

Perception of Undergraduate Medical and Dental Students Towards Learning Anatomy in Google Classroom

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Abstract

Background: Google Classroom is one of the online learning system developed by Google which enables both the teachers and learners to engage in ‘beyond the classroom’ learning in an innovative way. The present study mainly focus to assess the perception of students towards learning Anatomy in Google Classroom **Methodology:** A study was conducted in undergraduate medical and dental students of ACS Medical College and Thai Moogambigai Dental College, Chennai who are residing in their homes due to Covid 19 lock down. Anatomy virtual class was created in Google classroom individually for medical and dental students and students were asked to join the class by means of class code. The materials were uploaded on a daily basis based on the syllabus. Assignment and assessment were also given and graded. After two months of learning experience in Google Classroom, perception of students and challenges faced by them towards this learning system was collected by structured questionnaire in Google form and it was statistically analysed **Results:** About 163 students responded to the questionnaire. 79 (48.2%) students were males and 85(51.8%) students were females. Overall the students gave positive response towards their learning experience in Google classroom and few problems also have been found out like issues regarding accessing course materials and navigating the system, difficulty in submission of assignments, poor internet connection and they also want to make the classes more interactive **Conclusion:** Sensitisation and proper training should be given to the students regarding the use of Google Classroom. Quizzes, mind mapping, clinical based questions can be given to make the participants more engaged and interactive. Hence Google classroom is definitely a student centered online learning platform with the teacher as facilitators which helps to make the students competent.

Keywords: online learning, medical and dental students, technology, Google classroom, perception

Introduction

Teaching and learning is no more confined within the chalk and talk method in today’s modern world. Nowadays teachers are expected to provide better learning environment to the students both inside and outside the classroom which can be termed as “beyond the classroom” learning^[1]. This type of learning ensures

personalized, competency based and student centred environment. The first and foremost challenge is the growing dependence on technology which has made wide impact toward education system. Hence learning is no longer bound by space, distance and time with technological advances. Both the lecturers and students have already got the advantage of technology to support their teaching learning activities^[2]. Many people believe that use of technology for learning can be able to replace the current learning situation”learning with effort” into ”learning with fun”^[3]. Online learning is one kind of learning which is done not only in the classroom but it can also be done through online or computer devices. Khan et al reported that “online instruction as an innovative approach to delivering an instruction and

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materials of learning to a remote audience using the web as the media”^[4]. One such example for online learning is Google Classroom.

Google Classroom (GC) is a virtual class launched by Google Apps for Education (GAPE) in 2014. To use this application, the users need g-mail account and it is free of charge. This application can be used in smartphone and other computer devices. The facilitator need to create a class and share the class code to the students so that they can join with the class created. Google Classroom gives teachers opportunities to expand the techniques of classroom management and activities. This also facilitates the teachers to upload their classes, create and organize assignments quickly, provide feedback efficiently and communicate with their classes with ease^[5]. In Google Classroom, both the lecturer and students have the assessment record and the lecturer cannot miss any students’ mark and works. They can be checked anytime. Google classroom integrates with other Google products like Google Docs, Google Drive, YouTube, Google Forms, Google Calendar in one place which allows class teacher and students to send and share office docs or multimedia files, to do collaborative project, to have an online discussion and assessment. Iftakhar^[6] stated that “Google Classroom is meant to help teachers manage the creation and collection of student assignments in a paperless environment, basically leveraging the framework of Google Docs, Drive and other apps. Google classroom allows teachers to spend more time with their students and less time on the paperwork; which is now even better”

Online learning has many challenges like limited implementation of online learning since it is used only to deliver and submit the task, poor internet connection which can lower students motivation and miscommunication between the students and teacher can also happen if the instructions are unclear.

The teachers are basically regulating the activities in the Google classroom but it is the students can only tell the pros and cons of it since they are practically dealing with it for learning. Hence the aim of the present study is to investigate the perception of students towards learning Anatomy in Google Classroom.

Objectives

To assess the perception levels of undergraduate medical and dental students and to identify the challenges and barriers faced by the students towards learning Anatomy in Google Classroom

Methodology

The study was done in the undergraduate medical and dental students (2019-2020) of ACS Medical College and Hospital, Thai Moogambigai Dental College and Hospital, Dr.M.G.R Educational and Research Institute, Chennai who were residing in their homes due to Covid-19 lockdown. Hence the online classes were planned in Google classroom.

Anatomy virtual class was created in the google classroom individually . They were asked to join Anatomy class by typing a class code. The class was filled by teachers self made lesson materials like downloadable videos and voice over power point related to Anatomy and they were accessible by any student at any time .It was uploaded on a daily basis following the order of class discussions . Submission of assignments related to the topic were done and it was graded. Two Internal Assessment Examination were also conducted in Google classroom.

