

## **EFFECTS OF FLIPPED AND CONVENTIONAL TEACHING APPROACHES ON PERFORMANCE AND RETENTION ABILITY OF STUDENTS IN ADVANCE FINANCIAL ACCOUNTING IN ABUBAKAR TAFAWA BALEWA UNIVERSITY BAUCHI, NIGERIA**

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### **ABSTRACT**

*The study investigated the effects of flipped and conventional classroom teaching approach on performance and retention ability of advance financial accounting students in Abubakar Tafawa Balewa University Bauchi, Nigeria. The study had three specific objectives and three null hypotheses. Quasi-experimental design of pre-test, post-test I and post-test II was used for the study. The study used an intact class of 76 students that offered advance financial accounting in 2015/2016 academic session in the institution. Three instruments were used for data collection. The instruments were Advance financial accounting Achievement Test (AFAAT), Advance financial accounting Diagnostic Achievement Test I (AFADAT I) and Advance financial accounting Diagnostic Achievement Test II (AFADAT II). The validations of instruments were determined by board of examiners in department of vocational and technology education in Abubakar Tafawa Balewa University, Bauchi. The reliability of the instruments was established using pilot study. The result of the pilot study gave reliability coefficient of 0.79. Data collected from the study were coded into Statistical Package of Social Sciences. The package was used to run t-test statistics for the test of the three null hypotheses at significance level of 0.05. The results shows improvement in the performance and retention ability of students when flipped teaching technique was adopted. It was recommended among others that financial accounting lecturers in Nigerian universities should adopt the use of flipped classroom approach in teaching students by providing students with pre-class materials and assignments prior their classroom activities.*

**Key words:** *Flipped, Conventional, Performance, Retention, Advance Financial Accounting*

### **INTRODUCTION**

Accounting is one of the core courses in business education programme that students must offered and pass before graduation. The course involves identifying, measuring, recording, and communicating economic information. Students in business education programme more especially those in accounting option must offer at least a three credit units course in accounting every semester. The course contents of the subject such as depreciation, profit and loss account and ratio analysis helps students to better understand business mathematics, statistics, economics, entrepreneurship and element of finance. This explained why scholars in the discipline acknowledged that accounting skills, knowledge and performance as the gateway for Gross Point Average (GPA) and Cumulative Gross Point Average (CGPA) of

business education students. It therefore follows that students who are well-equipped with accounting skills and knowledge have the potentials to graduate with good CGPA.

The general performance of students in accounting in tertiary institutions in Nigeria is worrisome. For instance in 2014/2015 academic session, out of fifty five (55) students who sat for the examination in Ahmadu Bello University Zaria, 18 had weak passes, while 8 failed. Similarly, in 2014/2015 session, out of seventy two students sat for the examination in Abubakar Tafawa Balewa University Bauchi, 21 of them had weak grades, while 11 failed. Literature shows that situation is same in other tertiary institutions in the country. The decline in the performance is discouraging students from opting for accounting option. The current concern among scholars is how to improve students' performance in the courses. According to

Weiss and Pasley (2004), a likely cause of the nation's current performance and achievement can be attributed to the passive learning experiences students receive in the classroom. A growing body of researches such as Adamu and Jubril and Schultz (2012), Duffield and Rasmussen (2014) acknowledged that the quality of teachers' skills, methodology and approach as some of determinants of students' performance in accounting. Tuncay and Omur (2009) believed that the adoption of new instructional techniques would help to improve the general academic performance of students. Advocates of flipped approach such as Walvoord and Anderson (1998) maintained that pre-class assignment would improve the performance of students. The advocates of this approach recognized that learning take place faster when learning is built on the background knowledge of the learners as they will come to class prepared, focus attention on areas of difficulties and participates in the classroom activities. The study observed that flipped strategy is an effective child centered method learning method, and has been shown to have good effects when applied to a broad range of academic subjects such as social studies, mathematics, trade subjects and science (Sahin, 2010). The method does not only increase the performance of students, but also promotes classroom participation and the cultivation of important abilities, such as critical thinking, problem-solving, and communication, flipped strategy also helps students achieve a number of basic abilities, including independent thought, active exploration and research, clear expression and team work. In all levels of education, students in co-operative situations achieved greater academic, social and psychological benefits (Pashler, McDaniel, Rohrer and Bjork 2008, Fulton 2012, Brame 2013 and Yong 2014) Tran, 2014). Based on the forgone submission therefore, the present study intends to investigate the effects of flipped conventional teaching approach on academic achievement of students' in advance financial accounting in Abubakar Tafawa Balewa University Bauchi, Nigeria.

