ORIGINAL RESEARCH ARTICLE

EFFECT OF PROJECT-BASED TEACHING METHODS ON BUSINESS EDUCATION STUDENTS' ACADEMIC PERFORMANCE IN PRINCIPLES OF ACCOUNTING IN UNIVERSITIES IN SOUTH-WEST, NIGERIA

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ABSTRACT

The purpose of this study was to examine the effect of project-based teaching methods on business education students' academic performance in principles of accounting in universities in South-west, Nigeria. The study has two purposes, research questions and hypotheses. Quasi-experimental pre-Test post-test control group design was adopted for the study. The population of the study was 370 Business Education students offering principles of accounting in universities in the south-west. This comprises 200 level for the course is part of curriculum content at this level in South-West, Nigeria universities. The two universities were selected using purposive sampling technique. Random sampling was used to select two universities. The study used Principles of Accounting Performance Test (PAPT) pre-test and post-test with instructional package designed by researcher for collection data. The instrument was subjected to face and content validity by three experts with a Cronbach reliability coefficient of 0.74. Data collected were analyzed using mean and standard deviation for the research questions and Analysis of Covariance (ANCOVA) for testing the null hypotheses at 0.05 level of significance. The study found among others that project based teaching method had positive effect on the academic performance of Business Education students in principles of accounting, there was a significant main effect of treatment of project –based on academic performance of universities Business Education students in principles of accounting (F= 135.759; P = .000) and that there was no significant gender effect of project -based method on academic performance of universities Business Education students in principles of accounting (F= 20.356;P = 0.000).It was recommended among others that papers, journals and book publications should be made available on effective usage of project-based teaching method for academic improvement, mutual cooperation among students and students' involvement in the learning process. Business education students regardless of their gender should be exposed to project -based teaching method of teaching principles of accounting. This is because the method is beneficial to both sexes.

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INTRODUCTION

Educational programmes are often time designed to structure students' academic performance with needed skills, knowledge, attitudes and capabilities to be useful in life and society. The only way this can be made possible is to impart knowledge, professional skills and the right attitudes that are relevant to societal needs through the use of teaching methods that make students to be active learners. Teaching methods are strategies and techniques needed for instructions. Since the introduction of Business Education into Nigerian Universities, it is perceived by Bode (2016) that lecture and discussion teaching methods are predominantly used by lecturers. Today,

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2010). It is a planned piece of work that is designed to find information about something, to produce novelty or improve on performance. It involves careful study of a subject done by school or college students over a period of time. Project-based teaching method improves students understanding and retention of information and can be effective in developing higher order cognitive skills such as problem solving and critical thinking to produce something new, improve already existing one (Oladunjoye, 2015). Emioye (2014) asserts that it is a student-centered pedagogy that involves a dynamic classroom approach in which it is believed that students acquire deeper knowledge through active exploration of real-world challenges and problems. According to Edutopia (2016), students learn about a subject by working for an extended period of time to investigate and respond to a complex question, challenge, or problem which is a style of active learning. Project based learning contrasts with paper-based, rote memorization, or teacher-led instructions that simply presents established facts or portrays a smooth path to knowledge by posing questions, problems or scenarios.

Meanwhile, lecture teaching method been the oldest method of teaching communicated from ancestors to descendants by word only, transmitted from age to age without writing in form of rote study. According to Ojetunde (2012), lecture method is a method whereby the teacher pours down all the facts and figures he had prepared for the lesson without allowing students' participation except perhaps at the end of his lecture when students are allowed to ask questions. Kilani (2010) defines lecture method as the oldest, easiest, cheapest and most familiar but most abused and least effective method in many respects and circumstances. The method is characterized by the active teacher who does all the talking throughout the lesson and the passive pupils or students merely listen or take down notes of the important points in the lecture. There is more pressure on students as lectures focus on subject contents rather than making learning environments more interactive. All the above teaching methods impact on academic performance of students. Quite remarkably, regular poor academic performance by the majority students is fundamentally linked to application of ineffective teaching methods by lecturers to impact knowledge to learners (Adunola, 2011). Substantial research on the effectiveness of teaching methods indicates that the quality of teaching is often reflected by the performance of learners. According to Ayeni (2011), teaching is a process that involves bringing about desirable changes in learners so as to achieve specific outcomes.

