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The Attitude of Undergraduate Students On The Utilization of Flipped Classroom For Learning In South-West, Nigeria

Amos Ochayi Onojah[1*], Charles Olubode Olumorin[2], Adenike Janet Aderogba[3], Olubunmi Odewumi[4,] Gboyega Ayodeji Aladesusi[5]

[1,2,3,4,5]*University of Ilorin, No C2, Studiopedia, Off Ministry of Health, Fate Tanke Rd, behind Lgea Primary School, Ilorin, Nigeria*

Abstract

ICT encourages students to improve their literacy and numeracy skills and to recognize their existing abilities. In this critical moment of Technological breakthroughs, the reputation of education to mankind cannot be overstressed. The flipped classroom is a pedagogical model in which the typical lecture and homework elements of a course are reversed. The roles of students have a corresponding change from passive participants to positive participation. This study investigated the attitude of undergraduate students towards the use of the flipped classroom for learning in Southwest, Nigeria, and also examined the influence of gender and school ownership on their attitude towards the use of the flipped classroom. A cross-sectional survey type was adopted in this study. A researcher designed questionnaire was used to collect information. One thousand eight hundred undergraduate students were randomly selected across twelve universities in the South West region of Nigeria. Frequency, mean, and percentage were used to analyze the responses to the research questions. Hypothesis 1 was tested using a t-test, while hypothesis 2 was tested using Analysis of variance (ANOVA) at 0.05 level of significance. The findings established that undergraduate students have a positive attitude towards the use of the flipped classroom for learning. It was then recommended that stakeholders in education should procure the necessary equipment for the flipped classroom.

Keywords*: Attitude, Undergraduated Students, Flipped Classroom*

1. Introduction

Just like the vehicle is useless without an engine, so is any society who refuses to embrace education might be ready for downfall. Education is a social medium and process of acquisition of relevant knowledge, skills and attitudes for survival in a changing world (Sanni, Amosa & Danmaigoro, 2017). Education is critical for economic growth, development and prosperity of any nation. It is not only the means by which individuals become skilled participants in the society, but also a key driver to expanding information and communication technology usage (United Nations Education Scientific and Cultural Organization, 2012). In a rapidly changing world, it is essential for an individual to be able to access and apply ICTs beyond computer literacy to achieving technological competence for successful integration of technology into the classroom so as to nurture the students to be participants in the growth process in this era of rapid change. Bola and Ogunlade (2012) submit that, the introducton of the internet and other forms of ICT to higher institutions of learning has enabled the creation of multimedia resources and the instantaneous communication of information.

ICT has initiated a transition from analogue to digital operations in all aspects of human endeavour making it possible for a lot of activities to be carried out speedily, easily and accurately (Justina, Faben & Michael, 2018). Daniels (2002) opined that information and communication technologies (ICTs) have become within a very short time, one of the basic building blocks of modern society and many countries now regard the understanding and mastering of the basic skills and concepts as part of the core of education, alongside reading, writing and numeracy. However, the use of information and communication technologies in education is divided into two broad categories: ICTs for Education and ICTs in Education. ICTs for education

*) Corresponding Author.
E-mail: haymoresonojah@yahoo.com

refers to the development of information and communications technology specifically for teaching/learning purposes, while the ICTs in education involves the adoption of general components of information and communication technologies in the teaching learning process.

Education has been affected by ICTs as reflected in teaching, learning and research (Yusuf, 2005). Learners can complete their education from any location as long as they have access to the ICT resources (Amosa, Ogunlade, Ogunlade, & Obielodan, 2016). Onuma (2007) noted that information technology in education focuses on electronic generation, storage, retrieval, utilization and protection of information for future use. While information and communication technology revolves around different types of technology likely to be utilized for processing, transmitting and communicating information. ICTs are used for developing course material; delivering and sharing content; learners-teachers communication and the outside world; creation and delivery of presentations and lectures; academic research; administrative support, student enrolment among others. Emerging technologies have enhanced extensively the prospects that promote the learning process in ways which are not obtainable before now (Adegbija, Fakomogbon, & Adebayo, 2013)

Robinson (2012) opined that it is necessary for schools to keep up with a changing technological landscape. Many educators have sought to accomplish this through the development of blended learning. (Ribson, 2016). Blended learning refers to the use of online or digital tools in conjunction with more traditional classroom Strategies (Napier, Dekhane & Smith, 2011). Although blended learning has been the subject of research for more than two decades, the capacity for implementation has been enriched due to the more recent innovation of the flipped classroom. Flipped classroom model seeks to shift class content outside the classroom, often in the form of lecture videos or readings, and in turn moves writing, projects or practice activities traditionally assigned as homework into the classroom. The flipped classroom is a pedagogical model in which the typical lecture and homework elements of a course are reversed. Short video lectures are viewed by students at home before the class session, while in-class time is devoted to exercises, projects, or discussions.

