

Google Classroom - An Effective Tool for Online Teaching and Learning in this COVID era

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Abstract

Background: Nationwide lockdown due to corona virus pandemic compelled the medical colleges to conduct online classes to compensate for the loss of academic period. Among all the available apps, Google classroom was found to be more user friendly app with many built in features. After using one month of Google classroom app in the department of Forensic medicine, a feedback survey was done to know the effectiveness of online classes and in particular about the advantages and disadvantages of Google classroom as a tool for teaching and learning online.

Material and Methods: A Questionnaire which had both objective and open ended questions was administered to 150 phase II MBBS students who underwent online classes conducted by department of Forensic Medicine and 6 instructors who took classes.

Results: Students felt that undergoing online classes was the best way of utilizing lockdown time (54%). Both students and teachers found the app very user-friendly and easy to navigate. Students felt that, using anytime anywhere (68%), interaction through private comment section (90%), getting the constructive feedback (86%) and material available for revision all the time (84%) were the advantages of Google classroom. While teachers found, tracking of assignment, grading system and record keeping as advantages. No automated update option, network issues, No search option and No integration were few disadvantages quoted by students and teachers.

Conclusion: Online classes are the best way of utilizing the lockdown time to make up the loss of academic period. Google classroom is an effective tool for teaching and learning online classes because of its ease of use and features which are both teacher friendly and student friendly.

Key words: *Online teaching; Google classroom app; nationwide lockdown; feedback; teaching-learning interface.*

Introduction

India declared nationwide lockdown due to Corona virus pandemic. During this lockdown, universities including RGUHS (Rajiv Gandhi University of Health Sciences) Bangalore, Karnataka took steps to declare

holidays for medical colleges to contain the virus. Meanwhile RGUHS also urged medical colleges to start online classes to compensate for the loss of academic period.

An online classroom is virtual classroom that allows participants to communicate with one another, view presentations or videos, interact with other participants and engage with resources in work group⁽¹⁾. An online class which utilizes electronic technologies for learning is called e- learning⁽²⁾. Online classes can be synchronous that is usually scheduled in real-time and students should put aside their time to attend the online session whereas in asynchronous type one utilizes Computer

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Mediation Communication (CMC) to achieve “anytime and everywhere” learning through online discussion (3).

In online classes students are not in the physical classroom. So making them connected is a great challenge to teachers. Here we are dealing with students who know technology very well (4) and are adult learners who prefer self-directed learning, exhibit readiness to learn, orientation to learning that is problem-centered rather than subject-centered and exhibit a relatively high degree of internal motivation (5,6). While on the other hand, instructors’ moves from being at the center of the interaction or the source of information to the ‘guide on the side’ (7).

Research indicates that individuals prefer educational programs, “that are flexible with time and location (6). An app in mobile can improve the online learning experience by improving communication (8). There are many apps for online teaching and learning like, Zoom, Cisco webex, Impartus etc which provide live streaming of lectures. But many of these allow fewer students in free version. One of the major hurdles for live streaming of the class is poor internet connectivity which results in audio and video being not synchronous.

Web 2.0 technologies have been integrated for many years into educational systems (9). Google is a popular Web 2.0 tools and Google Classroom is a new tool introduced in Google Apps for Education in 2014(10)

Google classroom can be used for synchronous teaching using Google meet or asynchronous teaching using Google classroom. Asynchronous teaching and learning allows students to use material anytime and anywhere without time limit (10). Google Classroom is a learning management system that aims to simplify creating, distributing and grading assignments (1). By keeping, all these points in mind, we decided to go ahead with Google classroom app as a tool for online teaching and learning.

Forensic medicine has been described as a key to the past, the explanation of the present and to some extent a signpost to the future (11). Subject like Forensic Medicine, needs concepts which are clear and properly associated. We used Google classroom as an online teaching and learning platform to teach forensic medicine for MBBS phase II students. After using this app for 1 month,

we collected students feedback on online classes and both students and teachers feedback on ease of use, advantages and disadvantages of Google classroom app.

Aims and Objectives

1. To analyse the effectiveness of online teaching
2. To get the feedback of students and teachers on Google classroom app with respect to ease of access, advantages and disadvantages.

Materials and Methods

Second year MBBS students (n=150, Boys =82, Girls=68) and 6 instructors of department of Forensic medicine, S. Nijalingappa Medical College, Bagalkot, were included in the study.

Sampling: Purposive sampling

Study design: Descriptive

Methodology

We created a Forensic Medicine class on Google Classroom app and asked students to join. Then instructors were asked to upload their power point presentation with background narrations narrated in their own voice on scheduled time in app. PPT having background narrations in instructors voice, to some extent gives the feel of connectedness to students.

