



# FACTORS INFLUENCING UNDERGRADUATE COMPUTER APPLICATIONS STUDENTS TOWARDS LMS GOOGLE CLASSROOM

V.Rachel

Department of Computer Science, Avinashilingam Institute for Home Science and Higher Education for Women

## ABSTRACT

*The educational institutions at present are in a time of converging to online mode of teaching and learning. Academic institutions have to face new challenges every day to impart knowledge to the students. Educators are forced to apply new tools and techniques so the students can learn with ease with less resource. Higher educational institutions around the world are undergoing rapid changes as they adapt to the paradigm shift of the knowledge society. Information and Communication Technology (ICT) with the integration in education has given lot of benefits with the increase in quality of learning, technological skills, interactive and promoting teachers and students' performance. Many educational institutes have tried to bring in Learning Management Systems (LMS) to aid the face to face learning procedure. Google Classroom is a Learning Management System (LMS) which includes several tools that provide higher educational institute efficient and effectual means to support distance education and enhance their traditional way of teaching. This study with the sample of undergraduate computer applications students analyses the critical factors like perceived ease of use, perceived usefulness, attitude toward usage, behavioural intention to use, self-efficacy and access control which influenced students' towards Google classroom in higher education.*

**KEYWORDS:** Google classroom, LMS, Higher education

## INTRODUCTION

A lot of interest is shown at present in the field of E-Learning. E-Learning is not just the matter of keeping the course material in electronic form, and learner referring to that course material. Many tools are coming up for supporting the various activities of the e- learning process like communication, content creation, content delivery etc. In order to deal with the various activities of e- learning process a Learning Management System (LMS) with an integrated set of e-Learning features is required.

LMS is a portal where planning, implementing and assessing a learning process can be done. The student needs to register for the various courses, learn from the required learning material provided by tutor, undergo test, complete assignments, etc. The tutor can deliver learning materials, monitor student participation in quiz, assignment and also assesses the performance of student. In order to do this an instructor need to organize or plan a course based on prescribed syllabus and he/ she has to establish a course calendar to monitor student progress. Administrator plays the main role of the LMS, who has the privileges for creation of users, server management, etc. Currently there are number of Learning Management Systems available in the market like Ariadne, DLS, LearningSpace, Medit, Tool Book, Top-Class, BlackBoard, Sakai etc. These tools still could be improved to provide interoperability, scalability and conformance to standards (EduTools, 2006).

Google suite for education is one of the powerful tools for teaching and learning. It has Google App tools like Classroom, Drive, Gmail, Docs, Forms, Sheets and Slides, Meet etc (Sathyendra Bhat, 2018). Google Classroom is an internet-based service provided by Google as an e-learning system (Martínez-Monés et al., 2017). The Google Classroom facilitates teachers to post learning materials, create assignment, conduct test through Google forms and communicate with the students with ease. There are so many advantages of using Google Classroom as one of the Learning Management Systems (LMS) (Izenstark & Leahy, 2015). Learning through Google classroom uses technology to facilitate faculty and students in the learning process (Ocampo, 2017).

The Google classroom is a portal where the teachers can upload the learning materials in the form of ppt, doc, web links, video/audio etc (Fig.2). Students can view/download the materials whenever they need it. The teachers can give assignment (Fig.3), conduct online test through Google form (Fig.4). Grades can be seen by the students immediately for the assessment conducted. Google classroom is a cost effective platform because the uploaded files are in the format of ppt, doc and video/audio and there is no way for usage of stationery items. Classes can be conducted virtually with the help of Google meet.



