



Integration of Google Classroom as an Alternative Learning Environment in Colleges of Education in North-East Nigeria: Solution for 21st Century Teaching and Learning

***Musa Kallah Saidu & Abdullahi Ibrahim**

**Department of Computer Science Education,
School of Science Education
Federal College of Education (Technical), Potiskum, Yobe State, Nigeria
*mkallah2003@gmail.com, /(+2348026927232)**

ABSTRACT

This study sought to find out from lecturers of colleges of education in North East of Nigeria their level of integration of Google Classroom in their teaching and learning. Four research questions guided the study which was predicated on a survey research design. The population for the study was 1713 comprising lecturers from three each of state and Federal Colleges of Education in the North-East Geopolitical zone of the country respectively. Since the population was relatively large, a sample size of 230 was drawn for the study and a balloting random sampling technique was deployed to obtain the sample of the population for the study this was to ensure equal chance of being selected across every demography. A structured questionnaire was used for the study which was validated by three experts, Cronbach alpha reliability method was adopted to determine the internal consistency of the questionnaire item and 0.75 was obtained, the questionnaire was then translated into its electronic equivalent using Google form, whose link was later sent using Email, WhatsApp and/or text messages to the target respondents. Responses from the questionnaire numbering 155 were returned and analyzed. Data obtained from the respondents were analyzed using Statistical Package for Social Sciences (SPSS Version 22) as the tool. The five (5) Likert scale questionnaire were analyzed and interpreted. Mean and Standard Deviation was deployed to answer the research questions with the cut off marks = 3.00, meaning any Mean>3.00 is considered agreed whereas, Mean<=3.00 is considered disagree. The study found out that Lecturers from the region even though are aware of the security merits, usefulness, flexibility and maintainability of Google classroom however, don't do much of integration vis-à-vis their teaching. It was recommended that there should be a massive awareness campaign on the side of the government and administrators of institutions and lecturers should learn to imbibe and inculcate the culture of online collaboration.

Keywords: Google Classroom, Online Collaboration, GAFE and TAM

INTRODUCTION

The fact that the Educational sector today in Nigeria is not exempted from being incapacitated by insecurity and the global pandemic (COVID 19) just as it does to the economy is a pointer for us never to leave our guards down. This necessitated a shift from traditional mode face-to-face to eLearning where the class is taken in either semi or completely virtual (Adeoye, Adanikin, & Adanikin, 2020). However, this remains a problem to developing countries. Like other developing countries, Nigeria is faced with challenges among others; lack of infrastructures, well established ICT policies and poor or mismanaged economy. Just as recorded in a study by Ojokheta (2010), Nigeria like other developing countries, conservative nature of most educational stakeholders, poor governance and inefficient deployment of the

requisite technologies necessary for distance education in Nigeria compelled it to remain in its embryonic phase till date. Despite all these challenges, study by Adeoye et al. (2020) emphasized the needs for e-learning in Nigeria. However, it was established in a study by Weber and Hamlaoui (2018) while reporting in one regional survey on e-Learning revealed that, e-Learning will solve most teaching and learning problems as long as the practices by the countries got matured in the region, Unlike the conventional method of teaching that was affected during the lock down, the online system fosters a healthy and steady growth in the educational system. Therefore, this study is geared towards situational findings of the integration of Google classroom in teaching and learning by teachers from Colleges of education in the North-east Geo Political Zone of Nigeria. This could be attributed to its friendliness and fairness left aside the free access it has, as learning platform. Particularly for countries that are technologically disabled that, the know-how and finance to manage their personal reliable learning platforms remains a problem.

Theoretical Framework

Use of Technology Acceptance Model (TAM) framework

The study considers using Technology Acceptance Model (TAM) developed by (Davis, 1985). It was noted in the Model that lack of user acceptance of a system remains an impediment to its success. TAM proposes that perceived ease of use and perceived usefulness of technology can predict the attitude of users towards using technology then after, follows the behavioral intentions and then the actual usage of the technology (Masrom, 2007). As shown below.

