International Journal of Multidisciplinary Research and Development
Online ISSN: 2349-4182, Print ISSN: 2349-5979, Impact Factor: RJIF 5.72
www.allsubjectjournal.com
Volume 4; Issue 8; August 2017; Page No. 211-215

Attitude and performance of undergraduate students in a designed Google classroom: A case study of University of Uyo

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Abstract
This study scanned the attitude and performance of undergraduate students in a designed Google classroom: a case study of university of Uyo. Two research questions and two hypotheses guided the study. The population for the study was seven hundred and fifty (750) undergraduate students in the Department of Science Education, University of Uyo. One hundred and fifty-five (155) students were used as sample for the study. An achievement test was used as instrument for the study. T-test was used in testing hypotheses at. 05 level of significance. The result of the study reveals that Students taught with Google classroom application had a higher level of retention than their counterpart in the face-to-face classroom, it was also realized that there is no significant difference in the usage of Google classroom application between male and female students in learning. Therefore it was recommended that Instructors should adopts Google classroom application as an effective platform for teaching and learning in higher education.

Keywords: google classroom, academic performance, higher education

Introduction

The quest to make learning easy and less stressful has been on since the inception of formal education, and the 21st century system has brought a lot of innovation into the educational system which is seen as paradigm shift- the new view of learning. This has led to the introduction of information and communication technologies (ICTs) into education in which United Nation Education Science and Cultural Organisation (UNESCO) describes it as a major factor in shaping the new global economy and rapid change in society (UNESCO 2008) [5]: "ICT tools have fundamentally changed the way people communicate and do business, its serve as a potential to change the nature of education- teaching and learning". The impact of technology in education cannot be overemphasised but this research work tries to find out if it is every Information Communication Technology (ICT) tool that enhances learning and the aspect of learning it has the ability and capability to enhance using Google classroom. The rapid evolution of Google classroom applications is offering new possibilities and perspectives in business, government and health sectors, education and other public domains, (Virkus, 2008). This Google classroom evolution has led to the shift of emphasis from mere use of ordinary web to the adoption of Google classroom application as a tools which has great potentials inherent in them.

Google classroom is an application specially designed for educational activities to enhance communication, critical thinking, creativity and problem-solving among learners. It is a flexible learning application that enhances learners to play an active role in their learning process with the aim of improving their communication and learning capabilities. Instructors also take advantage of this application as a channel for instructional delivery to learners both within and outside the learning environment (Greenmeier & Gaudin, 2007) [1].

Also, the study tries to find out the attitude and performance of undergraduate students on this designed Google classroom for learning. If they learn, how long do they retain, if it enhances communication skill of students since it is observed that most students do not communicate well in the class especially with the presence of the teacher and also as for the pre-service teachers. Clark, (1983) [2], argues that, students learn equally irrespective or regardless of media use; he said "media are mere vehicles that deliver instruction but do not influence student's achievement.

The study is anchored on theory of constructivism by Jean Piaget (1975) [10] and Engagement theory by Kearsley and Shneiderman (1999) [16]. Constructivist theory was propounded by an educational psychologist Jean Piaget in 1975 [10]. Piaget's work is regarded as the founding principles of constructivist theory. Piaget observed that, learning occurs through constant interaction with the environment, this interaction gives rise to the assimilation of new experiences which is added to already existing knowledge followed by modification of the prior knowledge of the learner consequently, acceptance of the 'new' or modified knowledge. Constructivism therefore, is based on how knowledge is constructed or built. Its major emphasis is on the active role of the learner in building and understanding and making sense of information. (Agulanna & Nwachukwu, 2009) [3]. The theory believes that learning is an active process in which learners discovers things themselves and controlling the pace of learning, this theory aims at redirecting the students to critically examine whatever information given to them instead of swallowing the information the way it came.

Jonassen, (2000), opined that active constructive learning combats the occurrence of inert knowledge, which may be remembered but cannot be used, where as if learners construct their knowledge they becomes part them within and outside the learning environment.

The constructivist view is a general umbrella that is made up

of cognitive psychology and a subset of research within social psychology, but in all their focus is on individual learners' construction of knowledge and skills.

constructivist believe that the best way a learner learns is by personally and uniquely building understanding and making sense of information and it's done through transforming, adding, organising, and re-organising previous knowledge which eventually leads to a restructuring of what is already known.