Yacout, and Shosha, (2016) defined flipped Classroom as an instructional strategy which provides a new methodology and modality for teaching and learning, which constitutes a role change for instructors with a way of minimizing the amount of direct instruction in their teaching practice while maximizing one-to-one interaction and more cooperative and collaborative contribution to the teaching process which can improve and encourage social interaction, teamwork and cultural diversity among students. The roles of students have a corresponding change from passive participants to positive participation. Students watch video lectures before class and valuable class time is spent on active learning activities such as individual and small group exercises, application activities, case studies, discussions, and role playing. This inverted approach involves the students actively in course content during class time, and thus students are no longer inactive recipients as typically seen in traditional lectures. Flipped classroom therefore, has the potential of addressing the different learning styles of students (Yacout, & Shosha 2016).

The four pillars of FLIP are flexible environment, learning culture, intentional content and professional educator (Flipped Learning Network, FLP, 2014). The flexible environment denotes that flipped Learning allows for a variety of learning modes; educators often physically rearrange their learning spaces to accommodate a lesson or unit, to support either group work or independent study. They create flexible spaces in which students choose when and where they learn. Furthermore, educators who flip their classes are flexible in their expectations of student timelines for learning and in their assessments of student learning. Next is the learning culture, In the traditional teacher-centered model, the teacher is the primary source of information. By contrast, the Flipped Learning model deliberately shifts instruction to a learner-centered approach, where in-class time is dedicated to exploring topics in greater depth and creating rich learning opportunities. As a result, students are actively involved in knowledge construction as they participate in and evaluate their learning in a manner that is personally meaningful. Odewumi and Yusuf (2018) studied flipped classroom among the junior secondary school in Abeokuta on tie and dye, the study concluded that learners taught with flip performed significantly positive.

Intentional content, Flipped Learning Educators continually think about how they can use the Flipped Learning model to help students develop conceptual understanding, as well as procedural fluency. They determine what they need to teach and what materials students should explore on their own. Educators use Intentional Content to maximize classroom time in order to adopt methods of student-centered, active learning strategies, depending on grade level and subject matter. Lastly is the professional educator, The role of a Professional Educator is even more important, and often more demanding, in a Flipped Classroom than in a traditional one. During class time, they continually observe their students, providing them with feedback relevant in the moment, and assessing their work.

Professional Educators are reflective in their practice, connect with each other to improve their instruction, accept constructive criticism, and tolerate controlled chaos in their classrooms. While Professional Educators take on less visibly prominent roles in a flipped classroom, they remain the essential ingredient that enables Flipped Learning to occur. Also, Rani and Muniandy (2017) investigated the effect of flipped classroom on computer science students' engagement level among pre-university students. Findings showed that that the students in the experimental group (flipped classroom) were highly engaged and there was not much difference in terms of student engagement in the flipped classroom when compared to the didactic classroom.

Nowadays, the flipped classroom offers more opportunities for students to develop critical and independent thinking, and for students to enhance their own learning processes by interacting collaboratively with peers. The first key element that ensures the success of the process is the development of a well-organized teaching plan, which specifies the activities that will be carried out, as well as the resources and contents that will be consulted (Flores, 2015). In Bloom's revised taxonomy (2001), the students are doing the lower levels of cognitive work (gaining knowledge and comprehension) outside of class, and focusing on the higher forms of cognitive work (application, analysis, synthesis, and/or evaluation) in class, where they have the support of their peers and instructor.

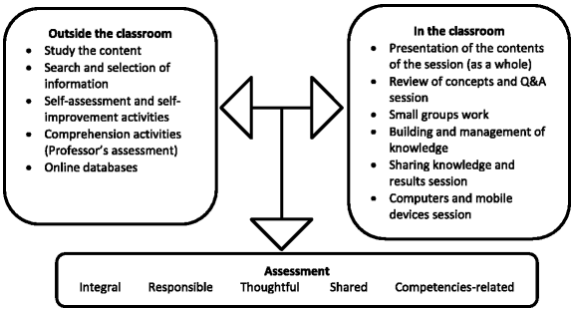

Figure 1: Flipped Classroom model
Source: Flores, Del-Acro, & Silva, (2016)

Flipped classroom model differs from the traditional model in which first exposure occurs through lecture in class, with students assimilating knowledge through homework. Flipped Classroom entails a role change for instructors, with much more instructor-student interaction. The instructor acts as a facilitator and guide, giving personal feedback to individual students, and thus making a more collaborative and cooperative contribution to the teaching process. The method is believed to have the potential to encourage student learning, because students are actively engaged in the learning process, and also the instructor has more time to interact with students individually or in small groups.

