

Impact of Online Classes on the Satisfaction and Performance of Students during the Pandemic Period of COVID19

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Abstract: *The intention of this research study is to identify the factors affecting students' satisfaction and their performance about online classes during the pandemic period of COVID-19. Study is measurable in nature, and the data were collected from 319 respondents through online survey from an autonomous college in Mumbai studying B. Com. Chi-square and Anova test was used to examine the proposed hypotheses. The results shows that respondents are happy with traditional way of learning than e-learning as it is much better way of learning that facilitates gathering of knowledge. The three factors are participation in E-Learning which increases computer skills secondly, E-Learning and rating about its effectiveness as there is a correlation between participation in E-Learning and rating about its effectiveness. For educational management, these three factors are essential to have a high level of satisfaction and performance for online courses. This study is being conducted during the epidemic period of COVID-19 to check the effect of online teaching on students' performance.*

Keywords: COVID-19, E-learning, Computer skills

1. Introduction

Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus. People who are very less infected by this virus will have less illness and so can be cured without any much medical treatment but those who are ill, senior citizens, persons suffering from heart disease, diabetes, cancer or respiratory problem are more likely to fall severe ill or may also die at any age. The virus can be spread through an individual's mouth or nose when they cough, sneeze, speak. It is important to practice respiratory etiquette by staying at home and self-isolation etc until you recover if you feel unwell. Preventing ourselves from crowded place, staying at home, wearing masks, staying at least 1 metre apart from others and finally to get vaccinated and follow local guidance. (WHO)

India started COVID-19 vaccination in the country from 16th January 2021. SARS (severe acute respiratory syndrome coronavirus 2), the virus that causes COVID-19, was isolated in late 2019. Its genetic sequence was published on 11 January 2020, triggering the urgent international response to prepare for an outbreak and hasten development of a preventive COVID-19 vaccine. The pandemic predisposed all the education system to close down on March 23rd 2020, world-wide. On March 24, India declared a country-wide lockdown of schools and colleges (NDTV, 2020) for preventing the transmission of the coronavirus amongst the students. Also, schooling affects students due to disruption of teacher and students' network thereby leading to poor performance (Bridge (2020). Educational organizations have started adopting technologies to avoid failure of performance in schools and colleges. Results of the studies show that the students perform much better in traditional learning than online learning. In the present study, prominent determinants of learning outcome and satisfaction of the students during online classes was analyzed (Lee, 2014). To prepare the courses for online learning, many instructors who are teaching blended courses

for the first time are likely to require a complete overhaul of their courses (Bersin, 2004; Ho et al., 2006). The second-factor, quality of the *instructor* plays an essential role in affecting the students' satisfaction in online classes. Instructor quality refers to a professional who understands the students' educational needs, has unique teaching skills, and understand show to meet the students' learning needs

The third factor that improves the student's satisfaction level is prompt feedback. Feedback is defined as information given by lecturers and tutors about the performance of students. It has been found that prompt feedback helps in developing a strong linkage between faculty and students which ultimately leads to better learning outcomes (Simseketal., 2017; Chang, 2011). The scrutiny of the literature show that although different researchers have examined the factors affecting student satisfaction but none of the study has examined the effect of course design, quality of the instructor, prompt feedback, and students' expectations on students' satisfaction with online classes during the pandemic period of Covid-19. Therefore, this study tries to explore the factors that affect students' satisfaction and performance regarding online classes during the pandemic period of COVID-19. As the pandemic compelled educational institutions to move online with which they were not acquainted, including teachers and learners. The students were not mentally prepared for such a shift. Therefore, this research will be examined to understand what factors affect students and how students perceived these changes which are reflected through their satisfaction level.

The study reveals that 75.2% respondents say that knowledge of computer Skills is most important.65.7% people say that they have not participated in any type of e-learning before the pandemic.19.3% say they have an access to online material and 29.3% say that learning in learning is at their own pace and 23.8 % say due to online learning they have the facility to stay at home. Almost 50.2% respondents

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say that in e-learning the main drawback is technical problem. 60.24% say that traditional face to face learning is better than online teaching. Almost 55% respondents say that if the students learn in college there is social interaction that is the best way to gain knowledge. 46% say they enjoyed e-learning classes during the pandemic. 62.6% of the respondents rate the effectiveness of traditional face-to-face learning is more effective in terms of increasing knowledge.

In this cross-sectional study, the data were collected from 319 respondents who were studying B. Com degree. The purposive sampling technique was used to collect the data. The percentages of male students were (33.3%) and female students were (66.7%). The percentage of female students is almost double in comparison to males. The ages of the students varied dominantly between 18 to 21 which was the under-graduation student group. The research instrument consists of two sections. The first section is related to demographical variables such as discipline, gender, age group, and education. The next three important factors are participating in E-Learning which increases computer skills. E-Learning and rating about its effectiveness. Also, thirdly respondents' preference about traditional way of learning is considered.

