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Students Perceptions Towards the Effectiveness of E-Learning: A Survey

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Abstract: ***Due to COVID-19 pandemic, educational establishments all over the world have been forced to experiment with e-learning. Delivering classes via an online mode has created problem for both institutions and students. The purpose of this paper was to conduct a survey to learn about students' perspectives and their experiences with online classes and blended learning mode as well. The survey comprises of 200 students from school, college and university level having 65 percent of males and 35 percent of females. Further 55 students were examined through experimental and control groups to find the effectiveness of blended learning mode. The results of the survey reveal that online learning proves to be a comfortable mode for students' safeguard learning during pandemics situations but it cannot be an alternate of traditional learning. When compared to the control group who were taught using the traditional method, the results show that the experimental group who were exposed to the blended learning programme improved academic accomplishment substantially. It shows that the new blended learning strategies used in the classroom have increased the ability to teach and learn more effectively.***
Keywords: COVID-19, Online learning, Convectional learning, Blended learning, Academic accomplishment.

I. INTRODUCTION

The epidemic of COVID-19 has wreaked havoc on the educational system. Educational institutions (primary, secondary, and higher education) were compelled to lock their doors and explore new ways of teaching and learning (Liguori and Winkler, 2020). One significant change has been focused on teaching and learning stratagems, i.e. a shift from masterclasses to telematics classes in order to make education more accessible to all students and allow them to complete their education without interruption. This development has inevitably altered the pedagogy utilised by teachers and instructors, who have had to make use of a variety of technological tools. In reality, "going online" is the present necessity of the hour. Although before the pandemic, changes in society, student expectations, and technology were already prompting university and college academics and instructors to reconsider pedagogy and instructional approaches. Now, the learning needs to be reviewed broadly and systematically. The advancement of new communication technologies offers an electronic network utilising electronic technologies, such as email, websites, multimedia, and information from the internet as a tool and method for providing learning experiences. E-learning materials are designed to effectively facilitate the achievement of the desired learning outcome for learners. It is a learning approach that is based on formalised instruction but uses electronic resources. In the present epidemic environment, the online mode is the major source of teaching and learning, but a number of studies have found some deficiencies in this mode. Therefore, it is observed that teaching and learning should be done through be through internal mode i.e traditional face-to-face teaching, external mode i.e. online learning, and mixed/ blended mode. “Blended learning“ involves a combination of face-to-face and an online component of technology-based learning.

II. REVIEW OF LITERATURE

As a result of the disastrous COVID-19 epidemic, educational institutions around the world have migrated from traditional classrooms to online learning and teaching. Most academics and students favour the old approach. According to Wargadinata et al. (2020), Wendelboe et al. (2020), and Zhang et al. (2020), traditional face-to-face learning is the most preferred system of learning. Brzycki & Dudt (2005) indicated that most teachers prefer face-to-face teaching to e-teaching since it allows for more interpersonal interaction. Moreover, instructors are also concerned about recognition and administrative support. Transitioning to online learning presents a new difficulty for both academics and students. Academics who teach using e-learning, on the other hand, confront a number of obstacles, including the need for new media skills, a lack of trustworthy technology infrastructure and support services, and the requirement for innovative pedagogical approaches. According to Dawadi et al. (2020), in low-income countries, online learning is likely to exacerbate already existing inequities due to large socioeconomic and educational/literacy disparities in the population. Moreover, the implementation of digitization would deepen the disparities between advantaged and underprivileged pupils even more due to unequal access to e-learning and e-resources.

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Wahid et al. (2020) revealed that online learning is more effective than traditional learning. Because of the flexibility in terms of place and time, allowing advanced interactions between instructors and learners, as well as the convenience of accessing learning resources online and through e-learning, have become the preferred options (Ananaga, 2020). According to John Watson (2008), "blended learning," which combines the finest parts of online and face-to-face education, is likely to emerge as the dominant teaching paradigm of the future. As per El-Deghaidy and Nouby (2008), students in the blended mode obtain much greater levels of accomplishment than students who study in the traditional mode. Chen and Jones (2007) found in their study that, students in collaborative groups during a blended learning class were more productive and satisfied than in a traditional environment. Eddie Gulc (2006) suggests that blending both e-learning and online learning benefits the learners to the maximum extent.