In order for the method used for teaching to be effective, Adunola (2011) maintains that lecturers need to be conversant with numerous teaching methods that take recognition of the magnitude of complexity of the concepts to be covered. Aka (2015) defines academic performance as the index of general mental abilities which are responses to test of different kinds. Walker and Lofty (2017) in support of Aka (2015) explains that academic performance is the general school disciplines as exhibited by intellectual functioning. A student can be above average, average or below average in his or her cognitive class functioning. Suboptimal academic performance by the majority business education students in principles of accounting at university level has largely been cited to be the result of ineffective teaching methods by lecturers. On relented attempts have been made by lecturers and other educational tutors to inculcate or pass the nitty-gritty and the practicability of this course using different methods of teaching to ensure deeper understanding of concepts and engage in sustainable thinking that can result in self-reliance. As a result, this study is to determine the effect of project-based teaching methods on business education students' academic performance in principles of accounting in universities in South-West, Nigeria. South-Western Nigeria comprises Ekiti, Lagos, Ogun, Ondo, Osun and Oyo states. In the region, there are eight federal universities, six state universities, one jointly owned university and thirteen private universities. Among these universities are Ekiti State University, Lagos State University, Olabisi Onabanjo University, Tai-solarin University of Education and University of Lagos offering Business Education in different faculties and departments.

Several demographic variables, especially gender have been found to be important in academic performance of students. Matthew (2012), Afon and Bamiwo (2015), Thompson (2016) identified gender as important antecedent variable in teaching and learning of business education subjects. Female protégés were found to exhibit greater social distance, experience sexual tensions, fear and public scrutiny. Allen (2016) concluded that these reasons account for high female reluctance to actively participate in students' centered learning relationship from male students and vice versa. So same sex pairing has the highest occurrence and is believed to be more likely to succeed. Mafo and Tunwagun (2010) found no relationship between gender and academic performance of micro economics students. But Foyeje (2017) found men to be more innovative, creative and proactive. Philip (2015) asserted that there is no statistically significant difference interaction effect between methods of teaching and Business Educations student's academic performance based on gender in universities, further stated that both gender benefit almost equally from any methods of teaching adopted by lecturers which implied that the contribution of both genders measurement was not significant.

Statement of the Problem: Performance of students in universities has been identified as a critical element of graduates' survival. However, academic performance of students in recent years, particularly in Principles of Accounting has posed a serious challenge which demands immediate solution. The performance of students in Principles of Accounting has not been encouraging as many students often fail this course in universities. This poor performance is evident in the analysis of 2012/2013, 2013/2014 and 2014/2015 academic sessions' results in four of the universities offering Business Education in South-West, Nigeria. The results are as found below: For 2012/2013 academic session, out of 711 students, 275 (38.7%) passed; while 436 (61.3%) failed. For 2013/2014 academic session, out of 602 students, 268 (44.5%) passed; while 334 (55.5%) failed and for 2014/2015 academic session, out of 740 Business Education students offering principles of accounting in the four universities, 276 students representing 33.2% passed; while 464 (66.8%) failed. Though the situation presented above calls for concern, the factors responsible for this poor performance are not clearly understood. However, the researcher's interaction with students and lecturers revealed that students complained that the accounting class is always one man's affair. They also complained that the method of teaching makes the subject to be exceptionally difficult. Lecturers on their part are of the opinion that students do not show enthusiasm and liveliness in Principles of

Accounting class. It is therefore necessary to properly groom the students at this level to enable them improve their academic performance in Principles of Accounting. Poor performance of students in accounting subjects, particularly Principles of Accounting has assumed a serious dimension as seen in the analysis above. In the light of this, accounting lecturers need to seek suitable ways of tackling the current massive failure in Principles of Accounting if they are to halt the drifts of business education students to other educational courses. It is as a result of these reasons that this study was conducted to determine the effect of project-based teaching method on Business Education students' academic performance in principles of accounting in South-Western Nigerian universities.

Purpose of the Study

The main purpose of this study was to determine the effect of project-based teaching method on Business Education students' academic performance in principle of accounting in South-West, Nigeria universities. The specific purposes are to:

? Assess the effect of project -based teaching method on Business Education students' academic performance in principles of accounting in South-West Nigeria universities
? Determine the effect of gender (male and female) on academic performance of Business Education students taught principles of accounting using project -based and lecture methods in South-West Nigeria universities.

