

## Online Learning and Teaching using Google Classroom during the COVID-19 Pandemic

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### ABSTRACT

The 'Google Classroom' is one of the technologies used for the teaching and learning process. This paper explores the possibilities of how Google Classroom may be brought into use by educators for the effective teaching-learning process. The study's main objectives are to understand 'Google Classroom' technology and find out the use of Google Classroom by the educators of India particularly during the COVID-19 pandemic situation. The study is quantitative research in nature. The data collected through Google form contains 18 questions. A sample of 1050 educators was collected to know the usage of Google classroom in the teaching-learning process. The result indicated that most of the respondents are using Google Classroom for teaching purposes which is good in terms of Ease of access, perceived usefulness, tracking the progress of students, communication and interaction between the teachers and the students. Results also show the effective use of google classroom by the librarians to provide e-library services to their users when physical access to libraries is not available. The study recommends that the Google Classroom may be used to enhance quality in imparting teaching and learning activities at all levels of education, especially during the Pandemic.

**Keywords:** Education-COVID-19; Online learning; Teaching-learning; Google classroom; G-suit in Education; Google classroom and libraries

### 1. INTRODUCTION

This pandemic has adversely affected almost every sector of life including the education sector, which has also been disrupted drastically. The education sector is facing unprecedented challenges in the given times. The teaching-learning process and research activities have been badly disrupted all over the world. According to United Nations Educational, Scientific and Cultural Organisation (UNESCO), more than 32 crore students in India are in the dilemma<sup>1</sup>. Lockdown in India leads to the temporary closure of about 988 universities and 40000 colleges<sup>2</sup>. The education sector was not ready for handling the situation in terms of the application of Information technology. The three main reasons were the digital divide, teachers and students are not trained enough to use technology, and lack of a well-developed distance-learning environments in our country.

In the present situation, students and teachers are using many Learning Management System Software (LMS) tools to manage teaching-learning activity on the virtual platform. Google Classroom is one such LMS, which is free to use and very easy to handle. It is very effective in tracking the progress of students, and communication and interaction between the teachers and the students. It has doubled the number of active

users to more than 100 million in this pandemic period since the beginning of March 2020<sup>3</sup>.

Google Classroom is a free web-based service, which offers paperless communication to anyone with a personal It has been specially developed for educational institutions to create, disseminate and grade the assignment in a more user-friendly environment. The primary purpose of Google Classroom is to exchange seamlessly e-content/e-files among teachers and students in a structured manner. An educationist, a teacher, or a librarian may make 'announcements' to the students to disseminate learning material to the students virtually. Google Classroom is compatible with almost all available LMS. Therefore, it is more like a Course Management Software that is free, user-friendly, and provides an organised platform for exchanging information resources.

### 2. BEGINNING OF GOOGLE CLASSROOM

Google announced Google Classroom on 6 May 2014 and officially launched it on 12 August 2014<sup>4</sup>. Google developed Google Classroom under the motto "to help teachers create and collect assignments" and based on the principle "educational tools should be simple and easy to use." Initially, it was slow and had some bugs too. In the first version of Google Classroom, provision of interaction with students individually and share button was missing. It was introduced only in 2015<sup>5</sup>. The Calendar tool was integrated with Google Classroom on 24

August 2015<sup>6</sup>. It is an effective integration as it helps the students track the upcoming assignment and its due date. Earlier, it was compulsory to have a G Suite for Education account to access Google Classroom, but in March 2017, Google Classroom removed this restriction<sup>7</sup>. Now, anyone who has a Gmail account may access Google Classroom. On 7 August 2018, Google announced an improved version of Google Classroom with the 'Classroom' feature, which is now the heart of Google Classroom<sup>8</sup>. Several developments like improvement of grading system, organizing the material by 'Topic,' dragging and dropping the topic & improved assignment grading, Etc., have made Google a real hit, now teachers are making use of Google Classroom globally. In November 2019, another great feature called Rubrics was added to the Google Classroom for evaluation, and the marks feature was strengthened<sup>9</sup>. During the COVID situation, Google announced the 'Google Meet' feature with Classroom to launch a platform for face-to-face communication between students and teachers. Libraries are also using Google Classroom for organizing various activities of the library<sup>10</sup>.

