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RESEARCH ARTICLE

A RESEARCH ON IMPACT OF ONLINE LEARNING ENVIRONMENTS AMONG STUDENTS DURING COVID-19 PANDEMIC PERIOD

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ABSTRACT

Background: Information communication technology has grown in popularity over the last few years and that has led to the rise of E-Learning. Educational institutions are resorting to incorporate the virtual method of learning into their system and implement “Blended Learning” especially during COVID 19 pandemic. It simplifies learning in a lot of ways and carries out the whole process in a paperless way. This acts as a supplement to traditional classroom learning and provides “anytime anywhere” access of information to the students and thus it transcends the limitations that can be caused by physical classroom learning. **Objective:** This article describes a study carried out to assess the knowledge and awareness about exposure to online platforms like Google Classroom and Moodle during COVID 19 pandemic among under graduate and graduate students in Tamil Nadu, India. **Method:** This analysis was carried out based on a online questionnaire using Google forms that was sent to students who had used both platforms for extended periods of time. **Result:** Three different parameters viz., use of internet for learning purpose, student teacher interaction and achieving the goal of satisfactory learning through online teaching were considered and the students feedback were discussed. **Conclusion:** The basic knowledge of internet and online learning platforms among the students is adequate but only 37% students agreed their goal of satisfactory learning is achieved through online teaching and 24% preferred online learning. This study would also help the educational institutions to understand the preferences and concerns of the students and the role of such platforms in learning process.

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INTRODUCTION

With the rapid increase in the field of Science and Technology, the educational model has now proved that the educational activities are inseparable from technological interventions. Technological advancements help in the teaching and learning process. If the effectiveness of the communication process is high, the message is received well by the learners and that increases the success of learning. Today’s internet facility and easy accessibility of computers attracts the students towards E-learning. In E-learning process, the teacher provides the students with access to the class and resources. It will not replace the traditional classrooms but it can be used as a supplemental tool to transfer the knowledge widely (Arbaugh et al., 2010).

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Due to COVID 19, many institutions have adopted these platforms and conduct teaching and learning online. In recent days, online learning has become the preferred method of study, it has its own advantages. In this method, the learners can access their study materials quickly and as many times as they want. It also allows teachers to quickly deliver their lessons and upload the necessary materials. Generally this method takes less time to complete than conventional learning. It is also environmental friendly due to lack of the usage of paper. Most of the students prefer these E-learning platforms since they can be accessed anywhere and even through their mobile phones. This is also helpful for the teachers to learn many things when they are taking classes through online. The process of E-learning can be represented as skill analysis, material development and learning evaluation (Chourishi et al., 2011). Any E-learning platform should represent six different types of activities such as Creation, Organization, Delivery, Communication, Collaboration and Assessment (Piotwsroki, 2010). Though there are several platforms for online learning,

Google classroom and Moodle are the most preferred one among the Institutions and teachers. In this study students who had used Moodle as well Google classroom were assessed for their views about the learning platforms they used through the online questionnaire and the results are presented in this paper.

METHODOLOGY

This study represents the feedback of the students who have undergone online classes through both Google classroom and Moodle platform. In our study, we analyzed the performance of the students during the COVID lock down period in the academic year 2020-21. In this period it was mandatory for the students to attend the classes only in online mode and they used either Google classroom or Moodle platforms as their learning environment. The questionnaire-based inquiry has been used in our empirical research. The feedback in the form of questionnaire had 10 queries which were closed items and students participated online, by using Google forms. Around 100 students gave their awareness towards use of internet and interaction with new environments and learning techniques particularly Google classroom or Moodle platforms. The respondents were mostly undergraduate students and few graduate students mainly residing in rural areas of Tamil Nadu. The number of girls and boys participated in this study were almost equal and we could see their interest in using these online platforms to make their learning more effective.

RESULTS AND DISCUSSION

In this study, ten parameters were given in the questionnaire and three parameters were taken into account for this study. The first query taken into consideration is the use of internet for their studies, the second query is the communication between student and teacher and the third query is the achievement of final goals. Based on the feedback obtained from the students through the structured questionnaire, the results are analyzed and presented here.

