Usefulness of Google Classroom Technology for Teaching and Learning Activities as Perceived by Students of Tertiary Institutions in Dutsin-Ma Metropolis

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Abstract

This study examined the usefulness of goggle classroom technology for teaching and learning as perceived by students of tertiary institutions in Dutsin-Ma, Katsina State. The target population was all the 421 pre-service teachers that have idea about goggle classroom in the two tertiary institutions in Dutsin-Ma Metropolis. Two hundred (200) respondents were selected for the study using simple random sampling technique. Researchers' designed questionnaire was used to collect data from the sampled used for the study. The instrument was pilot-tested using twenty (20) respondents who do not take part in the main field study. The reliability analysis of the data collected was analyzed using Cronback Alpha and the following values were the outcomes of the analysis: 8.3, 7.5 and 7.8 respectively. After the administration of the questionnaire and its collection from the respondents, the data collected were analyzed using descriptive statistics of frequency counts, percentages and t-test inferential statistics were used to analyzed the collected. The findings of the study indicated that, students in the tertiary institutions in Dutsin-Metropolis are aware of goggle classroom technology for teaching and learning activities and it is very useful in the process of teaching and learning. Added to that, the use of goggle classroom favours female students than the male students. Based on these findings, it was recommended that training and re-training in the effective use of goggle classroom technology should be arranged for students and lecturers to be able to use goggle classroom technology effective for teaching and learning activities.

Keywords: *Google Classroom Technology, Perception, Teaching, Learning, Tertiary Institution.*

Introduction

Teaching and learning activities should by now be blended in nature if not totally digital in nature. The contemporary students are very versed in the use of information and communication technology (ICT) which an integration of several methods and digital tools to receive and channel information from one place to another as observed by the researchers. Operation of smart phones and other ICT equipment as well as the use of several social media apps are very easy for these modern students. Interaction with some of these students showed that many of them spend so much to buy data and they love to be online always (Keenan, Slater & Matthan 2018). Based on this, it is therefore paramount for lecturers to seriously equip themselves and prepare adequately to meet the need and aspirations of these modern learners. Since the 21st century has a driving demand for citizens to be literate in technology, as gate keepers to knowledge, lecturers are expected to integrate technology into their

curriculum to prepare students for success in college and career (CCSS, 2016). Therefore, teachers need to have the knowledge and skill set in order to effectively accomplish this work. One of the free online teaching and learning platforms developed by Google in 2014 to help lecturers teach and students learn and interact effectively to ensure communication between lecturers and students and between students and students is the use of 'Google Classroom Technology'.

Goggle classroom as defined by Kgalemelo (2018) is a free web-based learning application or tool that is utilized for collaboration among instructors and learners. This is a learning management system in which instructors can create classes, invite and welcome learners to the class and start exchanging course content materials. It empowers learners and teachers to; communicate, make announcements, give assignments, post notes, submit assignments and projects. Learners can similarly check and monitor their grades after the educators have consigned and evaluated them.

Google Classroom is a cloud-based system offering online productivity tools for classroom teaching, learning and collaboration (Government of Australia, Department of Science Education, 2015). These tools include Google Docs as a word processor, Google Slides as a presentation tool, along with 24 translation software among many other applications. Google Classroom is designed to enable better communication between student and teacher and help students stay on task with course work in an inclusive environment, by assisting students in researching, organizing and collaborating for assignment, as well as turning in work through the apps' built-in sharing features (Sweeney, 2013).

The benefits of using Goggle Classroom as reported by Iliyasu, Sawida, Bashir, Ibrahim, and Usman (2020) showed that it allows teachers post lecture notes, create assignments, make announcements, set due dates for assignments. Teachers can create different groups in one classroom, then give each group a different assignment, thus making the class to be active and interesting. Teachers can easily identify students that miss class assignments and students that submit their assignments late. It is flexible, enabling teachers to extend due dates so that all students can submit their assignments, similarly it allows teachers to update or review students' grades. Previous posts made by teachers can be reused and then posted to the same group or to a different group and teachers can also be added in the classroom, they can as well grade students' assignments.

