

## GOOGLE CLASSROOM: WHAT WORKS AND HOW?

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### ABSTRACT

A virtual classroom is an online classroom that allows participants to communicate with one another, view presentations or videos, interact with other participants, and engage with resources in work groups. The very recent addition to virtual classroom is Google Classroom. Google has announced Classroom in May 2014 as a new tool in Google Apps for Education. More than 30 teachers of Daffodil International University have started using Google classroom from September 2014. The purpose of this study is to report the overall view of Google classroom adopted in the different classes. This paper presents brief features of Google Classroom. Roger's theory of diffusion of innovation has been used a theoretical frame work for this paper. In addition, some adoption factors (such as organizational, social, personal and technological) have been reassessed for the research purpose. The research questions are a) What factors influence teacher to use Google Classroom? b) How does teacher use Google Classroom in their teaching? c) What are the barriers to use Google Classroom? D) What are students' responses to the Google Classroom? The analysis of the results of the questionnaire indicate that this study can be effective in understanding and evaluating teachers' and learners' perceptive to ensure quality teaching and learning through Google classroom. This study also presents some new evidence on the potential of Google classrooms in teaching. Finally, some suggestions regarding the expectations of the learners were also provided for the teachers of the different disciplines who wish to use Google Classroom.

Key words: Google Classroom, Diffusion of Innovation, quality teaching and learning

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### Introduction

Over the course of the last decade, many changes have occurred that promote and support teachers to adopt technology in education. The study of Martin, F and Parker, M. A. (2014) states that many online courses are offered; at the same time faculties are adopting synchronous virtual classrooms that enable them to interact with students in real time. The Virtual classroom, a synchronous form of e-learning has been embraced by many organizations in their attempt to promote workforce learning while trying to cut travel time and costs associated with face to face instructor-led training.( Xanthoula, A 2015).The recent addition of virtual classroom is Google Classroom which is learning management system for schools that aims to simplify creating, distributing and grading assignments. It was officially introduced as a feature of Google Apps for Education in August ,2014 (Wikipedia, 2016) More than 30 teachers of Daffodil International University have started using Google classroom from September 2014. The purpose of this study is to report the overall view of Google classroom adopted in different English Literature classes by linking Roger's theory of diffusion of innovation. The paper finds out what are the factors for adopting Classroom, how the teacher use it, what works best and its' effectiveness and limitations.

### What is Google Classroom?

Google Classroom is considered as one of the best platforms out there for enhancing teachers' workflow. "It provides a set of powerful features that make it an ideal tool to use with students. 'Classroom helps teachers save time, keep classes organized, and improve communication with students. It is available to anyone with Google Apps for Education, a free suite of productivity tools including Gmail, Drive and Docs.'(2015).

Google Classroom is only six months old. Within this short period of time, it has managed to host over 30 million assignments turned in by teachers and students that indicates that Google Classroom is being "widely endorsed within the education community ."(2015)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, and it is now even better. Google's latest announcement brings new functionality to Google Classroom. Included in the new functionality is the ability to add more than one teacher, as well as to preparing for classes in advance as well.

At institutions currently signed on with Google, there are several ways in which Google Classroom could be beneficial to both students and faculty.

- Google Classroom has the potential to streamline communication and workflow for students by providing a single access point to discussion threads and assigned work.

- Google Classroom can help students to keep their files more organized because all their work can be stored paperlessly in a single program.
- Faculty can more quickly identify which students may be struggling with their assignments due to the tracking mechanisms associated with assigned tasks.
- Grading processes can be simplified because of the grading features associated with student submissions.

### Features of Google Classroom

Google Classroom is very simple to create and to use. Here all available features are integrated. Once a new course space is created, the instructor can see three tabs. These are labeled as about, students and stream. In the same page, on the bottom of the right side, he or she can see a plus sign. If the instructor clicks on it, four different tabs will open named reuse post, create question, create assignment and create announcement. A teacher can keep all files save in the Google Drive. He or she can grade, attach you tube or any link for instructional purpose. From Google Classroom, a teacher can send mail to all students at a time.

