

## Assessing the Challenges of Utilizing Google Classroom in Teaching among Early Childhood Care Educators

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### Abstract

The study assessed the Challenges of Utilizing Google Classroom in Teaching among Early Childhood Education Teachers. This study was carried out in Alvan Ikoku Federal College of Education in Owerri Municipal Council Area of Imo State. Two research questions guided the study. It adopted descriptive research design and used a population of 65 teacher educators and a sample of 40 teacher educators were randomly selected for the study. The instrument used for the collection was structured modified likert type questionnaire titled Challenges of Utilizing Google Classroom in Teaching of Mathematics Scale (CUGCTMS). The reliability co-efficient ( $r$ ) of 0.73 was obtained using Cronbach alpha method. Data collected were analyzed using Mean, standard deviation statistics to answer for the research questions. The results showed that there were low proportion early childhood care teacher educators in use of google classroom and the challenges are access, cost, weak infrastructure, inadequate skilled personnel, lack of skills, poor ICT policy/project implementation strategy, lack of relevant software, limited access to the internet and teacher attitudes and beliefs are the challenges of utilizing Google classroom in teaching of mathematics among early childhood care teacher educators. It was recommended that the school management should through government apply for provision of adequate technology, so as to enhance teaching in schools. This will also give teachers opportunity to practice the use of google classroom when training.

**Keywords:** Google Classroom, Teaching and Early Childhood Care Education

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### INTRODUCTION

Mathematics is a science of magnitude and number as well as the science that sustains the daily practices of man. It is the only core science subject that acts as pivot on which national development and wealth of any nation is created. Competency in mathematics learning is vital and sustainable to every individual's meaningful and productive life. Mathematics learning is very important in enhancement and sustainability of human existence because mathematics is all about finding solutions to human problems and physical challenges. All these are indications that mathematics is useful in domestic and business deals, scientific discoveries, technological breakthrough, problem-

solving and decision making in different situations in life (Usman & Nwoye, 2010; Unodiaku, 2012; and National Council of Teachers of Mathematics, NCTM,2013). It may be due to this vital usefulness of mathematics that Nigeria government made the study of mathematics compulsory at all levels of education as contained in the National Policy on Education (FRN 2013) and recommended the provision of functional mathematics with appropriate use of technology meant to promote sound and effective teaching and learning activities, boost students' critical thinking skills, reading habits and motivate students to come up with desired academic achievement. The traditional method of education with lectures and students sitting in straight rows is no longer beneficial hence the integration of technology into the curriculum to prepare students for 21st Century skills and careers (Yushua, 2006) and one those technology is known as Google Classroom.

Google Classroom is a free application designed to assist students and teachers connect, work together, organize and create assignments, it enables learning to be paperless. As a digital tool, Google Classroom is accessible only to users with Google Apps for Education (GAFE). This is a free collaborative set of tools, these tools include web tools like Google Docs, Google Drive, Gmail, and more. All users will have GAFE account and have access to these web tools regularly. Google Classroom can be used at any grade (basic, post basic and tertiary) levels, but this depends on the teachers' and students' competence (Bitner & Bitner, 2015). Google Classroom can be defined as a Digital Tool that enable students to attend classes online. Teachers work together with their students without meeting face to face. Teachers can post materials for their students through this medium, they can also make announcements and create assignments and quizzes for students to complete, submit and save online either in a web browser or on Google Classroom App. digital tools stresses on learners continuing learning activities through digital tools. There are many facilities provided by Google classroom which make it easier for teachers to carry out learning activities.

The application offers a paperless teaching and learning opportunity, which has resulted in positive findings. Udosen and Adie (2019) observed that Google classroom technology has proved a valuable platform for distance learners in term of their experience, perceptions and engagement in the classroom activities. The finding also showed that, the lecturers at the center possess a high level of competence to use Google classroom for instructional delivery. Karadag and Keskin (2017) the use of Google Classroom as a tool improve student engagement, and self-paced learning. Using Google Classroom, the teachers can provide online assignments, increase collaboration among their fellow teachers, their students and among the students, and foster communication with the students at all times. The teachers can create virtual classes, distribute assignments, send feedback, and see everything within one media. The flexibility and many features offered by Google Classroom make this application considered practical to support learning activities (Okanlawon & Fakokunde, 2019).

