

EFFECT OF BLENDED LEARNING APPROACH ON BUSINESS EDUCATION STUDENTS' ACADEMIC ACHIEVEMENT IN FINANCIAL ACCOUNTING IN UNIVERSITIES IN RIVERS STATE, NIGERIA

Bupo, Godwin O.1 PhD¹ & Ibeneme, Ogo T. Prof.²

¹Department of Business Education, Rivers State University, Port Harcourt

²Department of Technology and Vocational Education,
Nnamdi Azikiwe University, Awka

Abstract

This study sought to determine the effect of teaching financial accounting with blended learning approach on business education students' academic achievement in universities in Rivers State. Two research questions were answered, and two null hypotheses were tested at 0.05 level of significance. Quasi-experimental, non-randomized pre-test post-test control group research design was adopted for the study. The population of the study consisted of 685 first-year business education students (of all options) in two universities that offer business education in Rivers State. The sample size was made up of 160 year-one business education students (in accountancy option) in the two universities. Purposive sampling technique was adopted as intact classes were selected as experimental and control groups. Students in the experimental group were enrolled on a learning management system (MOODLE) which served as the virtual learning environment for the blended learning approach. The instrument for data collection was an achievement test titled Financial Accounting Achievement Test (FAAT) which contained 40 items. The instrument was validated by three experts and standardized through item analysis. The reliability of the instrument was determined using Kuder Richardson (KR 21) formula, which yielded a coefficient of 0.77. Mean and standard deviation were used to answer the research questions while Analysis of Covariance (ANCOVA) was used to test the hypotheses at 0.05 level of significance. The findings of the study revealed, among others, that blended learning approach had a higher effect on students' academic achievement scores in financial accounting when compared to conventional classroom approach. Also, blended learning approach had more effect on female students' academic achievement scores in financial accounting than on that of male students. It was recommended, among others that, professional institutions regulating the practice of accounting (like ICAN and ABEN), should insist that lecturers of financial accounting use blended learning approach as it improves students' academic achievement in the course.

Keywords: *Blended learning, academic achievement, financial accounting, MOODLE, flipped classroom.*

Introduction

Business education is a programme of study that prepares students for the world of work by exposing them to theoretical and practical knowledge in business practice and pedagogy. The programme has a slogan, *education for and about business*, which indicates that it covers the practical aspects of business knowledge and exposure of ways of teaching business. Oladunjoye (2016) viewed business education as the combination of subject areas that aid the acquisition, inculcation and development of proper values needed for the survival of an individual in a business society. Due to the robust nature of the programme, some tertiary institutions divide the programme of study into specialized options like accountancy, commerce and cooperatives/ marketing, management and office management technology (formerly known as secretarial option). These options usually run general courses in the first and second levels of study in the university after which students focus on specialized subject areas from their third level. One of the general courses taught first level students (especially in the university) is introduction to financial accounting because it is expected that every business owner or worker should have basic knowledge of the principles and practices of financial accounting.

Financial accounting as the art of recording, classifying and summarizing in a significant manner and in terms of money transactions and events which are in part at least, of financial character and interpreting the results thereof (Miller, 2012). The content of the course, introduction to financial accounting, as shown by the Department of Business Education Handbook, Rivers State University (2015), covers topics like the nature and scope of Accounting, the role of Accountants, History, principles and conventions of accounting, double entry bookkeeping system, subsidiary books, the ledger, the trial balance and final accounts among others. Introduction to financial accounting lays the foundation for other accounting courses that students will have to offer before graduating. Accounting courses like management accounting, cost accounting, auditing and investigation, taxation and so on, derive their basic operations from principles covered in financial accounting. As a result, a proper understanding of introduction to financial accounting may result in better learning outcomes in other accounting courses. However, the approach adopted in teaching financial accounting could be a factor to be considered in measuring how students understand the course.