### Benefits of Google Classroom

Janzen, M. (2014), points out the following benefits of using Google Classroom.

**Easy to use:** It is very easy to use. "Google Classroom's design purposefully simplifies the instructional interface and options used for delivering and tracking assignments; communication with the entire course or individuals is also simplified through announcements, email, and push notifications."(Janzen, M. 2014)

**Saves time: Google classroom is designed to save time.** It integrates and automates the use of other Google apps, including docs, slides, and spreadsheets, the process of administering document distribution, grading, formative assessment, and feedback is simplified and streamlined.

Chedayeb, A. (2015), Google Classroom Software Engineer mentions that they built classroom " to save time". He claims that Google is launching some features like export grades to Google Sheets, easier to update grade point scale ,keyboard navigation for entering grades, sort by name on grading page etc to save teachers' time.

**Cloud-based:** Google Classroom presents more professional and authentic technology to use in learning environment as Google apps represent "a significant portion of cloud-based enterprise communications tools used throughout the professional workforce." (Mary, 2014)

**Flexible:** This app is easily accessible and useable to instructors and learners in both face-to-face learning environments and fully online environment. This enables educators to explore and influence "flipped instructional methods more easily as well as automate and organize the distribution and collection of assignments and communications in multiple instructional milieus." ( Mary, 2014)

**Free:** Google Classroom itself is not necessarily available to learners without access to an educational institution. But anyone can access to all the other apps, such as Drive, Docs, Spreadsheets, Slides, etc. simply by signing up for a Google account.

**Mobile-friendly:** Google Classroom is designed to be responsive. It is easy to use on any mobile device. "Mobile access to learning materials that are attractive and easy to interact with is critical in today's web connected learning environments."(Janzen, M 2014)

Keeler, A. ( 2014) also mentions several other benefits of using Google Classroom. She mentions how Google Classroom ensure streamline counseling only by posting an announcement. Crawford, A. R. ( 2015) states that Google Classroom facilitates collaborative learning. Here teacher can upload materials and can give feedback to students .Students also can upload materials and make personal comment. Moreover, students can collaborate with each other. They can share their documents and assignment and thus they can produce the best assignment. Keeler, A (2014) also states that Google classroom encourage collaboration between students.