The constructivists believed that learning involves the inculcation of the previous knowledge (experience) to the new knowledge developed in the learning process. Particularly, Vygotsky (1999) in a socio-cultural theory based its assumptions on the fact that language, culture and cultural development are the bed-rock of a child's learning. The theory centres on how students and children develop knowledge, ideas, attitudes and values, and is through interaction with people in the child's world and the tools that their culture provides learning takes place. Vygotsky sees every culture as having its tool that supports thinking, These tools could be language, literature, music, arts, sign etc, and language is said to be the most important cognitive tool because, it provides the means for expressing ideas, asking questions or thinking about concepts. Vygotsky believes that, the child discovers the world through the mediation and assistance of family members, teachers and peers. This guidance or assistance is called "scaffolding". (Agulanna & Nwachukwu, 2009) [3].

Scaffolds are structures used by builders for support while the height of the building is being increased. Adult therefore provides the support while children build firm understanding of their world that will allow them to solve problems on their own (Agulanna 2009) [3]

Vygotsky's socio-cultural theory under the constructivist view of learning centres on child's interaction with tools in their world and scaffolding by adults to help them construct their meaning and activation of schemata (prior knowledge) and feedback. This foundation is the backbone of the study on using Google classroom in teaching the students to help achieve the objectives of education.

On the basis of scaffolding, the use of Google classroom will help the teacher distribute videos, pictures, music which serves as simulation to the students and are seen by Vygotsky as a very good tool in the child's world and culture. Interaction between teacher and students and among students is well carried out through the social media which is also a tool in the child's culture in the 21st century and should not be neglected while teaching. Presently in this 21st century social media has been seen as a good interactive and collaborative platform for teaching and learning, the teacher having Vygotsky's cultural tool in mind introduces medium of interaction that will interest the learner and bring about good results. The students can learn and correct each other on the plat form especially for students that are shy to communicate in a face to face classroom. The feedback of students' activities is sent to the students immediately or later depending on the teacher's strategy.

The educational implication of constructivist theory is that learners should be provided with socially rich environments in which to explore knowledge domains with their fellow students, teachers and outside experts is made possible. Information Communication Technology (ICT) can be used to support the learning environment by providing tools for classroom discussions, collaborative writing, and problem-solving and by providing online support system to scaffold students' evolving understanding and cognitive growth. There should be use of collaborative or interactive instructional process, like presenting challenging tasks to students and allowing them work in small group to accomplish small task, the use of methods that involves social interaction between students and teachers and among students. This will involve class discussions and demonstration, peer tutoring, reciprocal teaching and it should allow feedback about the students' progress. Most importantly, the educators or teachers should give the students opportunity to interact with one another.

The engagement theory was propounded by Kearsley and Shneiderman in 1999 [16]. Engagement theory is a new theory that represents a new paradigm for teaching and learning in the 21st system of education. Its emphasis is on the positive role of technology on human interaction in the process of learning. Engagement theory posits that learning involves active cognitive process such as reasoning, creating, problem-solving, decision making and evaluation among learners during learning process.

Engagement theory is concerned with individual learners' self-determination, direct participation, and collaborative problem-solving and mutual dialogue among learners. It is a model for learning in technology- based environment with a methodological framework for understanding social complexities within the learning environment. Engagement theory stressed on the intrinsic motivation of learners due to the meaningful learning environment and the activities that takes place during learning. The founder mental idea underlying engagement theory is that learners must be meaningfully engaged in their learning activities through interaction with others. The engagement can occur through the use of technology-based teaching and learning (Shneiderman 1994) [12].

Engagement theory is anchored on three key component which are relate, create and donate, it is believe that these three components results in meaningful learning. Applying this theory to this work implies that a child learning environment must be prepared which will help the child to be meaningfully engaged in the learning process by playing an active role during the learning process.

Dictionary.com defined Google classroom as a social networking tool or an application designed by Google to help or support educators to carry out educational activities successfully and to simplify their work. Google classroom was first debuted in 2014 and it was later expanded to mobile in January 2015.

This tool is aimed at helping educators organize assignment and communicate with their students at any time especially outside the traditional classroom time. It can also, be integrated to other applications like Google Docs, Drive and Gmail for heavy information and makes its use more efficient and hands on.