Generally, financial accounting is being taught with a conventional face-to-face classroom approach where the teacher physically stands before the students and gives out the learning materials, using a variety of teaching

methods, and assesses the students through homework and class activities. According to Cooper (2018), the conventional classroom approach encourages physical interaction between teachers and learners, supports socialization among learners and enhances motivation through the learning process. It encourages teacher in-person instruction where the teacher takes the center stage. However, this approach may not consider students' individual learning style, and may not be flexible enough for self-paced learning. As a result, the conventional classroom approach may not be student-centered as students' participation may be restricted to only what the teacher permits in class. In order to bridge the gap created by the face-to-face approach, blended learning approach was introduced.

Blended learning approach is the teaching/learning approach that brings together the face-to-face approach and the online learning approach. It is the hybrid of the two approaches to form a blend. Blended Learning Approach (BLA) is that approach that bridges the gap between the fully online learning approach and the conventional classroom approach. It integrates online learning with in-person instruction from the teacher. Blended Learning Approach involves combining classroom instruction and e-learning (Kiviniemi, 2014) which is increasing in tertiary institutions around the world (Graham, Woodfield, & Harrison, 2012). BLA has various models which include rotation model, flex model, self-blend model, and enriched-virtual model. The rotation model is made of flipped-classroom model, lab-rotation model, station-rotation model and individual-rotation model. The model adopted for this study was the flipped classroom model. In the flipped classroom model, students go through learning materials and resources at home and use the class period for problem solving or questions and activity with the teacher present to answer questions and assist those students who need more attention (ReadingHorizons, 2016). Flipped classroom derived its name from the activity it represents. In the normal classroom setting, the teacher provides learning resources and materials for the students in the classroom and gives them assignments to do at home. While in the flipped classroom model, students do what should have been done in class, at home, and vice versa. So, the students access educational resources and course materials at home via an online platform at their own pace and then come to class to solve exercises and do other activities with the teacher.

In the conventional classroom approach, the class teacher provides the lesson materials to students in class and gives them take home assignments while in blended learning approach, flipped classroom model, the resources are provided online for the students via a virtual learning environment, and the class time is used for class works and exercises. So, students are expected to

go through the lesson materials at home on their own and at their pace, then the exercises and activities are done during the class time. This could encourage students' participation as they are able to go through the lesson materials on their own.

In this study, the learning management system that was employed as the virtual learning environment for the blended learning is Moodle. Moodle (Modular Object-Oriented Development Learning Environment) is an open source Learning Management System that enables teachers to arrange their materials in a student-friendly manner. Moodle is a free open source LMS built on a sound educational philosophy through collaboration from members of the Moodle community (Cole, 2005). It is open source because each user has access to the software's source code and can design the environment to suit any peculiarities. As a result, Moodle can be used in the blended learning approach as teachers can post educational resources and links online which can be accessed by students at any time and place as long as there is internet connection. However, the extent to which the use of a learning management system on students' academic achievement in financial accounting has to be established.

Academic achievement refers to the extent to which a student has achieved the short term goals of a course, measured in the scores obtained after a test. As defined by the United States Department of Agriculture (2014), academic achievement is the accomplishments of students that results from study and learning in a schooling system. As it applies to education, academic achievement refers to the attainment of outcomes that are tied to educational experiences (York, Gibson, & Rankin, 2015). Students are exposed to educational experiences within a given period and then assessed to see the outcomes of such exposure. The results of the assessments are computed and then used as the achievement of the students which may be influenced also by the gender of the students.

Gender can be a factor that could influence the application of technology in the teaching and learning process. Alghamdi and Bayaga (2016) had observed that LMS was not actively used for teaching which was as a result of the attitude of the members of staff, age and gender. Also, male and female business education students may differ in their response to the usage of LMS in teaching and this may influence their achievement. As pointed out in Eze, Ezenwafor and Obidile (2016), male and female students who were taught financial accounting using problem based method did not differ significantly in their academic performance.

Proper knowledge of financial accounting and the application of its principles will help business education students to perform accounting duties

in any organization they find themselves upon graduation. However, business education students appear to be performing poorly in financial accounting course. Despite efforts of teachers to make classroom instruction interactive and engaging, students' retention and academic achievement in this skill course have been low (Bupo, Oboh & Nwosu, 2018).