Fig 1: Google Classroom Stream

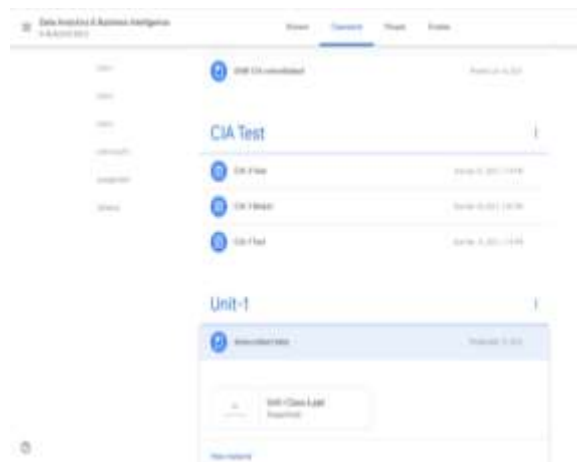


Fig 2: Materials Posted in Google Classroom

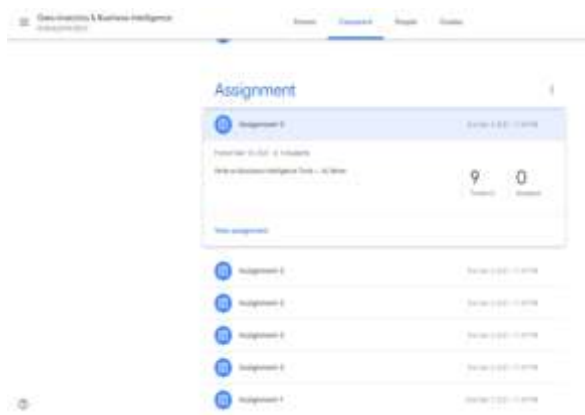


Fig 3: Assignment Submission by Students



Fig 4: Quiz through Google Form

### METHODS

The researcher used quantitative approach; an online questionnaire tool was prepared with the Google form (Fig.5) and distributed to the students through e-mail. A total of 49 final year undergraduate

students of computer applications were taken as the sample from Women's university in Coimbatore district and were using the Google classroom for learning computer applications subjects.

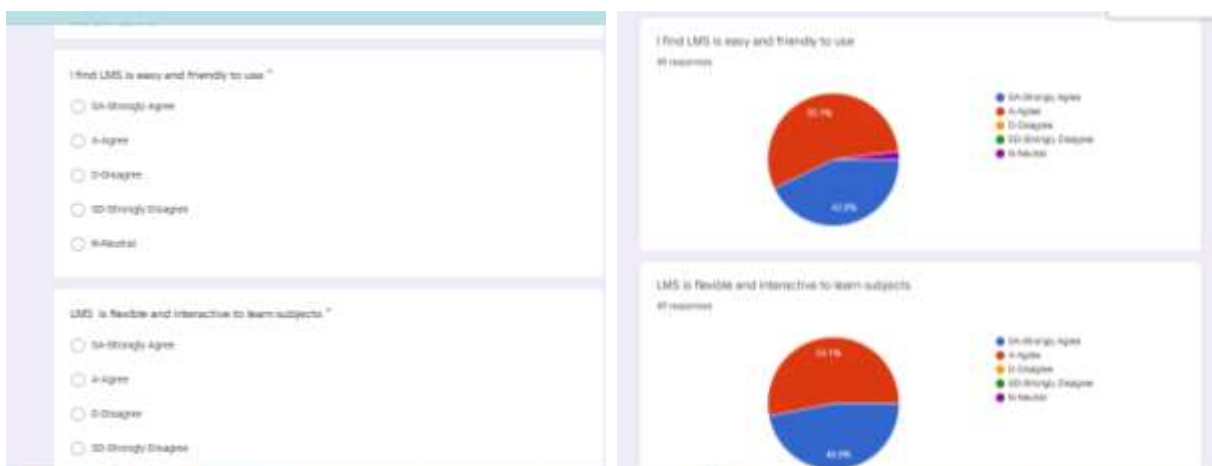


Fig.5 Questionnaire through Google form and Result Analysis



The findings of the descriptive analysis of students towards LMS Google classroom are discussed as shown below:

In **Perceived Ease of Use** there are 25 items which describes whether the usage of Google classroom is comfortable to the students. Majority of the students (38.7% and 54.7%) “strongly agree and agree” that LMS is easy to use. 2.20% of the students neither agree nor disagree that Google classroom is easy to use. Only 2.8% and 1.3% “disagree and strongly disagree” that LMS is not easy to use.

**Perceived Usefulness** with 15 items mentions how the usage of LMS has enhanced the performance of the student. Here also majority of the students (35.5% and 57%) “strongly agree and agree” that because of LMS their performance have enhanced. 4.48% of the students neither agree nor disagree that Google classroom has some benefits for their learning. Only few students “disagree and strongly disagree” (0.95 % and 2.04%) that it has not improved their performance.

**Attitude toward Usage** has 12 factors and tells about the interest in using the LMS. 27.04 % and 56.8% of the students “strongly agree and agree” that they have interest in LMS. 6.69% of the students neither agree nor disagree towards the usage of Google classroom. 6.63% and 2.55% of the students have “disagreed and strongly disagreed” that they have no interest in LMS.

**Behavioural Intention to Use** describes the reaction and communication towards the LMS. It has seven different items and 21.28% and 65.01% of the students have “strongly agreed and agreed” that their reaction is good towards LMS. 6.70% of the students neither agree nor disagree towards the intention in using Google classroom in future. Only 4.66% and 2.33% of the students have “disagreed and strongly disagreed”.