Google classroom unlike other applications and social media is a closed source designed only for educational purposes and its features supports learning and encourages other skills. Google classroom has the ability to help teachers administer assignment and receive the answers as turned in by the students with grades. Google classroom is an application that can be used by learners to perform so many functions especially by integrating other applications. instructors, can

create a class by adding students through their emails, thereafter, assignment or topics for discussion can be posted to the students in case the teacher wants to flip the class; discussing what will be taught in the next class. The teacher can also post announcement and comments or contact students or teacher can add attachment to their documents and with Google Drive application, one can view the attachment. Video can be uploaded, viewing of peoples comment and can contact the teacher or their classmate. More importantly Google classroom is a multiple way communication tool and it could be synchronous or asynchronous in communication.

Google classroom as a communication and assessment tool, gives room for shy students to express themselves since the classroom settings can be changed by the teacher, the teacher can make the class autonomous and allow everyone air their view but the students must know that, the teacher knows them and can trace what they say back to them so that they don't deviate or ask their classmates to help them in the task or assignment given.

Keeler (2015) in a blog said that, the most exciting thing a teacher can hear is "we are getting Intel-based chrome books for our students" that teachers wants students to handle these technologies but could be frightening since most teachers do not know how to use technology with their students for effective teaching.

Teachers can't be addressed as being frightened on using technology with students but just the level of competency is low to monitor the digital native of 21st century. However, teaching with technology requires new classroom management, techniques, digital literacy skills and overcoming bumps of internet problem. No wonder the new knowledge for education shifted from pedagogical and content knowledge to technological, pedagogical and content knowledge

Keeler sees Google classroom as an Intel based Chromebooks that has simplified the stress of going digital by the teacher at least it allows teachers to assign work and collect both for the teacher and for the students. The teacher can create a template in Google Doc and sends it to each student, Google classroom now automatically attaches the document for students to submit. This allows or gives the teacher access to the students while working and making correction or feedback formative rather than punitive or summative only. This act will reduce the stress of teachers dancing round the traditional classroom in the name of correcting or supervising or facilitating learning and it also saves the time of the classroom activities.

Perez (2015) [15] says in different blogs respectively that, Google Classroom has number of features like Classroom API for administrator, and a classroom share button. The classroom share button helps to add links, video and images from the web to the content in classroom. The content or document used in the previous assignment can be re-used or reposted for use, for Jobs, he said if a Classroom is used this year and the teacher wishes to reuse the materials in later classes the teacher is covered. Google classroom also, helps teachers to send the content to students individually instead of photocopying the material and he can amend the work or assignment given to suit the individual needs without much stress.

Michael, (2006) [11] defined Academic performance as the extent to which a student, teacher, institution has achieved their educational goal. Bacon, (2011) [11] defines academic performance as standardized test score, grades and overall academic ability and performance outcome. Brogan and Jackson, (1998) [18] described academic performance as a mark of success for both the students and the teacher. It is a substantial body of research on student-cantered, active learning strategies supports the effectiveness of these approaches in increasing student learning and achievement. It is believe that student-cantered/active learning strategy is associated with improved student academic performance and increased student engagement, critical thinking, and better attitudes toward learning. Chaplin, (2009) [17], opinion that the student-cantered learning is associated with improved students' performance, Chaplin added that when problem-based active learning occur students pay attention, report learning and their attitudes towards class improve.

In all, the various definitions points to excellence in academic disciplines as well as the attainment of educational goal measured by standardized test scores which aim at improving the educational outcomes.

Higher education is a system of education that comprises of the universities, Polytechnics and colleges which plays a multiple sustainable development quality teaching and learning through research. This involves knowledge creation in research and technology transfer through education and human resource development within and outside education community (Uche and Nwabuze 2013) [13]. National policy on education (2008), stated that higher education is a type of education given in an institutions such as universities and inter-university centres like Nigeria French Language Village, Nigeria Arabic Language Village, National Institute for Nigerian Languages, Innovation Enterprise Institutions (IEIs), Colleges of Education, Polytechnics and Monotechnics. World Bank (1999) emphasised on fundamentals of higher education to the construction of a knowledge-based economy in all nations through their positive contributions and the accomplishment of the general goals of education.