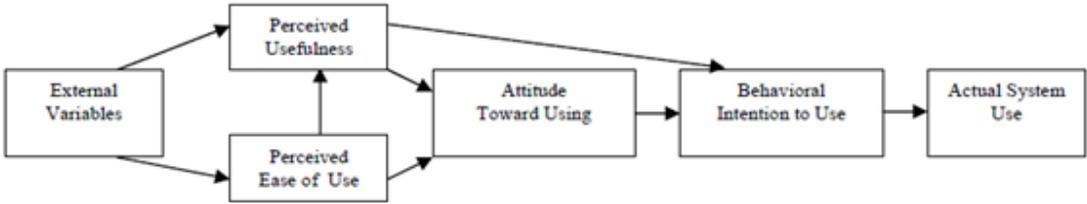


Figure 1: Original Technology Acceptance Model, adopted from (Masrom, 2007)

This study is based upon the TAM and the derived models, which ascertains the Awareness, Perceived ease of use, Perceived Usefulness, Technology challenges and operational ability just as in (Adeyemi & Osunde, 2005) and (Saidu, 2018) respectively.

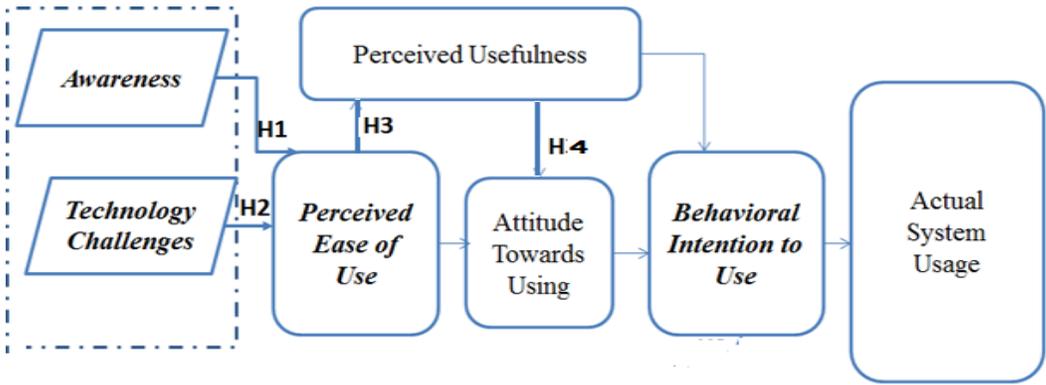


Figure 2: External factors relating with the other constructs in the original Technology Acceptance Model (TAM)

Among the studies recorded in this field, some portray the synergy of the Google classroom and its treasures as learning platform with emphasis on how to set up the learning environment by users. Whereas, other studies looked at it from the angle of it standing out among other collaborative learning platform in the recent time. Likewise, another study was concerned about the usability and usefulness of

its affordances as learning technology tool. Just like a study was recorded concerned indicating the impact of Google Classroom as an Online Learning Delivery during COVID-19 Pandemic, the case of secondary school students from Akure, Ondo State-Nigeria.

Going by the aforementioned studies therefore, it is quite clear from that, none of them highlighted on the integration of Google classroom by lecturers in Colleges of education from the study area; hence this study filled the gap

Google classroom and its practices

Google classroom was reported to have being introduced in May, 2014 and subsequently released in August, 2014 as a tool for teachers which functions as an interface layered on top of the Google Application for Education (GAPE) that establishes collaborative environment for students –teachers interaction (Brown & Hocutt, 2015). The system encompasses of several tools that when optimized efficiently, learning environment is observed which lead to proper teaching and learning process. Google Classroom being a universal tool for teaching and learning, it allows teachers across several disciplines to customize their classroom for effective online collaboration. It is a suit for education that comes along with other associated tools such as Google Drive, Google Docs, Google Sheets and Slides, sign up through the use of Gmail account altogether to establish a conducive learning platform called classroom existing in a virtual space (Madhavi, Mohan, & Nalla, 2018). Since the emergence of this great tool for blended and complete online teaching, multitude number of teachers were recorded finding their way to it (Madhavi et al., 2018) just as recorded in a similar study by Iftakhar (2016) noted that, in Daffodil International University around September 2014 More than 30 teachers were recorded to have started using Google Classroom. Similar to the statement of Xanthoula (2015) that many organisations have recently embraced live class mode of e-Learning so as to produced up to the task students besides cutting transportations time and cost; likewise associated cost engaged in face-face tutoring.

