

Undergraduate Students' Intention to Utilize Flipped Classroom Strategy for Learning

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ABSTRACT

This study investigated undergraduate students' intention to utilize the flipped classroom (FC) for learning, as well as the influence of gender and school ownership on its use for learning. The sample comprised of 1800 university students selected randomly crosswise the campuses in south-west in Nigeria. (of which country area of country) A fractious-segment survey kind was employed using the researcher-developed questionnaire. The research instrument was validated by six experts and pilot tested on 50 students of the University of Ilorin. The result of the reliability of the research instrument (the result of what) was 0.82 which makes the instrument highly reliable. Hypothesis one was tested employing t-test and the second hypothesis with Analysis of variance. The results via this study established that students had good intentions towards the use of FC for learning; no momentous change between male and female students' intention to the usage of FC for education; and school ownership influence students' use of FC for learning.

Introduction

Any nation that is interested in building a brighter future for its citizen must invest in the education of the people. Education is very important for economic growth, the development as well as the affluence of any nation, thus any society that wants to grow needs to invest in their educational sector judiciously. Okafor (2016) stated that education combines all the elements by which an individual develops abilities, attitudes, and other forms of behavior that help his/her existence in society. Thus, education assists an individual in minimizing his or her mental, emotional, and physical capabilities that benefit him or her and the society at large. It isn't solitary how entities turn out to be much trained partakers within social order, nonetheless is likewise an important drive towards the expansion of the usage of technologies for info and communiqué (UNESCO, 2012). Education is also described as the cornerstone for supportable expansion and also add quota toward the construction of a contemporary and blossoming civilisation (Idowu & Esere, 2013). Likewise, Education is defined by Sanni, Amosa, and Danmaigoro (2017) as the communal intermediate and progression of attainment of pertinent acquaintance, artifice, and poise for subsistence around this fluctuating ecosphere. The drastic innovation which is enchanting with information and communication technology has constructive paraphernalia on how scholars achieve their actions ere literacy and the intuitional strategy, exclusively afore the contrivance, propagation, and employment of lore including their adeptness. Tutelage correspondingly authorizes communities and residents to copiously take part afore development and opulence. Briggs, Ololube, Kpolovie, Amaele and Amanchukwu (2012) stated that in its widest sagacity, Education has been usually applauded as an instrument that takes an apropos influence ahead the concentration, charisma, or physical capability of every person.

As the world is changing rapidly, it remains indispensable for distinct to exhibit the ability in having entree so forth also utilize information and communication technology yonder CPU literateness in attaining industrial fitness aimed at efficacious incorporation of expertise addicted to the schoolroom in other to foster pupils to partake nigh developmental progression in this epoch of speedy transformation. Technology can best be described as the tool which assists in supporting the process of instruction and advance eminence of edification and training (Ekpo, 2017). Adoption of variations of methods in the teaching and learning process is nowadays highly demanded in many parts of the world. ICTs have affected Education and this mirrored in research, teaching, and learning of persons (Yusuf, 2005). Ogunlade (2015) further described ICTs as technological devices that are used by both the teacher and the students for instruction. Similarly, the knowledge and skills acquired concerning ICT provided teachers and students the opportunity for new passion and application of modern techniques of data gathering and research in their

respective disciplines. Onuma (2007) distinguished that the application of ICT in instruction emphasizes on automated cohort, stowing, repossession, exploitation, and fortification of facts for imminent usage.

Also, Ratheeswari (2018) explained that ICT had presently influence every single facet of human life and they are also playing prominent roles in the labour environment, business, education, in addition to entertainment. ICTs are used for the evolving of learning material, creating and conveyance of presentations, research activities, managerial support, and other school activities components. Similarly, Adegbija, Fakomogbon, and Adebayo (2013) stressed that unindustrialized technologies had boosted expansively the projections that encourage the learning process in conducts which are not attainable before this day and age. In essence, technology has moved instructional delivery to a remarkable point globally. ICT refers to a computer-cantered tool adopted by individuals to meet the information processing need of an organization. ICT incorporates facilities such as radio, cinematic, TV, mainframes, ironware, and firmware, and the approaches, performs measures, notions, and ideologies that are used in the demeanour of data and dispatch events as well as imparting knowledge to the learners. Correspondingly, the role which ICT played involve the revolution mediator on the process of learning, and also wedged on the apartment of the 'how', 'the when' and 'the where' to achieve learning, and also improve the education' eminence, in addition, to enhancing the administration of education (Kaur,2015). ICT is referred to as every forms of automated schemes which can be applied for the purpose of dissemination, telecommunications, entirely kinds of communication via computer-intermediated which can also be applied in making the instructional delivery and discharge further active (Bridget & Comfort, 2016).