### **Statement of the Problem**

Accounting courses are core in business education programme in first two years of admission in Nigerian universities. Students

admitted to business education must offered and pass the courses before graduation. Success in the course and application of its knowledge and skills would help to improve students in other related courses, and failure in the courses will jeopardize students' effort in business mathematics, element of finance, entrepreneurship and statistics. The skills, self-efficacy and performance of students in accounting courses plays significant role on the general performance of business education students.

Despite the importance of accounting courses in business education programme, the performance of students in the course is relatively low over the years (Jibril 2011). Research findings have confirmed that most students who offer the course found themselves completely at a loss during lectures, test and examinations (Adamu & Musa 2012 and Adamu & Sani (2012). The circumstance is frustrating and more worrisome as it affected students' Cumulative Grade Point Average (CGPA) in some cases and sometimes elongated their study period. What could be the cause of this persistent failure? One of the possible reasons, as suggested by Tuncay and Omur (2009), might be that the method used in the teaching of the course was not suitable. To this end, the researchers carried out this study to explore the effective strategy that would help to improve the performance of students in accounting.

In a quest to improve the general performance of university students, researchers such as Davies, Dean and Ball (2013) and Talley and Scherer (2013), revealed that flipped approach has a tendency of increasing students' academic performance. The study of Tune, Sturek, and Basile (2013) and Vaughan (2014), also revealed that flipped classroom approach significantly influenced the performance of students. Similarly, Adamu, Jibril and Uthman (2013) maintained that flipped has the ability of improving the retention ability of students. Considering the assertions of scholars on power of flipped approach prompted the researchers to compare:- (1) the difference in the pre-test and post-test I mean performance of students taught in advance financial accounting using flipped method in Abubakar Tafawa Balewa University Bauchi, Nigeria; (2) the post-test I

and post-test II mean performance of students taught in advance financial accounting using flipped method in Abubakar Tafawa Balewa University Bauchi, Nigeria; and (3) compare the difference in the mean retention ability of students in advance financial accounting based on the two instructional strategy in Abubakar Tafawa Balewa University Bauchi, Nigeria.

### **Research Questions**

In line with the research objectives, the study had the following research questions:-

- (1) What is the difference between pre-test and post-test I mean performance of students' in advance financial accounting in Abubakar Tafawa Balewa University Bauchi, Nigeria?
- (2) What is the difference between post I and post-test II mean performance of students' in advance financial accounting in Abubakar Tafawa Balewa University Bauchi, Nigeria?
- (3) What is the difference between the mean retention ability students in advance financial accounting based on the two instructional strategies in Abubakar Tafawa Balewa University Bauchi, Nigeria?

### **Research Hypotheses**

The following research hypotheses are raised and tested using t-test and 0.05 level of significant.

- 1 There is no significant difference between pre-test and post-test I mean performance of students in advance financial accounting in Abubakar Tafawa Balewa University Bauchi, Nigeria
- 2 There is no significant difference between post I and post-test II mean performance of students in advance financial accounting in Abubakar Tafawa Balewa University Bauchi, Nigeria
- 3 There is no significant difference between the mean retention ability students in advance financial accounting based on the two instructional strategies in Abubakar Tafawa Balewa University Bauchi, Nigeria

## **METHODOLOGY**

### **Research design**

Quasi-experimental design of pre-test, post-test I and post-test II to verify the effects of flipped teaching strategies on improving students' learning outcomes in financial accounting. The choice of the design was based on the suggestion of Urdan and Timothy (2005) who stated that quasi-experimental design should be adopted when a study involves finding out about the impact of a treatment on a group of people. The design was considered suitable because the study lacked randomization. The design is represented schematically as follows:

O<sub>1</sub> X<sub>1</sub> O<sub>3</sub> Experimental approach (flipped)

O<sub>2</sub> X<sub>2</sub> O<sub>4</sub> Conventional approach (lecture)

O<sub>3</sub> X<sub>3</sub> O<sub>5</sub> Flipped/lecture (Retention)

The O<sub>1</sub> is pre-test scores of the experimental approach, while O<sub>2</sub> is the pretest score of the conventional approach. Similarly O<sub>3</sub>, O<sub>4</sub> are the posttest I scores while O<sub>5</sub> is posttest II scores respective.

X<sub>1</sub> flipped instructional strategy.

X<sub>2</sub> conventional instructional strategy.

X<sub>3</sub> flipped and conventional instructional strategies.

### **Population of the Study**

The target population of the study consisted of all the 76 undergraduate students that sat for advance financial accountings (BSE 511) in 2015/2016 academic session.

### **Instrument for Data Collection**

The researchers used Advance financial accounting Achievement Test (AFAAT) for pre-test data collection. Post-test I data was collected using Advance financial accounting Diagnostic Achievement Test I (AFADAT I), while Advance financial accounting Diagnostic Achievement Test II (AFADAT II) was used to collect data for post-test II. The AFAAT was a formulated on the Ratio analysis. The AFADAT I was based on bill of exchange and AFADAT II was based on consolidated account. Each of the instrument

consisted of three practical exercises and students were required to attempt all the questions.

### **Validation and Reliability of the Instruments**

The instruments were validated by team of examiners in department of vocational and technology education in Abubakar Tafawa Balewa University Bauchi, Nigeria. The face-validation and its internal consistency reliability of the instruments were determined using the Kuder-Richardson's formula-20 (K-R20) and the calculated estimate obtained was 0.73

### **Procedure for Data Collection**

An intact class of 76 students that sat for advance financial accounting in 2015/2016 academic session in Abubakar Tafawa Balewa University Bauchi, Nigeria was used. In the first stage, a pre-test was used to ascertain the students' performance in advance financial accounting. The scripts of the test was marked using the drawn marking scheme. In the second stage of data collection, the researcher lectured the students for two weeks using three hours per week. A post-class reading materials and assignment was given to students and the end of each lecture. The scripts of the assignment were collected before the next lecture. At the end of the two weeks, AFADAT I was administered to students. In the second phase of the same stage, the researchers administered the same AFADAT I to the students after two weeks interval. The result of the second test was used to determine the students' retention ability.

In the second stage pre-class reading materials and assignment was given to the students. This approach enabled the students have prior knowledge of what was taught ahead of each lecture. The researchers collected the scripts of the assignments and lectured the students using drawn lesson plans. The same exercise took place for period of two weeks using three hours per week. At the end of two weeks, AFADAT II was administered to students after the exercise. To test the retention ability of the students the same (AFADAT II) question was administered after two weeks interval. The scripts collected from all test were marked by the researchers personally using drawn marking schemes.

### **DATA ANALYSIS**

Data collected from the students were coded into Statistical Packages of Social Sciences (SPSS) version 16. The package was used to run t-test for the test of the null hypotheses. The choice of this tool was based on the suggestions of Williams and Christin (2008) who maintained that t-test statistic is appropriate when a study involved comparing the means of two groups. The authors added that t-test was the best parametric statistical tool to test null hypothesis about the difference between two groups. All the null hypotheses were tested at significance level of 0.05. In the test of the null hypotheses, where the calculated value was greater than Table value, the null hypothesis was rejected. On the other hand, where the calculated value was less than the Table value, such null hypothesis was retained.

### **RESULT**

**H01:** There is no significant difference between pre-test and post-test I mean performance of students taught in advance financial accounting using flipped method in Abubakar Tafawa Balewa University Bauchi, Nigeria

**Table 1:** t-test analysis on the mean difference between pre-test and post-test I mean performance of students' in advance financial accounting.