The ability of undergraduate students to implements and integrate appropriate Flipped classroom for learning for learning allows them to interact fully with their within and outside the classroom situations. An Flipped classroom for learning are the already programmed software tools that are web-based to perform varieties of assigned functions through the communication channels of text-based, audio-based and video-based, all including graphics and animation for the intending users which can be use directly to modify and adopt time and space (Olumorin, 2009).

Ndibalema, (2014) defined attitude as a deposition behavior in a given situation context. They are relatively less stable than personality traits and can be changed across time and situations in virtue of individual interaction with the environment (Robinson, Simpson, Huefner & Hunt, 2015). Sanchal and Sharma (2017) stated that attitudes consist of cognitive, effective and behavioural reactions that individuals display towards an object or by the surrounding based on their feeling. Attitude represents a summary evaluation of a psychological attributes and it can be described both internally and externally in dimensions such as good-bad, likeable-dislikeable, harmful-beneficial, pleasant-unpleasant (Kendra, 2015). Undergraduate students who embrace flipped learning in their studies may have positive attitude towards the use of flipped classroom. This implies that attitude of undergraduate students toward the utilization of flipped classroom could be described as the way of thinking or behavior towards the utilization of flipped learning to boost their knowledge.

School proprietorship to a large extent determines the provision of an enabling environment for the adoption and integration of internet technologies in education. It is an institutional factor which could motivate lecturers towards the utilization of internet technologies for instruction (Lumumba, 2007). Abedalaziz, Jamaluddin and Leng (2013) reported that all the participants have positive attitude towards the use of Internet based on area of specialization. The environmental conditions that necessitate the utilization of internet technologies however differ from school to school. Issues such as school's status, funding, provision of equipment, age and experience of tutors, gender, time and lack of adequate support for technical know-how among lecturers do arise from school proprietorship and are often identified as the impediments to successful integration of technology for classroom utilization.

The influence of gender in classroom utilization of technology also plays a major role in the selection, development and achievement of instructional objectives. Van Braak (2001) proposes that female students exude lower confidence or knowledge ability

than males about using computers. Osuafor and Ofor (2015) reported that there was no significant difference between male and female lecturers on utilization of e-learning facilities in teaching in colleges of education. Similarly, Makewa, Kuboja, Yango and Ngussa (2014) reported that there was no significant difference in application of ICTs and research between male and female lecturers of Arusha University Tanzania. Moreover, Ogunlade, Fagbola and Amosa (2015) reported that there was no significant difference between male and female respondents in the use of internet facilities. Onasanya, Shehu, Ogunlade, and Adefuye (2011) assert that given the low level of utilization of ICTs for instructional purposes in Nigeria, male teachers are more computer literate and utilize ICTs for instructional purposes than their female counterparts. However, current trends and technological advancements have seen an uptake of equal parity in male and female use of technological devices. A change gradually being felt even across the education sector.

Ozad and Kutoglu (2010) reported that respondents have positive attitude towards the use Internet facilities that include search engines. Franciszkowicz (2008) argues that visual media is critical in courses where there are multiple steps that go into problem solving. Videos can be used to provide framework for students through problems by modelling expert problem solving strategies. The key to the achievement of this strategy is that students take responsibility for their own learning. This could be perceived as both an advantage and challenges. ICT offers the opportunity for access to up-to-date research reports and knowledge globally which can be accessed through proper utilization of different search engines (Nwokedi & Nwokedi, 2017). Advantages of this approach include an increase in opportunities for interaction between students and teachers, a shift in the responsibility for learning onto the students, the freedom to prepare for the class at a time that suits them, the opportunity to revise the material and as many times as required, the ability to readily record learning resources, collaborative working between students, an increase in student engagement and a shift from passive listening to active learning.

Bishop, (2013) defined Flipped Classroom as the restructuring of the classroom environment and activities at home. Possible challenges include the need to invest time and resources to develop such courses, possible need for technological investment and time for both teachers and students to acquire and adapt to the new skills required for this more active and self-directed approach to learning. Conferring to Bergmann and Sams, (2012), implementing a Flipped Classroom, the lecturer no longer must lecture for two hours while students take notes, they can fully utilize class time for discussion and problem solving with students. However, none of these studies known to the researcher focused on attitude of undergraduate students towards the use of flipped learning in South West, Nigeria which this study therefore seeks to determine.