Disposition traits and several other inner variables have been instituted to influence the use of technology as well as cluster functioning and effectiveness (Kounenoua, Roussosb, Yotsidic, Tountopoulou, 2015). Such a variable could be an intention to use ICT for learning. The intention is a psychological state that epitomizes a pledge to carrying out an action or action in the forthcoming days. Some studies on the attitude of teachers in training towards and theories about the use of ICT in the classroom settings have yielded inconsistent findings on the protagonist of attitudes on the intention of teachers to incorporate ICT. Charles, Buabeng-Andoh, Yaokumah, and Tarhini (2019) stated that in studies on technology acceptance, together model of technology reception as well as the reasoned action theory had remained extensively espoused towards investigating the influences which inspire users' commitment to utilize technology and established that extrapolative forte on behavioural goal between the three replicas does not differ expressively. Kounenoua, Roussosb, Yotsidic, and Tountopoulou (2015) stated that the intent towards the integration of ICT

into teaching activities entails a self-motivated process linking teachers' cognitive attributes (that is, competence and self-efficacy in the use of ICT, attitudes, beliefs), but then again also expert and personal variables as well

The aforementioned built on Web 2.0 predominantly by the internet. Studies have stressed the usefulness of the internet as very imperative in flip usage. For example, it was stated that it is difficult in the forecast of the means at which newly dispersed, egalitarian zed energetic could modify the flora of what means and which way persons are truly erudition (Mindflash, 2016). Although, several means by which learning with technologies could be modified and edified existed but there is a necessity to apply and embrace the internet in learning smoothing and had fetched around notion of the flipped studying. The society which people dwell is such which grips miscellaneous, worldwide, cardinal, and hyper textual acquaintance as purported by Flores, Del-Acro, and Silva (2016). It is never too late to start and that is the reason why most societies are now introducing technologies in all sectors including the educational settings because soonest teachers who refuse to embrace technologies will be drastically replaced by teachers who did. The deep-seated transformation afore method, by which information is opened and diffused, is attributed to the internet in addition to the digital world. Even though, Siemens (2005) opined that knowledge has terminated to be an interior and discrete commotion, this had made it developed an bustle completed cooperatively, with the operational embodiment (Siemens, 2005).

The flipped classroom is described as an educational stratagem that affords an innovative organization and means and strategy for the teaching and learning, with one-to-one collaboration and additional obliging and concerted involvement in the progression of teaching and this can advance and inspire communal collaboration, solidarity and artistic assortment amidst learners (Onojah, Olumorin, Adegbija & Babalola, 2019). A Flipped Classroom is an instructional tactic which delivers a novel organization as well as modality for the process of instruction and learning. The characters of learners acquired a conforming alteration beginning with the reflexive partakers to the constructive contributors nonetheless yet to be incorporated by the instructors. Lone, Ahmed, and Bashrat (2018) conducted a study and established that the findings established that there was a substantial difference in the preferences on the use of Goggle search engine based on gender in favour of the male. In a flipped classroom, students are introduced to subject at home and then practice working through it at school. A flipped classroom is an educational approach and a form of blended learning that seeks to improve student engagement and learning by having students complete readings at home and work on real-time problem-solving during class. With the flipped classroom strategy, teachers prepare the instruction which students use both in school and at home. It is such a continuous learning style whereby efficiency is achievable. For student, they are the

subject in the process and only opt out after their learning is successful.

Statement of the Problem

The continuous usage of emerging learning pedagogical is increasingly relevant and its use for learning is empirical globally. However, users' intention towards the use of such emerging technologies could mar or make its adoption of high relevance. Frequent research was steered on the flip in context of schoolroom instruction. For instance, the study of Lage, Platt, & Treglia, (2000) deduced that flip-flopping the classroom strongly implies that procedures have conventionally activated in the classroom now actualize on the outside of the learning room and the other way round. As deduced by Bergmann and Sams, (2012), executing the Flipped Classroom strategy, the teacher in no stretched must deliver lectures for several periods whereas learners put down transcriptions, they could copiously utilize the lecture time for dialogue and assist in resolving discrepancies with the learners. Long (2014) established that university tutors hadn't been abundantly applying the flipped learning scheme but it is possible for the situation to have changed since this is several years ago. Bishop, (2013), also defined Flipped Classroom as the reformation of the classroom atmosphere and activities at their household. The use of technologies bargains the chance for users have antree to the current article information and information universally that could be retrieved via the appropriate consumption of diverse quest apparatuses (Nwokedi & Nwokedi, 2017).

Technological progressions have created occasions for the augmentation and or comprehensive auxiliary of the conventional learning strategy. However, the satisfactoriness and appropriateness of these substitutes have remained prickly issues and only the boldest and the most copious institutions have so much as ventured to discuss let alone trying to integrate them into their curricular. Additionally, Franciszkowicz (2008) argued that visual media is serious in courses where there are manifold steps that go into delinquent solving. Videos for instance can be used to offer the basis for students through problems by exhibiting expert problem-solving approaches. The key to the accomplishment of this strategy is that students take accountability for their peculiar learning. This could either be perceived as both a gain and demerits. However, none of these studies available to the researchers had been conducted on undergraduate students' intention to the utilization of the flipped learning in Nigeria and this is what the research thus intends to investigate. Student's adoption of flipped classroom is contingent on several factors, these factors directly and inversely influences its utilization. One of those variables is the intention on the usage of the technologies.