A. The Present Study

Educational institutions throughout the globe have been compelled to experiment with e-learning since traditional class-based learning is restricted under COVID-19 guidelines (Demuyakor, 2020; Ratten, 2020). A variety of stakeholders, including government officials, academic staff, students, and parents, are worried about whether the change from classroom to online learning will yield the intended results. While it is expected that the widespread adoption of online learning will present new obstacles, the potential for innovation in the higher education industry should never be disregarded during these difficult times. This paper examines the student's perception and experience related to online classes as well as the effectiveness of the blended learning programme as an e-learning development in education.

B. Objectives of the Study

1) To investigate students' attitudes regarding online learning.
2) To assess the effectiveness of the blended learning programme on the academic achievement of teachers and students.

III. RESEARCH METHODOLOGY

The data was collected using an online survey approach to learn about different students' perspectives towards online learning. The efficiency of online learning using various teaching systems was evaluated using a structured questionnaires. Students were polled on how they felt about taking online learning. A total of 200 students from school, undergraduate and postgraduate institutions, with 65 percent of males and 35 percent of females, were included in the sample of the study.

Furthermore, in order to assess the effectiveness of the Blended Learning programme on academic achievement, 55 participants were grouped into experimental and control groups both having pretest and post-test groups. The experimental group was taught using a blended learning programme, whereas the control group was taught the identical study material using traditional methods. The same teacher instructed both groups. Both parametric and non-parametric tests such as the t-test, the Wilcoxon Sign Rank test, and the Mann Whitney U test are used for the analysis using the Statistical Package for Social Sciences (SPSS 19).

IV. DISCUSSION AND ANALYSIS OF DATA

A. Students' Perception Towards Online Learning

The replies of 200 students from various educational institutes in Haryana were placed on a five-point Likert scale for further analysis and interpretation. The respondents included school-going students, undergraduate students, and postgraduate students, and all these respondents are presently attending online classes for their various subjects.

Table-1: Frequency of the Respondents with educational level

Student Category	Frequency	Percentage
School	50	25
Graduation	100	50
Post Graduation	50	25
Total	200	100

Table 1 depicts the respondent students' category and the number of respondents who answered their perspective on online class learning. There are 25% of students studying at the school level, 50% of undergraduate courses, and 25% of postgraduate courses among those who responded.

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Table-2: Age group of Respondents

Student Category	Frequency	Percentage
6-16 years	42	21
17-21 years	112	56
21years and above	46	23
Total	200	100

Table 2 shows the number of respondents from various age groups who shared their opinions on online class learning. Among them, 21% of students were in the 6 to 16 year age group, 56% of respondents were in the 17 to 21 year age group, and the remaining 46% of students belonged to the more than 21 year age group.

Table-3: Experience about online learning environment

	Frequency	Percent	Valid Percent	Cumulative
Excellent	22	11	11	11
Good	58	29	29	40
Natural	38	19	19	59
Fair	52	26	26	85
Poor	30	15	15	100
Total	200	100	100	

Table 3 shows the number of students who answered the statement regarding their online learning environment experience. This learning experience was rated as satisfactory by 40% of the students.

Table -4 Difference between online digital learning and traditional offline learning

	Frequency	Percent	Valid Percent	Cumulative
Strongly disagree	8	4	4	4
Disagree	16	8	8	12
Natural	34	17	17	29
Agree	80	40	40	69
Strongly Agree	62	31	31	100
Total	200	100	100	

Table 4 shows the number of people who agreed or disagreed with the assertion that there is a distinction between online digital learning and traditional offline learning. This comment was agreed upon by 71 percent of the respondents.

Table-5: Online learning is more motivating than conventional offline learning

	Frequency	Percent	Valid Percent	Cumulative
Strongly disagree	50	25	25	25
Disagree	70	35	35	60
Natural	40	20	20	80
Agree	20	10	10	90
Strongly Agree	20	10	10	100
Total	200	100	100	

In table 5, the number of people who agreed that online digital learning is more inspiring than traditional offline learning is represented. Sixty percent of students disagreed with this statement, twenty percent remained neutral, and forty percent agreed with it.

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Table-6: Online learning more comfortable than classroom learning

	Frequency	Percent	Valid Percent	Cumulative
Strongly disagree	18	9	9	9
Disagree	40	20	20	29
Natural	50	25	25	54
Agree	60	30	30	84
Strongly Agree	32	16	16	100
Total	200	100	100	

Table 6 shows that 46 percent of students agree with the assertion that online learning is more comfortable than classroom learning. 29 percent of the students disagreed with the statement, while 25 percent were undecided.

Table-7: Do you watch recorded online sessions when you miss out?