Use of internet for their studies

How often you use the Internet for studies? *

- Very often
- Once in a day
- Twice a day
- Once a week
- Whenever time permits
- Never

When the usage of internet for studies among the students was analyzed, it was found that no student avoids using the internet. Nearly half of the students (47%) mentioned that they use it very often whereas it was used once a day and once a week by 2% of students. 37% of the students use the internet whenever time permits. This may be due to the problems in accessing the internet due to connectivity issues and insufficient mobile data. It was also found that some students don't have smart phones and they may access the internet through their friends (Table 1). In a study conducted by Oproiu (2015) involving a group of students from different faculties of University Politehnica of Bucharest, Romania, it was reported that 28% of the students use these platforms once in a week or once in a month. Only a very few students who belonged to the faculty of Automatic control and Computer sciences use these platforms daily. About 80 % of the students

are interested to use these platforms often, but they don't or may not be able to do so due to lack of motivation. Hence it was considered important that the teaching staff has a significant role in creating activities for the students, which will facilitate them to go for virtual learning. This will serve as a form of motivation to the students to use these platforms. Further when they were questioned about the usefulness, 80% of the teachers expressed that it is beneficial for the students. It was also concluded that these students used the platforms only during class hours due to the necessity of attendance. In this situation, it is necessary for the students to be initially taught about the usefulness of these learning platforms as well as the tools and options available in them. It may also create interest and play a role in the usage of the platforms by the students for learning purpose.

In another study (Mohd Shaharane *et al.*, 2016), a Likert type questionnaire was used and asked about the frequency of internet access among the students in order to know the usage of ICT by the students. They had five options and the results showed that more than 80% of the students use internet very often and 20% students didn't use it as much. The results revealed that all students are familiar about the use of internet and other web based programs for their study. This makes it easier for these students to study on these platforms compared to students of other faculties. It is a good sign among the users for effective learning

Interaction between student and teacher: To know about the level of interaction between the students and teachers, the following questions were asked among the students and the answers were graded on a five point scale.

- Teacher interacts with every student
- Students have comfortable interaction and learning through chat box
- Students interact with fellow students through chat boxes
- Student can raise the question through chat box to the teacher without much interference to the class
- Teacher is answering all the student queries and feel happy to take the class
- Teachers are comfortable in taking class through Google classroom/Moodle compared to conventional teaching method
- Teacher can see the performance and comment on the student activities in her leisure time
- Teachers are friendly and ignore the mistakes of the student during the online mode of teaching
- Teachers interact and pay special interest on the poor performing students

The results showed that about 24-49% students gave positive feedback on all attributes towards the interaction between students and teachers. Around 7-32% students strongly agreed on the existence of teacher student interaction in online classes and 1-14% of students strongly disagreed and upto 17% students disagreed. This may be due to the lack of awareness and usage about the new system of learning such as Google classrooms and Moodle platforms. 16-38 % students expressed that they may not able to say about the interaction. This also might be due to the lack of involvement in the online classes and may have never undergone any online courses before the COVID situation.

Table 1. Feed back of the students towards the use of internet for studies

No. of users	1	2	3	4	5	6	Total
	46	2	12	2	35	0	97
% of internet user	47	2	12	2	37	0	100

Table 2. Five point grade scale: student-teacher interaction in online platforms

S.No	Abbreviation	Details	:	Grades in 5 point scale
1.	SD	Strongly disagree	:	1
2.	D	Disagree	:	2
3.	N	Not able to say	:	3
4.	A	Agree	:	4
5.	SA	Strongly agree	:	5

Table 2a. Students' Feedback: student-teacher interaction in online learning

	1(%)	2(%)	3(%)	4(%)	5(%)	6(%)	7(%)	8(%)	9(%)
SD	9(9.3)	3(3.1)	12(12.4)	1(1.0)	2(2.1)	14(14.4)	5(5.2)	5(5.2)	12(12.4)
D	14(14.4)	12(12.4)	16(16.5)	8(8.2)	2(2.1)	15(15.4)	13(13.4)	8(8.2)	17(17.5)
N	22(22.7)	16(16.5)	17(17.6)	16(16.5)	19(19.6)	37(38.1)	23(23.7)	19(19.6)	24(24.7)
A	45(46.4)	46(47.4)	37(38.1)	45(46.4)	43(44.3)	23(23.7)	44(45.3)	48(49.5)	37(38.1)
SA	7(7.2)	20(20.6)	15(15.5)	27(27.8)	31(32.0)	8(8.2)	12(12.4)	17(17.5)	7(7.2)

Table 3. Result showing students feedback: goal of learning through online classes

	1	2	3	4	5	6	7	8	9	10
SD	10	21	12	14	8	15	15	6	16	17
D	16	29	26	29	15	17	20	14	19	20
N	28	22	24	33	15	19	41	37	23	24
A	37	24	30	17	42	36	18	34	34	27
SA	6	1	5	4	17	10	3	6	5	7