### 2.1 Advantages of Google Classroom

- It is a free, efficient and paperless virtual platform, and it allows communication through announcements and discussions among educators, teachers, and students;
- It improves the Classroom's overall environment, facilitating creating an assignment, quiz, or questionnaire, evaluating them, and sending them back to the students. All activities are automatically saved into cloud service of 'Google Drive' under the 'Classroom' folder;
- G-Suite for education is also free of cost for Educators. It is free from advertisement and is also a secure platform that does not require any permissions in downloading and installation. Google Classroom designers claim that they never use teachers' content or student data for advertising purposes<sup>11</sup>.

### 2.2 Main Features of Google Classroom

- The theme of the Class is to customise classroom photos, logos, and school colors allowing the users to customise and personalise the platform as their own
- Creating, sending, and grading assignments are possible. Grades can be downloaded in a .csv file or Google sheet for compilation and records keeping
- Classes can be duplicated. Assignments and class material may be used subsequently in future.
- Classes' content can be organised topic-wise in various formats like doc, ppt, pdf, etc., and maybe added directly from Google Drive and YouTube<sup>12</sup>.
- Google Doc, Google sheet, Google Form, Google Slide can be incorporated into the Classroom for assignments and collaborative work.
- It allows chats, discussion, and remote interaction through Google Meet.
- 'Rubrics' for assignments may be created, and activities of students may also be controlled and monitored
- Announcement and assignment can be drafted and scheduled.
- Google calendar helps to track forthcoming activities and assignments.

- Co-Teachers and students can be added through an email invitation or sharing the class code.
- Co-teachers can do other activities but cannot delete the Class.
- Many educational apps like Khan Academy, Quizlet, PlagiarismCheck.org, Etc may be integrated with Classroom<sup>13</sup>.

### 3. OBJECTIVES OF THE STUDY

As per the capabilities of the Google Classroom, the objectives of the study are:

- To understand technology of 'Google Classroom'.
- To study the procedure to use the Google Classroom.
- To find out how the educators of India use Google Classroom.
- To know about the problems faced while using the Google Classroom.

### 4. LITERATURE REVIEW

Various studies on the use of Google Classroom by teachers & librarians reported the effectiveness of the Google Classroom. According to Izenslark & Lisky<sup>14</sup>, Google Classroom can be used for sharing introductory information, exercises, and supplemental materials with students, and libraries may use the flipped classroom model for the instructions. Shaharane, Jamil, & Rodzi<sup>15</sup> conducted a study in which 100 students were surveyed on 'the use of Google Classroom.' The authors concluded that students found that Google Classroom is easy to use, and they viewed that it is better than any other LMS in communication and interaction. Authors also found that the cost was the primary reason for its adoption, whereas collaborative learning through assignments is a highly effective tool for enhancing student engagement. Liu & Chuang<sup>16</sup> did a study on the sixth class students of Taiwan on the use of Google Classroom. They reported that students had a very positive response to the use of Google Classroom. According to Roche<sup>17</sup>, the use of Google Classroom may facilitate Information Literacy sessions. It is very easy to modify and upload tasks for students. Students may also answer to the given tasks. They can also give an instant reply. In a similar study, Sharda and Gupta<sup>18</sup> found that Google Classroom may be used for taking Information Literacy (IL) sessions by the libraries. Authors viewed that by using Google Classroom; librarians may change the stereotype perceptions of people who consider that a library is a dull place and the librarians are only the custodians of books and journals.

Lynch<sup>19</sup> opined that libraries might organise resources through Google Classroom for sharing with the Class. Libraries can also track the Google Classroom accounts of users and may monitor their earlier shared resources with their users. According to Harjanto and Sumarni<sup>20</sup>, teachers find Google Classroom to be a helpful tool when conducting online classes; it is also helpful for promoting collaborative learning and organizing material and assignments. Nagele<sup>21</sup> opined that Google Classroom helps in creating student-centered, collaborative, and meaningful learning. According to Yunus, and Syafi'i<sup>22</sup> "Google Classroom can be used as the preferred blended education approach where classrooms, educators,

students, and parents collaborate to meet learning goals.” The COVID-19 Pandemic has tremendously increased the use of Google Classroom worldwide. It became one of the top 5 downloaded apps in the United States and was downloaded 50+ million times by April 2020<sup>23</sup>. Keeping in mind the above studies, the study has been undertaken to know about the use of Google classroom by the educators of India. This study aims to know the perception of educators on Google classroom.