### Diffusion of Innovation Theory

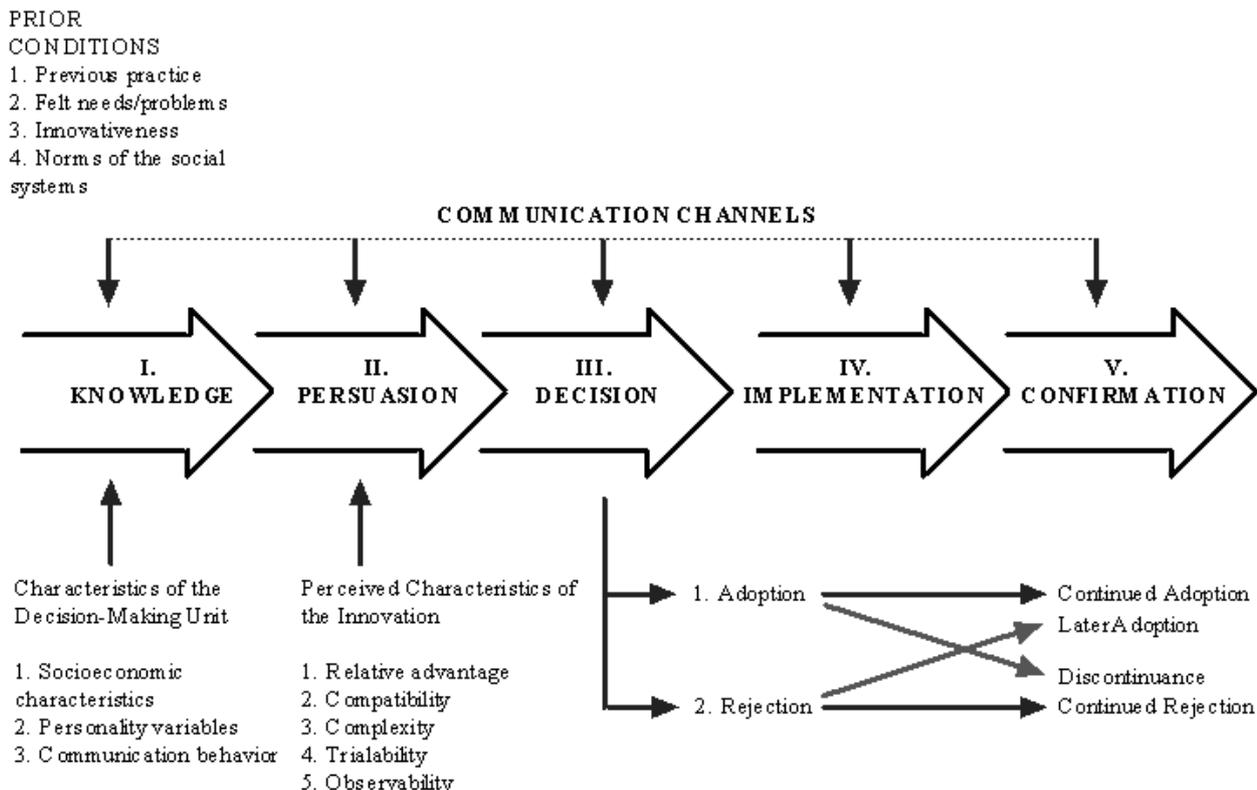
Medlin (2001) and Parisot (1995) view that Rogers' diffusion of innovations theory is the most appropriate for investigating the adoption of technology in higher education and educational environments. For Rogers (2003), "a technology is a design for instrumental action that reduces the uncertainty in the cause-effect relationships involved in achieving a desired outcome" (p. 13)

Diffusion of Innovations is a theory of how, why, and at what rate new ideas and technology spread. Rogers (2003) defines "an innovation as an idea, practice, or object that is perceived to be new by the individual"(page 12) and diffusion as the process through which an innovation is communicated through certain channels over time among the members of a social system. Rogers' (2003) theory of diffusion of innovations provides a theoretical framework for analyzing technology adoption patterns.

Rogers defines diffusion as “the process in which an innovation is communicated through certain channels over time among the members of a social system” (p. 5). As expressed in this definition, innovation, communication channels, time, and social system are the four key opponents of this diffusion theory.

**The Innovation-Decision Process**

Rogers (2003) described the innovation-decision process as “an information-seeking and information-processing activity, where an individual is motivated to reduce uncertainty about the advantages and disadvantages of an innovation” (p. 172). For Rogers (2003), the innovation-decision process involves five steps: knowledge, persuasion, decision, implementation, and confirmation. These stages typically follow each other in a time-ordered manner. This process is shown in Figure 2.1.



(Source: <http://www.ucalgary.ca/~dmjacobs/phd/diss/Image74.gif>)

According to Rogers (2003), individuals in a social system do not adopt an innovation at the same time; a certain percentage of individuals are relatively earlier or later in adopting a new idea. Based on the *innovativeness* criterion, the degree to which an individual is relatively earlier in adopting new ideas than other members of a social system, the distribution of various adopter categories forms a normal, bell-shaped curve that illustrates Innovator (2.5%), Early Adopter (13.5%), Early Majority (34%), Late Majority (34%), and Laggards (16%). Rogers (1995) states that relative advantage, compatibility, complexity, trialability and observability influence an individual’s decision to adopt or reject an innovation. Relative advantage is how improved an innovation is over the previous generation. Compatibility is the level by which the innovation has to be assimilated into an individual’s life. Complexity is how likely it is to be adopted by an individual based on how difficult it is to use. If the innovation is too difficult to use, an individual will not likely adopt it. Trialability determines how easily an innovation may be experimented with as it is being adopted. Observability is the extent that an innovation is visible to others. An innovation that is more visible will drive communication among the individual’s peers and personal networks and will in turn create more positive or negative reactions.