Objective of the Study

The objectives of the study specifically sought to:

1. Determine the use of Google Classroom as an alternative learning environment
2. Ascertain the level of the of lecturers integration of Google Classroom in their teaching and learning processes in Colleges of education in North Eastern Nigeria.

Research questions

The research questions was formulated in line with the specific objective to guide the study as follows:

- 1) Can the use of Google Classroom curtail the effects of COVID 19 Pandemic in Colleges of Education in North Eastern Nigeria?
- 2) What is the level of lecturers in integrating Google Classroom in their teaching and learning in Colleges of Education in North Eastern Nigeria?

METHODOLOGY

The study adopted a descriptive survey design so as to find the level or extent to which Google Classroom is integrated by the lecturers in their teaching and learning just as to find out whether the lecturers see Google classroom as a solution to insecurity and the COVID 19 pandemic we are in today. The use of these approaches is deemed fit, because the tool for data gathering was questionnaire, which analyzed and presented as the researcher remains outside so as to ensure objectivity of the findings (Trochim & Donnelly, 2001). A five point Likert scale rated as: 1=Strongly Disagree, 2=Disagree, 3= Undecided, 4=Agree and 5 strongly agree was employed using Google form to collect the responses from the subjects. The five response choices were observed in the study just as recorded in a study by Ibrahim et al. (2007), that the reliability and the validity improved based on the response options where anything fewer than four (4) choices decreases the validity and the reliability just as from five choices upward; hardly increases the psychometric nature of the scal. A balloting selection strategy was employed while administering the questionnaires to 230 targeted subjects from the six (6) Colleges of Education across the States (Adamawa, Bauchi, Borno, Gombe, Taraba and Yobe States) in the North-Eastern Geo Political zone which is comprised of three (3) Federal and State Colleges each respectively. The researcher wraps the phone numbers of the 230 respondents based on their institutions, after which the researcher randomly

picks from the wrapped phone numbers for each institution and administered the survey online accordingly. Each objective on the questionnaire attracts five sub-items to respond to the main question. Google form was used and the link to the respondents was sent via email, WhatsApp and/or as text messages. Where the respondents lack internet service, the research assistance provides them with a Wi-Fi connection to enable the respondents fill the form accordingly. The cumulative responses received was 155 where they were analyzed using Statistical Package for Social Sciences (SPSS Version 22). The five (5) Likert scale questionnaire were analyzed just as SPSS was used as the appropriate computer application program for the data analysis and interpretation as in (Mkongwa, 2015). Mean (\bar{X}) and Standard Deviation (SD) was deployed to answer the research questions with the cut off marks = 3.00, meaning that, anywhere $\bar{X} > 3.00$ the responses considered agreed whereas, $\bar{X} \leq 3.00$ were considered disagreed. All the participants participated voluntarily; with their consents just as given in the consent form that introduces the questionnaire. The input from the participants were objective as in no one interfered or persuaded any participant during the process. As such, the study was carried out strictly adhering to all the necessary research ethics. It is therefore expected that the current state of the situational findings on the integration of Google classroom in Colleges of education in North-East Nigeria will be ascertained and the findings is meant to send a clarion call for online learning with available means around, so as to cope with the 21st century learning style.

RESULTS AND ANALYSIS

The result of the analysis and interpretation of collected data using statement- wise, category percentage, cut off mark, Mean (\bar{X}) and Standard deviation (SD) was presented based on the research questions that guided the study. Thus, the following tabulations are comprised of explanation on the findings from the subjects under study:

The demographic data of the respondents was recorded based on gender with the following result.

Table 1: Demographic Data of the respondents based on Gender % of the total respondents (N)

	Frequency	Percent	Valid Percent
Female	15	9.7	9.7
Male	140	90.3	90.3
Total (N)	155	100.00%	100.00%

It can be deduced from table 1 above that, out of the 155 respondents, 15 which translates to 9.7% were females and 140 making 90.3% were males.

