

Effects of Flipped Classroom Method of Teaching on Academic Performance of Business Education Student in Financial Accounting in Universities, Nigeria

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Abstract: The study investigated into the effects of flipped classroom method on students' achievement in financial accounting in Universities in Nigeria. Three research questions and two null hypotheses were developed to guide the study. The study adopted quasi-experimental design. The population for the study was one thousand and fifty-seven (1057) business education students in accounting option in the ten (10) federal universities in Nigeria offering business education programme. The sample size for the study was one hundred and eighty-seven (187) financial accounting students in business education with accounting option from the randomly sampled Universities: Ahmadu Bello University, Zaria, and University of Benin, Benin-City. The instrument for data collection was 40-multiple choice Financial Accounting Achievement Test (FAAT). The instrument was validated by three experts and the reliability was tested using Cronbach's Alpha Reliability method in which a coefficient of 0.75 was obtained. Data collected were analysed using mean and standard deviation for answering the research questions while t-test statistics was used for testing the hypothesis at 0.05 level of significance. Based on data analyzed, the study found that students taught financial accounting with flipped classroom method had significantly higher mean achievement score than the control group that were taught with conventional lecture method. The study also found that gender of the students had no significant interaction effects with the treatment given to them. Based on these findings, the study among others recommended that accounting educators should use flipped classroom method of teaching to encourage students' participation in active learning and hence improve their performance and that seminars and workshops should be organized to retrain the lecturers on the use of flipped classroom instruction to enhance students' achievement.

Keywords: Flipped Classroom Instruction, Conventional Teaching, Achievement, Financial Accounting, Gender

Introduction

Many researches have been carried out on the appropriate teaching method to be used in teaching Accounting. It is widely documented in literature that most teachers use mere lecture and explanation methods (traditional or conventional) to teach skill related courses like Accounting (Unongo, 2015). It has been observed, the traditional method does not allow teachers to have the time to meet with and attend to students individually during the provided minute of the class period. If students have questions, there won't be much time to linger. The is because the class cannot fall behind schedule. There is a lot of material to cover before the test at the end of the unit. All this may be one of the reasons why performance of Accounting students has not been encouraging. Umar (2014) reported that Financial Accounting is not a subject that can be mastered by mere memorization of the basic rules. It requires total involvement of the learner in the learning process, sound theoretical knowledge and intensive practice in application of the basic principles.

The face of higher education among the educators is changing and constantly evolving. Recently, a paradigm shift has taken place in education with the advent of a model of teaching known as the flipped classroom. Flipping the classroom is the process of replacing traditional lectures with more student-centered learning strategies, such as active learning, discussions, problem-based learning, and other forms of group work and peer instruction. Content delivery is moved outside of the classroom, for example, through videos, or pre-class readings. This paradigm

shift is occurring where learning began to be about students and their needs. Cheng & Mok, (2008) asserted that since the turn of the century, the challenges of globalization, information technology, international competition, and strong local developments have stimulated a new wave of educational reforms.

Flipped classroom model has shifted from a teacher-centered paradigm to a student-centered one. It is one where the focus of learning shifts to how students learn, create, think, and develop with the ultimate goal being lifelong learning. With the proliferation of Internet technology, virtual communications, and learning management systems, many college and university instructors are interested in a flipped classroom (Berrett, 2012). Learning of accounting is built upon a foundation of a student's prior knowledge, it is imperative that students understand the foundations before progressing in the subject. In a hierarchically-organized subject, such as accounting, failure to learn prerequisite skills actively, is likely to interfere with students' learning of later skills. This research compares the effects of flipped classroom model and traditional lecture in teaching business education student in financial Accounting in Nigerian Universities

Literature Review

Flipped Classroom Model

Flipping the classroom has become an increasingly popular approach to teaching and learning that has caught on globally, at different education levels and in a variety of subject areas to meeting the learning needs of students. According to Bergmann & Sams (2012) flipped classroom started in 2007 by two high-school chemistry teachers, Jonathan Bergmann and Aaron Sams, at a Colorado high school. After learning about the ability to use PowerPoint with voiceovers and annotations, the two teachers began recording their live lessons using screen-capture software and posting them online for their students to access

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, discussions and active learning. The students do pre reading and videos or screencasts are available for them to access whenever and wherever it is convenient at home, during study hall, on the bus, even in the hospital as many times as they like, enabling them to come to class better prepared (Musallam, 2010). The video lecture is often seen as the key ingredient in the flipped approach, such lectures being either created by the instructor and posted online or selected from an online repository. According to Berrett (2012), flipping the classroom” means that students gain first exposure to new material outside of class, usually via reading or lecture videos, and then use class time to do the harder work of assimilating knowledge, perhaps through problem-solving, discussion, or debates. If the students gained basic knowledge outside of class, then they need to spend class time to promote deeper learning.