Janzen (2014) has noted that Google classroom is easy to interact with and use. It was further concluded that it spares time since it has an easy-to-use interface and one doesn't battle to utilize it since it integrates the utilization of other Google applications including; docs, slides, and spreadsheet. Chehayeb (2015) added that the design of this classroom gives room to be paperless and to spare time, thus its benefits. It is intriguing highlights that it can send out evaluations to Google Sheets and Microsoft excel for simple altering, and amending the remarks and marks of the learner. Ajjan and Hartshorne (2008) remarked that this web 2.0 tool is effectively open to both the learner and the instructor completely in an online environment and that it isn't accessible and available to learners who don't belong to an instructive establishment or who are a part of some course. One can download this free application and install it in his/her mobile technology device, this makes learning on the go and easy. The primary tool to use in teaching and learning now days is the mobile technology device (Mafa & Desmond 2018).

Keeler (2014) also mentions several other benefits of using Google Classroom to ensure streamline counseling only by posting an announcement. Crawford, (2015) states that Google Classroom facilitates collaborative learning. With this technology, 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 (2014) also states that Google classroom encourage collaboration between students.

Additionally, Google Classroom stores all the teacher's class resources in Google Drive, which allows teachers to, automatically create and manage folders for each of their classes and allows students to access assignments anywhere with an internet connection (Government of Australia, 2015). For students, Google Classroom provides a platform to read, write, present with visuals, submit work, keep track of assignments, and communicate back and forth with the instructor and peers. Spoken language can populate in the document and students can highlight the text and have the computer read it back to them. Students who have exceptionalities, which impact their ability to type and spell, can also benefit from Google Docs. If there is a spelling mistake Google Docs, like Microsoft Word, will either correct it or underline it to let the writer know there is something needing to be addressed.

Features of Google Classroom

Google Classroom is very simple to create and use and all the available features are integrated. Once a new course space is created, the instructor can see three taps. These are labeled as about, students and stream. In the same page, at the bottom of the right side, one 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. one 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.

Literature Review

Using Google Classroom as mentioned above, there is a gap in the literature on the use of Google Classroom in schools. However, a study conducted by Bondarenko and colleagues (2017) discusses the disadvantages that educators should consider when they chose to engage with Google Classroom for the blended learning experience. The article mentioned low levels of motivation, insufficient student readiness, a need for out-of-classroom pedagogical supports, and the lack of guidance on the content on Google Classroom pages. However, Umamah (2019) lauds Google Classroom as an excellent learning media tool, that can assist in the delivery of instruction and motivate students to learn. Some of the features that received positive feedback from the five sample teachers involved in this were: single views of student assignments, class arrangement, decimal grading, transfer of class ownership, new class integration, code display class, import the Google Form Quiz score to class, and add a profile on the cellphone. The five teachers involved in Umamah (2019) study reported their satisfaction with the usage of the application in their classrooms with a combined total of 170 students. The data reported in the study was managed by the five high school teachers in Indonesia. The teachers concluded that the features and audio-visual components of Google Classroom were conducive to efficient management of their pedagogy. Heggart and Yoo (2018) conducted a study involving 33 preservice teachers and academics in a teacher preparation course in Australia, who wanted to understand their own usage of internet tools and Google Classroom. The analysis of data revealed that Google Classroom increased student participation, learning, and classroom dynamics. It is also reported to unveil the teachers concern regarding pace and user experience. There was the mention of more emphasis and value being placed on the growing interest in online and cloud-based tools, ubiquitous use of cell phones, and the possibility of increasing students' engagement by engaging them with the type of tools such as social media.

Purpose of the Study

The main purpose of this study is to carryout investigation on the usefulness of google classroom technology for teaching and learning as perceived by tertiary institutions students in Dutsin-Ma Metropolis. Specifically, the study looks at:

1. Students' awareness level of google classroom technology for teaching and learning
2. Perceived usefulness of google classroom technology for teaching and learning
3. Difficulties encountered when using goggle classroom technology for teaching and learning
4. Difference in the perceived usefulness of google classroom technology for teaching and learning based on gender
5. Difference in the difficulties encountered when using goggle classroom technology for teaching and learning based on gender

Research Questions

The following questions are raised to guide the conduct of this study:

1. What is the level of tertiary institution students' awareness of google classroom technology for teaching and learning in Dutsin-Ma Metropolis?
2. What is the perception of tertiary institution students towards the usefulness of google classroom technology for teaching and learning in Dutsin-Ma Metropolis?
3. What are the difficulties encountered by tertiary institution students when using goggle classroom technology for teaching and learning in Dutsin-Ma Metropolis?
4. Is there any difference in the perceived usefulness of google classroom technology for teaching and learning based on gender?
5. Is there any difference in the difficulties encountered when using goggle classroom technology for teaching and learning based on gender?