Research Questions

1. Do undergraduate students have the intention of using a Flipped classroom approach for Learning?

2. Do the undergraduate students differ in their intention towards using a flipped classroom for learning across gender group?
3. What is the impact of university sector on undergraduate students' intention to use flipped classrooms for their Learning?

Research Hypotheses

Ho1: There is no significant difference between male and female undergraduate students' intention about using the flipped classrooms for learning.

Ho2: There is no significant difference among undergraduate students intention about using flipped classrooms weather they belong to public, state or private sector University.

Literature Review/Theoretical Frameworks

Researchers have explained flip in diverse words. For example, Advance (2018) defined the flipped learning as a didactic tactic through which the unadventurous concept of learning relayed in the classroom can be overturned, such that learners have acquainted with instructional media beforehand the class, per classroom period than utilized to excavate comprehension by dialogue with their aristocracies and the problem-correction goings-on facilitated by teachers. In same, Honeycutt and Garrett (2014) described flipped classrooms as poignant from a teacher-centered atmosphere to a learner-centered environment. This may be described as the shift from distinct to concerted policies. Under the flipped classroom strategy, the delivery of content could yield an assortment of arrangements because cinematic trainings arranged by the facilitators or third parties are used to distribute content (Onojah, Olumorin, Adegbija & Babalola, 2019).

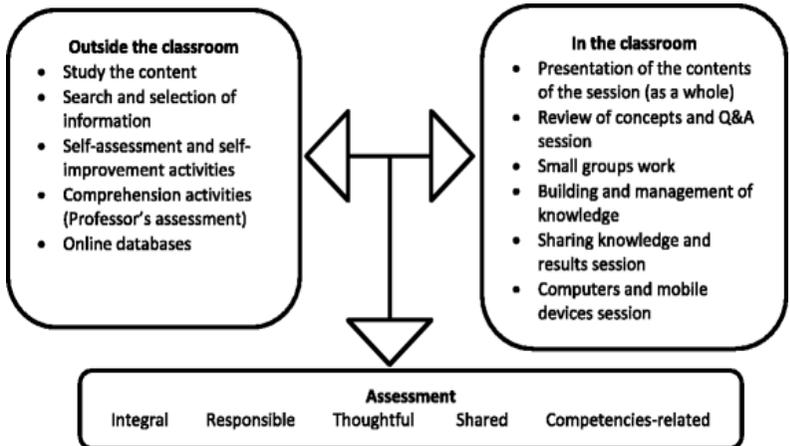
The effectiveness of flip has been looked into in the context of classroom instruction. For example, Odewumi and Yusuf (2018) conducted a study on the flipped classroom on tie and dye in Ogun state, and established that student's trained using flip did significantly better. Likewise, the findings of Rani and Muniandy, (2017) showed that learners in the flipped classroom experimental group were extremely affianced and as regards students' engagement with the flipped classroom was not much different in comparison with the moralizing classroom. Furthermore, Kenna (2014) carried a research and established that intensification in the mean score on self-efficacy with the flipped classroom but the conventional classroom declined in their mean score. Likewise, Elian and Hamaidi (2019) in their study investigated the consequence of using the flipped classroom strategy on students' academic attainment and concluded that the average score on the instructive accomplishment assessment accredited to the instructional stratagem differs significantly, in courtesy of the associates of the tentative group. Besides, Toh, Tengah, Tan, and Leong, (2017) thus ascertains the indication that the flipped classroom slant definitely acquire an optimistic influence on the recital of the learners. Thus, the flicked classroom can be well-thought-out as one of the functioning teaching and

learning tactics to be functional in the classroom atmosphere and it encourages learner-centered learning.

Flipping is much supplementary round the mentality of stroking consideration on learners' studying and readdressing away from the tutor (Toh, Tengah, Tan & Leong, 2017). Besides, educators who integrate the flipped classroom method in their classes are stretchy in their potentials of timelines of learners for the learning as well as in the duties of learners' studies. Furthermore, instructional ethos within conventional tutor-centered archetypal ordinarily makes the tutor solely as the real information' source. By distinction, the Flipped Learning model intentionally directs learning or teaching to a scholar-centered tactic, whereby during class session is devoted to the exploration of themes in larger complexity in addition to generating grounded erudition prospects. This resulted in students been vigorously tangled in acquaintance edifice as they partake and appraise studies within an evocative personal style. As extracted from the revised version of Bloom's taxonomy in (2001), learners are undertaking the lesser stages of intellectual exertion (including the acquisition of knowledge and conception) exterior the classroom settings, and concentrating on the advanced forms of the cognitive work (involving the application, analysis, synthesis, and/otherwise evaluation) within the classroom, whereby there is sustenance of their mates and trainer.