Research Questions

The study addressed the following research questions:

1 What is the effect of project -based teaching method on Business Education students 'academic performance in principles of accounting in South-West Nigeria universities?
2 What is the effect of gender on the academic performance of Business Education students taught principles of accounting using project-based and lecture methods in South-West Nigeria universities?

Hypotheses

The following null hypotheses are formulated and would be tested at 0.05 level of significance:

Ho
1: There is no significant difference in the mean academic performance of Business Education students taught principles of accounting using project -based teaching method and those taught with lecture teaching method in universities.

Ho
2. There is no significant gender difference among the mean academic performance of Business Education students taught principles of accounting with project -based and lecture teaching methods in universities.

Ho
3. There is no significant interaction effect of treatment and gender on academic performance of Business Education students taught principles of accounting with project -based and lecture teaching methods in universities.

MATERIALS AND METHODS

The research design employed in the study is quasi-experimental pre-test post-test control group due to its suitability in establishing positive cause and effect relationship. This design is a non- equivalent, control group design that requires non-random assignment of participant into groups. This design is used for the study because intact classes are assigned to the two learning methods of project-based teaching, and lecture method. This is because it is not possible for the researcher to randomly sample the students and assign them to groups. Basically, the primary unit of sampling in this study is five federal and state owns universities in south-west, Nigeria offering business education as at 2017/2018 academic session with a total of 370 business education students as provided by the Education Management information system(EMIS, 2017) and not necessarily the individual students or the student' population. This is because most universities operate an intact-group class structure. Thus, purposive random sampling technique was adopted the selection of universities 200level students in this study.

The universities selected for the study were based on the following criteria:

1 Universities which are either federal or state government owned
2 Universities which are co-educational
3 Universities where students offers business education
4 Universities which have the same admission policy
5 Universities situated in the south-west, Nigeria

Based on the above criteria two universities were randomly selected for the experiment from the five universities offering Business Education in the South-West, Nigeria. They are Olabisi Onabanjo University, Ago Iwoye and Lagos State University, Lagos. The universities were chosen purposefully for proper representation because two teaching methods and intact classes were needed for groups. The number of students in each university was used for the study, because intact classes were assigned to each group as it was not possible for the researcher to randomly sample the students and assign them to the groups. Hence, a factorial research design of 2 x2 was adopted to test null hypotheses for this study. The first two factorial levels are the experimental group with is project-based teaching methods and control group with is lecture teaching method and the second factorial level is gender occurring in either male (M) or Female (F). Of course, this design allowed for the experimental groups to receive treatment while the control group did not receive any treatment. However both the experimental and control group received the pre-test and post-test before and after the treatment. Three researcher designed instruments were used to collect data for the study. The instruments are titled: Instructional packages (Lesson plan) on project-based, Instructional packages (Lesson plan) on lecture and Principles of Accounting Performance Test. (PAPT) was drawn from five relevant themes (topics) in the 200level Business education course content in the selected universities course books. The topics are general journal, correction of errors, suspense account, control account and incomplete records. It was scored100%, the objective test carried 40% that is two marks for each item while the essay question carry 60%. The range of scores obtainable was 0% -100%. The instruments were subjected to face and content validity. Draft copies of the

PAPT (Pre-test and Post-test), instructional packages on project-based and lecture teaching method of the study were given to three experts. These experts were requested to scrutinize the items for relevance, clarity, content coverage or appropriateness of the instrument in addressing the purpose of the study. After necessary validation of the instruments, a pilot study was conducted at Kwara State University, Malete, using 42 students. The forty-two (42) students are 200 level students.

The reliability of the instrument was determined by statistically analyzing the data collected from the pilot study using Cronbach Alpha. This reliability coefficient calculated for the instruments was 0.74.The data for the research questions were analyzed using mean and standard deviation. The hypotheses were tested using Analysis of covariance (ANCOVA) statistic. All the hypotheses were tested at 0.05 level of significance.

RESULTS

Research Question one : What is the effect of project-based teaching method on Business Education students 'academic performance in principles of accounting in South-West Nigeria universities?