**Context and Research Methodology**

Daffodil International University's mission is defined by its IT-based traditions of service and access. This university works to prepare its students so that they can face the challenges of the global economy in a successful way. This university provides students broad access to the institution's educational resources. For educational programs in campus and beyond, Daffodil International University gives high priority on the use of new and outreach technologies available in the emerging information era. To ensure blended learning, DIU has introduced Learning Feedback system (LFS). To use LFS is must all teachers and students. On 2 September, 2014 DIU organized a presentation session was held on Google Classroom and 14 teachers were given email IDs of diu.edu.bd domain for implementing Google Classroom by the IT department. Later on more teachers were included to implement Google Classroom. DIU also organized *Bangladesh Summit-Featuring Google for Education* on February 27-28, 2015.

This study followed 'Typical Case Sampling' which is a type of purposive sampling, suggested by Wiersma & Jurs (2005) in their book *Research Methods in Education: An Introduction*.

I collected my data from December 2014 to first week of July 2015. The participants were teachers and students of Daffodil International University. The interviews were conducted with seven teachers: four males and three females. Three teachers are from BBA Department, one teacher is from LLB, two teachers are from English Department and one from CSE. All of them are university graduate and at present they are using Google Classroom for different courses. Three of respective teachers are from Dhaka University, two from Jahangirnagar University, one from Kushtia University and another teacher from London Metropolitan University. They have been teaching at DIU for more than 3 years. Altogether they are in teaching for 5 years i.e. they are all experienced. All the names of the participants are kept anonymous as it may raise ethical questions.

35 students were selected from the Department of English. They were all in the same age group. They completed their H.S.C. from the different colleges of Dhaka, Chandpur, and Comilla. Most of them are quite friendly with net-browsing and technology. They frequently use some social networks like facebook, viber, whatsapp and imo. All of them have Gmail account. Very few of them do not have much experience of net browsing.

In this study, data were collected were through interviews and observations. The interviews followed 'structured' format where detailed one-to one interview of the students and teachers were conducted. In total, 35 students and 7 teachers were interviewed in total. There were interview questions out the facts as well as the attitudes and opinions of students and teachers. There were different interview questions for teachers and students. (See Appendix A, B)

The second tool that was used for the study was observation. Total 20 classes that were created in Google Classroom were observed of one particular teacher from English. Teachers' uploaded materials, links, personal comment and announcement are examined. At the same time, students' responses, remarks and given grade to the assignment are observed.

## **Findings**

From the teachers' and students' points of views the findings are noted. Their salient opinions regarding Google Classroom can be divided in two categories. Moreover some of the findings are noted after observing the classes. These are described below.

### **Teachers' Perspectives**

All teachers mention that they use Google Classroom mainly from promotion. As per the requirement of DIU, all teachers must prove their participation on virtual classroom. So they use either LFS or Google Classroom. Interesting at the beginning they have created classes but they are not very regular user of Google Classroom. Five of them they have been using LFS instead of Google Classroom for last two semesters. The major reasons behind this are their own and learners' reluctance and fear to use technology.

One teacher mentions that Google Classroom features enable him and his learners to have better interaction. His students preferred Facebook to Learning Feedback System for announcing a quiz date or a topic for the upcoming class or assignment. But when he starts using Google Classroom, it becomes popular among students as they can get all reading materials and resources, lesson plan, course outline beforehand. He can instruct his students very easily.

Another teacher comments that Google Classroom is very helpful to complete the assigned syllabus. At times it's really difficult to finished syllabus on time due to political issues or national holidays. But through Google Classroom, one teacher can conduct the class virtually from anywhere and anytime. So Google Classroom introduces students to a higher education system where technology plays a major role. One teacher states that she decided to implement Google Classroom for organizational motivation and personal development. No doubt, she states that expertise in using technology empowers her. She can easily handle a large number of students in Google Classroom. She has got her students very positive in Google Classroom.