In this cross-sectional research the respondents were selected through judgment sampling. They were informed about the objective of the study and information gathering process. They were assured about the confidentiality of the data and no incentive was given to them for participating in this study. The information utilizes for this study was gathered through an online survey. The questionnaire was built through Google forms, and then it was circulated through the mails. Students were also asked to write the name of their college. The data were collected in the pandemic period of COVID-19 during lockdown in India. This was the best time to collect the data related to the current research topic because all the colleges across India were involved in online classes. Therefore, students have enough time to understand the instrument and respond to the questionnaire in an effective manner. A total of 374 questionnaires were circulated, out of which the students returned 351. Thirty-two responses were not included due to the unengaged responses. Finally, 319 questionnaires were utilized in the present investigation. Male and female students both have taken part to fill the survey, students different age groups from varied programmes were the part of the sample.

In the present study, the authors evaluated the different factors directly linked with students' satisfaction and performance with online classes during Covid-19. Due to the pandemic situation globally, all the colleges and universities were shifted to online mode by their respective governments. No one has the information that how long this pandemic will remain, and hence the teaching method was shifted to online mode. Even though some of the educators were not tech-savvy, they updated themselves to battle the unexpected circumstance (Pillai et al., 2021). The present study results will help the educators increase the student's performance in online classes. The current research assists educators in understanding the different factors that are required for online teaching.

Comparing the current research with past studies, the past studies have examined the factors affecting the student's satisfaction in the conventional schooling framework. However, the present study was conducted during India's lockdown period to identify the prominent factors that derive the student's satisfaction with online classes. The study also explored the direct linkage between student's satisfaction and their performance.

The present study highlighted that the second most prominent factor affecting students' satisfaction during online classes is the student's expectations. Students might have some expectations during the classes. If the instructor understands that expectation and customizes his/ her course design following the student's expectations, then it is expected that the students will perform better in the examinations. The third factor that affects the student's satisfaction is feedback. After delivering the course, appropriate feedback should be taken by the instructors to plan future courses. It also helps to make the future strategies (Tawafak et al., 2019). There must be a proper feedback system for improvement because feedback is the course content's real image. The results of this study have numerous significant practical implications for educators, students and researchers. The study tries to fill this research gap.

Sr. No.	Hypothesis Code	Hypothesis Description	Tests Used	Inference
1	H1	Participation in any kind of E-Learning and Knowledge level of computer skills are dependent.	Chi Square Test	Accepted
2	H2	There is significant association in between participation in any kind of E-Learning and rating about its effectiveness.	Chi Square Test	Accepted
3	H3	There is agreement of opinions amongst the respondents that traditional way of learning is much better way of learning that facilitates gathering of knowledge.	Anova	Accepted

Details are presented herewith

Hypothesis 1

- Null Hypothesis: H01: Participation in any kind of E-Learning and Knowledge level of computer skills are independent.
- Alternative Hypothesis: H1: Participation in any kind of E-Learning and Knowledge level of computer skills are dependent.

Here we will consider responses for the following two questions:

- Q5. Participation in any kind of E-Learning before the pandemic and
- Q4. Knowledge Level of Computer Skills

Data from the Survey

Association between these two inputs

	Participation in any kind of E-Learning before the pandemic			
	No	Yes	Total	In %
Knowledge Level of Computer Skills				
High	35	34	69	16%
Low	27	8	35	8%
Moderate	213	102	315	75%
Total	275 (66%)	144 (34%)	319	100%

Chi-Square Tests

	Value	df	P value Asymp. Sig. (2-sided)
Pearson Chi-Square Value (Statistics Value)	9.4054	2	0.0091
Critical Value of Chi-Square	5.9915	2	0.05

df= Degrees of Freedom

Above table shows results of the data about these two inputs. Results showed that Pearson Chi-square value (Statistics value) for association between them is 9.4054 at df = 2 which is greater than the critical value of chi-square (5.9915) at significant level 0.05 for df= 2. This indicates non-acceptance (i. e. rejection) of null hypothesis. This means that both these variables are dependent.

The alternative hypothesis stands accepted.

Also, it is observed that p value is less than significant value (i. e.0.05), hence the null hypothesis is rejects and the alternative hypothesis is accepted.

Hence the alternative hypothesis is accepted which is as stated below:

- H1: Participation in any kind of E-Learning and Knowledge level of computer skills are dependent.

Hypothesis 2

- Null Hypothesis: H02: There is no significant association in between participation in any kind of E-Learning and rating about its effectiveness.
- Alternative Hypothesis: H2: There is significant association in between participation in any kind of E-Learning and rating about its effectiveness.