Table 1. Mean and standard deviation on effect of project-based teaching method on students' academic performance in principles of accounting

GROUP	N	X	SD
Project-Based	217	56.21	5.59
Lecture	153	49.46	4.69

Source: Field experiment, 2018

The data presented in table 1 reveals that treatment group taught principles of accounting with project-based method had a post-test mean score of 56.21 and standard deviation of 5.59 ($\bar{X}$ = 56.21; SD = 5.59),and treatment of accounting while the control group taught principles of accounting with lecture method had a post-test mean scores of 49.46 and standard deviation of 4.69 ($\bar{X}$ = 49.46; SD = 4.69). The mean difference between the two groups is 6.75. This implies that students taught principles of accounting with project-based method had higher mean score than those taught with lecture method. The standard deviation values indicated that there is low variability in the scores.

Research Question two : What is the effect of project-based teaching method on male and female students' academic performance in principles of accounting in South-West Nigeria universities?

The data presented in table 2 reveals that male students taught principles of accounting with project -based method had mean score of 56.91 and standard deviation of 6.60 ($\bar{X}_{male}$ = 56.91; SD = 6.60) while female students taught with lecture method had mean of 51.18 and standard deviation of 3.57 ($\bar{X}$ = 51.18; SD = 3.57) with a mean difference of 4.50. The low standard deviation values in both methods of female students indicated that there is low variability in the scores. These results showed that male students taught principles of accounting with project -based method had higher mean score than female students ($\bar{X}_{male}$ = 56.91; $\bar{X}_{female}$ = 55.68) and lecture method female students had higher mean score than male students ($\bar{X}_{male}$ = 47.62; $\bar{X}_{female}$ = 51.18). This implies a slight effect attributed to gender on academic performance of students taught principles of accounting using project-based method.

Table 2. Mean of pre-test and post-test of male and female students taught principles of accounting using project-based and lecture methods

GENDER	N	Mean Project-based X	SD X	Lecture X	Difference SD
MALE	326	56.91	6.60	47.62	5.06 9.29
FEMALE	390	55.68	4.51	51.18	3.57 4.50

Test of Hypotheses: The null hypotheses for the study were tested using Analysis of Covariance (ANCOVA) at 0.05 level of significance and the summaries are presented in Tables 3 to 6 as follows:

Ho1. There is no significant difference in the mean academic performance of Business Education students taught principles of accounting using project-based teaching method and those taught with lecture teaching method in universities.

Table 3. Summary of Analysis of Covariance (ANCOVA) for Test of Significance of main effect treatment of project-based method on academic performance of students in principles of accounting

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	5060.849a	4	1265.212	49.997	.000

estimated marginal means for two groups that is the adjusted mean after the co-variance. The table reveals that the participants in treatment group (Project-based method) performed better than their counterparts in control group (Lecture method) because they had the highest adjusted post mean scores (mean = 56.08) as against the adjusted post-test mean score of the control group (mean = 49.66). The implication here is that teaching with Project-based method is effective for improving the academic performance of students in principles of accounting in universities.

The data presented in Table 6 showed F-calculated value for interaction effect of treatment and gender on universities students' academic performance in principles of accounting. The Table showed that there was no significant interaction effect of treatment of project-based method and gender on academic performance of students in principles of accounting (F= 20.17; P = 0.254). Hence, the null hypothesis that stated that there is no significant interaction effect of treatment of project-based teaching method and gender on the academic performance of universities Business Education students

Table 4. Estimated marginal means of both the treatment and control groups

Groups	Mean	Std. Error
Project-based method	56.08	0.347
Lecture method	49.69	0.415

Source: Field experiment, 2018

Table 5. Summary of Analysis of Covariance (ANCOVA) for Test of Significance of gender effect on academic performance of students in principles of accounting

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1214275.423a	5	242855.085	16273.008	.000
Pretest	119.987	1	119.987	8.040	.005
Treatment	12497.664	1	12497.664	837.432	.000
Gender	216.702	1	216.702	14.521	.153
Treatment * Gender	301.020	1	301.020	20.170	.254
Error	5566.577	373	14.924		
Total	1219842.000	378			

a. R Squared = .995 (Adjusted R Squared = .995)