	Frequency	Percent	Valid Percent	Cumulative
Strongly disagree	24	12	12	12
Disagree	102	51	51	63
Natural	50	25	25	88
Agree	14	7	7	95
Strongly Agree	10	5	5	100
Total	200	100	100	

Table 7 shows the number of respondents who answered the statement, "Do they go through online recorded sessions when they miss out?" Only 12% of the respondents agreed with the statement and 63% disapproved it while 25% remained natural.

Table-8: Which educational learning tool do you find most interesting?

	Frequency	Percent	Valid Percent	Cumulative
"Quizzes"	60	30	30	30
"Assignments"	40	20	20	50
"PPTs"	50	25	25	75
"Audio visual"	30	15	15	90
"Polls"	20	10	10	100
Total	200	100	100	

Table 8 shows the number of learners who answered the question, "Which educational learning tool do you find most interesting?" Quizzes piqued the attention of 30% of students, while assignments piqued the interest of 20%, PPTs piqued the interest of 25%, audio-visual piqued the interest of 15%, and polling techniques piqued the interest of 10%.

Table-9: Direct interaction with the teacher in offline mode is essential for learning

	Frequency	Percent	Valid Percent	Cumulative
Strongly disagree	20	10	10	25
Disagree	20	10	10	60
Natural	40	20	20	80
Agree	72	36	36	90
Strongly Agree	48	24	24	100
Total	200	100	100	

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Table 9 shows how many people agreed with the assertion that direct interaction with the teacher in offline mode is crucial for learning. On this assertion, 60 percent of the students agreed.

Table-10: Combination of face-to-face and an online component of technology-based learning (Blended learning Programme)will be more effective

	Frequency	Percent	Valid Percent	Cumulative
Strongly disagree	8	4	4	4
Disagree	20	10	10	14
Natural	30	15	15	29
Agree	90	45	45	74
Strongly Agree	52	26	26	100
Total	200	100	100	

A blended learning programme that incorporates face-to-face and online technology-based learning components will be more successful. This question was answered positively by 71% of the students, while 15% of the students were uncertain.

B. Assessing the Effectiveness of the Blended Learning Programme on the Academic Achievement of Teachers and Students.

The Blended Learning Program for the experimental group mixes a traditional classroom with an online learning platform to create an interactive learning environment for both teachers and students. The paired sample t-test provides descriptive statistics for both the pretest and post-test for the experimental as well as control groups. The purpose of this test is to determine whether the blended learning programme improved student-teacher achievement in the experimental group.It's also used to see if there's a substantial difference between the experimental group before and after the blended learning programme is implemented.

V. HYPOTHESIS

The following null and alternate hypotheses were formulated for assessing the effectiveness of blended learning programme:

1) $H_{01:}$ There will not be significant mean difference in the experimental group's achievement in learning between the pretest and post-test scores.
2) H_1*:* There will be significant mean difference in the experimental group's achievement in learning between the pretest and post-test scores.
3) H_{02}*:* There will not be significant mean difference in the control group's achievement in learning between the pretest and post-test scores.
4) H_2*:* There will be significant mean difference in the control group's achievement in learning between the pretest and post-test scores.

Group	Test	N	Mean	S.D	Mean Difference	t-value	Sig.
Experimental	Pretest	30	37.35	9.69	24.68	17.07	.01
	Post-test	30	62.05	10.67			
Control	Pretest	25	38.18	7.94	14.15	7.02	.01
	Post-test	25	52.35	7.74			

The results depicted in the table show that the paired sample t-test for the experimental group reveals a significant difference between the mean pretest and post-test scores of this group at the 0.01 level. Hence, the null hypothesis is rejected. The experimental group's average post-test score is 62.05, while the pretest score is 37.35 (t =17.07 p=.01<.05). As a result, it is found that the average grades of the students in the experimental group differ significantly.

At the 0.01 level, a paired sample t-test for the control group shows that there is a significant difference between the mean pretest and post-test scores of the control group also. The average post-test score in the experimental group students is (52.35), whereas the pretest score is (38.18) (t =7.02 p=.01<.05). This finding reveals that students in the control group exhibit a moderate difference while using the conventional teaching technique.

