

Student Perception of Online learning during Covid Pandemic

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Abstract. *Online learning has become more significant during recent times due to COVID – 19 lockdown. The pandemic has forced educational institutions all over the world to shift to an online mode of education. The integration of ICT into education has accelerated the online learning process and has made it accessible to all categories of students. Several tools such as Google Classroom & Meetings, Zoom, Blackboard & Microsoft teams facilitate online learning and play a significant role in this revolution. Teachers are inspired to deliver classes virtually using these tools. This sudden transition to an online mode of teaching has made a strong impact on the learning pattern of the students.*

The objective of this paper is to measure the effect of the learning outcomes of students in an interactive learning environment. The investigation is based on a comprehensive sample of an online computer course in one of the reputed engineering colleges in India. The research is to investigate learner's factors toward virtual learning. A questionnaire on virtual learning was prepared and given to 70 students . The analyzed results of the empirical data reveals that blended learning is much preferred by the students as it helps them to improve their knowledge and skills. It has an incredible effect on the students to take responsibility for their learning methods.

Keywords: *Blended Learning, Virtual Learning, Knowledge Sharing*

1. INTRODUCTION

The COVID -19 pandemic has practically influenced all facets of our daily life. The disruption has impacted all segments, including the educational sector. Educational institutions were closed before conducting the final examinations of the academic year. This prolonged closure caused hardship as schools and colleges were not able to complete the syllabi. The pandemic has forced the educational institutions worldwide to transform from the chalk and talk teaching method to technology-driven online mode of education. Kulkulska [1] has discussed the significant changes that will take place when educational institutions adapt to the online mode of education. Chang et al. [2] , in their work, have pointed out that the online learning is transforming how

instruction is provided to students, and it needs more interaction from the students as well as the teachers.

Educationists are investigating various ways to teach in different modes for providing benefits of virtual learning to students across the world. These various means of instruction have been previously unexploited, particularly in the Indian Education system. Most of them believe that this virtual learning will become an integral part of education, while few think that this unexpected move to an online learning will result in poor user experience. This disarray in the delivery of education is making the policymakers to resolve how to drive engagement of students, while ensuring comprehensive e-learning solutions and embarking the digital divide.

Our Indian education system is also shifting the stereotype towards online education during this pandemic. With the advent of ICT in education, schools and colleges are exploiting its potential to improve the outcomes of the students through digital learning. Georgina [3] claims that the incorporation of technology into education could meet the demands of the current generation of students attending college and universities. In almost all countries, teachers are communicating with students through virtual live classes. This remote learning is enabled by several online technology tools like Google Classroom & Meetings, Zoom, Blackboard & Microsoft teams.

It is observed that educational institutions face significant barriers in adopting the change. Garg et al [4] has observed that though technology improves students' engagement, teachers have shown resistance to its use in classrooms. They have identified the different possible obstacles in the application of Information Technology in educational institutions using the Interpretive Structural Modelling (ISM) methodology. Faculty should gear up to prepare the digital content in various engaging formats. Sufficient infrastructure should be in place, and students should be ready to adopt the new mode of learning within a short period.

This sudden transition to an online mode of teaching will have a vibrant influence on the learning pattern of the students. There has been a lot of research work carried out to find the effect of online learning in the student community. Knowing learners' attitudes in e-learning has gained attention in information system research Bishop [5]. Passerini & Granger [6] have identified the learner characteristics, which include attitude, motivation and confidence. Sheng Liew et al. [7] have also discussed the various factors that influence the student attitude in online learning. Murithi & Indoshi [8], in their study have indicated that the students as well as teachers have a positiveness on the utilization of computers in the curriculum.

The objective of this paper is to measure the influence of the learning outcomes of students in an interactive learning environment. The investigation is based on a comprehensive sample of an online computer course in one of the reputed engineering colleges in India. A survey of 16 questions related to student perceptions on online learning was carried out, and the empirical results were analyzed to measure the learning outcomes.

2. METHODOLOGY

The data for the study was collected from 70 students of a computer course based on a questionnaire, and statistical analysis was done to measure the impact of online learning.

a. Teaching Method

Faculty prepared the digital content for the subjects they are handling using presentations and lecture notes[9]. The digital contents were then shared with the students through google classroom like platforms, wherein the teacher can communicate and collaborate with students. Online classes were scheduled through appropriate tools, and the students were invited to attend the classes. Presentations and contents were shared for the students through these tools and lecture/demonstration sessions were handled by the teachers. Worksheets and assignments were shared online and quizzes were conducted to evaluate the understanding of the subject matter by the students[10].

a. Survey Method

The survey method is a technique of gathering data by posing questions to people who are thought to have the desired information. A questionnaire was framed to determine the effectiveness of online teaching/learning; responses were collected and analyzed using standard statistical techniques. The survey was given to a sample from 70 students of different sections for a computer course.

3. RESULTS ANALYSIS & INTERPRETATION

The collected data were analyzed using statistical tools, and the primary findings are presented below:

a. Students Perception of Online learning

77.2% of students have responded positively to online learning, as shown in Fig. 1. This indicates that online teaching has met the learners' goals and would increase their online learning participation in the future.