Variables	N	Mean	Std. Dev	Std. Error Mean	95% Confidence Interval of the Difference		Sig. (2 tailed)
					Lower	Upper	
Pre-test	76	42.73	4.70	1.21	40.13	45.33	
Post-test I	76	58.73	8.60	2.22	53.97	63.49	.000

The t-test analysis on difference in the pre-test and post-test I performance of experimental group shows the mean score of 42.73 for pre-test and 58.73 for post-test with standard deviation of 4.70 and 8.60 respectively. The p-value of .000 was less than 0.05 level of significant, the study therefore shows significant difference exist in the pre-test and

post-test I mean score of students taught advance financial accounting using flipped technique. The null hypothesis was therefore not rejected.

**HO2** There is no significant difference between post-test I and post-test II mean performance of students taught in advance financial accounting in Abubakar Tafawa Balewa University Bauchi, Nigeria.

**Table 2:** t-test analysis on post-test I and post-test II mean performance of students in experimental group

Variables	N	Mean	Std. Dev	Std. Error Mean	95% Confidence Interval of the Difference		Sig. (2 tailed)
					Lower	Upper	
Post-test I	76	58.73	8.60	2.22	53.97	63.49	
Post-test II	76	56.27	4.17	1.08	53.96	58.67	.061

The analysis of difference the retention ability of students taught advance financial accounting using flipped technique shows the post-test I mean score of 58.73 with standard deviation of 8.60. The post-test II mean score was 56.27 with standard deviation of 4.17. The probability value of .061 obtained was greater than alpha value of 0.05. The analysis therefore shows that no difference in the post-test I and post-test II mean performance of students taught advance financial accounting

using flipped technique. The hypothesis was therefore retained.

**HO3** There is no significant difference between the mean retention ability of the advance financial accounting students based on the two instructional strategies in Abubakar Tafawa Balewa University Bauchi, Nigeria

**Table 3:** t-test analysis of difference in post-test II mean performance of e advance financial accounting students based on the methods.

Variables	n	Mean	Std. Dev	Std. Error Mean	95% Confidence Interval of the Difference		Sig. (2 tailed)
					Lower	Upper	
Conventional	76	45.33	5.58	1.44	42.24	48.43	
Flipped	76	56.27	4.17	1.08	53.96	58.67	.000

The t-test analysis used to determine the difference in the post-test II revealed the mean score of 45.33 with standard deviation for students in conventional technique. Students in flipped approach had mean score of 56.27 with standard deviation of 4.17. The P-value was less than the alpha value ( $.000 < 0.05$ ). The analysis therefore shows that significant difference exists in the post-test II mean performance of two groups of students; hence the null hypothesis was rejected.

### Discussion of the Findings

The result of test of null hypothesis one showed that flipped method had effect on students' performance in advance financial accounting. The analysis revealed the mean score of 42.73 with stand deviation of 4.70 for pretest while posttest had mean score of 58.73 with standard deviation of 8.60. The probability value of .000 obtained indicated that there was difference between the pretest and posttest I mean score of accounting students. Abdullahi (2017) attributed the low performance of most students to teacher centred method where teachers serve as dispersal of knowledge while students are passiv recipients of the information already acquired by the teacher. The author maintained that effective teaching maybe achieved by integrating a self-regulating strategy such as flipped method learning is built on the background knowledge of the learners as they will come to class prepared, focus attention on areas of difficulties and participates in the classroom activities. The finding agreed with that of Johnson and Renner, (2012) who reported that flipped instructional strategy in the content areas to be very effective on students' academic performance. The authors argued that in the flipped classroom students' benefit more due to the transitioning of class time from lower-level activities to collaborative group work. Similarly, Bergmann and Sams (2012) reported that flipped classroom provide the means to develop an educational environment that promotes discovery learning, problem-based learning, experiential learning, and student-centered learning. The study of Davies et al. (2013), Talley and Scherer (2013) and Davies et al. (2013), further affirmed that the use of flipped approach have tendency of improving perform of students. The authors added that flipped classroom stu-

dents demonstrated higher levels of motivation and improved academic performance. The research conducted by Vaughan (2014) also revealed that flipped classroom approach improves student engagement in classroom, promoted self-paced learning and improves the performance of students. Of recent, Kevin (2015) reported that flipped model of instruction has the potential to be deemed effective in terms of improving student engagement and performance in the secondary mathematics classroom.