Students' poor performance in financial accounting could lead to frustration and increase in drop-out levels which may lead to increased unemployment among youths in the society. Also, students' poor performance in financial accounting could result in their inability to perform accounting duties in public or private institutions where they will be employed after graduation. The resultant effect of this could be loss of jobs and loss of confidence in the graduates of business education by employers of labour.

This 21st Century is characterized by technological innovations that are applicable in education. One of such innovation is e-learning. The problem of this study, put in a question form, is what effect will applying e-learning, in its blended form, have on business education students' academic achievement in financial accounting?

The study was guided by the following research questions and hypothesis

- What is the difference in mean academic achievement scores of business education students taught financial accounting using blended learning approach and those taught using conventional classroom approach?
- What is the difference in mean academic achievement scores of male and female students taught financial accounting using blended learning approach?
- There is no significant difference between the academic achievement scores of students taught financial accounting using blended learning approach and those taught using conventional classroom approach.
- There is no significant difference between the academic achievement scores of male and female students taught financial accounting using blended learning approach.

Method

The study employed a quasi-experimental non-randomized control group, pre-test-post-test design. The study was conducted in Rivers State which is in the southern part of Nigeria. Rivers State is one of nine Niger Delta States in the south-south geopolitical zone of Nigeria. The population for this study comprised of 685 first-year business education students in universities in Rivers State. The sample for this study was made of 160 year-one business education students in two universities offering business

education in Rivers State. The sample size was made up of 122 business education (accountancy) students in the control group (43 males and 79 females), and 38 business education (accountancy) students in the experimental group (17 males and 21 females). Purposive sampling technique was used as intact classes were chosen for the study.

The instrument that was used for the collection of data was an achievement test titled, *Financial Accounting Achievement Test (FAAT)*. The instrument is made up of 40 multiple choice questions (with options A to E), which was standardized using item analysis. The instrument was validated by two experts in the field of business education and one expert in the field of measurement and evaluation. Kuder Richardson (K-21) formula was used to determine the reliability of the instrument which yielded a coefficient of 0.77. The experimental procedure included installing the MOODLE software, briefing the research assistants, training the research assistant for the experimental group, sensitization of the participants and administration of the pre-test.

The teaching approaches were applied for five weeks after which the test was reshuffled and given to the students as post-test. The flipped classroom approach was applied for the experimental group as the teacher provided learning materials for the students before the class via the learning management system (MOODLE). The class time was used for solving problems and other class activities. Extraneous variables like experimental mortality, experimental expectancy, and experimental bias were controlled by ensuring that standardization of procedure was followed. The research assistants were the actual lecturers of the course and the students have been taught by these lecturers before. The research questions were answered using mean and standard deviation. The hypotheses were tested with Analysis of Covariance (ANOVA) 0.05 level of significance.

Result

Table 1: The effect of blended learning approach on students’ academic achievement in financial accounting when compared with conventional classroom approach

Approach	N	Pre-test		Post-test		Mean Difference	Remark
		Mean	Std. Deviation	Mean	Std. Deviation		
Blended Learning Approach	38	33.24	12.17	63.06	10.96	29.82	BLA has a higher effect
Conventional Approach	122	24.63	9.35	33.23	13.33	8.60	

Data in Table 1 show that the mean score of the pre-test for experimental group (BLA) was 33.24 while the post-test mean score is 63.06. This signifies a mean difference of 29.82. On the other hand, the mean score of the pre-test for the control group (CCA) is 24.63 while the post-test mean score is 33.23. The control group also has a mean difference of 8.60. The results therefore indicate that blended learning approach has a higher effect on students' academic achievement scores in financial accounting when compared to conventional classroom approach.

Table 2: Results showing the effect of blended learning approach on achievement scores of male and female students in financial accounting

Gender	N	Pre-test		Post-test		Mean Difference	Remark
		Mean	Std. Deviation	Mean	Std. Deviation		
Male Students	17	36.47	13.69	66.06	9.72	29.59	BLA had more effect on female students' achievement
Female Students	21	30.00	10.22	60.06	11.39	30.06	

Data in Table 2 indicate that male students taught with blended learning approach have mean achievement scores of 36.47 and 66.06 for the pre-test and post-test respectively. This results in a mean difference of 29.59. On the other hand, the female students taught with blended learning approach have mean achievement scores of 30.00 and 60.06 for the pre-test and post-test respectively. Also, the female students have a mean difference of 30.06. The results show that the female students taught financial accounting with blended learning approach have a higher mean difference than their male counterparts. It therefore means that blended learning approach in the teaching of financial accounting have more effect on female students' achievement scores than on that of the male students.