Hypotheses

Theses hypotheses are tested for the study at 0.05 Alpha level.

Ho1: there is no significant difference in the perceived usefulness of google classroom technology for teaching and learning based on gender

Ho2: there is no significant difference in the difficulties encountered when using goggle classroom technology for teaching and learning based on gender

Methodology

This study adopts descriptive survey research type. This is assumed to be relevant because, the researchers reported the responses collected from the respondents descriptively. The target population was all the 421 pre-service teachers that have idea about goggle classroom in the two tertiary institutions in Dutsin-Ma Metropolis. There are two tertiary institutions in Dutsin-Ma Metropolis. The first one is Federal University Dutsin-Ma and the second is Isakita State College of Education, Dutsin-Ma, Katsina State. Simple random sampling technique was used to select one hundred (100) respondents from each higher institution making a total of two hundred (200) participants. The instrument used in collecting data is a researcher designed questionnaire which is divided into three sections. The first section deals with level of awareness, the second deals with the perceived usefulness and the third section deals with the challenges encountered when using google classroom technology. The instrument was pilot-tested using twenty respondents who do not take part in the main study and reliability of the instrument was established using Cronbach Alpha. The value arrived at after the analysis were 8.3, 7.5 and 7.8 respectively. After the distribution and collection of

the research instrument, the data collected was analyzed using descriptive statistics of frequency counts, percentages, mean, standard deviation and inferential statistics of t-test and thus answered the research questions and the test hypotheses raised to guide the conduct of the study.

Results

Research Question One

What is the level of tertiary institution students' awareness of google classroom technology for teaching and learning in Dutsin-Ma Metropolis?

Table 1: Students' awareness level of google classroom technology for teaching and learning in Dutsin-Ma Metropolis

Are you aware that google classroom technology can be used for the below activities:	Highly aware		Aware		Less Aware		Not Aware	
	Freq.	%	Freq.	%	aware Freq.	%	Freq.	%
Using google classroom technology for teaching activities in the school	45	22.5	139	69.5	6	3.0	10	.5.0
Using google classroom technology for learning activities among students in the schools	36	18	146	73	15	7.5	3	1.5
Using google classroom technology for synchronous interaction between teachers and students	52	26	132	66	6	3.0	10	5.0
Using google classroom technology for asynchronous interaction between teachers and students	53	26.5	120	60	21	10.5	6	5.0

The result from table 1 revealed that respondents in this study are aware of the use of goggle classroom for teaching and learning in tertiary institutions in Dutsin-Ma Metropolis. Majority of the respondents confirmed that they are aware of the use of goggle classroom for teaching and learning.

Research Question Two

What is the perception of tertiary institution students towards the usefulness of google classroom technology for teaching and learning in Dutsin-Ma Metropolis?

Table 2: Tertiary institution Students' perception towards the usefulness of google classroom technology for teaching and learning in Dutsin-Ma Metropolis

S/N	Items	Agree		Strongly Agree		Disagree		Strongly Disagree	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%
1	It provides more up-to-date information that makes teaching and learning so easy	64	32	114	57	3	1.5	19	9.5
2	It provides speedy and easy access to information	44	22	145	72.5	5	2.5	6	5.5
3	Increases efficiency in distance learning	45	22.5	132	66	13	6.5	8	4.0
4	It makes distance learning more affordable	43	21.5	143	71.5	9	4.5	5	2.5
5	It enhances students' self-learning	74	37	107	53.5	5	2.5	14	7.0
6	It provides access to unlimited information from different sources	63	31.5	111	55.5	17	8.5	9	4.5
7	It provides flexibility of information to the users	86	43	93	46.5	6	3.0	15	7.5
8	It provides round the clock access to information	56	28	119	59.5	19	9.5	6	3.0
9	It provides users opportunity to share information with others	58	29	111	55.5	8	4.0	23	11.5

The result in table 2 indicated that the respondents agreed to the fact that goggle classroom is useful for teaching and learning activities in the tertiary institutions in Dutsin-Ma Metropolis based on the result in the table above.

Research Question Three

What are the difficulties encountered by tertiary institution students when using goggle classroom technology for teaching and learning in Dutsin-Ma Metropolis?

