likert scale. To obtain the data about students' opinions regarding attitudes towards e-learning, a questionnaire is designed by the researcher. The questionnaire consists of various 20 statements, which are related to attitudes toward e-learning.

- **Attitude Towards E-Learning Among the Undergraduate Students of Purulia District:** This questionnaire is prepared in two segments. In the first section students are required to fill the questions related to demographic information and information related to the availability of personal smartphones and internet connectivity, time spent on the internet, and the purpose of their internet use in the second section, the students are required to fill the data about their attitude towards e-learning. In the second section, there are 20 statements which are divided into five categories for a better understanding and lucid interpretation. These categories are e-learning and traditional learning, e-learning and motivation, e-learning and collaborative

learning skills, e-learning and stress, and Future learning preferences. Each category consists of 4 statements. 5-point Likert-type scale is being used for collecting the data ranging from 1-5 where 1 is denoted as strongly disagree, and 5 strongly agree. In the questionnaire, 10 items are negatively worded, and the scoring is reversed in those negative statements.

- **Reliability and Validity of the Questionnaire:** The questionnaire is being validated before the final try-out. The face validity is presented in the questionnaire which is being established by the opinions of two eminent professional researchers. A pilot study was also done on the 30 students for establishing the reliability and the Cronbach alfa was found to be 0.82 which signifies that the questionnaire is reliable to apply.

Method of Data Collection

The questionnaire is converted into the google form. And the google form link was distributed to the undergraduate students via email, WhatsApp, Facebook, and other social media platforms to 190 students and got a response from 150 students who fully completed the questionnaire.

Time of Data Collection

The data is collected through online mode from mid of June to the mid of August of the year 2021.

Data Analysis and Discussion

In this section, the collected data is analyzed and interpreted. The data was collected through the questionnaire method. After checking the questionnaire and scoring the entire, the researcher analyzed the data in SPSS20 software.

Table 1: Tests of Normality

	Kolmogorov-Smirnov ^a (KS)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Score	.098	150	.001	.975	150	.008

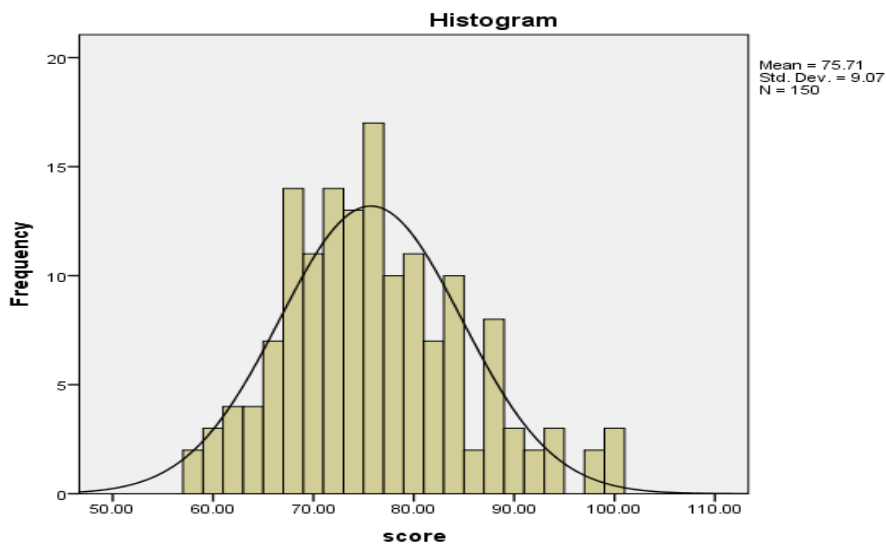
a. Lilliefors Significance Correction

Table 2: Skewness and Kurtosis Test

	Value of the Present Distribution	Value of the Normal Distribution
Skewness	0.53	-0.5 to + 0.5
Kurtosis	0.87	0.263

To find out the attitude toward e-learning by UG level students, the normality tests are being administered on the data to test the normality, the p-value of KS test is .001 and the Shapiro-Wilk test is .008 (both p-values are less than 0.05). So, the result shows that the data is not normal. The skewness value is 0.53 kurtosis value is 0.87 both are slightly greater than the value of the normal distribution. The results signify that the data is slightly asymmetrical from the normal curve. The following figure illustrates that how the data exceeds the normal probability curve.

Figure 1: Distribution of the Data



Statistical Techniques Used

As the data is slightly different from the normal distribution, non-parametric statistics will become helpful to analyze the data. But when data is large ($N > 30$) then the t-test can be applied for non-normal distribution also. In the present study to solve this dilemma, the researcher applied both t-test and Mann-Whitney U test, F test, and Kruskal Wallis test to analyze the data. And to check whether the interpretation is the same or not. In the present study, some simple descriptive statistical techniques like percentage, mean, and S.D. were also used to reach a specific conclusion and a simpler summary.

Analysis of the Data

Objective 1: Frequency of internet use by undergraduate college students

Table 3: The Frequency of Use Internet by Undergraduate College Students

Time Spent per Week	Frequency	Percentage%
Less than 3 hours a week	5	3.33
Less than 5 hours a week	10	6.67
1-2 hours a day	15	10
2-4 hours a day	20	13.33
4-6 hours a day	25	16.67
More than 6 hours a day	75	50
Total	150	100

From table 3 the following information is revealed. that 3.33% spend less than 3 hours a week on the Internet, 6.67% less than 5 hours a week, 10% spend 1-2 hours a day, 13.33% spend 2-4 hours in a day, while 16.67% spend 4-6 hours in a day, 50% students spend more than 6 hours a day on the internet, in the pandemic period. Which is similar to the academic time of any institution.

Objective 2: To know the purpose of internet use.