After 2 months, students were asked to fill pre formatted structured questionnaire in Google form to assess their perceptions and challenges faced towards learning Anatomy in Google Classroom. The questionnaire was prepared with reference to Shahanee et al^[7] and Khaleel et al^[8]. The questionnaire included questions on demographics, five predictor variables, student satisfaction and issues faced by the students. All the items excluding demographics were measured using a five-point nominal scale ranging from 1 (strongly disagree) to 5 (strongly agree). Pre-testing and pre validation were done in the questionnaire. Questionnaire was shared to the students through whats app. The Google form contained consent form in first section and questionnaire in second section. The link was made accessible to the students for one week (26th May 2020-30th May 2020). Then the data was statistically analysed.

Results and Discussion

About 163 students of I year undergraduate medical

and dental students responded to the questionnaire .Out of 207 students, 164 students participated in the study which shows a response rate of 79.22%. 79 (48.2%) students were males and 85(51.8%) students were females. The main access of application is through mobile phone(90.9%) rather than desktop, laptop and tablets and the internet data usage in google classroom per day is less than 1GB/day(44.5%) (Fig.1).

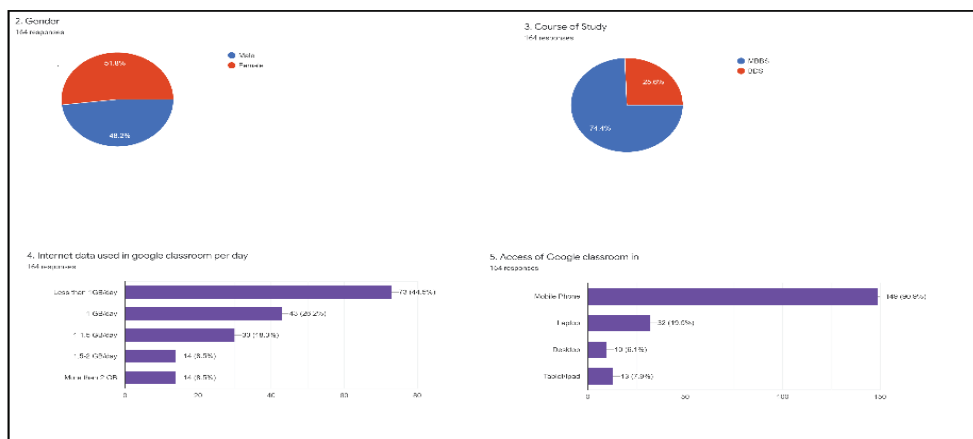


Fig.1: Gender distribution and Course of participants/

Mode of Access and internet data usage in Google classroom

Regarding ease of access in google classroom, students agreed that it was easy to sign into the google classroom and about understanding the system with mean of 4.04 ±0.93 and 4.01± 1.35 and is lower in the component of submitting and receiving assignments with 3.35. Hence the students should be sensitised regarding the submission of assignments in google classroom. But in the study done by Shaharane et al^[7], respondents strongly agreed that the introduction of Google Classroom in their class makes the process of submitting assignment easier with 4.52 and disagreed about accessing course materials and navigating the system with 3.05 and 3.44 Hence teacher should pay

more attention on helping the students with necessary materials to help them understand about navigating the system easily.

Students strongly agreed that the feedback provided by the lecturer is useful with highest mean of 4.32±0.92. The items of learning quality and the grading system in Google classroom have the mean value of 4.01 and 4.12 respectively.. Students disagreed that about learning activity in google classroom helping to evaluate new ideas and develop self learning and critical thinking skills with mean value of 3.54± 1.17 and 3.36 ± 1.15 and hence the teachers have to concentrate more on the platform that should improve the students critical thinking skills and idea generation [Tab.1].

Tab.1: Mean value and S.D of items of Perceived usefulness in google classroom(n=164)

S.No	Item	Sum	Mean	Standard Deviation
1.	The quality of learning activity was excellent	658	4.01	0.83
2.	An excellent medium for social interaction (lecturer vs students and students vs student)	675	4.11	1.16
3.	Help me to submit assignment on time	682	4.15	0.54
4.	Helped me to examine issues, to evaluate new ideas, and to apply what I have learned.	582	3.54	1.17
5.	The feedback provided by the lecturer is useful	710	4.32	0.98
6.	The grading system help in monitoring my performance and understanding the current topic discussed	677	4.12	0.74
7.	Help to develop self learning skills and critical thinking skills	552	3.36	1.15

The item with highest mean is instruction regarding feedback given by the lecturer that allowed the student to better understand the content of the course with mean value of 4.54±1.07. In the study done by Shaharane et al^[7] the lowest mean value goes to feedback that allowed to better understand the content of the course provided by lecturer with mean value of 4.33. The lowest mean value goes to lecture clearly communicated course topics and making the course participants on task with mean value of 3.77±1.01 and 3.79±0.98 respectively. Therefore, steps has to be taken to keep the course participants on task by including activities like quizzes,

picture based questions and clinical based questions as a part of learning activity[Tab.2].