Here we will consider responses for the following two questions:

- Q5. Participation in any kind of E-Learning before the pandemic and
- Q13. Rating about effectiveness of E-Learning

Data from the Survey

Association between these two inputs

	Participation in any kind of E-Learning before the pandemic			
	No	Yes	Total	In %
Rate the effectiveness of e-learning in terms of increasing knowledge				
Extremely Effective	32	28	60	14%
Somewhat Effective	64	28	92	22%
Neutral	105	63	168	40%
Somewhat Ineffective	50	13	63	15%
Extremely Ineffective	24	22	36	9%
Total	275 (66%)	144 (34%)	319	100%

Chi-Square Tests

	Value	df	P value Asymp. Sig. (2-sided)
Pearson Chi-Square Value (Statistics Value)	10.6697	2	0.03054
Critical Value of Chi-Square	9.4897	2	0.05

df= Degrees of Freedom

Above table shows results of the data about these two inputs. Results showed that Pearson Chi-square value (Statistics value) for association between them is 10.6697 at df = 2 which is greater than the critical value of chi-square (9.4897) at significant level 0.05 for df= 2. This indicates non-acceptance (i. e. rejection) of null hypothesis. This means that both these variables are dependent.

The alternative hypothesis stands accepted.

Also, it is observed that p value is less than significant value (i. e.0.05), hence the null hypothesis is rejects and the alternative hypothesis is accepted.

Hence the alternative hypothesis is accepted which is as stated below:

- H2: There is significant association in between participation in any kind of E-Learning and rating about its effectiveness.

Hypothesis 3

- Null Hypothesis: H03: There is no agreement of opinions amongst the respondents that traditional way of learning is much better way of learning that facilitates gathering of knowledge.
- Alternative Hypothesis: H3: There is agreement of opinions amongst the respondents that traditional way of learning is much better way of learning that facilitates gathering of knowledge.

For testing this, we have used Anova test.

Here we will consider responses for the following three questions:

- Q8. Opinion: Traditional face to face learning is better than online teaching.
- Q9 Opinion: Learning in the college through social interaction is the best way to gain knowledge.
- Q14 Rating using a five-point scale (where 1-extremely ineffective, 5-extremely effective) Rate the effectiveness of traditional face-to-face learning in terms of increasing knowledge

Statistical test applied and their results are given subsequently.

Anova Single Factor SUMMARY				
Groups	Count	Sum	Average	Variance
Q8. Opinion: Traditional face to face learning is better than online teaching	419	1544	3.6850	1.5273
Q9. Opinion: Learning in the college through social interaction is the best way to gain knowledge	419	1008	2.4057	0.5336
Q14 Rating using a five-point scale (where 1-extremely ineffective, 5-extremely effective) Rate the effectiveness of traditional face-to-face learning in terms of increasing knowledge	419	1580	3.7709	1.3780

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	489.8775	2	244.9387	213.6798	1.39E-80	3.0029
Within Groups	1437.4463	1254	1.1463			
Total	1927.3238	1256				

Since the p-value is very less than 0.05, the null hypothesis of equal means is rejected (i. e. not accepted).

Hence the alternative hypothesis is accepted which is as stated below:

- H3: There is agreement of opinions amongst the respondents that traditional way of learning is much better way of learning that facilitates gathering of knowledge.

Another way of Testing

We have considered three factors from the questionnaire. They are age, gender and year of undergraduate programme.

Significant Value	0.05
No. of factors used for comparisons with the above set of questions viz. Q.8, Q.9, and Q.14.	3
Bonferroni correction	0.0167

As there are 3 comparisons, applying the Bonferroni correction means that a P value has to be less than $0.05/3=0.0167$ to be significant at the $P<0.05$ level.

Comparison between	P Value
Age and Question Set	2E-230
Gender and Question Set	2E-223
Year of Undergraduate Programme and Question Set	5E-143

It is seen that, all these P values are less than 0.0167.

Hence the alternative hypothesis is accepted which is as stated below:

- H3: There is agreement of opinions amongst the respondents that traditional way of learning is much better way of learning that facilitates gathering of knowledge.

2. Limitations and future scope of the study

The data collected in this study was from one type of respondents only, that is, the students. Therefore, the results of the study cannot be generalized to other samples. The future research can also include the perspectives of teachers and policy makers to have more generalization of the results. The current research is only limited to theory classes; therefore, it can be implemented to check students' performance in practical classes. There may be some issues and problems faced by the students, like the limited access to the internet or disturbance due to low signals. Some of the students may face the home environment issues such as disturbance due to family members, which may lead to negative performance. The above-mentioned points can be inculcated in the future research.

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