Figure 1

A flipped Classroom model



Source: Flores, Del-Acro, & Silva, (2016)

Flipped classroom model is somehow different from the traditional model in which foremost acquaintance ensues over lectures within the class, and students conforming knowledge via the assignment. The Flipped

classroom necessitates duties alteration for teachers, with guaranteed copious more tutor-student interface. In this process of instructional delivery, the teacher performed as an architect and director, providing unique reactions to specific learners, thereby making an additional concerted and supportive involvement to the procedure of teaching. The technique which is alleged to exhibit the budding to inspire learning, for the reason that pupils are vigorously affianced in the progression of instruction, besides the teacher had enough periods to interrelate with learners independently or with clustered learning strategy in small groups.

Undergraduate student as used in this study is regarded as a student studying in university and hadn't acknowledged a foremost and specifically a bachelor's degree. The capability of undergraduate students to gear and assimilate suitable flipped classroom for instructional acquisition give room for them to network wholeheartedly with others in the interior and the exterior of the classroom status quo. The intent of students to utilize the flipped classroom method could influence the utilization of the technologies which aid this strategy for learning and could improve both the teaching and learning means. This strategy catered for individual differences as the intelligent students could learn at a roll while the rest will be given another chance to complete tasks in the areas where there are difficulties.

Gender is the condition of being male or female. it implies the psychological, social, and cultural aspects of masculinity or femininity. Abdulazeez (2014) opined that gender issues have associated with the ability, skill, and competence of teachers and students to use ICT but without any definite conclusion. Gender also refers to the constructs which each society assigns to conducts, characteristics, and morals socially and culturally and are attributed to men and women (Sanda & Hashim, 2013). The distinction between teachers either male or female in the preferences and attitudes towards the use of technologies to boost teaching activities cannot be mistreated. Aremu and Fasan (2011) also revealed that females instructors are more self-confident in the utilization of ICT than male as established from the study in 2011, while Bian and Rice (2014) harangued in their study that gender does affect the students' attitudes to adoption of technology, the study further deduced that most of the females did not have strong perception towards the use of computers as being difficult for them. In addition, Leysens, Roux, and Parry (2016) reported that there remained no weighty change amongst masculine and feminine respondents when they utilize ICT for learning.

Information and communication technology in the field of education encompasses all modern-day cardinal tackles like computers, fittings, as well as the internet which is capable of been utilized in education to achieve its aim (Abdulrahman & Soetan, 2017). Although the integration of the flipped classroom is a welcomed development but the conservational situations that impose the exploitation of these technologies and its strategy

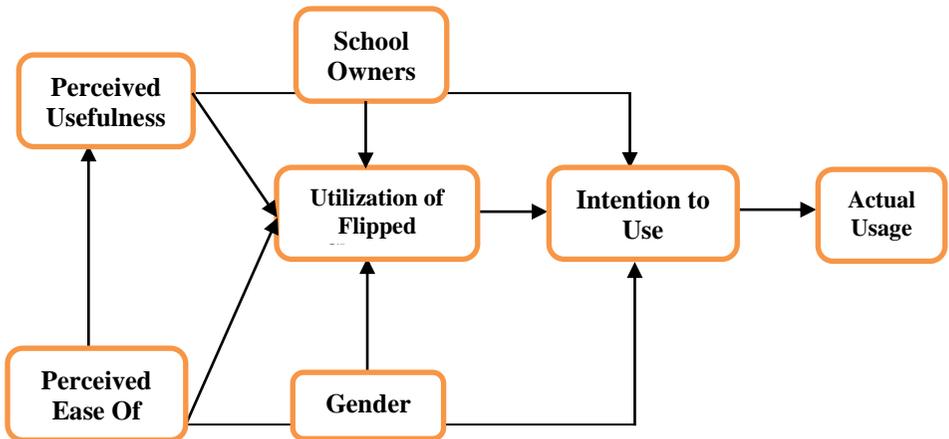
nevertheless could vary from one school to another. The intention to use these technologies in achieving the full implementation of this approach could vary based on school ownership either privately owned or government-owned.

This study thus adopts the cognitive learning theory as it will allow undergraduate students to source and transformed knowledge through the application of the flipped classroom strategy. Besides is the technology acceptance model.

The Technology Acceptance Model (TAM) has been described as a protuberant theory which pursues to explore the qualities which affect the adoption of technology. Also imperative to the TAM is the intention that can as well be applied in the fore see and envisage the keenness and enthusiasm to accomplish behavior with the complement of several skills. Thakur (2013) discussed some issues which affect user’ intention to espouse the exploitation of mobile imbursement structures and discovered that “performance expectancy, effort expectancy, social influence is facilitating conditions in the e-finance and mobile finance context. For this research, the TAM has been adopted as shown in figure 2. The reason why the study originally adopted TAM is that the flipped classroom strategy has not been much used by undergraduates in Nigeria.