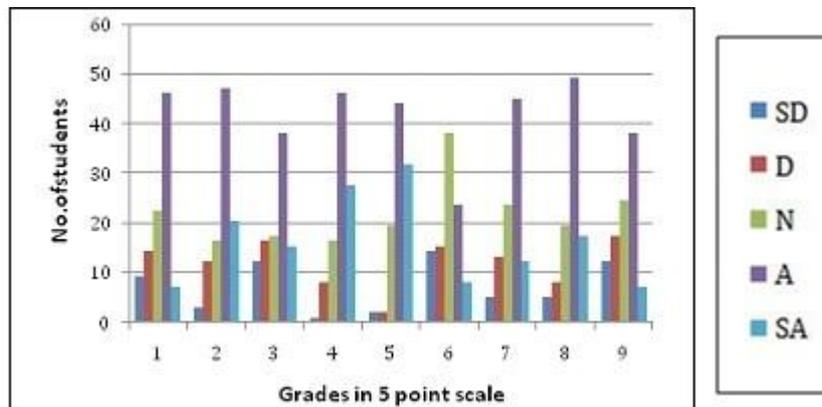


Figure1. Students Feedback: student-teacher interaction through online classes

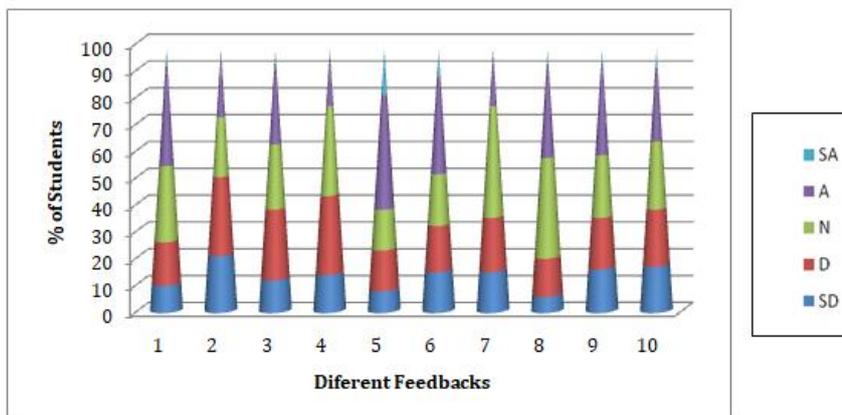


Figure 2 . Students Feedback: % chart

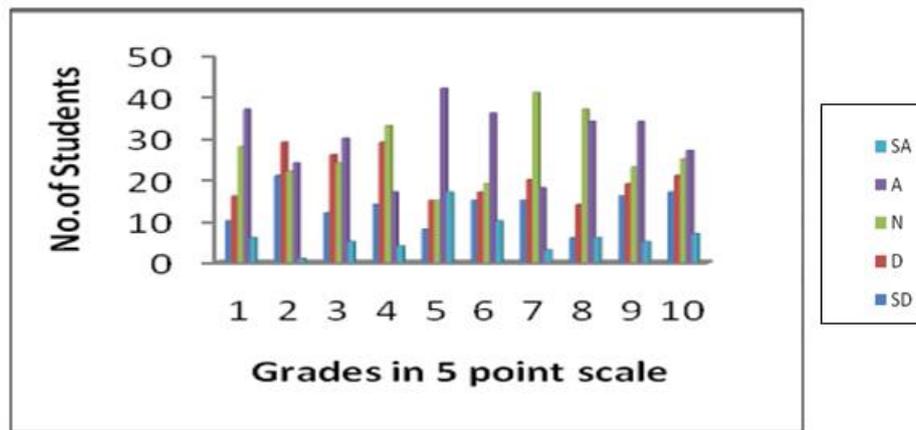


Figure 3. Students Feedback (%): goal of learning through online classes

When individual traits for the student teacher interaction in online classes are considered, about half of the students expressed that the teachers are friendly (49 %). About (47%) students felt comfortable about interaction and learning through chat box against a small percent of students (1%) who didn't feel comfortable about raising questions through chat box to the teacher. This may be due to the differences in language or their shyness. When inquired about the level of comfort of the teachers in online classes compared to traditional method of teaching, 38% students weren't able to answer whereas about 8-23% students expressed that their teacher felt comfortable teaching. 15% of the students felt that the teachers weren't comfortable on this environment. The perception varies among the students. In online teaching they may get a chance to interact with fellow students through chat box, whenever it is needed. This may not be possible in conventional classrooms, since it hinders the listening process. 43% of the students agreed that the teachers addressed all the queries raised by the students against 2% students who disagreed. Majority of the students said that the teacher gives appropriate feedback whenever they get time. More than one third of the students said that the teacher takes special effort on students who perform poorly (Table 2a and Fig.1). About 16-37% students were not able to answer for all the questions asked in this regard. This indicates that they may be poor listeners under online teaching. They might have responded well in traditional classrooms since that requires face to face interaction. In related to this study, Oproiu (2015) asked students about the necessity of Student-Teacher interaction under Virtual learning environment. About 30% students felt the teachers interaction is very much needed in these environments and about 8% students did not consider that the teachers interactions is needed in Moodle platforms.