2. Method

This chapter presents the methodology adopted in the study. They include: Research Design, Sampling and sampling techniques, Instrumentation, procedure for data gathering, Data analysis techniques.

2.1. Research Design

A cross-sectional survey type was adopted in this study. A researcher designed questionnaire was used to collect information on attitude of undergraduate students towards the use of Flipped classroom for learning in South-west, Nigeria.

2.2. Sample and Sampling Techniques

The study investigated the attitude of undergraduate students on the utilization of Flipped classroom for learning in South-west, Nigeria. The study covered federal, state, and private owned universities that are located in the South-west geopolitical zones of Nigeria. One thousand, eight hundred undergraduate students were randomly selected across the universities.

2.3. Research Instrument

The research instrument employed to collect the relevant data for this study was a researcher-designed questionnaire. The questionnaire was structured in order to help draw appropriate responses from the respondents. In building questionnaire items, the instructions were clear and unambiguous. The questionnaire was divided into two sections. Section A focused on respondents' bio data, section B provided questions on undergraduate students' attitude toward the use of flipped classroom for learning. Respondents ticked (√) as appropriate for their response, and fill in blank spaces to provide suitable answers where applicable.

2.4. Data analysis techniques

The analysis and interpretation of data obtained through the questionnaire was done using descriptive and inferential statistics. Frequency, mean and percentage was used to analyze the responses to the research questions given. Hypothesis 1 was tested using t-test while hypothesis 2 was tested using Analysis of variance (ANOVA). The analyses was done using SPSS 23 at 95% confidence interval and 0.05 level of significance.

3. Result and Discussion

3.1. Demographic Data

Table 1. Distribution Based on Gender

Gender	Frequency	Percent	Cumulative Percent
Male	906	56.03	56.03
Female	711	43.97	100.0
Total	1617	100.0	

As shown in table 1, male respondents formed the highest with 906 (56.03%) while their female counterpart were 711 (43.97%).

Table 2. Distribution based on school ownership

School Ownership	Frequency	Percent	Cumulative Percent
Federal	843	52.1	52.1
State	501	40.0	92.1
Private	273	16.9	100.0
Total	1617	100.0	

Table 2 revealed that 843 (52.1%) of the respondents were from federal institutions, 501 (40.0%) from state owned universities while 273 (16.9%) from private owned Universities.

Table 3. Attitude towards the use of Flipped classroom

S/N	Attitude	Mean	Std. Deviation
1.	Flipped classroom are not very relevant in the teaching and learning process	2.35	.883
2.	I am not interested in using flipped classroom.	2.33	.930
3.	Flipped classroom is not designed for learning but entertainment.	2.58	.737
4.	Adopting flipped classroom will not in any way increase students' academic performances.	2.38	1.008
5.	Flipped classroom is not as important as people think.	2.47	.875
6.	Flipped learning attracts interest with its pleasant experience.	3.31	.906
7.	I will not adopt flipped classroom even if I am advised or encouraged to use it.	2.42	.868
8.	The use of flipped will reduce participation in class and encourage absent from class lectures	2.22	.850
9.	Flipped classroom encourages laziness and non-challant behavior	2.43	.831
10.	It should not be integrated into the school curriculum	2.24	.773
	Grand Mean	**2.41**	

Table 3 investigated the attitude of undergraduate students to use flipped classroom for learning. The grand mean score was 2.41. Using a benchmark of 2.50, it can be concluded that undergraduate students had good attitude towards the use of flipped classroom for learning.

Table 4. T-test on Male and Female Students' Perception to use flipped classroom.

Gender	No	X	SD	df	t	Sig. (2-tailed)	Remarks
Male	906	2.87	0.79	1615	1.35	0.99	Not Rejected
Female	711	2.99	0.87				
Total	1617						

It was revealed in table 4 that t (1615) = 1.35, p > .05. That is, the result of the t value of 1.35 resulting in .99 significance value was greater than .05 alpha value. Hence, the null hypothesis, there is no significant difference between male and female students' attitude towards the use of Flipped classroom for Learning was not rejected. This implies that both male and female students have good attitude to use flipped classroom for learning.