The overall results of the responses from the subjects is presented based on the research questions guiding the study as thus:

Research question 1: *Can the use of Google Classroom curtail the effects of COVID 19 Pandemic in Colleges of Education in North Eastern Nigeria?*

Table 1: Google Classroom curtails the effects of COVID 19 Pandemic

Institution		Item				
		1. I find Google Classroom meeting my remote teaching needs	2. I teach my students via GC remotely during COVID 19 lockdown	3. I find giving online collaborative work to students easy using GC	4. Using GC, one can hold classes with physical distancing ensured	5. With GC, even students in isolation centers can partake in virtually all class activities
Aminu Saleh College of Education Azare	Mean	1.75	1.68	1.50	3.57	4.25
	N	28	28	28	28	28
	Std. Deviation	.928	.670	.577	1.574	.928
College of Education Zing	Mean	1.70	1.37	1.80	3.97	4.40
	N	30	30	30	30	30
	Std. Deviation	.702	.490	.551	.765	.724
Federal College of Education [Technical], Gombe	Mean	1.74	1.61	1.84	4.03	3.94
	N	31	31	31	31	31
	Std. Deviation	1.125	.919	.934	.875	1.340
Federal College of Education [Technical], Potiskum	Mean	1.76	1.70	1.64	3.76	4.03
	N	33	33	33	33	33
	Std. Deviation	1.173	.883	.699	1.200	1.185
Federal college of Education Yola	Mean	1.93	1.93	1.73	5.00	4.53
	N	15	15	15	15	15
	Std. Deviation	1.163	.961	.799	.000	.516
Kashim Ibrahim College of Educ. Maiduguri	Mean	1.22	1.61	1.78	3.06	3.22
	N	18	18	18	18	18
	Std. Deviation	.428	.698	.732	1.056	1.114
Total	Mean	1.70	1.63	1.71	3.86	4.08
	N	155	155	155	155	155
	Std. Deviation	.976	.783	.720	1.159	1.090

The result for the responses to question 1, “Can the use of Google Classroom curtail the effects of COVID 19 Pandemic in Colleges of Education in North Eastern Nigeria?”. Was analyzed and interpreted as thus: Item 1 reveals that, $\bar{X} = 1.70$ i.e to say the respondents disagree with the statement, “I find Google Classroom meeting my remote teaching needs” with a SD = 0.972 which is moderately consistent. Item 2 was has $\bar{X} = 1.63$ and SD = 0.783 meaning that, the respondents disagree with the statement, “I teach my students via GC remotely during COVID 19 lockdown” and with a high consistency. Item 3 on the other hand, revealed $\bar{X} = 1.71$ and SD = 0.720 meaning that, the respondents disagree with the statement that “I find giving online collaborative work to students easy using Google Classroom” and the response was consistent. However, item 4 recorded a cumulative $\bar{X} = 3.86$ with SD = 1.159 meaning that, the respondents agree with the statement, “Using Google Classroom, one can hold classes with physical distancing ensured” with a moderate consistency. Finally, the result for item 5 revealed, $\bar{X} = 4.08$ with SD = 1.090 meaning that, the respondents agree greatly with the statement, “With Google Classroom, even students in isolation centers can partake in virtually all class activities” and the consistency is moderate.

Research question 2: What is the level of lecturers in integrating Google Classroom in their teaching and learning in Colleges of Education in North Eastern Nigeria?

Table 3: Level of lecturers in integrating Google Classroom in their teaching and learning

Institution		1. I do participate in Google Classroom activities	2. I present my learning contents to students using Google Classroom	3. I find preparing learning contents in GC easier than conventional means	4. I assess my students through GC environment	5. I engage my students on group project collaborative work through GC
Aminu Saleh College of Education Azare	Mean	2.75	1.14	1.82	1.79	1.43
	N	28	28	28	28	28
	Std. Deviation	1.143	.356	.723	.418	.504
College of Education Zing	Mean	3.03	1.40	1.80	1.60	1.53
	N	30	30	30	30	30
	Std. Deviation	1.351	.675	.805	.498	.629
Federal College of Education [Technical], Gombe	Mean	3.68	1.52	2.13	1.55	1.55
	N	31	31	31	31	31
	Std. Deviation	.945	.851	.991	.675	.675
Federal College of Education [Technical], Potiskum	Mean	3.91	1.82	1.79	1.64	1.58
	N	33	33	33	33	33
	Std. Deviation	.522	1.044	.992	.895	.792
Federal college of Education Yola	Mean	3.53	1.73	1.53	2.00	2.00
	N	15	15	15	15	15
	Std. Deviation	.915	1.033	1.125	.655	.000
Kashim Ibrahim College of Educ. Maiduguri	Mean	3.22	1.56	1.61	1.83	1.17
	N	18	18	18	18	18
	Std. Deviation	.943	.616	.698	.383	.383
Total	Mean	3.37	1.52	1.82	1.70	1.53
	N	155	155	155	155	155
	Std. Deviation	1.075	.817	.901	.638	.627