Fulfillment of learning activity by the students

To know about the fulfillment of the goal by these online classes, students views have been reviewed through the following statements with options as given below.

-) I met my goal of learning up to the mark
-) I like this online class room and recommend for all the courses
-) It is interesting and I enjoyed attending the classes through Google classroom.

-) It is interesting and I enjoyed attending the classes through Moodle.
-) Initially it was a stress attending online classes but the classroom platform was more comfortable.
-) I prefer Google classroom class room for future online classes
-) I prefer Moodle class room for future online classes.
-) Teachers are interested in offering online classes and feel happy looking at the student's performance.
-) I feel motivated in learning through Google classroom /Moodle.
-) I will take-up many more online courses of my interest other than my regular course of study.

In general by observing the feedback given by the students, less than 45 % students responded positively and 29% students expressed their disagreement whereas the rest of the students did not give any answer for the questions given. When the results were looked at individually for all questions asked about the achievement of learning goals, only 37% students agreed that their goal of satisfactory learning is achieved through online teaching. 24% students liked online learning and would prefer it for online courses in the future. The number of students who enjoyed attending classes through Moodle and Google Classroom were almost similar (29 and 30%). 42% students felt stressed in the beginning and felt it was comfortable once they got used to it. Google classroom was preferred by 36% of the students and Moodle was picked by 18% of the students. 19-41 % students weren't able to tell their preference. When asked about the interest of teachers, 34% of the students expressed that their teachers were interested in taking online classes as well monitoring the performance of the students and 6-14% of the students disagreed about the interest of teachers in virtual classrooms. 34 % students agreed that they have been motivated to learn through Google classroom or Moodle platform and up to 19% of the students didn't get any motivation in virtual learning. 27% students prefer to go for many online courses other than the regular courses (Table 3, Fig. 2& 2a). According to Oproiu (2015), the students identified some benefits of using Moodle platform such as being able to access the virtual library at anytime and collaborating with their friends for doing homework. Since they are familiar with E-learning environment, they feel comfortable using Moodle and can post any information on the forums. Further they can contact their professors directly and their level of learning is increased due to the extra study materials posted by their teachers through

this platform. Self assessment can also be done easily. The burden of the teacher increases due to handling lengthy courses which are skill based and contain heavy load of information. They may also get frustrated and struggle in conventional classes (Mai, 2019). Valdez (2015) mentioned that the teachers should know to integrate technology into instructions and to use them as supplementary for teaching. Another study in data mining subject under decision making degree program proved that majority of the students get satisfied with Google classroom tools and in particular the comparative performance is observed good in the areas starting from accessibility, perception on the usefulness, interaction and communication, getting instructions and to till satisfaction towards learning activities through Google classroom. They obtained the results for 100 questions and reported the above findings (Mohd Shaharane et al, 2016).

Summary and conclusion

Earlier literatures showed that Google classroom and Moodle are the highly preferred platforms for online teaching and learning. A study was conducted with 97 students who used both the platforms for learning by getting feed back to the online questionnaire. For this study three parameters such as use of internet for learning purpose, student teacher interaction during the classes and the satisfactory learning by the students were taken into consideration through the feedback given by the students. Nearly half of the students (47 %) use internet often for learning , 2% students used once in a week or once in a day and rest of them use it whenever they find time .This is mainly because of the access to network , connectivity issues, insufficient mobile data and not having smart phones. When the student teacher interaction is considered, 24-49 % students said positive answers on all attributes of student teacher interaction, where as 1- 17 % students gave negative answers towards the student teachers interaction in online classes. Similarly the third parameter considered here is the goal of satisfactory learning by the students.

Only 37% students agreed that their goal of satisfactory learning is achieved through online teaching. 24% students liked online learning and would prefer it for online courses in the future. Google classroom was preferred by 36% of the students and Moodle was picked by 18% of the students. Some students said that they were initially stressed latter they picked up and got interest. Based on the results it is suggested that though since online teaching is the need of the hour, some information about the merits of online teaching, tools available in these platforms for smart learning can be thought earlier before the beginning of the course to the students so as to create more interest in learning through these platforms.

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