Figure 2

Adapted Technology Acceptance Model from Davis (1986)



The proposed model displayed in figure 2 integrates Technology Acceptance Model (TAM) with Gender, School ownership, Utilization, Perceived ease of use, perceived usefulness, and intention to Use. Perceived

ease of use is described as the degree to which undergraduate students believe that using a flipped classroom would be free of effort” which is the usage of the flipped classroom technique would be unrestricted by neither the physical nor the mental exertion. Perceived ease of use is designated as the gradation through which undergraduate students have confidence in that exploiting the flipped classroom technology strategy is unrestricted from the bodily and rational struggle. The Ease of use is user’s dint of the degree of prerequisite desirable for the usage of technology or the notch to which a handler agrees to take that operating an explicit modernization will be unproblematic and plane. Perceived usefulness is regarded as the degree through which undergraduate students have faith in that consuming the flipped classroom strategy could increase task recital. The intention is regarded as that which could as well be castoff to foresee and forecast the willingness and drive to achieve the behaviour and many skills and is influenced by human attitude, social influence, and perceived behavior. The Technology acceptance model makes presentable a laconic process to prototypical the gender, school ownership, and intention of undergraduate students in the direction of the utilization of a Flipped classroom strategy and the actual usage of the technology.

Methods

The method segment defines the approaches and procedures that the researchers used to carry out the study. This was debated beneath the subsequent sub-headings: research strategy, site, and participants, Data collection and analysis. The purpose, content, and usage of data collection tools were also explained and justified.

Research Design, Site, and Participants

The type of research design adopted in this study is a cross-sectional research form. A researcher developed questionnaire employed in the assemblage of information on the intention of undergraduate scholars to utilize the strategy. The population for this study comprised all undergraduate students in the South western region of Nigeria. The target population comprised undergraduate students from 15 universities from different states in South western region of Nigeria. The sample for the study comprised the federal, the state, as well as the privately- possessed universities which were all situated in Nigeria. These comprised undergraduate students from six federal government maintained campuses, 5 state government preserved universities, and 4 Cloistered possessed universities in the Southwest region of Nigeria. And 1800 undergraduate students were erratically carefully chosen athwart the universities. The sample was selected through a multistage sampling procedure. Purposive specimen procedure were cast-off to hand-picked the universities because there were six federal possessed universities in South west each representing

a state which comprised Lagos state, Ogun state, Oyo State, Ekiti State, Ondo State, and Osun State; only five state-owned universities were available and accessible as at the time of this study and four privately owned university were sampled for the research. Furthermore, proportionate selection method was used to allocate respondents to each of the universities and accidental sampling techniques were employed to administer the research tool.

The study tool hired in accumulating the pertinent information for this research which was the questionnaire was designed in assisting to induce suitable rejoinders as of sampled students. The questionnaire was developed by the researchers to have different sections. In the developmental process of the items of the questionnaire, the directives were indistinct and explicit. It comprised of two different sections. While the first section engrossed on the demographic information of the respondents of Name of Institution, Gender, and School Proprietorship of the respondents. They were given the chance to tick as applicable and also fill in the gap as suitable. Section B provided questions on undergraduate students' intention toward exploiting the flipped classroom strategy for learning. The four Likert modes of response of Strongly Agree, Agree, Disagree, and strongly disagree was adopted for the second section in which respondents are required to tick against each statement as suitable answers where applicable.

The manuscript instruments were validated by means of six experts for face and content validity. The experts validated the content in accordance of measuring what it purports to measurer. Their suggestions, amendments, and criticism were effected and used to produce the concluding flow of the research tool. The questionnaire contents were subjected to the reliability process. This was achieved via pilot testing with administering the research instrument on 50 students of the university of Ilorin undergraduate students who are not fragment of the experimented respondents for the real study. However, out of the 50 copies of questionnaires, 47 were properly filled and returned and were thus subjected to reliability using Cronbach's alpha statistical tool. The result was 0.82 which makes the instrument highly reliable.

Data Collection and Analyses

The researchers took an introductory letter to each of the universities, to pursue approval from the appropriate establishments in the sampled universities. After the permission was granted, each of the researchers visited the universities to administer the questionnaire to the respondents. Ethical issues were considered as none of the respondents was coerced to attest to the research instrument and their anonymity was kept confidential. The determination of the research study was explicated to the respondents. Analysis and construal of the raw data attained through the feedback forms were finished with the expressive and inferential statistics.