All teachers use announcement in Google Classroom. Only two of them use assignment feature where students have submitted their assignment. One of them graded the students in the assignment page. But rest of them give grade manually. No record of grade was found in Google classroom. One of them use Google Drive. Only one out of seven teachers is acknowledged about the recent features of Google Classroom. For grading, no one use rubric. Two of them reply to the learners' comment.

Three teachers' agree that Google Classroom can promote collaborative learning. Students can make a group and submit their assignment or project work. They can send videos. Only one of the respective teachers assessed group presentation in Google Classroom. For that particular presentation, students uploaded their videos on character presentation. Though individual student was graded manually for the presentation, s/he could easily assess their own performance and justify the grade.

All teachers mention that they encourage the students to enroll in the created class by using the code. Four teachers get 50%-60% students enrolled for each class. Two teachers get 85% students enrollment because in the first class all present students in the class get enrolled by using the particular code in the very presence of course teachers. They strongly motivate their learners' to use it regularly. One teacher mentions senior students are more interested and involved in Google Classroom than the newly admitted students as new admitted students get their Gmail account from DIU in delay and they take time to adjust with virtual classroom.

All teachers agree most of the students' assignments are plagiarized. This academic dishonesty supports the view of Dick, Sheard, Bareiss, Carter, Joyce, Harding and Laxer (2003). Their studies reported that on the average that 75% of all college students cheat at one time or another during their college career. Most of their assignment are simply nothing, just the downloaded materials from different websites. Even they hardly edit the page.

Low internet speed is also a bar to implement Google Classroom effectively. All teachers agree on this issue. One teacher prefers Moodle which is free and open-source software learning management system.

### Students' Perspectives

Among students' participants, 18 agree that Google Classroom is effective and easy to use. They can get so many uploaded files at a time. As they have been given Gmail id from the DIU, they can join the class by using class code from anywhere and anytime. Google Classroom has unlimited storage. So they can add own reading resources too. 20 students feel that high speed internet is mandatory to upload file. Most of the time, it takes long to submit their assignments from university computers. Five of them complain about missing files after uploading. 30 students are from different rural areas and mainly from Humanities background. So they are not computer friendly. 20 students have smart phones. They use facebook mostly. They feel little scared when they are motivated and instructed to use Google Classroom. Previously they used LFS in the different semester not as a regular practice. They sent request to their teachers to add them in the LFS. Once teacher accepted their request, they felt their job was over. Rarely, they submitted assignment in LFS. So when teachers instruct them to use Google Classroom, they felt pressurized at the beginning. 11 students feel that student also need training on Google Classroom and its effective features so that they feel motivated. Regular use can improve their understanding of the lesson. 30 students comment that teachers should use it regularly and give positive feedback about students' participation in Google Classroom i.e. reply to the students' comments or inquiries on time. 22 of the students confess their academic dishonesty regarding posting the copied assignments. At DIU, total assignment mark is 5. So very few of them feel they should work hard only for 5 marks. Moreover, most of cases the deadline of assignment comes just before the midterm or final. Consequently, they become more concerned for exam which contains more marks. Uploading videos on character presentation on Google classroom is very funny and effective because they can watch their performance repeatedly and judge the pros and cons. They feel Google Classroom is helpful tool to improve their future presentation on any courses or any topic. Two students state if the teacher can arrange online quiz through Google Classroom, it would be really very interesting. 15 students complain about using class code. They inform that they were absent in the first class when the teacher announced the class code. They heard class code from their friends and tried to join but in vain. Later on with teacher's help, they were able to join the class. Six of them have the problem with password for Gmail account. After solving this problem, they join the class.