The efficiency of the student in using LMS is **Self-efficacy**. It has 4 different items and 26.02% and 57% of the students have “strongly agreed and agreed” whereas 8.67% and 2.55% of the students have “disagreed and strongly disagreed”. 5.61% of the students neither agree nor disagree towards the self-efficacy of Google classroom.

**Access Control** describes the privacy and security of the information stored in LMS. It has six different items and 54.08 % and 43.19% of the students have “strongly agreed and agreed” that LMS is secured. 1.36% of the students neither agree nor disagree that Google classroom has some privacy and security. 1.02% and 0.34% of the students have “disagreed and strongly disagreed” that there is no privacy and security in LMS.

Student felt Google classroom is friendly, flexible and pleasant. Most of the students have felt that more mental effort is not required to interact with LMS. Accessing the activities like assignment, quiz, Google forms, Google Meet were easy. They were able to easy download the learning materials, submit assignment, attend quiz through Google form. They were able to access Google classroom through their smart phones/ipad/tablet without any difficulty. Students are comfortable that they can submit assignment, attend quiz and

download learning materials from anywhere anytime. Immediate marks and feedback after attending quiz was very useful for the students so they were able to correct their mistakes. The attitude towards LMS was that the students needed all subject to be learned through LMS. They felt very positive towards LMS. Only 16% of the students have felt that learning the subjects through LMS is more difficult than learning in a traditional classroom. Because of LMS ease of use and perceived usefulness students feel that it is becoming more popular in universities and colleges. Most of the students intended to be a user of LMS frequently in their learning activities, recommend other students to use LMS, intend to use LMS as part of their daily learning activities and use LMS in the future if they get any opportunity. Students felt that they could use LMS without any manual for reference and feel confident using the LMS. Most of the students felt that LMS maintains privacy and security. The assignment material, quiz marks, feedback of a student by tutor is not accessible by other students. Google Classroom is very useful and effective in improving students' skills, abilities, discipline, and independent learning through teaching materials (Nur Alim et.al,2019).

## CONCLUSION

Google classroom is an effective LMS where the students can download the learning materials, submit assignment, attend quiz and also the teacher can handle classes through Google meet by presenting the learning materials. The current study showed that students accepted the new way of online learning and has a positive feeling towards Google Classroom. The result shows that the factors perceived ease of use, perceived usefulness, Attitude toward usage, Behavioural Intention to use, Self-efficacy and Access control influenced the undergraduate Computer Application students towards the LMS Google classroom. Students felt that the LMS has made a big impact on their learning.

## REFERENCE

1. *EduTools* (2006). *Course management systems*, EduTools, Retrieved February 14, 2013 from <http://www.edutools.info/static.jsp?pj8andpageHOME>
2. Izenstark, A., & Leahy, K. L. (2015), *Google classroom for librarians: features and opportunities*. *Library Hi Tech News*, 32(9), 1-3
3. Martínez-Monés, A., Reffay, C., Torío, J. H., & Cristóbal, J. A. M. (2017), *Learning Analytics with Google Classroom: Exploring the possibilities*. In *Proceedings of the 5<sup>th</sup> International Conference on Technological Ecosystems for Enhancing Multiculturality* (p. 47). ACM
4. Nur Alim, Wa Linda, Fahmi Gunawan, Mohd Shamsuri Md Saad (2019), *The Effectiveness Of Google Classroom As An Instructional Media: A Case Of State Islamic Institute Of Kendari, Indonesia*, *Humanities & Social Sciences Reviews eISSN: 2395-6518, Vol 7, No 2, 2019, pp 240-246* <https://doi.org/10.18510/hssr.2019.7227>
5. Ocampo, J. F. G. (2017), *Analysis of the use of Google Classroom, in the students of System Engineering of the Instituto Tecnológico de Mexicali*. *European Journal of Multidisciplinary Studies*, 6(2), 60-62
6. Sathyendra Bhat , Ragesh Raju, Bikramjit Athokpam, Rio G. L. D'Souza(2018), *Leveraging E-Learning through Google Classroom: A Usability Study*, *Journal of Engineering Education*



*Transformations, Volume 31, No.3, January 2018, ISSN 2349-2473, eISSN2394-1707, Pages:129-135  
 DOI:10.16920/jeet/2018/v31i3/120781*

**QUESTIONNAIRE FORM**

Dear Respondent,

This is a research survey carried out on the usage of LMS Google Classroom. Please provide the data by completing the questionnaire. Thank you for your ultimate support.