Table 3: ANCOVA result showing difference in students' achievement scores between approaches

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Decision
Corrected Model	27507.965 ^a	2	13753.983	88.955	0.000	0.531	
Intercept	24432.767	1	24432.767	158.020	0.000	0.502	
Pre-test	1683.536	1	1683.536	10.888	0.001	0.065	
Approach	19293.028	1	19293.028	124.779	0.000	0.443	Significant.

Error	24275.031	157	154.618
Total	307523.063	160	
Corrected Total	51782.996	159	

a. R Squared = .531 (Adjusted R Squared = .525)

Data in Table 3 show that the F-cal value is 124.7 and the P-value is 0.000. Since the p-value is less than the level of significance (P-value<0.05), the F-value is significant. Thus, the null hypothesis is rejected as there is a statistically significant difference in the effect of the independent variable (Approach) on the dependent variable (achievement scores). This difference is in favour of the blended learning approach as shown in the pairwise comparison table below.

Table 4: Pair wise comparison result showing the significant mean difference in achievement scores between approaches

Pairwise Comparisons		95% Confidence Interval for difference ^b				
Dependent Variable:						
Post-test						
	(J)	Mean Difference (I-J)	Std. Error	Sig. ^b	Lower Bound	Upper Bound
(I) Approach BLA	CCA	29.83*	2.440	.000	22.439	32.079
CCA	BLA	-29.83*	2.440	.000	-32.079	-22.439

Table 4 shows that the mean difference between achievement scores of BLA and CCA is 29.83 in favour of BLA and that this mean difference is significant. Therefore, the null hypothesis is rejected. This means that blended learning approach has a significant effect on students' achievement in financial accounting more than conventional classroom approach.

Table 5: ANCOVA result showing difference in mean achievement scores of male and female students taught financial accounting with blended learning approach

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Decision
Corrected Model	1685.047 ^a	2	842.524	10.681	0.000	0.379	
Intercept	8667.668	1	8667.668	109.886	0.000	0.758	
Pre-test	1346.916	1	1346.916	17.076	0.000	0.328	
Gender	62.176	1	62.176	0.788	0.381	0.022	Not Significant
Error	2760.764	35	78.879				

Total	154041.813	38
Corrected Total	4445.811	37

a. R Squared = .379 (Adjusted R Squared = .344)

Data in Table 5 show that the F-value for gender variable effect on the post-test scores is 0.788 and the p-value is 0.381 which is not statistically significant. The hypothesis is not rejected as the p-value is greater than the level of significance ($P\text{-value} > 0.05$). The pairwise comparison shows it better.

Table 6: Pairwise comparison result showing the significant mean difference in achievement scores of male and female students

Pairwise Comparisons		Mean	Std.	Sig. ^a	95% Confidence Interval	Interval
Dependent Variable: Post-test	(J)	Difference (I-J)	Error		for difference ^a	
(I) Gender	Gender				Lower Bound	Upper Bound
Male	Female	6.00	3.008	.381	-3.435	8.776
Female	Male	-6.00	3.008	.381	-8.776	3.435

The data in Table 6 shows that male students had a mean difference of 6.00 over their female counterparts and a p-value of 0.381 which is not significant. The null hypothesis is therefore, not rejected and that means that the achievement scores of male students taught financial accounting with blended learning approach do not significantly differ from their female counterparts.