The use Google Classroom can make the students become more receptive to the learning materials. Baskerville [8] states that the application of technology in the classroom must provide opportunities for the students to make their learning experiences more meaningful, for example exploring information from digital media to get new ideas and build knowledge. It also allows students to work through problems or assignments at their own pace while still receiving support and guidance when necessary. Students could become self-directed, and it produces a learning environment that improves students' knowledge and skills in the subject area (Hemrungrote, Jakkaew & Assawaboomee, 2019). In addition, when students submit their assignments, the teacher can highlight the contents of each assignment, provide the student with instant constructive feedback, and evaluate his/her performance. More so, the platform creates a space for private comment for students to interact with other mates or their teachers on things relating to the topic taught or subject area, which makes the class interesting and enjoyable. The teachers, in this case, need to use an appropriate learning strategy in order to create an interesting and effective learning atmosphere. The interactions and discussions between the teachers and students and/or among the students can no

longer be held just at school but can also be online anywhere and anytime. Despite the importance accorded to google classroom, there are several challenges that affect the implementation of google classroom teaching. Abidin and Saputro (2019) explain the challenges of using google classroom in teaching and learning.

Access to early accounts of technology integration focused much of their interest on increasing the availability of computers in schools (Fisher, Dwyer, & Yocam, 2017). Certainly, the most basic step toward effective technology integration is widespread access to equipment necessary to run educational computer programs. Many teachers and students do not have regular and reliable access to a computer or Android phone. Inconsistent computer access makes it extremely difficult for instructors to integrate technology into existing lesson plans. Routine access to hardware (i.e., laptops or tablets), software (e.g., reading and writing software, internet browsers), and internet connection is a fundamental requirement.

Another identified challenge is cost price of computer hardware and software continues to drop in most developed countries, but in developing countries, such as Nigeria, the cost of computers is several times more expensive. While a personal computer may cost less than a month's wages in the United State, the average Nigeria workers may require more than two years' income to buy one. Nigeria has over 2000 tertiary institutions, majority of them lack instructional resources such as, computer, software, multimedia, projector, white board etc (Aduwa & Iyamu, 2005). Apart from the basic computers themselves, other costs associated with peripherals such as printers, monitors, paper, modem, extra disk drives are beyond the reach of most tertiary institutions. The schools cannot also afford the exorbitant internet connection fees.

Weak Infrastructure in Nigeria is a formidable obstacle to the use of computer technology is infrastructure deficiencies. Computer equipment was made to function with other infrastructure such as electricity under controlled conditions. For the past fifteen years Nigeria has been having difficulty providing stable and reliable electricity supply to every nook and cranny of the country without success. Currently, there is no part of the country, which can boast of electricity supply for 24 hours a day except probably areas where government officials live. When electricity supply is not stable and constant, it is difficult to keep high-technology equipment such as computers functioning, especially under extreme weather conditions as obtained in Nigeria. In rural communities were some the tertiary institutions are located most inhabitants do not have access to electricity, thereby denying teachers and students opportunity to benefit from the use of computer technology. The few Internet access available in Nigeria are found in urban centers.

Again, inadequate skilled Personnel does not only lack information infrastructure, it also lacked the human skills and knowledge to fully integrate ICT into tertiary education (Aduwa & Iyamu, 2005). To teach computer science (ICT) in schools, the need for locally trained workers to install, maintain and support Computer Systems cannot be over emphasized. There is acute shortage of trained personnel in application software, operating systems, network administration and local technicians to service and repair computer facilities. Those who are designated to use computers in schools do not receive adequate training, at worst, do not receive any training at all (Okebukola, 2020).

In tertiary institutions Nigeria also, teachers lack the skills to fully utilize technology in curriculum implementation. Hence the traditional chalk and duster approach still dominates in tertiary institutions pedagogy. Information transfer using ICT is minimal or non-existence in schools (Anao, 2019). Teacher educators in Nigeria need to be trained on educational technologies and the integration of computers into classroom teaching. Carlson and Firpo (2018) stated that teachers need effective tools, techniques, and assistance that can help them develop computer based projects and activities especially designed to raise the level of teaching in required subjects and improve student learning.