After the scheduled class was over, instructors were asked to upload assignments to the students covering the key concepts of the lecture. A stipulated time was given to student to complete the assignment and upload the answers. During this time, instructor was available for discussion with students to clear their doubts. Once the student submits the answers, teacher would evaluate the assignments and return the file with constructive feedback to the students. The students who have handed in the response in a given stipulate time were marked as present others considered as absent. Three late submissions (submission after the stipulated time) were marked as 1 absent (considering the network issues).

Data collection method: After one month of using Google classroom app for online teaching and learning, a feedback questionnaire was administered to the students. Questionnaire had 2 components. Questionnaire on ease

of App was adapted from Shaharane et al⁽¹⁰⁾ where students were asked to mark their response n 5- point Liekert’s scale 1- strongly disagree to 5- strongly agree). Other component of questionnaire contained combination of closed ended and open ended questions advantages and disadvantages of online classes and app. Instructors feedback was also collected.

Statistical Analysis: Collected data was analysed using Microsoft excel sheet.

Results

Table 1; shows the feedback of students about the advantages of online classes. About 54 % students felt that this was the best way of utilizing the lockdown time. Online classes allow them to maintain continuity with the subject (53%), regular assignments after the class help them to remember the concept well (48.6%). There were also responses regarding no hurry to copy the notes (18%) and stress free study (6.6%).

Table 2; shows the feedback responses on disadvantages of online classes. Around 39.33% students felt that online classes were not effective as traditional classes because it lacks student teacher interaction or no classroom environment. Few students also complained about distraction by pop ups (9.33%) and headache and eyestrain due to excessive use of mobile (5.33%)

Table 3; show the mean scores of the ease of use of Google classroom app. Among student, the scores

of all the components were high. The highest score was for access of material on this app (4.71) then followed by signing into the app (4.62) and then navigation of the system (4.55). Among teacher, signing into the app (4.80) and easy navigation of the system (4.89) score were high.

Table 4; shows the student responses about the advantages of the Google classroom. Around 68% students were responded saying it as they can use the app anytime and anywhere, they can view the material many times and revise (84%) which helps them to remember the subject well. Around 90 % (135) students were happy about the private comment section which enables them to communicate with teacher. About 86% (129) students felt that instant feedback by the instructor helps them to improvise themselves in the area of lacunae. Few students (45%) also commented that they can keep a track of their assignments and grading system helps them to monitor their progress.

Table 5; shows the disadvantages of Google classroom app. Around 46.6% of students responded that, app consumes lot of data and needs more storage space. Students also experienced network issues due to which they got late announcement (38%). Few students (21%) expressed the need for search option in the app, which will save them the time to find the material easily. Few students also expressed that they took time to adjust for the app (10.6%). Around 3.3% students experienced difficulty in uploading the assignment.

Table 1: Advantages of online teaching

Feedback responses	Boy (n=82)	Girl (n=68)	Total (n=150)
Good utilization of lockdown time	51.2%(42)	57% (39)	54%(81)
Syllabus can be covered	45%(37)	63.2%(43)	53%(80)
Assignments helps in remembering the concepts	34.1%(28)	66.1%(45)	48.66%(73)
Can do other activities along with learning	12,2%(10)	11.7%(8)	12%(18)
No hurry to copy material	14.6%(12)	22%(15)	18%(27)
Overcame shyness	3.6%(3)	2.9%(2)	3.3%(5)
Stress free study	4.8%(4)	8.8%(6)	6.6%(10)

Table 2: Disadvantages of online classes when compared to traditional classroom

Feedback responses	Boy (n=82)	Girl (n=68)	Total (n=150)
No classroom environment	36.5%(30)	42.6%(29)	39.33%(59)
Not interesting	6.1%(5)	11.7%(8)	8.66%(13)
Distractions by pop ups	14.6%(12)	2.9%(2)	9.33%(14)
Eye strain and headache	3.6%(3)	7.3%(5)	5.33%(8)

Table 3: Ease of Google classroom app usage (To be marked on Likert scale, 1- strongly disagree to 5- Strongly agree). Method adapted from Shaharane et al⁽¹⁰⁾

Questions	Student (n=150)	Teachers (n=6)
Accessible on all the devices mobile models	4.22	4.33
Signing on to the Google Classroom	4.62	4.80
Accessing course materials	4.71	---
Sending and receiving assignment	4.12	---
Submitting Assignment	4.00	---
Navigating the system	4.55	4.89
Personalised learning experience	4.09	---