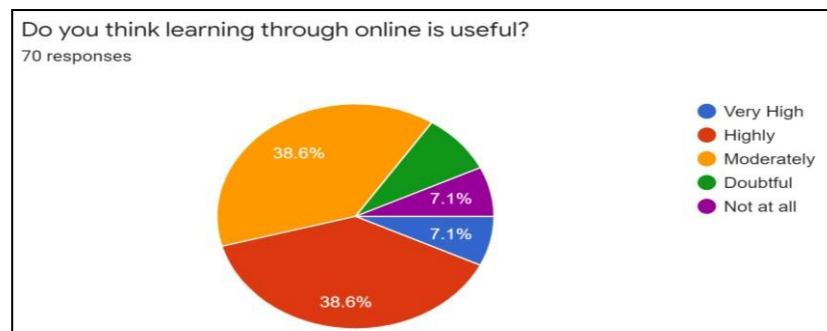


Fig. 1. Students perception on usefulness of online learning

Fig. 2. shows that more than 70% of the students have responded that online learning has improved their learning process during the lockdown period emphasizing autonomous learning.

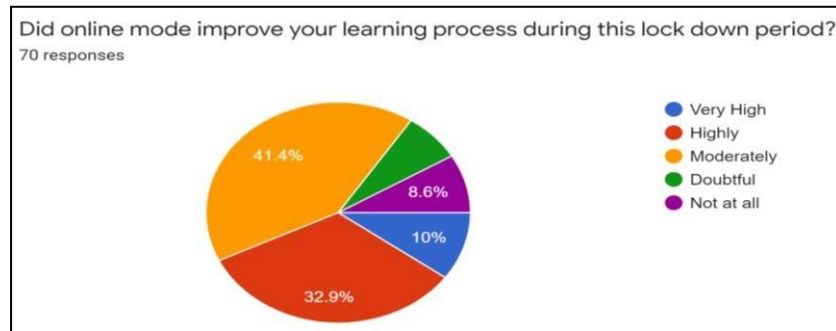


Fig. 2. Students perception on improvement in learning

More than 75% of students have answered that their knowledge has improved in online learning and it has enabled the sharing of knowledge and transferring skills, as shown in Fig. 3 and Fig. 4. Knowledge sharing is a sign of active learner participation, which increases the productivity of the learners.

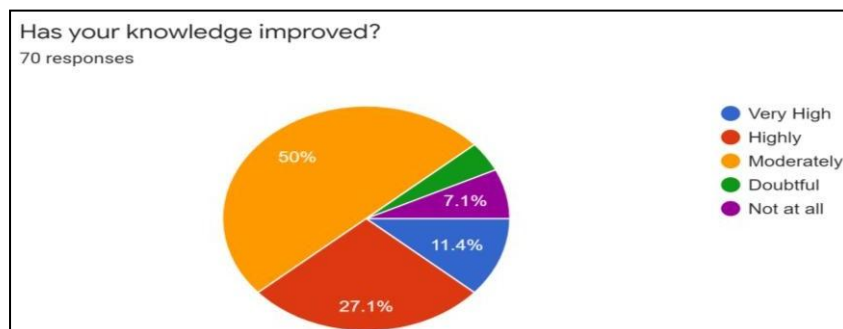


Fig. 3. Students perception of knowledge improvement

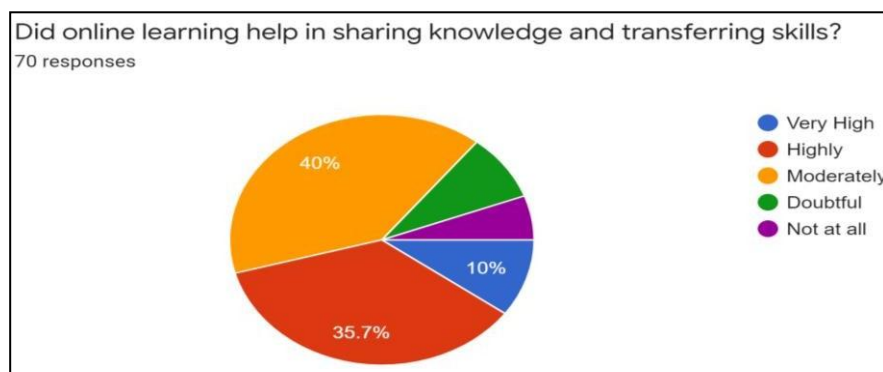


Fig. 4. Student Perception on sharing of knowledge and transferring skills through online learning

The mean and standard deviation for the various parameters given in the questionnaire is shown in Table 1. It is evident that online learning has helped the students in improving the learning process, sharing their knowledge, and transferring the skills learned to their peers despite of the situation prevailing due to COVID-19 where face to face interaction was not possible.

Table 1. Students Perception of online learning

Variables	Mean	Std. Deviation
Online learning useful	3.38	.842
Improved learning process	3.36	.874
Knowledge improved	3.39	.844
Help in sharing knowledge and transferring skills	3.41	.863
Getting better in learning	3.29	.909

Fig. 5. shows the visual representation of the mean and standard distribution of some of the parameters considered in the questionnaire.