The study further revealed there was no significant different in posttest I and posttest II retention ability of accounting students when flipped teaching strategy was adopted. From the analysis the mean performance of students in posttest I was 58.73 while that of posttest II was 56.27 with standard deviation value of 8.60 and 4.17 respectively. The probability value of .061 obtained indicated there is no significant difference in the posttest I and posttest II mean retention performance of students in accounting. This outcome could be attributed the effectiveness of flipped strategy in promoting classroom participation and the cultivation critical thinking, problem-solving, and communication that helps clear expression and team work. The finding of the study was found to be similar with that of Research by Davies et al., (2013) and Talley and Scherer (2013), Tune, Sturek, and Basile (2013), Mason et al (2013) and Tune et al, (2013) who affirmed that there is an increase in students' retention ability within the flipped classroom. The authors all agreed that flipped model of instruction is effective and students taught using flipped demonstrates higher levels of motivation that improves their retention ability when compared to the students in traditional approach. Study of also indicated that students in flipped classroom approach scored significantly performed better and improves the retention ability on the cardiovascular and respiratory sections compare to students in conventional class approach. Recent study of Galway et al. (2014) and Schultz et al. (2014) Vaughan (2014) further affirmed that flipped model better improved student participation, promoted self-paced learning and enhances students' performance when compare with the traditional method.

The analysis of null hypothesis three indicated that the use of flipped improved the retention ability of students in advance financial accounting compare to those in conventional strategy. The mean retention of students in conventional method was 45.33 with standard deviation of 5.58 against 56.27 and 4.17 for students in flipped strategy respectively. The probability value of .000 obtained indicated that significant difference exists in the retention ability of the two group of the students. The result was in line with that of Brame (2013) who reported that in flipped technique increased student academic achievement levels, increased student motivation, and retention of learned material. Pierce and Fox (2012) and Vaughan (2014) opined that flipped classrooms improve student understanding, concept clarification through increased discussion time and retention. The study of Bergmann and Sams (2012) and Berrett (2012) suggested that to improve retention ability of students, learning outcomes, and depth of knowledge in specific content, the flipped classroom pedagogy must be considered by stakeholders in education. Bergmann and Sams (2012) reported that flipped teaching technique allows students the chance for enrichment and retention that would not normally occur in a typical classroom. The study of Brame (2013) indicated that flipped method results in significant learning and retention gains when compared to traditional instruction. The study of Talley and Scherer (2013) pointed out that flipped approach increasing the retention ability of students better than the traditional approach. Missildine, Fountain, Summers and Gosselin (2013) maintained that one promising teaching strategy that improves student performance and retention in several disciplines is flipped classroom. Galway et al (2014) also published evidence that flipping the classroom can produce significant learning gains and improve students retention ability when compare to conventional teaching approach. Ziegelmeier and Topaz (2015) also reported that using flipped classroom approach improves students' learning and retention. The recent study of Peisachovich, Susan, Phillips and Messinger (2016) revealed that incorporating flipped classroom with active learning activities had a signifi-

cant impact on increasing grades, problem solving

skills and retention of nursing students. Similarly, Muhammad, Abrar, Fayha, Yezan, Dina and Akef (2016) recently reported that flipped classrooms replace passive lecturing with active student-centered learning that enhances critical thinking and application, including information retention. Rotellar, and Cain (2016) maintained that students engaged in-class, such instructional approaches decrease distraction, enhancing retention and application of acquired information.

### CONCLUSION AND RECOMMENDATION

The findings of the study showed the performance and retention ability of students' in advance financial accounting was better in flipped approach compared to conventional technique. It was therefore concluded that prior knowledge of what will be taught would help to improve students' enthusiasm to participate in the classroom activities with possibilities of improving their performance and retention ability in a course. Based on this the researchers recommended that financial accounting lecturers in Nigerian universities should adopt the use flipped classroom approach in teaching students by providing pre-class reading materials and assignments to

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