This gives opportunity to students to learn anytime and anywhere. Their goal is to change education for the better by providing a free world-class education to anyone anywhere (Khan, 2011). Off-loading direct instruction in this way allows teachers to reconsider how to maximize individual face-to-face time with students. This new wave has shifted from a teacher-centered paradigm to a student-centered one. Cheng and Mok (2008) described this new paradigm as one where learning should be tailored to meet the needs of the individual student. It is one where the

focus of learning shifts to how to participate, learn, create, think, and develop with the ultimate goal being lifelong learning.

In a flipped model, students gain exposure first and process information second. Students move away from being passive note-takers and move toward active participation. The instructor also becomes more involved with the learning experience, as opposed to exclusively disseminating information at the front of the classroom. Time becomes available for students to collaborate with peers on projects, engage more deeply with content, practice skills, and receive feedback on their progress (Hamden, McKnight, McKnight, & Argstrom, 2013). Teachers can devote more time to coaching their students, helping them develop procedural fluency if needed, and inspiring and assisting them with challenging projects that give them greater control over their own learning. This allows an interactive teaching techniques (Crouch & Mazur 2001; Deslauriers, Schelew & Wieman, 2011). Flipping learning leaves room for achieving in-classroom goals and higher-level cognitive activities, including debates, data analysis and synthesis activities. As a result of a flipped classroom, students not only learn how to understand a material, they master it.

In the Flipped Learning model, teachers shift direct learning out of the large group learning space and move it into the individual learning space, with the help of one of several technologies. Teachers record and narrate screencasts of work they do on their computer desktops, create videos of themselves teaching, or curate video lessons from internet. The teacher's role changes from lecturer and deliverer of content to learning coach, guiding students through a series of engaging and experiential-learning activities. The focus is on learning rather than teaching and the approach has been found to increase overall interaction among students and between student and teacher (Phillips & Trainor 2014)

Academic Performance of Accounting Students

Academic achievement or performance is the learning outcome, the determination of the extent to which a student has achieved her educational goal, and which can be measured by any form of assessment technique. Kobaland and Musek (2001) defined academic performance as performance on task with measures including comprehension, quality and accuracy of answers of tests, quality and accuracy of problem solving, frequency and quantity of desired outcome, time or rate to solution, time on task, level reasoning and critical thinking, creativity, recall and retention and transfer of tasks.

Akinbola (2006) further described achievement of students as learning outcomes which include the knowledge, the skill and experiences acquired in both classroom and laboratory practices. In the same vein, Boyle and Dunleavy (2003) stated that students' achievement in learning are determined by factors such as teacher's ability, motivation, interest, meaningfulness of subject matter, methods of instruction, memory capacity of the learners and gender of the students. Accounting as a skill subject, requires total involvement of the learner in the learning process which mean that methodology to be use by the teacher become very important.

Many researchers have observed that present level of academic achievement of students of financial accounting in respect of gender calls for immediate attention. Sayel and Anwar (2004) reported that gender was a significant variable in students' performance in accounting when they assessed the importance of various factors in explaining variations in students' performance in accounting. Efforts have been made to identify, evaluate, track and encourage the progress of student's performance in school. There is, naturally, much concern by the students regarding their performance because it is believed good academic results will provide more career choices and job security. Schools are also interested in fostering good academic habits for the same reason, as well as concerns about the schools' reputation and the possibility of monetary aid from various sources which may be hinged on the overall performance of a school.

Purpose of the Study

The opening paragraph has no indentation.

The main purpose of this study was to determine the effects of Flipped Classroom Method on students' achievement in financial accounting in Universities in Nigeria. Specifically, the study investigated:

1. the effects of flipped classroom method on students' mean achievement in financial accounting;
2. the effects of gender on students' mean achievement in financial accounting; and
3. the interaction effect of treatments (flipped classroom and lecture method) and gender on students' achievement with respect to their mean scores in Financial accounting achievement test.