Discussion

The findings of the study revealed that blended learning approach had a higher effect on students' academic achievement scores in financial accounting when compared to conventional classroom approach. Although the two approaches had positive effects, the blended learning approach had a higher positive effect on the students' achievement scores than the conventional approach. The results of this study are in line with those of Lopez-Perez, Perez-Lopez, and Rodriguez-Ariza (2013) who found out that blended learning approach had a positive effect on undergraduate students' performance in four different business programmes. The increase in students' academic achievement may be as a result of the increased participation level of students in blended learning approach. Blended learning approach mixes the benefits of both face-to-face approach and online learning approach to

create a blend that is better for the students (Kose, 2010; Benson, Anderson, & Ooms, 2011). The findings also agreed with the studies of Chak and Fung (2015) and Kiviniemi (2014), who discovered that students' performance increased better in the blended learning model than in the conventional face-to-face approach. While Chak and Fung (2015) discovered that students' performance improved significantly in the online quiz model, Kiviniemi's study showed that students indicated more interest in the blended learning class and as such their participation was higher.

The test of the first hypothesis showed that the p-value was significant, and as such the hypothesis was rejected. This means that there is a significant difference between the achievement scores of business education students taught financial accounting with the blended learning approach and those taught with the conventional face-to-face approach. This difference is in favour of the blended learning approach (as shown in Table 4). The results are in line with those of Marchalot, Dureuil, Veber, Fellahi, Hanouz, et al. (2017); Shorey, Kowitlawakul, Devi, Chen, et al. (2017) and Gogo (2018), who discovered a significant difference in the performance of students taught with blended learning models from those taught with face-to face approaches.

Some other studies are not in agreement with the findings of this particular study. Jones and Chen (2008) did not discover a significant difference in students' outcomes in the two approaches. They found out that blended learning approach fell short in areas like students engagement and teacher preparedness. Keller, John, Sally, and James (2009) also pointed out that there was no difference between blended learning and traditional learning approaches. This may be based on the pattern of employment of blended learning. Moreso, though blended learning approach may increase students' participation level, there is the possibility of high-drop out rates as in fully online learning models (Berge & Yi-ping, 2004). The teacher will have to discover the best model of blending face-to-face approach and online approach in order to encourage students' continued participation. Also, there is the possibility of distractions from technology usage in blended learning approach which may not be present in conventional face-to-face approach.

The findings of the study also revealed that female students taught financial accounting with blended learning approach had a higher mean gain score than their male counterparts. It therefore means that blended learning approach in the teaching of financial accounting had more effect on female students' achievement scores than on that of the male students. The finding is contrary to the findings of Du (2011) and Gogo (2018) who discovered that male students performed better than the female students on an e-learning course taught with a blended learning approach. An explanation for this, may

be that male students are less technophobic than female students. Male students tend to explore technology for education more than female students. On the other hand, the finding collaborates the findings of Nnamani and Oyibe (2016) who discovered that female students had higher mean achievement scores than males in social studies.

The test of the second hypothesis using ANCOVA indicated that the F-value was not significant. As a result, the hypothesis was retained. It therefore means that the achievement scores of male students taught financial accounting with blended learning approach did not significantly differ from their female counterparts. Though the female students had a higher mean gain on achievement scores than the male students taught financial accounting with blended learning approach, the results showed that the difference was not statistically significant. This is in line with the findings of Eze, Ezenwafor and Obidile (2016), Okocha, Eyiolorunshe, and Oguntayo (2016) and Noni, Abdullah and Ismail (2017) who found out that male and female students did not differ in their achievement scores. However, the findings was different from the findings of Nnamani and Oyibe (2016) who found out that there was significant difference in the mean achievement of secondary school students in Social Studies based on gender

Conclusion

From the findings of the study, it is concluded that blended learning approach has a higher effect on business education students' achievement in financial accounting than the conventional classroom approach. This is because blended learning approach encourages self-paced learning, increased students' participation and is more student-friendly than the conventional classroom approach.

Recommendation

Based on the findings of this study, the following recommendations are made:

1. Accounting educators should adopt the flipped classroom model of blended learning approach in the teaching of financial accounting as it has a higher effect on students' academic achievement.
2. Professional institutions regulating the practice of accountancy like the Institute of Chartered Accountants of Nigeria (ICAN) and Association of Business Educators of Nigeria (ABEN), should insist that lecturers of financial accounting, and other aspects of accounting, use blended learning approach as it improves students' academic achievement of what is taught.

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