While the research questions were analysed through the statistical tool of the frequency count, proportion and average, independent t-test was adopted in testing hypothesis one and Analysis of variance (ANOVA) was employed to test hypothesis two. All these analyses were completed by the SPSS 25 at a confidence intermission of 95% combined with the significance' level of 0.05.

Findings

The findings established from the study per the study' aim are presented systematically. Also, the findings are accompanied by relevant tables and figures respectively.

Demographic data

Table 1

Dispersal Constructed on Respondents' Gender

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

Table one revealed regarding the demographic of students gender that, with 906 (56.03%) of the entire respondents are male whereas 711 (43.97%) represented the female counterparts in the study.

Table 2

Circulation of Respondents Grounded on School Proprietorship

| School Proprietorship | 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 | |

The distribution of respondents in the study as shown in the table two indicated that 843 with percentage of 52.1% of the entire population represents respondents from federal institutions, the respondents of the state-owned universities sampled in this study were 501 (40.0%) while 273 with 16.9% hailed from the private owned universities.

Research Question One: Do undergraduate students have the intention of using a Flipped classroom approach for Learning?

Table 3
Intention to Use the Flipped Classroom

| Sr. No. | Intention to use FC | Mean | SD |
|---------|--|-------------|-------|
| 1. | The flipped classroom will be my best choice ahead of another learning style | 2.23 | .883 |
| 2. | I will like to adopt a flipped classroom often and even in the future. | 2.79 | .930 |
| 3. | I cannot use the flipped classroom. Therefore, I will rather use another method than flipped classroom | 2.31 | .737 |
| 4. | I will always prefer the traditional learning style to the flipped classroom. | 2.89 | 1.008 |
| 5. | Nothing will convince me to use the flipped classroom. | 1.91 | .875 |
| 6. | It has increased my reasoning ability | 2.83 | .906 |
| 7. | I intend to use flipped classroom but the cost and electric power source are my hindrances. | 2.78 | .868 |
| 8. | My wish is on no occasion had whatsoever to organize with a flipped classroom. | 3.22 | .850 |
| 9. | It will take time before I adjust to the flipped classroom, hence I don't want to adopt it | 2.94 | .831 |
| 10. | Use of flipped classroom will reduce productivity level | 2.80 | .773 |
| | Grand Mean | 2.57 | |

Table 3 investigated respondents' intention to exploit the flipped classroom for their knowledge acquisition. Please note that the items with negative statements were coded in reverse during the analysis, this is to allow the negative items to be cordial with the other items and not in any way affect the analysis. Most undergraduate students will like to adopt flipped classroom often and even in the future with a mean score of 2.79. Also, undergraduate students intend to use flipped classroom but they think cost and electric power source are their hindrances towards the utilization if FC is introduced. The grand mean of 2.57 which was greater than the benchmark of 2.50 (since it was a 4likert scale response mode) justified that undergraduate students had good intentions to explore flipped classrooms for learning.

Hypotheses Testing

Ho1: There is no significant difference between male and female undergraduate students' intention about using the flipped classrooms for learning.

Hypothesis one investigated the momentous differences among the male and female undergraduate pupils' intention to utilize the Flipped classroom for Learning, thus autonomous t-test was used for the investigation to determine whether gender influence undergraduates' intent towards using the flipped classroom for learning or not.

Table 4

Comparison between Male and Female Students' Intention to Employ the Flipped Classroom

| Gender | N | M | SD | df | t | p | Remarks |
|--------|------|------|-----|------|------|-----|--------------|
| Male | 906 | 2.45 | .66 | 1615 | 1.33 | .55 | Not Rejected |
| Female | 711 | 2.56 | .73 | | | | |
| Total | 1617 | | | | | | |

As indicated from the result in table 4 that $t(1615) = 1.33$, $p > .05$. This is because the t-value result of 1.33 that ensue within 0.55 values of significance was superior to .05 alpha values. Thus, the insignificant hypothesis, which states that male and female students' intention to apply the Flipped classroom for Learning was not weightily different. The implication of this simply means that both the masculine and feminine undergraduate students intend to use a flipped classroom for learning if introduced in the learning process.

Ho2: There is no significant difference among university undergraduate students intention about using flipped classrooms weather they are adopted under university ownership or not.

Table 5
Analysis of Variance on the Intention by School Ownership

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. | Remarks |
|------------------|-------------------------|------|-------------|---------|-------|----------|
| Corrected Model | 5.542 ^a | 2 | 1.771 | 4.322 | .043 | Rejected |
| Intercept | 215.926 | 1 | 215.926 | 509.281 | <.001 | |
| School ownership | 5.542 | 2 | 1.771 | 2.322 | .043 | |
| Error | 99.477 | 1615 | 1.23 | | | |
| Total | 1613.400 | 1617 | | | | |
| Corrected Total | 104.485 | 1616 | | | | |

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

Table 5 showed that there was a significant change amidst the intention of federal state and private undergraduate students to adopt the flipped classroom for knowledge, $F(1616) = 1.23$, $p = .043$. That is, the significance value (.043) was instituted to be lesser than the 0.05 alpha value. Therefore, the null proposition which states that there was no significant alteration between the intentions of scholars in the university towards exploring the Flipped classroom based on school ownership was rejected.