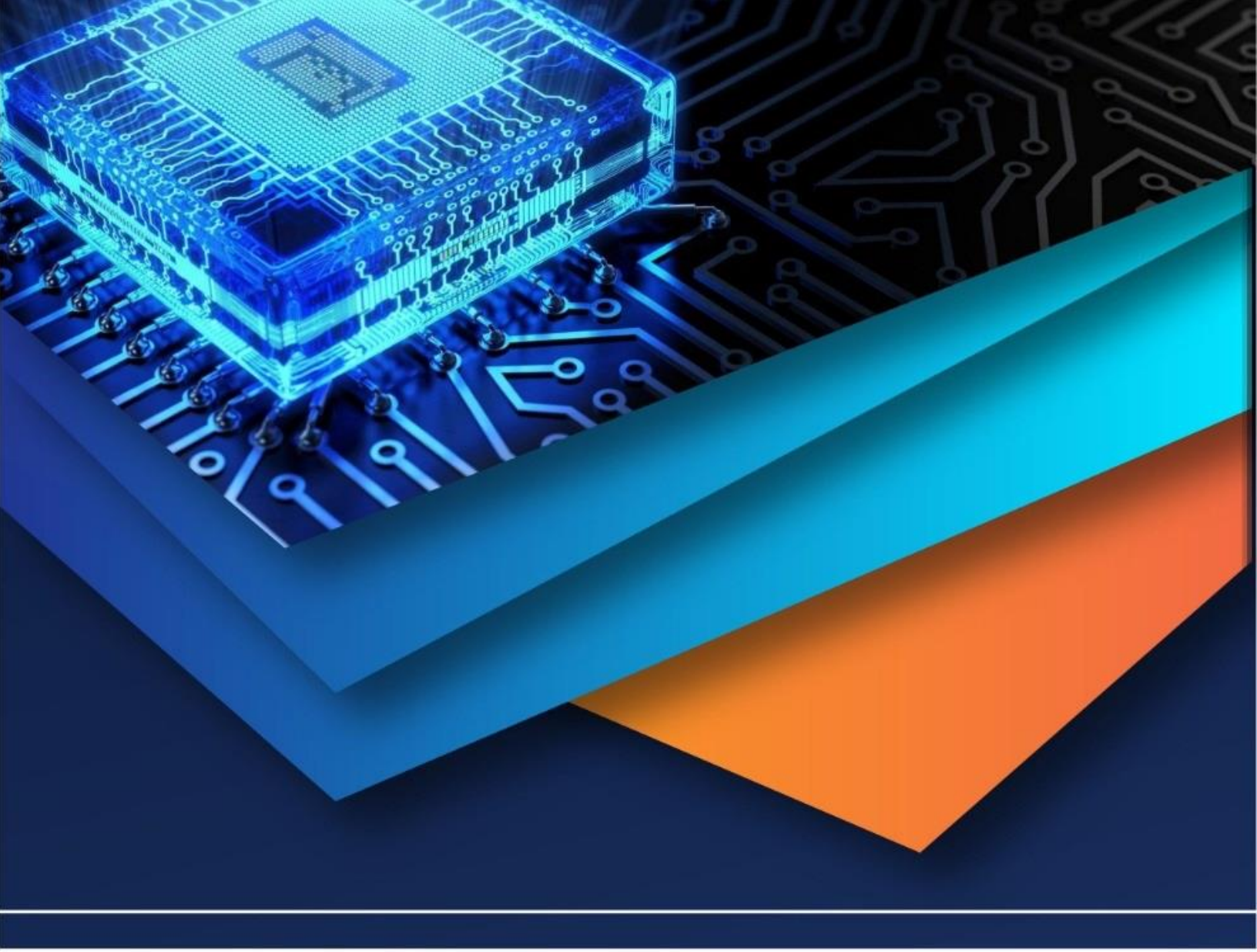
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VI. CONCLUSION

Due to the spread of COVID-19, which has forced students all over the world to transition to e-learning, online learning has seen tremendous growth and acceptance from both educational institutions and students. The purpose of this study was to compare the efficacy of online and traditional classrooms for students as well as assess the effectiveness of blended learning techniques. Although 46 percent of students believe that online learning is more comfortable, 60 percent believe that traditional offline learning is more motivating than online learning, and the same percentage of students believe that direct engagement with the teacher in offline mode is more important for learning. Quizzes, PowerPoint presentations, and assignments are rated as the most engaging teaching-learning aids by 75% of students. Although online learning has proven to be beneficial in protecting students' learning during pandemics yet it cannot replace traditional learning. It has also been demonstrated that the new tactics utilised in the classroom in blended learning have improved their ability to teach and learn. The results demonstrate that the experimental group that was exposed to the blended learning programme improved academic success significantly when compared to the control group that was taught using the traditional technique. The usefulness of the blended learning programme for teaching and learning is supported by several previous study findings.

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