From table 3 above, we deduce the results of the response to question 2, “What is the level of lecturers in integrating Google Classroom in their teaching and learning in Colleges of Education in North Eastern Nigeria? Thereafter were analyzed and interpreted as thus:

Item 1 indicated, $\bar{X} = 3.37$, which implies that the respondents agree with the statement, “I do participate in Google Classroom activities” and the $SD = 1.075$ with moderate consistency. Whereas, Item 2 recorded a $\bar{X} = 1.52$ and $SD = 0.817$, meaning the respondents disagree with the statement, “I present my learning contents to students using Google Classroom” with a high consistency. Likewise, item 3 recorded $\bar{X} = 1.82$ and $SD = 0.901$ meaning that, the respondents disagree with the statement, “I find preparing learning contents in Google Classroom easier than conventional means” with a moderate consistency. More so, item 4 recorded $\bar{X} = 1.70$ and $SD = 0.638$ meaning that, the respondents totally disagree with the statement, “I assess my students through Google Classroom environment” with moderate consistency. Finally, the result for item 5 revealed a $\bar{X} = 1.53$ and $SD = 0.627$ meaning that, the respondents disagree with the statement, “I engage my students on group project collaborative work through Google Classroom” and with a moderate consistency of the responses.

DISCUSSION OF FINDINGS

The findings from Research question 1 reveals that, majority of the lecturers were aware of Google classroom. This could be due to the popularity of Google as a search engine. Just as their responses on items 4 and 5 affirm. This will further strengthen the postulated statement from the research question 1; that the use of Google Classroom curtails the adverse effects of COVID 19 Pandemic in the study area. However, despite their familiarity with Google Classroom, they were not registered, practicing and or engaging their students with Google classroom. Similar to the findings in items 1, 2, and 3 that show their cumulative responses affirm disagree. This therefore indicated that, they don't teach using Google classroom during COVID 19 nor they give collaborative works to their students just as it does not provide their needs being met; even if they believe its usage curtails the effects of COVID 19 pandemic. This could be due to other factors like class size, technological knowhow among the subject and/or their students; or lack of knowing the value of Google classroom in online teaching and learning. This is in line with a finding, that reveals many innovations in technology fail as teachers do not see its educational benefits just as they lack the skills needed to use the technology, (Kaffash, Kargiban, Kargiban, & Ramezani, 2010).

From research question 2, talking about the level to which lecturers were found integrating Google Classroom in their teaching and learning in the study area; the findings revealed from item 1 that, majority of the respondents attested to have participated in Google Classroom related matters. Although only negligible number may be found integrating Google Classroom in their teaching and learning. The finding implies that, majority were not in any way registered to have integrated Google Classroom in their teaching and learning. This could be that, the participation by some lecturers do happen with external bodies mandatorily. This therefore, indicated lack of attitudes towards using and/or lack of behavioral intention to use Google Classroom. This was established to have influenced the actual usage by stressing much emphasis on the perceived ease of use concerning behavioral intention to using the technology just as in the original TAM model (Masrom, 2007) and (Davis, 1989), (Wong Su Luan & Teo Timothy, 2009). Likewise, the respondents totally disagree with the statement items 2, 3, 4, and 5 meaning that, the lecturers are yet to imbibe the habit of presenting course materials to students, enjoying contents development in Google classroom than the conventional means, assessing their student and engaging them on collaborative work via Google Classroom. This could be due to technology challenges, operational ability and lack of thorough awareness that was established as an external factor to have influenced their perceived ease of use, perceived usefulness which cumulatively found influencing the behavioral intention thereby, affecting the actual usage of Google Classroom as in line with the studies by (Adeyemi & Osunde, 2005) and (Saidu, 2018). Just as recorded in another study, Behavioral intention impacts on use of Google classroom (Jakkaew & Hemrungrote, 2017).