The highest mean is the item regarding lecturers being friendly, approachable and could be easily contacted and also the enthusiasm of lecturers in teaching and explaining The lowest mean value goes to lecturer helping to keep course participants engaged and comfortability of interacting with other participants in learning activity with mean value of 3.46±1.13 and 3.25±1.20. Therefore, action should be taken on making interactive platform of online learning [Tab.2].

Tab.2: Mean and S.D of course Instruction Delivery/communication and Interaction in Google Classroom(n=164)

S.No	Item	Sum	Mean	Standard Deviation
Course instruction delivery				
1.	Lecturer provided clear instructions about course learning activities.	730	4.45	0.95
2.	Lecturer clearly communicated important due dates/time frames for learning activities.	732	4.46	0.99
3.	Lecturer clearly communicated important course topics.	619	3.77	1.01
4.	Lecturer helped keep the course participants	623	3.79	0.98
5.	Lecturer provides feedback that allowed me to better understand the content	745	4.54	1.07
Communication and Interaction				
1.	Feeling comfortable conversing through this medium for this activity	683	4.16	0.62
2.	Lecturer helped to keep course participants engaged and participating in productive discussion	569	3.46	1.13
3.	Felt comfortable interacting with other participants in this activity	534	3.25	1.20
4.	My point of view was acknowledged	679	4.14	0.71
5.	Lecturers are enthusiastic in teaching and explaining via the Google Classroom.	694	4.23	0.91
6.	Lecturers are friendly, approachable and could be easily contacted.	721	4.39	0.64

Regarding students satisfaction in Google classroom, the highest mean value pointed to the students would recommend this method of learning to be applied in the near future with mean value of 4.22 ± 0.56 . This reveals that students were satisfied with the introduction of Google classroom as an active tool of learning and would recommend

it in the near future too. The lowest mean value goes to Google classroom as first choice in active learning and liking towards Google classroom as a learning initiative and motivation booster with mean value of 4.10 ± 1.34 and 4.15 ± 1.28 . Hence the teachers should concentrate on the activities in Google classroom which enhance active learning and provide motivation to the students (Tab.3).

Tab.3: Mean and S.D of Students satisfaction in Google Classroom(n=164)

S.No	Item	Sum	Mean	Standard Deviation
1.	The subject met my personal goal through the medium introduced.	684	4.17	1.09
2.	I would recommend this method of learning to be applied in the near future	693	4.22	0.56
3.	Google classroom is my first choice in active learning compare to other method	673	4.10	1.34
4.	I like the Google Classroom as a learning initiative and motivation booster.	681	4.15	1.28

The higher mean score was for the items “I’m suffering from poor communication network” and “I think that Google classroom focus on the cognitive side more than technical skills and emotional aspects” with mean value of 3.30 ± 1.29 and 3.28 ± 1.07 . This reveals that few students had poor communication network in their mobile phones and activities in Google classroom mainly focus on cognitive domain than psychomotor. Students disagreed about being upset in doing assignment

and assessment in Google classroom with mean value of 2.89 ± 1.25 . All the items show the scores below 4 which reveals that students are satisfied with their learning activity in Google classroom in spite of the minor issues and challenges faced by them and it can be inferred that a common challenges and issues faced by the students in Google classroom belong to any type of online learning in general and they are not belong to Google classroom in specific since it was reported in earlier findings Perry (2003)^[9], Facer, et al, (2005)^[10] [Tab.4].

Tab.4: Mean and S.D of Issues/Challenges faced by the students in Google Classroom (n=164)

S.No	Item	Sum	Mean	Standard Deviation
1.	Feeling bored when read my course by google classroom	526	3.20	1.28
2.	Feeling upset when doing assignment and assessment by google classroom	474	2.89	1.25
3.	Application would negatively affect the acquisition of the skills of reading and writing to me.	508	3.09	1.22
4.	Difficult to store large files	510	3.10	1.27
5.	Application does not lead to social isolation for students.	501	3.05	1.13
6.	Focus on the cognitive side more than technical skills and emotional aspects	539	3.28	1.07
7.	Difficult to enter the information on the small screen size of mobile phone	522	3.18	1.27
8.	Poor communication network	542	3.30	1.29
9.	Problem of low mobile battery continuously.	479	2.92	1.31
10.	Cons of Google classroom more than the positives	511	3.11	1.16

Conclusion

This study showed that Google Classroom is an effective teaching and learning tool since students gave a positive response for most of the items in the questionnaire. The problems also have been found out like difficulty in submission of assignments which may be due to lack of proper technological knowledge. Hence proper training should be given on its use which will enhance the students performance and a successful learning . Interactive platform should be created to enhance the critical thinking of the learners. Every new learning environment has issues and challenges that can be overcome in the near future. Hence Google classroom can be used as an effective tool for teaching and learning activity in addition to traditional classes. Here the

teachers play the role as facilitators which enhances collaborative learning and making the students more competent in this era of competency based curriculum.

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