Research Questions

Based on the specific purposes of the study, the following research questions were answered by the study:

1. What is the mean achievement score of students exposed to flipped classroom method and those exposed to conventional (lecture) method in Financial Accounting Achievement Test (FAAT)?
2. What is the effect of gender on students' achievement in Financial Accounting Achievement Test (FAAT)?
3. What is the interaction effect of treatments (flipped classroom method and lecture method) and gender on students' achievement with respect to their mean scores in Financial Accounting Achievement Test (FAAT)?

Hypotheses

The following null hypotheses were tested at $p < 0.05$ levels of significance:

H01: There is no significant difference in the mean achievement score of students exposed to flipped classroom method and those exposed to conventional (lecture) method in Financial Accounting Achievement Test (FAAT)

H02: There is no significant difference in the mean achievement scores of male and female students exposed to flipped classroom method and those exposed to conventional (lecture) method in Financial Accounting Achievement Test (FAAT)

METHODOLOGY

The study adopted quasi-experimental design. This type of research design as applied here encompasses pre-test, post-test, and non-equivalent control group design. According to Gall, Gall and Borg (2007), quasi experimental research design permits the use of intact classes. Three research questions and two null hypotheses were developed to guide the study

The population comprises of one thousand and fifty-seven (1057) business education students in accounting option in the ten (10) federal universities in Nigeria offering business education programme. The sample comprised of one hundred and eighty-seven (187) financial accounting students in business education with accounting option from Ahmadu Bello University, Zaria, and University of Benin, Benin-City. These institutions were chosen as samples because of their peculiar characteristics in term of long years of establishment and teaching experience that made other universities look up to them. Ahmadu Bello University, Zaria comprises of 85 financial accounting students (39 males and 46 females) and University of Benin, Benin City with 102 Financial accounting students (48 males and 54 females). Through balloting Ahmadu Bello University Zaria, Kaduna State, was assigned to flipped classroom method (experimental group) while University of Benin, Benin-City was assigned to conventional lecture method (control group). The assignment of the two universities through balloting was to ensure that each of the institutions have equal probability of being selected to either experimental or control group. The

instrument for data collection was 40-item multiple choice Financial Accounting Achievement Test (FAAT) The instrument was validated by four experts. Two expert lecturers made of one each from Business education section of the two universities and one was from the Department of Accounting, Ahmadu Bello University, Zaria Kongo Campus. For the purpose of ascertaining the internal consistency of the Financial Accounting Achievement Test (FAAT) instrument, the last lecturer was from Department of Research Methodology Ahmadu Bello University, Zaria to ascertain the validity of the instrument Cronbach's Alphawas used in which a coefficient of 0.75 was obtained. Prior to the commencement of the treatment, all students both in experimental and control groups were subjected to a pre-test in order to obtain the pre-test achievement scores. The administration of the pre-test took place a week before the experiment began in the two universities. The achievement score obtained by students from the two groups served as the pre-test scores of the study. Immediately after the pre-test, the actual treatment began in which business education students of financial accounting in Ahmadu Bello University, Zaria, Kaduna State, were taught financial accounting using flipped instructional method while business education students of financial accounting in University of Benin, Benin City were taught using conventional lecture method. The financial accounting topics that were covered in the treatment were: Trading, Profit and loss Account, Partnership Account and Admission of a new Partner.

The treatment lasted for a period of six weeks. Post-test was administered to the students in their respective groups to obtain the post-test achievement scores. The post-test was administered a day after the completion of the experiment. The scripts of the students were collated and marked by the researcher and the students were scored over 40. This is because, any correct answer out of the 40 questions is awarded 1 mark. The data collected in the two stages (pre-test and post-test) from the two groups (experimental and control) were compiled for analysis. The data collected from the pre-test and post-test were analyzed using mean and standard deviation to answer the research questions while the hypotheses were tested using t-test statistics at 0.05 level of significance.

Result

Research Question One: What is the mean achievement score of students exposed to flipped classroom method and those exposed to conventional (lecture) method in Financial Accounting Achievement Test (FAAT)?