It was established in another study, that Google Classroom was user friendly, light and free cost, (Buzhardt & Heitzman-Powell, 2005). In a study by Budiman, Rahmawati, and Ulfa (2018) , it was categorically revealed that integrating technology in teaching and learning process recorded significant.

Likewise another study indicated that, integrating Google classroom in the teaching and learning process improved the attainment of graduate attributes in higher education (Madhavi et al., 2018). Despite all these, the integration of Google classroom in the region is extremely low contrary to the statement that many organizations recently embraced live class mode of e-Learning which produced up to the task students thereby cutting up transportation time and cost; just as other associated cost engaged in face-face tutoring, just as it is contrary to answering the call for online learning for the 21st century (Dockstader, 1999) and (Xanthoula, 2015).

Research question 3 on the other hand, discusses the impacts of integrating Google Classroom in providing required security in schools under studies. Majority of the respondents affirm that, the use of Google Classroom in teaching and learning ensures safe learning environment that equally absorb the challenges associated with moonlighting tutoring, for it ensures security due to virtual class collaboration. Subsequently, it ensures security and maintainability of the entire learning environment. The respondents all affirmed agreed with all the items even though, they were not found to have integrated Google classroom in their teaching and learning. The respondents' stand in agreeing with all the items is in line with a study by Oyarinde and Komolafe (2020), where the findings revealed that, Google classroom is a relevant platform for online learning just as it provided enabling atmosphere for learning. Just in line with a study by Ahmad et al. (2020) in facing "Covid-19 Pandemic" which registered that, the students' readiness in using Google Classroom was found very high.

Finally, from research question 4, it is deduced that Google Classroom works with limited internet connectivity. Just as it is friendly to users with more features upgraded periodically to making it friendlier, more so, institutional registrations with Google Classroom is easy. Just as designing, maintaining and securing the learning platform is not the responsibility of the user as respondent affirmed cumulatively, which is in agreement with other findings that investigated the usability and usefulness of its affordances as learning technology tool (Brown & Hocutt, 2015). Then why don't Nigerian lecturers particularly in the North Eastern Region integrate Google classroom in their teaching and learning? Despite the fact that Online environment was established to have allowed for collaboration among the learners and/or their teachers whereby establishing confidence and trust among them (Radosavlevikj & Hajrullai, 2019), (Brown & Hocutt, 2015; Mohd Shaharane I. N. Jamil J. Rodzi M. & Syamimi S., 2016; Phan, 2015; Toren, 2015; Xanthoula, 2015).

CONCLUSIONS

Going by the aforementioned points, we can then draw the conclusion that the majority of the subjects were aware of the concept of Google Classroom, even though they do not integrate it in their teaching and learning process. The impacts and effects of Google Classroom in ensuring security and curtailing COVID 19 Pandemic were strongly established in the finding. By implication, the study serve as an awakening towards answering the call for online learning in the 21st century by all the subjects and the entire educational stakeholders. The findings also attest to the fact that Google classroom is cost effective, flexible and easy to use with good maintainability feature independent of the user.

RECOMMENDATIONS

- i. There is need for thorough awareness on Google classroom by the stakeholders for it appears to be a factor silencing the need for integration of the Google Classroom by the lecturers.
- ii. Government needs to be more proactive on the need to objectively improve the standard of technology usage in teaching and learning in line with global best practice.
- iii. Government health/educational policy formation should mandate the use of Google classroom for online collaboration so as to curtail the recurrence of the 2020 Covid-19 pandemic and the likes in the future.
- iv. All educational stakeholders should at least use Google Classroom as an official free LMS to be integrated at their institutions for teaching and learning.
- v. School Administrators should consistently motivate lecturers that are found to be integrating at least Google classroom for their online learning

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