Table 2: Purpose of Internet use by College Students

Purpose of Internet Use	Frequency	Percentage
Educational Information	30	20
Social Media and News	80	60
Audios and Videos	20	13.33
Gaming	10	6.67
Other	20	13.33
Total	150	100

From the table-2 it is clear that college students used the internet primarily for social media and news but 20% of students followed the internet for educational information, 13.33% uses the internet for audio and videos, gaming 6.67% and 6.67% of students used the internet for other purposes like online shopping, etc.

Objective 3:

Table 4: Level of e-Learning among Undergraduate Students

Sl. No.	Degree of Attitude	Range	No of Students	%
1	Low level of attitude	>57.57	0	0%
2	Slight attitude	57.57-66.64	20	13.33%
3	Average attitude	66.64-84.78	107	71.33%
4	Slight High attitude	84.78-93.85	17	11.33%
5	High attitude	<93.85	6	4%

Testing of H_1

It is found in table 4 that the maximum number (71.33%) of undergraduate college students have an average attitude toward e-learning. It is also found that 11.33% of students possess a slightly high attitude towards e-learning and only 4% of students have a very high attitude towards e-learning. The result signifies that the average level of attitude toward e-learning persists among the students of Purulia district, West Bengal, and some of the students tend towards high attitudes toward e-learning.

Table 5: Shows the Mean and SD along with t- Critical Ratio and Median Test

Category	Variables	N	M	SD	df	t-value	Mann-Whitney U test
Attitude on E-learning	Male	80	74.27	9.37	148	2.11*	.018*
	Female	70	77.35	8.49			
Attitude on E-learning	Arts	129	76.19	9.21	148	1.59**	.057**
	Science	21	72.81	7.74			
Attitude On E-learning	Rural	88	74.71	9.17	148	1.61**	.090**
	Urban	62	77.13	8.80			

*Significant at 0.05 level, ** Not significant at 0.05 level

Table 6: Summary of ANOVA and Kruskal Wallis Test Result (Attitude towards e-Learning)

Sl. No	Variable	Source of Variation	Df	Sum of Square	Mean Square	F-value	Kruskal-Wallis test
1	Caste	Between Groups	3	358.992	119.664	1.47**	0.109**
		Within Groups	146	11899.681	81.505		
		Total	149	12258.673			

*Significant at 0.05 level, **Not significant at 0.05 level

Results and Discussion

Testing of H₀₂

From Table 5, it is observed that the calculated 't' value is 2.11 which is smaller than the table value of 2.58 at the 0.01 level & greater than the table value of 1.96 at the 0.05 level. Mann-Whitney U test also signifies that the p-value < 0.05. So, it is being determined that there is a significant difference exist in the attitude toward e-learning between male and female college students. Thus, H₀₂ is rejected at a 0.05 level of significance. Female students' mean is higher than the male students that demonstrate female students' attitude is higher than male students' attitude this result does not support by Malik et al. (2017) and coincide with Rizvi et al. (2019). The tentative reason behind this result is females have to play various responsibilities in their household, so learning in the mode of e-learning is easier for them as it saves time and energy and has less formal tie-up.

Testing of H₀₃

From Table 5, it is observed that the calculated 't' value (1.59) is smaller than the table value (2.58 at 0.01 level & 1.96 at 0.05 level). And the Mann-Whitney U test value is .057 which is greater than the p-value of 0.05. Thus, the H₀₃ is accepted in both levels of significance. So, it can be concluded that there is no significant difference exist in the attitude towards e-learning based on students' stream.

Testing of H₀₄

From Table 5, it is observed that the calculated' value (1.61) is smaller than the table value (2.58 at 0.01 level & 1.96 at 0.05 level). The Mann-Whitney u test result also found 0.90 which is greater than the table value of 0.05. So, it can be concluded that there is no significant difference exist in the attitude toward e-learning between rural and urban college students.

Testing of H₀₅

From Table-6, it is observed that the computed attitude on internet 'F'-value among general, OBC, SC, and ST students found (1.47) is smaller than the table value (0.05=2.66, 0.01= 3.91 level). Therefore, it is not significant at 0.01 and 0.05 levels of significance. The Kruskal Wallis test value was also found not significant at the 0.05 level as the calculated value is greater than the table value that is 0.05. Hence the null hypothesis H₀₅ is accepted. It signifies that there is no significant difference exists in the attitude toward e-learning based on students' caste.

Analysis of the Qualitative Data

The present study revealed some qualitative data also, that 78% (117 out of 150) students reported that they are not aware of what is the procedure of e-learning in the initial days of the pandemic, and they don't have any clear idea about the e-learning teaching and learning methods at first. 74% (111 out of 150) of students face difficulty to manage their concentration in the new learning environment. 68% of students strongly disagree that traditional learning and e-learning environments are similar, this result is supported by Adnan & Anwar 2020. However, now 62% (93 out of 150) of students become adjusted and feel comfortable in the new learning situation. 84(56%) students want to go to the traditional method of teaching and learning. Whereas 66(44%) students want to pursue their studies in the e-learning mode.

The responses of the students further revealed that e-learning causes stress among them, and the majority of the students face difficulty in pursuing online classes due to a lack of internet networks properly which is also corroborated by the study by Ahmad, 2020; Zhong, 2020.

Conclusion of the Study

The major findings of this study revealed that there is a significant difference exist in the attitude toward e-learning between male and female college students. This study also found that there is no significant difference exists in the attitude toward e-learning based on students' stream, location, and caste. When facing a global crisis or emergencies like the COVID-19 pandemic, institution management, and teachers need to be aware of students' difficulties when changing to a different learning environment. Students should be provided with support not only related to online learning but also for their personal needs. The reports of this paper may be helpful to the e-content developer, educational planner, and administrator. So that the entire learning process becomes meaningful and less mechanical for the students.

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