Table 3: Difficulties encountered by tertiary institution students when using goggle classroom technology for teaching and learning in Dutsin-Ma Metropolis

S/N	Items	Agree		Strongly Agree		Disagree		Strongly Disagree	
		Freq.	%	Freq.	%	Freq.	%	Freq.	%
1	Epileptic electricity supply	69	34.5	104	54	8	4.0	19	9.5
2	Lack of ICT support staff	72	36.0	96	48.0	20	10	12	6.0
3	Inefficient network service	81	40	82	41.0	22	11.0	16	8.0
4	High-cost laptop and mobile devices	79	39.5	70	35.0	19	9.5	32	17.0

The result in table 3 revealed that the respondents agreed that epileptic electricity supply, lack of ICT support staff, inefficient network service and high-cost laptop and mobile devices are all challenges that hindered the effective use of goggle classroom for teaching and learning in tertiary institutions in Dutsin-Ma Metropolis.

Research Question Four

Is there any difference in the perceived usefulness of google classroom technology for teaching and learning based on gender?

Hypotheses One

Ho1: there is no significant difference in the perceived usefulness of google classroom technology for teaching and learning based on gender

Table 4: t-test analysis of the difference in the in the perceived usefulness of google classroom technology for teaching and learning based on gender.

Group	N	X	Std	df	T	Sig. (2-tailed)	Decision
Male	113	15.85	2.071				
				198	4.441	0.000	Ho1 Rejected
Female	87	17.09	1.808				

The result of independent t-test in the table 4 shows that, there is significant difference in the perceived usefulness of google classroom technology for teaching and learning based on gender. This is because t (198) = 4.441; sig (2-tailed) = 0.000 and $p < 0.05$. The hypothesis one is hereby rejected.

Research Question Five

Is there any difference in the difficulties encountered when using goggle classroom technology for teaching and learning based on gender?

Hypothesis Two

Ho2: there is no significant difference in the difficulties encountered when using goggle classroom technology for teaching and learning based on gender

Table 5: t-test analysis of the difference in the difficulties encountered when using goggle classroom technology for teaching and learning based on gender

Group	N	X	Std	df	t	Sig. (2-tailed)	Decision
Male	113	35.65	4.180				
				198	4.404	0.000	Ho2 Rejected
Female	87	39.57	8.151				

The result of independent t-test in the table 2 shows that, there is significant difference in the difficulties encountered when using goggle classroom technology for teaching and learning based on gender. This is because t (198) = 4.404; sig (2-tailed) = 0.000 and p < 0.05. The hypothesis two is hereby rejected.

Discussion

The majority of the respondents affirmed that they are aware of using goggle classroom technology for teaching and learning. The outcome of this study supported the report of Lo, Cho, Law, Chiu, & Allard, (2017) and Jan (2019) which recognized that a vast collection of information could be searched and retrieved instantaneously using e-resources.

Respondents agreed to the fact that goggle classroom is useful for teaching and learning activities in the tertiary institutions in Dutsin-Ma Metropolis. The result is in line with the study conducted by Churchill (2009) and Hall and Davison (2007) that found students' support for peer feedback on their blog post.

Respondents agreed that epileptic electricity supply, lack of ICT support staff, inefficient network service and high-cost laptop and mobile devices are the challenges that hindered the effective use of goggle classroom for teaching and learning in tertiary institutions in Dutsin-Ma Metropolis. These challenges are common and it is evident whenever technological devices are being integrated in to teaching and learning as observed by the researchers.

There is significant difference in the perceived usefulness of google classroom technology for teaching and learning based on gender and there is significant difference in the difficulties encountered when using goggle classroom technology for teaching and learning based on gender. The significance difference is in the favour of female students. These findings negate the finding of Bello (2020) on the impact of e-learning on academic performance of upper basic science and technology in Kaduna State, Nigeria where both male and female interest to learning using e-learning platform are the same.

Conclusion

Students in the tertiary institutions in Dutsin-ma Metropolis are aware of goggle classroom technology for teaching and learning, found it very useful in the process of teaching and learning and the significant difference in the decisions about its awareness and usefulness favour the female students.

Recommendations

Based on these findings, the following recommendations are made:

1. The university authority should provide strong internet connection for both lecturers and students in the tertiary institutions to be able to engage meaningfully in the use of goggle classroom.

2. Training and re-training in the effective use of goggle classroom technology should be arranged for students and lecturers to be able to use it effectively.
3. ICT Support staff should be recruited to handle some of the problems encountered when using goggle classroom technology.

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