Table 4: Advantages of Google classroom app

Feedback responses	Boy (n=82)	Girl (n=68)	Total (n=150)
All classes in single app	24.4%(20)	27.9%(19)	26%(39)
Use anywhere and anytime	63.4%(52)	73.5%(50)	68%(102)
Can watch many times and revise	84.1%(69)	83.8%(57)	84%(126)
Regular notifications of classes	48.7%(40)	41.1%(28)	45.33%(68)
Interaction through private comment section	36.58%(30)	72%(49)	90%(135)
The grading system help in monitoring my performance	42.6%(35)	69.1%(47)	52.66%(79)
The feedback provided by the lecturer is useful.	89%(73)	82.3%(56)	86%(129)
Good for self learning process best alternative for physical class	15.8%(13)	29.4%(20)	22%(33)
Time saver	8.5%(7)	8.8%(6)	8.66%(13)
Paperless or less paper work	10.9%(9)	27.9%(19)	18.66%(28)

Table 5: Disadvantages of Google classroom app

Feedback responses	Boy (n=82)	Girl (n=68)	Total (n=150)
No search option	24.3%(20)	17.6%(12)	21.33%(32)
Difficult to edit assignment and upload	3.6%(3)	2.9%(2)	3.33%(5)
No automated update	1.2%(1)	0%(0)	06%(1)
Took time to adjust for this app	7.3%(6)	14.7%(10)	10.66%(16)
No integration			
It consumes lot of data and storage space	50%(41)	42.6%(29)	46.66%(70)
Late announcement due to network problems	32.9%(27)	29.4%(20)	38%(57)

ABBREVIATIONS

MBBS: Bachelor of Medicine, Bachelor of Surgery

Discussion**Online teaching and its advantages**

As India announced nationwide lockdown, many students got stuck at their hometown. In our study around 54% of students responded as online classes were the best way of utilizing lockdown time and regular assignments help them to remember things better than physical classroom (53%). Students felt study was stress free and there was no hurry to take notes. Few students, who were shy to ask questions in the physical classroom, were comfortable in asking questions through private comment section. The great advantage of online classes is that students become active learners. They are directed to solve problems through a self-regulated process. “This takes an approach of social constructivism in which the student must steer his/her own learning process”⁽¹²⁾.

Effectiveness of online classes

In our study around 59% of students expressed that, online classes were not. This may be possibly due to facilitators not been effective in making the class interactive. The primary disadvantage reported by students in online courses is the absence of interaction between instructor and student⁽¹³⁾ which makes online classes less effective. Research supports the fact that course satisfaction is contingent upon course interaction

⁽¹⁴⁾. Students benefit greatly from strong feelings of a sense of community⁽¹⁵⁾ and students who received consistent personalized instructor feedback exhibited higher satisfaction levels and academic gains”⁽¹⁶⁾. The goal of online classes is to create a transformative learning which is an outgrowth of self-directed learning.

Ease of usage of Google classroom app

As Google classroom app is accessible on mobile there is high potential to increase the communication and interaction among participants in online classes⁽⁸⁾.

In our study, both teachers and students felt that, Google classroom app was easy to sign, easy access of material (4.71) and easy navigating system (4.55) and lowest score was for submission of assignment (4.0). This may be possibly due to the network issues faced by students. Google Classroom provides easy-to-use learning features with students of all categories able to cooperate. Mobile access to learning materials that are easy to interact and easy to mark is critical to online teaching and save time also^(17, 18).

Even though the students of 21st century are very well versed with use of app on mobiles but social use does not translate directly into educational use⁽¹⁹⁾. In order to benefit from online courses, students must be comfortable with the technology. In our study we

found that, students were comfortable in using Google classroom app.

Advantages of Google classroom app

Google Classroom is an educational interactive tool that allows creating an informatively rich educational environment⁽²⁰⁾. Whole process of administering assignments, grading, formative assessment, and feedback is simplified and streamlined as it integrates with other Google apps⁽¹⁾. In our study, students expressed that interaction through private comment section (90%) helped them to overcome shyness while constructive feedback given by the instructors (86%) helped them to learn better. In online environment, students receive far less informal feedback thus the provision of effective assignment feedback is particularly important. In this app, students can view their grading and keep a track of their assignments and also view the assignments submitted by other students. This helps them know where they stand and get the sense of learning community. Mobile friendly app (68%) and material available for revision (84%) were other advantages quoted.

Disadvantages of Google classroom app

Though Google classroom is equipped with user friendly teaching and learning interface, it has certain disadvantages like no search option (21.33%), no automated update option, missed new announcements (38%) and app consumes lot of data and storage space.

Teachers' perspectives on Google classroom app

Google Classroom helps teachers save time, keep classes organized, and improve communication with students⁽¹⁾. This app also allows teachers to welcome and associate the guardians so they can track their children's performance and get email declarations relating to the learning of their kids⁽²¹⁾. Teachers suggested having a feature of individual folders for students.

Conclusion

Online classes are the best way of utilizing the lockdown time to make up the loss of academic period. Google classroom is an effective tool for teaching and learning online classes because of its ease of use and features which are both teacher friendly and student friendly.

Ethical Clearance: Ethical clearance obtained from institutional ethical committee.

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