Source: Field experiment, 2018

Table 6: Summary of Analysis of Covariance (ANCOVA) for Test of Significance of interaction effect on treatment and gender on academic performance of students in principles of accounting

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	1214275.423a	5	242855.085	16273.008	.000
Pretest	119.987	1	119.987	8.040	.005
Treatment	12497.664	1	12497.664	837.432	.000
Gender	216.702	1	216.702	14.521	.153
Treatment * Gender	301.020	1	301.020	20.170	.254
Error	5566.577	373	14.924		
Total	1219842.000	378			

Source: Field experiment, 2018 a. R Squared = .995 (Adjusted R Squared = .995)

H02: There is no significant gender difference among the mean academic performance of Business Education students taught principles of accounting with project-based and lecture teaching methods in universities.

The data presented in Table 5 showed F-calculated values of gender effect of project-based teaching method on students' academic performance in principles of accounting. The Table showed that there was no significant gender effect of project -based method on academic performance of universities Business Education students in principles of accounting (F

(373,1)= 14.521; P = 153). Hence, the null hypothesis that stated that there is no significant gender difference among the mean academic performance of Business Education students taught principles of accounting with project -based and lecture teaching methods in universities was not rejected. This implied that the academic performance of male and female business education students taught principles of accounting with project -based teaching method did not differ significantly.

H03: There is no significant interaction effect of treatment and gender on academic performance of Business Education students taught principles of accounting with project-based and lecture teaching methods in universities.

taught principles of accounting was therefore not rejected. This implied that interaction between treatment and gender has no effect on the academic performance of students in principles of accounting. This means that the effects observed are due to the main treatment given to students.

DISCUSSION OF FINDINGS

Table 1 revealed that project-based method is effective in the teaching of principles of accounting for it improved students' academic performance in principles of accounting. Table 3 clearly revealed that there is no significant effect of treatment of project-based teaching method on the academic performance of universities Business Education students taught principles of accounting was therefore rejected. This implied that teaching with project-based teaching method has positive effect on the academic performance of universities Business Education students in principles of accounting. This means that the effect observed are due to the main treatment given to students. Table 4 showed that teaching with project-based teaching method is effective for improving the academic performance of universities Business Education students in principles of accounting.This finding supports similar reports on learning integration of project-based method. The report indicates that project-based learning gives students a more

"integrated" understanding of the concepts and knowledge they learn by equipping them with practical skills they can apply throughout their lives (Abbott, 2014). The study also found that that there was a significant main effect of treatment of project-based on academic performance of universities Business Education students in principles of accounting (F (373,1)= 837.432; P = 000). This means that project-based is effective in improving the academic performance of Business Education students in principles of accounting. In addition, Table 2 showed that there is a slight effect attributed to gender on academic performance of students taught principles of accounting using project-based method. Table 5 affirmed that there is no significant interaction effect of treatment of project-based teaching method and gender on the academic performance of universities Business Education students taught principles of accounting was therefore not rejected. This implied that interaction of treatment and gender has no effect on the academic performance of students in principles of accounting. This means that the effects observed are due to the main treatment given to students. This corroborated the findings of Oyewole (2017) that the test of interaction showed that gender had no significant interaction with teaching approach on students mean achievement. Statistics show that the literacy rate is 73 percent for men and 48 percent for women showing that gender gap in literacy rates at post basic level of education stood at 79 percent for boys and 61 percent for girls (Oyesola, 2018).

Conclusion

Based on the findings of the study it was concluded that teaching with project-based method is effective in improving the academic performance of universities Business Education students in principles of accounting. This indicates that project-based teaching method has significant positive effect on the academic performance of business education students in principles of accounting. The implication here is that the conventional method used by lecturers in teaching principles of accounting is not as effective as the project-based teaching method.

Recommendations: Based on the findings of the study, the following recommendations are considered plausible and necessary:

- ? Institutions should encourage business educators in using project-based teaching method by organizing seminars, conferences and workshops to expose them its proper usage.
- ? Government should formulate and implement policies that will enhance the work of lecturers and motivate business educators at all levels to utilize project-based teaching method.
- ? Papers, journals and book publications should be made available on effective usage of project-based teaching method for academic improvement, mutual cooperation among students and students' involvement in the learning process.

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