Another challenge identified is Poor ICT Policy/Project Implementation Strategy. The Nigerian Federal Government's 2005 policy on National Computer policy, introduced computer education to be a compulsory course in schools (Okebukola, 2018). The only way this policy was implemented was the distribution of computers to federal government higher schools, which were never used for computer education of the students. Although the government planned to integrate ICTs into the school system and provide schools with infrastructure, concerted efforts have not been made to provide facilities and trained personnel. Thus, most schools do not yet offer ICT training programmes (Akukwe, 2018).

Other identified challenges lack of relevant software as well as limited access to internet, there is no doubt that the ultimate power of computer technology is the content and the communication. Though, software developers and publishers in the developed countries have been trying for long to develop software and multimedia that have universal application, due to the differences in education standards and requirements, these products do not integrate into curriculum across countries. Software that is appropriate and culturally suitable to the Nigerian education system is in short supply. Also there are few reputable Internet providers which render reliable services, charge high fees thus limiting access to the use of the Internet. Higher education in Nigeria are not given adequate funds to provide furniture, requisite books, laboratories and adequate classrooms let alone being given adequate funds for high-technology equipment (computers) and Internet connectivity. Nigeria is lagging behind other African countries such as Uganda, Senegal and South Africa who are already helping their students to become better information users. These challenges have by far been addressed and overcome by most developed countries.

Another challenge facing the use of Google classroom is the teachers' attitudes and beliefs are crucial factors in determining the role and effectiveness of technology in classrooms. Attitudes and beliefs about both educational technology and pedagogy in general will ultimately influence how teachers implement technology. Now that technology is being widely used in schools, perhaps the most important question is how to best implement technology, rather than whether technology will be used (Ertmer, 2017; Ertmer, Ottenbreit, Sadik, Sendurur & Sendurur., 2012; Keengwe, Onchwari, & Wachira, 2008; Lowther, Inan, Strahl, & Ross 2008).

Researchers like Abidin and Saputro (2019) investigated Google classroom as a mathematics learning space: potentials and challenges. Results showed that some challenges that arouse included the limited availability of devices, technical issues, and the low level of familiarity of Google Classroom's features, the readiness of students to study independently online for Johnson, Jacovina, Russell, & Soto (2016) in a study titled challenges and solutions when using Google technologies in the classroom. Results showed that there are challenges facing the use of google classroom. Igwe (2015) examined the challenges Influencing the Use of Information and Communication Technology (ICT) in Teaching and Learning Computer Studies in Ohaukwu Local Government Area of Ebonyi State-Nigeria. the study concluded that both home and school environment factors collaborate to effect the use of ICT in learning and teaching computer studies. Andri (2016) investigated analysis of factors affecting the use of Google classroom to support lectures. Results revealed that there are external and internal challenges on use of google classroom to support teaching and learning.

## **AIMS AND OBJECTIVES**

The main aim of this study was to examine the challenges of utilizing google classroom in teaching of mathematics among early childhood care teacher educators. Specifically, the study sought to:

- i. Identify the proportion of early childhood care teacher educators who can effectively use Google classroom in teaching mathematics
- ii. examine the challenges of utilizing google classroom in teaching of mathematics among early childhood care teacher educators

## Research Questions

The following research questions guided the study

1. What proportion of early childhood care teacher educators can effectively use Google classroom in teaching mathematics?
2. What are the challenges of utilizing Google classroom in teaching of mathematics among early childhood care teacher educators?

## METHODOLOGY

This research is a survey research with a descriptive research design. According to Gay and Airisian (2009), descriptive research involved collecting data in order to answer question concerning the current status of the subject of study. It means that descriptive research would help the researchers in collecting the data. In addition, quantitative research was the process of discovering knowledge by using numeral data as the instrument to find information about what was wanted to know. It means that quantitative research used the data in the form of the numbers and statistic analysing. So, descriptive quantitative is numeral related to statistic descriptive such as measuring scale, portrays graphic and variability. The data would be in numeral statistic and would be explained in narrative. In this research, the descriptive research was used to analyse the challenges of utilizing google classroom in teaching of mathematics among early childhood care education pre-service teachers. The population of the study involved all the 65 early childhood teacher educators (ECTE) in school of early childhood care and primary education. A sample of 65 teacher educators participated in the study, due the small nature of the population and no sampling technique was used. The instrument used for the collection of the data is structured Questionnaire titled Challenges of Utilizing Google Classroom in Teaching of Mathematics Scale(CUGCTMS). The face and content validity of the instrument were done by two experts in measurement and evaluation and one expert in mathematics education. A Cronbach alpha measure of 0.92 were obtained as the reliability index for internal consistency of the items. The schools involved were visited by the researchers and the questionnaires were administered to the respondents with the help of some trained research assistance. The instruments were collected on completion, this ensured a 100% return of the instrument. The descriptive statistics of mean and standard deviation were used to answer the research questions.