Table 6

Scheffe Post Hoc Analysis on Intention based on Ownership

| (I) School Ownership | (J) School Ownership | Mean Diff.(I-J) | SE | Sig. | 95% CI | |
|----------------------|----------------------|-----------------|------|------|--------|------|
| | | | | | LB | UB |
| Federal | State | -0.63 | 0.41 | 0.36 | -1.83 | 0.58 |
| | Private | -1.50 | 0.52 | 0.05 | -3.02 | 0.02 |
| State | Federal | 0.63 | 0.41 | 0.36 | -0.58 | 1.83 |
| | Private | -0.88 | 0.55 | 0.33 | -2.49 | 0.74 |
| Private | Federal | 1.50 | 0.52 | 0.05 | -0.02 | 3.02 |
| | State | 0.88 | 0.55 | 0.33 | -0.74 | 2.49 |

Based on observed means.

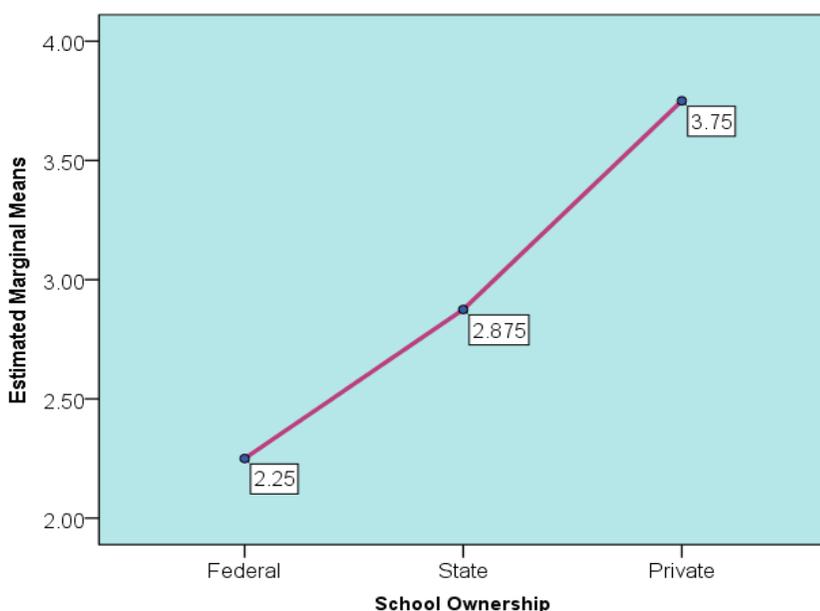
The error term is Mean Square (Error) = .410.

In table 5 and 6 a few numbers are shown but not interpreted with reference to the study question.

The post-hoc analysis which displayed the track of the variances in undergraduate students' intention towards using a Flipped classroom for Learning based on school ownership is as shown in table 6. It specified that there exist an alteration amidst the intention of federal undergraduate students and private undergraduate students' intention towards using the Flipped classroom for Learning with pvalue of 0.054. This is further indicated in figure 3.

Figure 3

Predictable Marginal Averages on Intention based on School Ownership



As shown in figure three on the predicted marginal means on undergraduate students' intention towards the usage of the flipped classroom for learning based on their institution ownership. It indicated that undergraduate students from private institutions had the intent to utilize flipped classrooms for learning the most than their counterparts from state and federal institutions respectively.

Discussion

This study established that Undergraduate students had good intentions toward the application of the flipped classroom strategy for Learning. This corroborates the findings of Onojah, Olumorin, Adegbiya, and Babalola (2019) who deduced that the perception of students studying in the university on the flipped classrooms was that it is to useful and easy to

practice for learning. Anything that is easy to operate will attract all form of users which will in turn influence its adoption. In addition, the findings of Abu-Dalbouh (2013) substantiate this and stated that the attitude of students towards the usage of technology governs the type of willingness to the exploitation of an exact technology whereas an entities' purpose to utilize technology governs the real convention. Positive attitude brings positive attraction and perception likewise negative attitude influences negative attraction and perception. Furthermore, Vangie (2017) stated that students use mobile application and tools to complete and upload assignment to teachers, download course instruction and work in online social groups to complete tasks. Their intention to use these technologies could rely on how they perceive it's easy to use as well as its perception on usefulness. Suki & Suki (2011) detected that the two definite beliefs of perceived usefulness and perceived ease of use to a large extent have direct links to the attitudes that determine the use of technology. Similarly, Manea (2012) opined that students use their mobile technologies in a variety of educational activities such as taking classroom notes, writing papers, using calendars to keep track of their work, solving mathematical problems, and staying in touch with classmates. Thus, the flipped classroom strategy is relevant at all levels irrespective of students' background or teachers' academic level. Alzaza & Yaakub (2011) noted that awareness of infrastructure is required to implement technological learning services and the use of modern technologies such as the flipped technologies considerably influences effective teaching and learning.