Several researches have been conducted on the attitude and performance of undergraduate students in a designed Google classroom, for instance the findings of Light (1999), in a study on computer mediated communication in a conventional undergraduate setting using Google classroom at university of Southampton. The researcher focused on a lecture course titled ''explaining the mind''. Eight (8) psychology honours students and fifty (50) other students in first year were used as the sample of population. Single lecturers were used in face to face tutorials and on the fourth night Google classroom was offered as optional or extra that supplemented the face to face tutorials. The students were encouraged to use the Google classroom in communication: ask questions, answer questions, interact among themselves. After some conversations the dialogue was also given to the students to give their perception about the experience with Google classroom. The findings reveals that 80% of the participant had a positive perception about Google classroom in which they see it as a useful vehicle for question and answer exchanges. However, the students used the complied or accumulated questions and answers as reference or resource material and for accessing the tutorial dialogues of other students with their tutors.

Also, Warschauer (2009), conducted a study on students perception on online classes using technology in a research titled '' Hawaiian Multimedia''. This research was conducted in a Hawaiian language class at the University of Hawaii in

2009, using a group of about 20% of state's population. The research involved Hawaii university students whose programs are in the Hawaiian language and they make extensive use of new technologies. The technology provided opportunity of the learners of Hawaii language outside the school to get access and interact with each other. Students exchanged e-mails with community or native speakers of the language, videos of native speakers of the language and after that the students worked on websites that explored the culture, history of the language and all web pages were written in Hawaiian language. The researcher found out that, the students' perception about the experience was that they have double advantage as they learnt how to use new tools. In view of this perception and result gotten Warshauer concludes that, technology can be integrated to multiply students' linguistic, educational and social advantages.

Statement of the problem

Recently, it has been observed that the attitude and performance of undergraduate students in a designed Google classroom varies in University of Uyo and this may be cause by incompetence's with the current state of demand in this technology-driven age, lack of required skills to be used etc. This may stem from inadequacy and non-availability of the required skills for effective participation by individual learners. Regarding this fact, this study therefore seek to investigate the attitude and performance of undergraduate students in a designed Google classroom in University of Uyo, Akwa Ibom State.

Objectives of the study

The purpose of the study is to find out how well student can learn outside the conventional classroom using Google classroom. Specifically the study intends to;

1. Find out the perception of male and female students about Google classroom.
2. To find out the retention ability of students who used Google classroom for learning.

Research Questions

The following research questions guided the study

1. What is the perception of male and female students about Google classroom?
2. To what extent does Google classroom affect the retention ability of the students?

Research Hypotheses

In the course of the study the following null hypotheses were formulated to guide the study:

1. There is no significant difference between male and female students who used Google classroom application in learning.
2. There is no significant difference between the students' retention ability in a face to face classroom and Google classroom.

Methodology

The area of the study was Akwa Ibom State. The design of the study was a quasi-experimental design. The population of the study consisted of all the Science Education undergraduate students in the Faculty of Education University Uyo. The Science Education student as at this year of the study is 750. The population comprises first year to final year students. (Faculty of Education, Department of Science Education). The sample of the study consisted of 155 Science Education Students. Purposive sampling technique was used to draw the two level out of the four levels in the department. The researcher purposively selects the sample that meet a particular characteristics or criteria as stated in the purpose of the study.

The researcher selects the 1st year students and the third year students to determine the effectiveness of the Google Classroom on the new students and the old students. The instrument for the study was a class achievement test, the instrument was validated by experts and the reliability was established using cronbach's Alpha Analysis and the reliability coefficient of 0.85 was obtained. The data obtained were analysed using t-test and the formulated hypotheses were tested at. 05 level of significance.

Findings

Hypothesis one: There is no significant difference between male and female students who used Google classroom application in learning.

Table 1: Summary of t-test on the differences between male and female students who used Google classroom application for learning.

		Levene's Test for Equality of Variances		t-test for Equality of Means						
				T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
		F	Sig.						Lower	Upper
Students perception	Equal variances assumed	7.617	.006	2.145	153	.033	1.00417	.46540	.08473	1.92362
	Equal variances not assumed			2.122	136.416	.035	1.00417	.47096	.07285	1.93549

From the analysis in table 1.1, when subjected to t-test, a t-calculated value of 2.145 and 2.122 were realized. A computer value (p-value) of 0.000 was also realized. Hence, since $p<0.05$, which is the chosen alpha is less than the computer value the null hypothesis was accepted implying that there is no significant difference between the male and female students who used Google classroom application in learning.

Hypotheses two: There is no significant difference between the students' retention ability in a face to face classroom and Google classroom.

Table 2: Summary of t-test on the differences between retention ability of students in face-to-face classroom and Google classroom.