Table 1: Pre-test and Post-test Mean Scores of Students Exposed to Flipped Classroom Method and those exposed to Conventional Lecture Methods in Financial Accounting Achievement Test (FAAT)

<i>Group</i>	<i>Pre-Test</i>			<i>Post-Test</i>		<i>Mean Diff</i>
	<i>N</i>	<i>X</i>	<i>SD</i>	<i>X</i>	<i>SD</i>	
<i>Flipped Classroom Method</i>	85	18.77	3.15	42.15	4.21	23.38
<i>Control (Lecture)</i>	102	18.30	3.78	30.01	6.71	11.71

The result presented in Table 1 shows that business students that were taught financial accounting with flipped classroom method had pre-test mean achievement score of 18.77 ,post-test mean score of 42.15 and mean achievement differences score of 23.38. On the other hand, the business education students that were taught financial accounting with conventional lecture method had pre-test mean achievement score of 18.30, post-test mean achievement score of 30.01 making the mean achievement difference score of the control group (lecture) to be 11.71 This result indicates that the teaching of financial accounting with flipped classroom instructional method

significantly increased academic achievement of the business education students than using conventional lecture method.

Research Question Two: What is the effect of gender on students’ achievement in Financial Accounting Achievement Test (FAAT)?

Table 2: Pre-test and Post-test Mean Scores of Male and Female Students Exposed to flipped classroom Method and Conventional Lecture Method to Determine Effect of Gender in Financial Accounting Achievement Test.

<i>S/N</i>	<i>Teaching Methods</i>	<i>Gender</i>	<i>N</i>	<i>Pre-Test</i>		<i>Post-Test</i>		<i>Mean Diff</i>
			No.	X	SD	X	SD	
		Males	39	20.62	4.12	42.11	6.43	21.49
		Females	46	20.59	4.87	42.13	7.21	21.54
		Males	48	20.23	3.35	29.42	4.41	9.19
		Females	54	20.90	3.52	30.53	4.73	9.63

The result presented in Table 2 above showed the effect of gender on the achievement scores of business education students taught financial accounting using flipped classroom and those taught with conventional lecture method. The result showed that male students taught financial accounting with flipped classroom had pre-test mean achievement score of 20.62, post-test mean achievement score of 42.11 and mean achievement gain of 21.49. Female students taught financial accounting with flipped method had pre-test mean achievement score of 20.59, post-test mean achievement score of 42.13 and mean achievement gain of 21.54 For the control group, male students taught financial accounting with conventional lecture method had mean achievement score of 20.23 in the pre-test and 29.42 in the post-test making their mean achievement gain to be 9.19. The female students taught with conventional lecture method had mean achievement score of 20.90 in the pre-test and 30.53 in the post-test making their mean achievement gain to be 9.63. This result indicated that teaching business education students of financial accounting with flipped classroom method equally and significantly increased the achievement of both male and female students than those taught with conventional lecture method.

When inserting tables and figures within the body of the article, position them after the paragraph in which they are described. When citing the source information, it should be included at the bottom of the figure in a “source line.” Tables and figures should be labeled with numbers and a short, descriptive title. Table headings should be flushed left above the table, while figure captions should be flushed left below the image. Examples can be seen below in Table 1.1 and Figure 1.

Research Question Three: What is the interaction effect of treatments (flipped classroom method and lecture method) and gender on students' achievement with respect to their mean scores in Financial Accounting Achievement Test (FAAT)?

Table 3: Mean Interaction Effect of (Flipped Classroom and Lecture Teaching Method) and Gender of the Students on their achievement in Financial Accounting Achievement Test

<i>Gender</i>	<i>Group</i>	<i>Pre-Test</i>	<i>Post-Test</i>	<i>Mean Diff</i>
<i>Male</i>	Mean	20.43	35.77	15.34
	Std. Deviation	3.74	5.97	
	N	87	87	
<i>Female</i>	Mean	20.75	36.33	15.58
	Std. Deviation	4.33	5.67	
	N	100	100	
<i>Total</i>	Mean	25.56	36.05	10.49
	Std. Deviation	8.20	5.93	
	N	187	187	

The result presented in Table 3 showed the interaction effect of gender and treatments (flipped classroom and lecture methods) on students' academic achievement in financial accounting. The result revealed that, male students had mean achievement score of 20.43 in the pre-test and 35.77 in the post-test making their overall mean achievement gain in financial accounting to be 15.34. On the other hand, female students had mean achievement score of 20.75 in the pre-test and 36.33 in the post-test making the overall mean achievement gain of female students in Financial accounting to be 15.58. This result showed that, there is no significant difference in the mean achievement scores of male and female students in the financial accounting test as a result of the treatments given.