It was also deduced from this study that there exist no important difference between boys and girls undergraduate students' intention to use the Flipped classroom for Learning. This supports the finding of Leysens, Roux, and Parry (2016) gender did not significantly influence respondents' application of ICT for instruction. This established that the use of technologies in the learning process is of no gender lacuna and adequately employed by both the male and the female learners. In the same vein, Ogunlade, Fagbola, and Aмоса (2015) testified that there was no noteworthy difference between male and female respondents in the usage of internet amenities. The use of internet is available and attracted to all users because it made learning faster as well as encouraged self or paced learning where learners could study at their own scheduled period for convenience. But, Sarwar & Soomro (2013) opined that mobile technologies distract classes, promote cheating, and increase bullying between students through the Internet, which may affect the victims' focus in their studies. Although some of this are factual but we cannot shy away from the usefulness of the technologies to enhance learning. Information and communication technology can be described as technologies that facilitate communication processing as well as transmission of information by electronic means, such as: radio, television, telephone, computer, CD-ROM and the internet (Bakac & Akbay, 2011).

The Technology Acceptance Model (TAM) is an expansion of Ajzen & Fishbein's Theory of Reasoned Action (TRA) (Priyanka & Kumar, 2013) has gone through several modifications and validation. It is beyond just designing a peculiar technology for students' learning but are they ready to accept or welcome the innovation for the purpose it was designed for.

Moreover, this study indicated that significant variation occurred amidst undergraduate students' intention in adopting the Flipped classroom for Learning based on school ownership in favor of the privately-owned universities. Odewumi and Yusuf (2018) established that the flipped classroom can be used by junior secondary school students on tie and dye irrespective of their school ownership. Even though, some set of gender could perform better than the other but the defenses may not be substantial. In the opinion of Marangunic & Granic (2015), the relentless enhancement and advancement in technology, exclusively ICT related applications, makes the prime to choose on stocks of acceptance and denunciation an impasse. Every-day comes with its own innovation and this is responsible for diverse upgrade in the realm of technological advancement. Studies by Taylor (2013) also found that the majority of e-book readers preferred smart-phones as reading platforms. In terms of students' interest in using flipped technologies in academic activities, Paterson & Low (2011) stated that University students were interested in using their mobile technologies to access library services such as maps of the library's floors and locations of facilities such as shelves. Their interest in the attraction to smart phones could be grounded on some factors like portability, durability, attractive, interest arousal among others. Garg & Garg (2013) stated that in formulating perceptions regarding new technologies, subjective and social norms influence consumers as well as perceptions of the quality of service.

Conclusion and Recommendations/Implications

This research explored the intention of undergraduate students in applying the flipped classroom for learning in the southwest, Nigeria. Technologies cannot take the place of teachers but students who facilitate their learning with technologies could perform better than their counterparts. The findings deduced that undergraduate students had good intentions to use the flipped classroom for Learning irrespective of their gender. The findings of this study have great implications on instructional methods, strategies, techniques, and approaches of the instruction and studying across universities situated in Nigeria. If the flipped classroom strategy could be adopted by undergraduate students, effective learning is guaranteed, and academic performance would be enhanced across all gender and school ownership. This is because; the findings have exposed some of the implications of conventional instructional patterns and unveiling that undergraduate students can learn either individually or cooperatively through striking utilization of the flipped classroom strategy. However, the

following limitations can be drawn from the research, the manuscript was conducted within South-west and the findings may not be generalized to other geo-political zones in Nigeria and other countries in Africa and other continents. Also, the respondents comprised undergraduate students, this may not bound the simplification of the discoveries to postgraduate students, secondary school students, and university lecturers.

The following recommendations were made regarding this study. Concerning the findings, the succeeding endorsements were completed:

1. Syllabus developers should assist in designing strong minimum standards that support the integration of flipped classroom strategy into the learning process.
2. Seminars, workshops, and other Programmes should be organized to increase awareness on flipped classroom;
3. Students especially those in the federal owned universities ought to be reinvigorated to use the flipped classroom erudition style in their studies..
4. Meanwhile scholars had good intentions to use the flipped classroom for learning, school administrators should make an effort to encourage undergraduate students to exploit a flipped classroom for the purpose of instruction.

For further studies, the followings areas are suggested: the study should be replicated in other Universities in other regions in Nigeria to confirm or reject the current findings of this research. Lecturers' perception of the adoption of the flipped classroom for instructional strategy at different levels of education should be investigated by future researchers. Further studies should also focus on students of colleges of education in Nigeria.

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