### Suggestions

Teachers' professional development is a key factor to successful integration of technology. High management of DIU are the innovators who inform and inspire to use Google Classroom effectively to ensure quality higher education. 14 teachers are the early adopters who implement Google Classroom. Then 16 teachers show their interest to use it. But at the end most of them, to some extent, reject to implement Google Classroom. The reasons are many. These are:

**Work load:** First thing to be noted is too much workload. A teacher has to conduct 4 courses. Within five working days, a faculty takes 8 classes. He or she spends 10-12 hours on counseling. In a semester, a teacher is required to take 20 classes for each course, three quizzes, one presentation and one assignment. There are Midterm and Final exams too. Moreover, she or he is required to write in Forums or Job Tracking System. In addition, a teacher is involved in some other academic activities like attending meeting or working in different committee. The studies of Neyland (2011), Samarawickrema & Stacey (2007) prove this too much workload influence teachers' acceptance of new technology. So DIU must lessen teachers' workload for an effective implementation of Google learning.

**Teachers' ICT Competence:** Next thing to be considered is teachers' ICT Competence. Though Google Classroom offers different features, most of the teachers are not using them. Consequently, students remain unaware about the effectiveness of Google Classroom. The study of Bordbar (2010) supports this view. He states that when a teacher lacks knowledge and skill about technology, she or he reports negative or neutral attitude. Based on the Rogers's theory, we find 14 early adopters and 16 late majority at DIU who intend to implement Google Classroom. They use Google Classroom for professional development but their adaptation in teaching is very low. This study finds that most of the teachers prefer to use Learning Feedback System.

**Administrative Support:** At DIU trialability and observability are maintained. According to Rogers, these two are important variables that affect the rate of adoption of an innovation. Everyone has a easy access to computer technology. But to use any technology, adopters need organizational support as Medlin (2001) views in his study. So DIU must ensure high speed internet. The study of Gardner & Clarke, (2001) states administrative support is necessary for adoption of a technology.

**Attitude:** For a successful implementation of Google Classroom both teacher and learners must have positive attitude towards technology for instructional purposes. Rogers (2003) "individual" perceptions of these characteristics predict the rate of innovations" (p 219).

**Use of Plagiarism detective tools and progressive assessment:** To stop academic dishonesty in assignment a teacher can use plagiarism detective devices. Sileo & Sileo (2008) views that these devices are effective to find out plagiarized writing. He also suggests to use progressive assessment. In progressive assessments students turn in parts or drafts over time that can be reviewed

or graded. Such a strategy allows students to reflect on their learning while making it difficult if not impossible to cheat or have someone else do the writing.

**Pedagogical Strategies:** To stop plagiarism, a teacher can give moral and ethical orientation towards cheating. He or she can assess learners' orientation towards cheating in the beginning of a course.(Faucher and Caves ,2009).

#### Limitations of the study

This study has some limitations. These are:

**Small sample size:** Only 7 teachers of different departments and 35 students from the Department of English are interviewed.

**Limited Data:** Analysis of the data was limited as no administrative official was questioned.

#### Conclusion

Teaching in the 21<sup>st</sup> century does mean teaching 21<sup>st</sup> generation. It means helping and monitoring the students to learn and implement 21<sup>st</sup> century skill. So teachers must be very welcoming to any new technology to ensure the best learning in the virtual classroom besides the physical classroom. At DIU, Google classroom provides a vital chance to promote blended learning and professional development. As a top-ranked university, DIU also take into consideration the issues that hinder the successful implementation of Google Classroom.

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#### APPENDIX A: Interview questions for teachers

- How long have you been teaching at Daffodil International University?
- What do you use besides regular class Google Classroom or Learning Feedback System or anything else?
- When have you started using Google Classroom?
- Why do you use it?

- Do you use Google Classroom regularly? If no, give the reasons.
- What are the features of Google Classroom you use most?
- Mention the benefits of Google Classroom.
- Is collaborative learning is possible by Google Classroom? How?
- How do you grade your students?
- What is your opinion about academic dishonesty in the Google Classroom?
- What is your suggestion to stop academic dishonesty in virtual classroom?

**APPENDIX B: Interview questions for students**

- What do you use besides regular class Google Classroom or Learning Feedback System or anything else?
- Which one do you think easy and effective?
- Why do the students submit same assignment from different id in Google Classroom?
- Do you feel that students' also need training about Google Classroom?
- Mention some positive and negative features of Google Classroom.