Table 2. shows the correlation between the parameters used for finding the impact of online learning on the students. The results indicate that parameters ‘knowledge improved’ and ‘help in sharing knowledge and transferring skills’ are with the highest correlation of 0.744, and the parameters ‘online learning useful’ and ‘improved learning process’ are with the next higher correlation of 0.728.

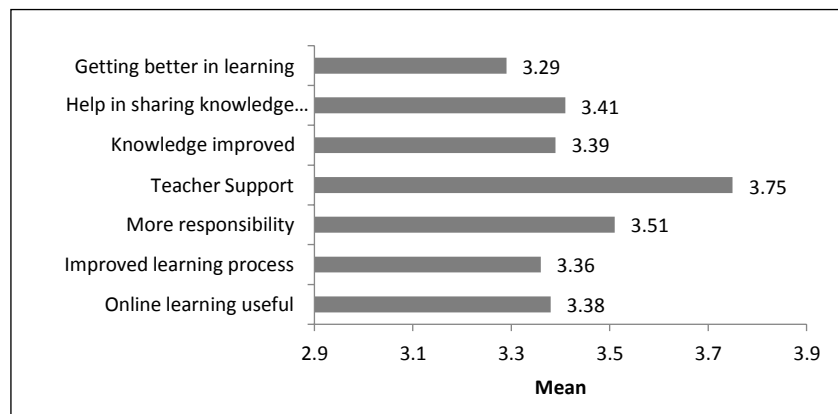


Fig. 5. Students Perception of online learning

Table 2. Correlation between the study variables

	Online learning useful	Improved learning process	More responsibility	Help in sharing knowledge and transferring skills	Knowledge improved
Online learning useful	1.000	.728**	.533**	.532**	.566**
Improved learning process		1.000	.603**	.654**	.707**
More responsibility			1.000	.726**	.709**
Help in sharing knowledge and transferring skills				1.000	.744**
Knowledge improved					1.000

** . Correlation is significant at the 0.01 level (2-tailed).

3.2 Association between improvement of knowledge and sharing of knowledge and transferring skills through online learning

Chi-square test was used to discover the relationship between the parameters ‘improvement of knowledge’ and ‘sharing of knowledge’ and ‘transferring skills through online learning’. The details of cross tabs and chi-square test results are discussed in Table 3. The hypothesis framed are as follows:

H₀ : There is no association between the improvement of knowledge and the sharing of knowledge and transferring skills through online learning.

As the p-value is less than the chosen significance level $\alpha = 0.05$, the null hypothesis is rejected and it can be inferred that there is an association between improvement of knowledge and sharing of knowledge and transferring skills through online learning.

Table 3. Chi-square test results to find the relationship between improvement of knowledge and sharing of knowledge and transferring skills through online learning

Knowledge improved * Help in sharing knowledge and transferring skills – Cross tabulation						
Count		Help in sharing knowledge and transferring skills				Total
		2	3	4	5	
Knowledge improved	2	6	2	0	0	8
	3	4	23	5	2	34
	4	0	3	15	1	19
	5	0	0	4	4	8
Total		10	28	24	7	69

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	69.341 ^a	9	.000
a. 12 cells (75.0%) have expected count less than 5. The minimum expected count is .81.			

3.3 Association between the usefulness of online learning and improvement in the learning process

Chi-square test was used to find the relationship between ‘usefulness of online learning’ and ‘improvement in the learning through online’. The details of cross tabs and chi-square test results are shown in Table 4. The hypothesis framed is shown below:

H₀ : There is no association between the usefulness of online learning and the improvement of learning through online.

As the p-value is less than our selected significance level $\alpha = 0.05$, the null hypothesis can be rejected and it can be concluded that there is an association between the usefulness of online learning and improvement in the learning process through online learning.

Table 4. Chi-square test results in finding the association between the usefulness of online learning and the improvement in learning process through online learning.

Online learning useful * Improved learning process Cross tabulation						
Count						
		Improved learning process				Total
		2	3	4	5	
Online learning useful	2	8	3	0	0	11
	3	3	17	6	0	26
	4	0	9	15	3	27
	5	0	0	1	4	5
Total		11	29	22	7	69

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	71.134 ^a	9	.000
Likelihood Ratio	59.515	9	.000
Linear-by-Linear Association	38.355	1	.000
N of Valid Cases	69		
a. 12 cells (75.0%) have expected count less than 5. The minimum expected count is .51.			

4. CONCLUSION

Learning through online has become compulsory during the COVID-19 pandemic period. The outbreak of COVID has created negative impacts on all sectors, including education. The educational institutions took up this challenge and have taken measures to provide a smooth transition to change to an online mode of learning. The results of the study indicate that

virtual learning environments enable the knowledge sharing and transferring of skills. Students are comfortable with this learning mode and have quickly adapted to it. Online learning would play a significant part in Indian education even after COVID-19 gets controlled and would bring about an overall pedagogical change.

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