Null hypothesis 1: There is no significant difference in the mean achievement score of students exposed to flipped classroom method and those exposed to conventional (lecture) method in Financial Accounting Achievement Test (FAAT)

Table 4: Comparison of Academic Achievement post-test mean scores of business education students in financial accounting exposed to flipped classroom method and those exposed lecture method of Teaching

<i>Variable</i>	<i>N</i>	<i>X</i>	<i>SD</i>	<i>Df</i>	<i>t-value</i>	<i>p-value</i>	<i>Remark</i>
<i>Flipped classroom Method</i>	85	42.15	4.21		1.775		
<i>Lecture Method</i>	102	30.01	6.71				

From Table 4 the p-value obtained is 0.008 at $p \leq 0.05$ level of significant. The p-value of 0.008 is thus significant. The null hypothesis of no significant difference is thus rejected. This mean that there is significant difference in the academic achievement of business education students taught with flipped classroom method and those taught with lecture method. This result thus shows that flipped classroom instructional method is better at improving students' achievement in financial accounting than lecture instructional method.

Null hypothesis 2: There is no significant difference in the mean achievement scores of male and female students exposed to flipped classroom method and those exposed to conventional (lecture) method in Financial Accounting Achievement Test (FAAT)

Table 5: Comparison of Academic Achievement post-test mean scores of male and female students in financial accounting exposed to flipped classroom method and those exposed to lecture method of Teaching

Teaching Method	Gender	N	X	SD	T	t-value P	Remark
	Male	39	42.11	6.43	83	0.097	NS
	Female	46	42.13	7.21			
	Male	48	29.42	4.41	100	0.869	NS
	Female	54	30.53	4.73			

Table 5 shows the results of the post-test scores for the male and female business education students in financial accounting taught with flipped classroom and lecture method. The p-value obtained for male and female taught with flipped classroom method is 0.097 and p-value for male and female taught with lecture method is 0.869 all at $p \leq 0.05$ level of significant. The null hypothesis of no significant difference is thus retained. This therefore mean that both flipped classroom method and lecture method are gender friendly, since no significant difference is obtained.

Discussion of the Results

The findings of this study showed that business education students of financial accounting that were exposed to flipped classroom method had higher achievement and gain score in financial accounting achievement test than their counterparts that were exposed to conventional lecture method. This finding is in conformity with that of Freeman (2007) and Chaplin (2009) which reported that active learning is associated with improved student academic performance. This also agreed with the facts asserted by Prince (2004) and Michael (2006) that active learning strategies supports the effectiveness of these approaches in increasing student learning and achievement.O’Dowd & Aguilar-Roca(2009) reported that flipped method increases student engagement, critical thinking, and better attitudes toward learning. On the contrarily, Strayer (2007) reported dissatisfaction in flipping a college level introductory course. This was attributed to tasks not being clearly defined, and students being confused over the purpose of the changes. Frydenberg (2012) research study also found that in flipped sections in which the instructors were not experienced with non-lecture based learning did not score higher than sections taught in the traditional method.

The non-significant effect of gender on students’ academic achievement in relation to the treatments implied that flipped classroom instruction is not gender sensitive and can produce the same learning effect on both male and female students. This is supported by Overmyer (2014) reports that students did not respond differently to the flipped classroom based on their gender.

Conclusion and Recommendation

The flipped classroom is essentially part of a broader conceptual framework of teaching which promotes the use of active learning in the classroom and students being responsible for the information gathering portion of learning outside the classroom. In this study, flipped classroom proved to be effective teaching approach for financial accounting students in Universities in Nigeria.

Recommendations

Based on the above findings, it is recommended that:

1. Accounting educators should use flipped classroom method of teaching to encourage students 'participation in active learning and hence improve their performance.
2. Government and stakeholder should encourage the usage of flipped method by providing of computers and internet in higher institutions of learning to stimulate both the lecturers and the students in the use of this approach for effective teaching and learning.
3. Lecturers of financial accounting should be provided with in-service training to acquire more skills in the use of flipped classroom method of teaching to enhance the performance of students

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