Table 5. Analysis of Variance on attitude by school ownership.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Remarks
Corrected Model	5.009[a]	2	1.252	3.537	.034	Rejected
Intercept	215.691	1	215.691	609.281	.000	
School ownership	5.009	2	1.252	3.537	.034	
Error	99.477	1615	2.54			
Total	1613.400	1617				
Corrected Total	104.485	1616				

a. R Squared = .048 (Adjusted R Squared = .034)

Table 5 showed that there was significant difference between the attitude of federal, state and private undergraduate students towards the use of flipped classroom for learning, F (1616) = 2.54, p = .034. That is, the significance value (.034) was found to be lower than the alpha value (0.05). Therefore, the null hypothesis which states that there is no significant difference undergraduate students' attitude towards the use of Flipped classroom for Learning based on school ownership was rejected. Thus, the attitude of undergraduate students towards the use of Flipped classroom for Learning based on school ownership. The direction of this difference is displayed in table 6 with scheffe post hoc analysis.

Table 6: Scheffe Post Hoc Results on Influence of School Ownership on Students Attitude

(I) School Ownership	(J) School Ownership	Mean Difference (I-J)	Sig.	95% Confidence Interval	
				Lower Bound	Upper Bound
Federal	State	-.0300	.954	-.2694	.2094
	Private	.3644*	.000	.1514	.5775
State	Federal	.0300	.954	-.2094	.2694
	Private	.3944*	.000	.1501	.6388
Private	Federal	-.3644*	.000	-.5775	-.1514
	State	-.3944*	.000	-.6388	-.1501

The post-hoc analysis which shows the direction of the differences on undergraduate students' attitude towards using Flipped classroom for Learning based on school ownership is as shown in table 6. It indicated that there was difference between the attitude of federal undergraduate students and private undergraduate students' attitude towards using Flipped classroom for Learning. The result further established that there was difference between the attitude of state undergraduate students and private undergraduate students' attitude towards using Flipped classroom for learning.

3.2. Discussion

Undergraduate students have good attitude toward the use of Flipped classroom for Learning. This support the Findings of Adegbija, Fakomogbon, and Adebayo (2013) who stated that emerging technologies have enhanced extensively the prospects that promote the learning process in ways which are not obtainable before now. Also, Kendra (2015) established that attitude represents a summary evaluation of a psychological attributes and it can be described both internally and externally in dimensions such as good-bad, likeable-dislikeable, harmful-beneficial, pleasant-unpleasant. Ogunlade, Adeyanju and Fakorede (2015) reported that over 80% of the respondents had positive attitudes towards the use of internet facilities. Similarly, Oladimeji, et al. (2017)[62] reported that colleges of education lectures have positive attitudes towards ICTs. In addition, Almaraheh, Majdalawi and Mohammed (2016) reported that respondents have positive attitudes towards Internet and the respondents preferred social media websites followed by Google search engine. However, Olajede (2016) reported that some lecturers of have negative attitudes towards the use of ICT resources.

There was no significant difference between male and female undergraduate students' attitude towards the use of Flipped classroom for Learning. Onojah, Olumorin, Adegbija and Babalola (2019) established that there was no significant difference between undergraduate students' perception towards the ease of use of flipped classroom for learning based on gender. Van Braak (2001) proposes that female students exude lower confidence or knowledge ability than males about using computers. However, Halder, Halder and Guha (2015) deduced that the use of electronic media for teaching and learning process varies according to gender. Herath and Hewagamage, (2015) reported that there was no significant differences on overall ICTs usage of the academic staff based on gender. On the other hand, Rajasekhar, Veena and Kumar (2018)64 reported that there was significant difference on the preferred accessed of website among respondents based on gender.

There was significant difference between undergraduate students' attitude to use Flipped classroom for Learning based on school ownership. Franciszkowicz (2008) argues that visual media is critical in courses where there are multiple steps that go into problem solving. This study investigated the attitude of undergraduate students towards the use of flipped classroom for learning in southwest, Nigeria. The findings deduced that undergraduate students have positive attitude towards the use of Flipped classroom for Learning. Thus, flipped classroom could be adopted for teaching and learning. This may improve learning rates and increases academic performances.

4. Conclusion

The findings established that undergraduate students have a positive attitude towards the use of the flipped classroom for learning. It was then recommended that stakeholders in education should procure the necessary equipment for the flipped classroom. On the bases of the findings, the following recommendations were made:

a. Learning environments in our schools should be equipped with necessary flipped classroom facilities to enhance students to learn effectively.
b. Students should be encouraged to flipped classroom learning styles in their studies.
c. Since students' have a positive attitude towards the use of the flipped classroom for learning, stakeholders in education are encouraged to procure flipped classroom environments in Universities in Nigeria.

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