**5. RESEARCH METHODOLOGY**

A detailed analysis of the historical background of Google Classroom and its development has been done to understand the basics of the Google Classroom. It is a quantitative research, and an online survey method has been used to collect data from educators of India. A well-designed questionnaire was prepared on Google form and shared with almost 5000 educators all over India during May-June 2020. One thousand fifty questionnaires were received back. The data received from the educators has been analysed and interpreted.

**6. RESEARCH FINDING AND DISCUSSION**

**6.1 Personal Data of the Respondents**

Respondents were asked about their academic status, and it was found that out of 1050 respondents, 22 % (231) were school teachers, 42 % (441) were college lecturers, and 36 % (378) were librarians. Out of the total data collected, 46 % (483) were male, and 54 % (567) were female. Data on ‘the age of the respondents’ shows that 12 % (126) of the respondents are below 25 years of age, 30 % (315), 34 % (357), 22 % (231) of the respondents are between the age of 25-35 years, 36-45 years, 46-45 years respectively. Only 2 % (21) of the respondents are above 55 years of age.

During the COVID-19 Pandemic, teaching-learning was completely shifted to the virtual model. Respondents were asked whether they were using the online mode before the nationwide lockdown or not. It was found that 90 % (945) of the respondents started using online mediums for teaching after 24 March 2020, while the nationwide lockdown was announced.

**6.2 Use of Google Classroom**

Google Classroom is being used for various purposes, for sending and grading assignments, quizzes, and surveys, providing material, etc. Respondents were asked whether they are making use of the Google Classroom or not. It was good to know that 70 % (735 = 165 school teachers+318 college teachers+252 librarians) of the respondents use Google

Classroom for teaching and library service-related activities (Table 1).

Respondents were further asked for the reason for not using Google Classroom. 15 % (47) of the respondents said they use other alternatives, whereas 18 % (58) use LMS provided and prescribed by the institution. 31 % (98) of the respondents out of 315 said they tried using Google Classroom but found it difficult to use. 19 % (61) opined that students could not be connected to Google classroom due to low connectivity. 16 % (51) of the respondents (majority of the librarians) said they do not require it for their work.

**6.3 Perceptions of the Educators on the use of Google Classroom**

Respondents were asked about ‘the Ease in the use of Google Classroom’, 3 % (23) of the respondents found it very difficult to use. They further added that they find difficulty in uploading material and managing the grading system of the Classroom. 11 % (84) of the respondents viewed that they find it averagely easy, while 44 % (326) found it easy to use. 41 % (302) of the 735 respondents viewed that the Google classroom is very easy to use and requires basic computer literacy. They further added that it is very user-friendly and flexible

Respondents were further asked on ‘Ease of Access of the features of Google classroom,’ it is observed that 63 % (463) of the respondents found it relatively easy signing into the Google classroom whereas 50 % (368) of the respondents opined that submitting assignments in Google Classroom is an easy task. Only 19 % (140) of the respondents found that accessing the material from GC is easy. 37 % (272) of the respondents found that they can easily navigate the system, whereas 47 % (345) respondents found that sending and receiving assignments is very easy in the Google Classroom.

Respondents were also asked the reason they primarily use Google Classroom in the Class. From Table 2, it is observed that 73 % (537) of the respondents are using Google classroom as a medium of communication with other teachers and students. 60 % (441) of the respondents said that they use it for quizzes and sharing content. The assignment feature of Classwork is used by only 14 % (103) of the respondents, and 16 % (118) of the respondents use the ‘Register’ feature of Google Classroom to take attendance of the students.

**Table 1. Use of google classroom**

Use of Google classroom	School teachers (%)	College lectures (%)	Librarians (%)	Total (%)
Yes	165 (71)	318 (72)	252 (67)	735 (70)
No	66 (29)	123 (28)	126 (33)	315 (30)
Total	231 (100)	441 (100)	378 (100)	1050 (100)

**Table 2. Purpose of using google classroom**

Purpose of using google classroom	Number of respondents	Percentage
Communicate with classmates and teachers	537	73
Share links	441	60
Share Material	368	50
Take the quiz or practice test	441	60
Grading and Real-time Feedback	294	40
Attendance	118	16
Assigning Assignments to students	103	14

Respondents were also asked their views on the best thing about Google classroom. As depicted in Table 3, 22 % (162) of the respondents viewed that the quality of learning activity is very good in the Google Classroom. 26 % (191) of the respondents found it an excellent medium for social interaction, whereas 4 % (29) of the respondents found that the feedback provided by the students is helpful.