## Results

**Research Question 1:** What proportion of early childhood care teacher educators can effectively use Google classroom in teaching mathematics

**Table 1: Proportion of Early childhood care teacher educators can effectively use Google classroom in teaching mathematics**

Variable	Number	proportion	Decision
Teacher Educators	65	15%	Very Low

The result showed that the proportion of early childhood care teacher educators can effectively use Google classroom in teaching mathematics is 15% indicating very low.

**Research Question 2:** What are the challenges of utilizing Google classroom in teaching of mathematics among early childhood care teacher educators

**Table 2: Mean and Standard deviation on challenges of utilizing Google classroom in teaching of mathematics among early childhood care teacher educators?**

S/N	ITEMS	MEAN	SD	DECISION
1	Access	3.23	1.5	Accepted
2	cost	3.00	1.3	Accepted
3	Weak Infrastructure	3.13	1.2	Accepted
4	Inadequate Skilled Personnel	3.65	1.8	Accepted
5	Lack of Skills	3.42	1.7	Accepted
6	Poor ICT Policy/Project Implementation Strategy	2.96	1.0	Accepted
7	Lack of Relevant Software	3.14	1.2	Accepted
8	Limited Access to the Internet	3.04	1.3	Accepted
9	Teacher Attitudes and Beliefs	3.21	1.4	Accepted
10	Low self-efficacy	3.23	1.5	Accepted

Results in table 2 shows that all the items scored above 2.50. This implies that access, cost, weak infrastructure, inadequate skilled personnel, lack of skills, Poor ICT Policy/Project implementation strategy, Lack of relevant software, Limited access to the internet and teacher attitudes and beliefs were the challenges of utilizing Google classroom in teaching of mathematics among early childhood care teacher educators.

### DISCUSSION OF FINDINGS

The study revealed that there are challenges of utilizing Google classroom in teaching of mathematics among early childhood care teacher educators. This result is in line with findings of Abidin and Saputro (2019) investigated Google classroom as a mathematics learning space: potentials and challenges. Results showed that some challenges that arouse included the limited availability of devices, technical issues, and the low level of familiarity of Google Classroom's features, the readiness of students to study independently online for Johnson, Jacovina, Russell, and Soto (2016) in a study titled challenges and solutions when using Google technologies in the classroom. Results showed that there are challenges facing the use of google classroom. Igwe (2015) examined the challenges Influencing the Use of Information and Communication Technology (ICT) in Teaching and Learning Computer Studies in Ohaukwu Local Government Area of Ebonyi State-Nigeria. the study concluded that both home and school environment factors collaborate to effect the use of ICT in learning and teaching computer studies. Andri (2016) investigated analysis of factors affecting the use of Google classroom to support lectures. Results revealed that there are external and internal challenges on use of google classroom to support teaching and learning.

### CONCLUSION

It was concluded in the study that there are low proportion early childhood care teacher educators in use of google classroom and the challenges are access, cost, weak infrastructure, inadequate skilled personnel, lack of skills, Poor ICT Policy/Project implementation strategy, Lack of relevant software, Limited access to the internet and teacher attitudes and beliefs are the challenges of utilizing Google classroom in teaching of mathematics among early childhood care teacher educators

### RECOMMENDATIONS

Based on the study the following recommendations

1. The school management should through government apply for provision of adequate technology, so as to enhance teaching in schools. This will also give teachers opportunity to practice the use of google classroom when training.

2. The school management should organize workshop and seminars for early childhood teacher educators so as to be abreast with innovative approaches of teaching mathematics at tertiary level.

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