-----  
**Read the items carefully and decide how you feel about it. To do this, you have to put a tick mark[√] in the relevant columns. Please do not omit any statement. The information you furnish will be confidential and will be used for research purpose only.**  
**[Note:SA-Strongly Agree,A-Agree,N-Neutral,D-Disagree,SD-Strongly Disagree]**

.No	Questions	SA	A	N	D	SD
<b>Perceived Ease of Use (PEU)</b>						
1	I find LMS is easy and friendly to use					
2	LMS is flexible and interactive to learn subjects					
3	The interface is pleasant					
4	It is easy to become skilful in using LMS					
5	Interacting with LMS requires much mental effort					
6	The language used in LMS is easy to understand					
7	Accessing the activities (Assignment, learning materials, Quiz-Google Form, Google Meet) are easy					
8	Activities such as assignment, learning material, Google Meet and Quiz-Google Form in LMS are clear and understandable					
9	LMS is a package where learning materials, assignment, Google Meet and Quiz-Google Form are all at one web portal					
10	It is convenient to download learning materials in .ppt, .doc. and .pdf format					
11	It is easier to listen to the audio based learning materials					
12	It is easier to view the video based learning materials					
13	Allows to access learning materials as many times as needed					
14	It is convenient to upload assignment as a file in any format (.doc, .pdf and .ppt)					
15	LMS helps to add images easily in assignment preparation					
16	Accessing links to the external web resources is easy					
17	It is convenient to attend Multiple Choice online quiz through Google Form					
18	Easy to participate in the survey through Google Form					
19	Easy to communicate with teacher through 'Stream' feature in Google classroom					
20	LMS can be accessed anytime through internet from inside the campus					
21	LMS can be accessed anytime through internet from outside the campus					
22	LMS can be accessed through smart phones					
23	LMS can be accessed through ipad/tablet devices					
24	It is easy to share materials(doc, pdf, ppt, video, audio, web page) in Meet for presentation					
25	The chat feature in Meet makes it easy to communicate with teacher					
<b>Perceived Usefulness (PU)</b>						
1	LMS improves my academic achievement(Internal/External marks)					
2	Has a positive effect on my learning					
3	LMS with the support of traditional teaching method through Google Meet helps me to learn better					
4	Learning materials uploaded are available throughout the semester and hence it gives flexibility to learn anytime					
5	LMS gives me learning materials and other information that I need at right time					
6	Helps in accessing unit wise 'learning materials' according to the syllabus					



7	The due date in LMS helps to know the assignment submission date					
8	Submission of assignment, attending quiz through Google form, downloading learning materials can be done from anywhere					
9	LMS allows me to complete assignment on time than would otherwise be not possible if submission done manually					
10	Feedback/Comments on assignment given by the teacher is very useful to learn further					
11	Attending Quiz through Google form helps to test the knowledge gained from learning materials distributed through LMS					
12	Attending Quiz through Google form helps to test the knowledge taught in traditional teaching					
13	Knowing the immediate answer(feedback) at the end of the quiz in Google form helps to correct the mistakes					
14	Helps to know the marks immediately after submission of quiz in Google form					
15	The doubts can be clarified immediately with the teacher in Google Meet which is very useful for learning					
	<b>Attitude Toward Usage (ATU)</b>					
1	Learning through LMS is a good idea					
2	LMS makes me to realize anywhere and anytime learning					
3	I feel positive towards LMS					
4	LMS has all the functions and capabilities required for a learning environment					
5	LMS has to be an essential part of this graduation programme					
6	LMS is useful only when teacher provides appropriate learning materials and relevant activities					
7	Believe I could become successful in using LMS					
8	Learning the subjects through LMS is more difficult than learning in a traditional classroom					
9	The organization of information on the screens of LMS is clear and understandable					
10	LMS requires proficiency in Information Technology (IT)					
11	Learning through LMS is acceptable					
12	LMS is becoming more popular in universities and colleges					
	<b>Behavioural Intention to Use (BIU)</b>					
1	I intend to be a user of LMS frequently in my learning activities					
2	I like to use new learning methods other than traditional way of learning					
3	I intend to learn more about the features of LMS					
4	I would recommend other students to use LMS					
5	I intend to continue using LMS every semester					
6	I intend to use LMS as part of my daily learning activities					
7	I will use LMS in the future if I get any opportunity					
	<b>Self-Efficacy</b>					
1	I could use the LMS if only I had the manual for reference					
2	I could access learning materials, upload assignment, attend Quiz through Google Form on the LMS even if there is no one around to show me how to use it					
3	I feel confident using the LMS					
4	I have the necessary skills for using LMS					
	<b>Access Control</b>					
1	The submission of assignment material by me is accessible only by the teacher					
2	I cannot see other student's assignment material					
3	I cannot see other student's assignment marks					
4	The feedback for assignment given by the teacher is accessible only by me					
5	I cannot see other's student's feedback given by the teacher					
6	I cannot see other student's quiz marks in Google form					