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	face_to_face_1 - google_class_1	-2.07296	2.65361	.20511	-2.47616	-1.66577	-9.067	155	.000

From the analysis in table 1.2, when subjected to t-test, a t-calculated value of 9.067 was realized. A computer value (p-value) of 0.000 was also realized. Hence, since $p<0.05$, which is the chosen alpha is greater than the computer value the null hypothesis was rejected implying that there is a significant difference in the students retention ability in face-to-face class and those in the Google classroom.

Discussion of findings

The result of analysis presented in hypothesis one showed no significant difference between the male and female students who used Google classroom application in learning. The result of this findings agrees with the findings of Wright (1999) [13] who opined that certain factors like gender possessed by learners can affect their perception about certain teaching method. The study by Kasap's (2005), who demonstrated students' general perception on online learning considering gender which turn out positive and the interview with the study teacher also yielded a positive result. The results from the analysis showed that both male and female had positive perception about online learning.

In testing hypothesis two the result showed a significant difference in the students' retention ability in face-to-face class and those in the Google classroom. The result is in agreement with the findings of The result agrees with the Kolawole (2007) [20], also found out that there is a significant differences in the cognitive, affective and psychomotor skills of science students in respect to their knowledge, retention and application level of Blooms categorization differences.

Conclusion

Based on the findings Students taught with Google classroom application had a higher level of retention than their counterpart in the face-to-face classroom, it was also realized that there is no significant difference in the usage of Google classroom application between male and female students in learning.

Recommendations

The following recommendations were made based on the findings of the study:

1. Instructors should adopts Google classroom application as an effective platform for teaching and learning in higher education.
2. Students adopt virtual classroom learning as a supplements to the conventional classroom learning system.

References

1. Greenmeier L, Gaudin S. Amid The Rush To Web 2.0, Some Words Of Warning. Retrieved 1st October, 2014 from http://www.informationweek.com/amid-the-rush-to-web-20-some-words-of-warning/d/d-id/1055555, 2007.
2. Clark RE. Reconsidering Research on learning from media: Review of educational research. 1983; 53:443-446.
3. Agulanna G, Nwachukwu F. Psychology of learning. Owerri: vantage press, 2009.
4. Light P. Learning with computers: Analysing productive interaction: Routlege, 1999.
5. UNESCO. Information & Communication Technology in teachers' education: A planning guide; Russia division of higher education, 2002.
6. Warschaner M, Journal of educational technology and society. International forum of educational technology and society. 2009, 16(3).
7. National policy of education. strategic plan for the development of the education sector, 2009-2011-2015.
8. Uche C, Nwabueze A. Quality Teaching and Learning in Higher Education: A road Network for Sustainable Development in south – south state of Nigeria: African Journal of Higher Education Studies and Development, 2013; 1(1).
9. Vygostsky L. Interaction between learning and development. Reading on the development of children. 1978; 2(3):24-26.
10. Piaget J. Piaget theory of cognitive development, 1975.
11. Michael E. Instructional media and the new technologies of instruction. New York: John Wiley & sons, 2006.
12. Shneiderman B. Education by engagement and construction: can distance education be better than face-to-face? Retrieved from http:www.hitt.washigton.edu. 1994.
13. Wright M. Influences in learning attitude towards language and culture. Article in educational research. 1999; 41(2):197-199
14. Jonssen DH. Computer as mind tools for schools; engaging critical thinking (ed). New jessey: prentien hall, 2002.
15. Perez L. New ways to integrate with Google classroom. Retrieved on 30th /03/2017, from www.google for education.com, 2015.
16. Kearsely G, Shneiderman B. Engagement theory: A framework for technology-based teaching and learning, 1999.
17. Chapline T. Social Learning Trend to Watch. Retrieved 30th/03/2017 from hppt://mashable.com, 2009.
18. Brogon R, Jackson B. Variables associated with cademic achievement of African-American males in for years undergraduate education institutions: A synthesis of studies (unpublished PhD thesis, Virgina polytechnic institute and State University. USA), 1998.
19. Bacon LS. Academic self-concept and academic achievement of African students' transition from urban to rural schools (published PHD thesis. University of Lowa). Retrieved 30/03/2017 from lr.u.owa-edu/cgi/viewcontent.cgi?article=25828 &context etd, 2011.
20. Kolawole. Journal of language for cultural and technological development (JOLCATED). Lagos: Bluesign Publication. 2007; 1(1):22.