**Table 3. Views on the preferred feature of Google classroom**

A preferred feature of Google classroom	Number of respondents	Percentage
It helps to collect/submit the assignment on time.	147	20
It is an excellent medium for social interaction	191	26
The feedback provided by the lecturer is useful.	29	4
The grading system in Google classroom helps in monitoring the performance	103	14
The quality of learning activity	162	22
The subject objective, assessment, and content can be consistent with it	103	14

The assignment feature of the Google Classroom is its heart, but the study reveals (Table 2) that only 14 % (103) of the respondents use this feature. Researchers still tried to determine their knowledge on the 'Assignment' feature of the Google Classroom (Table 4). It was found that 73 % (537) of the respondents are aware of this feature which helps in the facilitation of assignment work, and 70 % (515) of the respondents understand that the feature may be used for checking assignments. It is again strange to notice that only 17 % (125) of the respondents are aware of the 'Plagiarism' feature of the Google Classroom.

**Table 4. Knowledge on the Assignment Feature of the Google classroom**

Assignment feature can be used for	Number of respondents	Percentage
To collect/submit the assignment on time.	294	40
For record-keeping of assignments	368	50
Tracking progress of assignments	441	60
Keep a check on plagiarism	125	17
Facilitation of assignments	537	73
Checking assignments	515	70

Respondents were further asked about their views for the 'Stream' feature of the Google Classroom (Table 5). It was found that 73 % (537) and 70 % (515) of the respondents believe that stream feature facilitates communication and helps

in improving the teacher/student interaction respectively. Only 15 % (110) of the respondents are aware that they can send and receive messages any time in the Google Classroom.

**Table 5. Use of stream feature of the Google classroom**

Use of stream feature	Number of respondents	Percentage
Better than WhatsApp group	118	16
Improvement in teacher/student interaction	515	70
Facilitate Announcement	458	62
Message any time	110	15
Facilitates communication	537	73
No time constraints	118	16

Respondents were also asked about the problems in using Google Classroom; 28 % (206) said they face no problem using the Google Classroom. 72 % (529) respondents said that they have issues in using Google Classroom. Some of the views of the respondents are:

- "Google is a facilitator, and students miss upon the face-to-face interaction, which shall take a while when all of us get used to it."
- "It lacks support to Regional Languages."
- "At times, the time of my computer system and the time of Google classroom do not match, and therefore it becomes a problem to submit the assignment."
- "Google Classroom is a good tool to keep in touch with students, but it lacks several required features."
- "Students do not have access to the Google classroom app... considering this scenario, technological infrastructure is required for making any online learning a success".
- "As everything is saved in Google Drive, space sometimes becomes a problem."
- "Sometimes students are reluctant to send assignments through Google doc."

Google has provided support services to learn the use of Google Classroom (GC) from 'Google Help Center' and resolve problems occurring while using it<sup>24</sup>. Video tutorials available on YouTube may also be utilised in learning Google Classroom. Udemy is offering various online courses on GC for beginners and advanced level<sup>25</sup>. MOOCs on GC are also available to learn and work with Google Classroom. Users may utilise these courses to learn how to use Google Classroom and update themselves from beginner level to advanced level. Faculty Development Programmes (FDPs), Webinars, workshops may be conducted at the institution level/university level/national level to train and support users who are not familiar with such tools. Since everyone's "learning curve" with technology is different, such kinds of professional development programs may enhance skills during the difficult times of the pandemic situation.

## 7. CONCLUSIONS

The results of this study acknowledged that the Google



Classroom is an excellent teaching platform and it provides an accessible medium for the exchange of knowledge. Comparative performance is good in terms of ease of access, perceived usefulness, tracking the students' progress, and communication and interaction between the teachers and the students. The study reflects that the librarians are making effective use of Google Classroom in sharing e-contents and providing a variety of e-library services in the COVID-19 pandemic time where physical access is not available. Google classroom performs the entire task involved in classroom teaching, from marking attendance to submitting a Grade card. Google ensures the security of the data in an encrypted and secured medium. The cloud storage system of Google Drive enables access from anywhere and anytime. It provides a 'Flipped Classroom' setting in which students first access the material and then come either face to face through Google Meet or through chat in the 'Stream' section to ask queries or resolve their problems. It is a useful web-based free technology for libraries to send e-contents and provide e-services to make optimum use of library resources. It is recommended that the Google Classroom may be utilised to enhance the quality of the teaching and learning process at all levels of academic activities, especially during the COVID-19 pandemic time.

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