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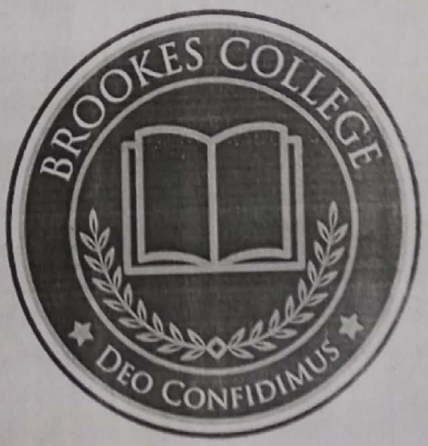
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EFFECT OF CLASS-WIDE AND CROSS-AGE PEER TUTORING ON STUDENTS' ACADEMIC PERFORMANCE IN JUNIOR SECONDARY SCHOOLS, NIGERIA

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Abstract

The study made comparative analysis of the class-wide and cross-age peer tutoring in junior Secondary schools in South-Western Nigeria. The study adopted quasi-experimental research design of the non randomized pre-test post-test of the non-equivalent control group. Four research questions were raised and two hypotheses generated at 0.05 level of significance. The population of the study was 372,467 junior secondary school students offering business studies in south-west during the 2019/2020 academic session out of which 230 were drawn as sample using purposive sampling technique. Business Studies Standardized Cognitive Achievement Test (BSAT) was the instrument used, which was validated by three experts from Kwara State University and Ekiti State University. Test re-test method of reliability was employed to obtain reliability coefficient of 0.67. Mean and Standard Deviation were used to answer the five research questions raised. Analysis of Co-Variance statistical tool was used to test the two null hypotheses at 0.05 level of significance. Findings revealed that students taught using class-wide and cross-age peer tutoring performed significantly better than those taught using traditional teaching strategies. The study revealed that there was no significant gender effect on the academic performance of students taught business studies using class-wide, and cross-age peer tutoring. It was also revealed that there was no significant interaction effect of treatment and gender on students' academic performance in business studies in junior secondary schools in South-west Nigeria. Therefore, engaging students in their studies allow them to be active in the learning process. It was recommended that teachers should employ both class wide and cross age peer tutoring in teaching business studies to encourage students to be active learner.

Introduction

The importance of business studies to human development cannot be under estimated especially in this modern time that government pay much attention to training of more business studies teachers at Junior Secondary schools. Business studies is meant to prepare individuals for the acquisition of the needed skills to survive in a highly competitive labour market, and develop provide capacity building for pupils that will enable them self sustenance in subsequent life. traditional method of teacher-cantered pedagogy is a traditional method commonly used in teaching business studies which is only useful for making students understand the concept in a logical way but passive approach that paves way to one- way communication of idea. Therefore, the Teachers-centered pedagogy seems to be dominant method of instruction, because of its difficulty in making individual learner to learn without participating in teaching-learning process

Hott, Walker, and Sahni (2012), described peer tutoring as a teaching strategy used in classrooms to enhance students' motivation, cognition, learning outcomes and meta-cognitive skills. It is an instructional strategy that allow interaction between high-achieving students and low-achieving students. It is a systematic, peer-mediated, a powerful tool for meeting the academic and social needs of students at all levels of education irrespective of gender, age and socio-economic background.

Mahead and Gard (2010) described Class-Wide as a as a type of peer tutoring that allows students to act as both tutors and tutees for instruction to review academic material and exchange roles among themselves during the tutoring lesson; receiving assistance from the teacher who supervises their activities. That is, it is a teaching method that requires dividing the entire class

into groups of two to five students according to their ability levels. Students act as tutors, tutees, or both tutors and tutees.

The Cross-age peer tutoring is an approach where students of different age group are peered together with older students assuming the role of tutor while the young ones assume the role of the tutee (Rebecca, 2017). This is a method where older students are paired with younger students to teach or review a skill. The older students and younger students may be at the same or different skill levels, with the relationship of cooperative or expert interaction type.

The goals of business studies at the junior secondary school (JSS) level as entrenched in the Basic Education Curriculum for Junior Secondary Schools (NERDC, 2013) include:

- To enable students to acquire the basic knowledge of Business Studies.
- To prepare students for further training..
- To equip students with orientation and basic skills with which to start work after junior Secondary School.
- To inculcate in the students, the basic skills in office occupation.
- To equip the students with the ability to relate the knowledge and skills to the national

Ugwu (2011) affirmed that gender difference explained the gender gap in Nigerian education system. Gender was found to be significantly related to students' performance in Physics. According to him, the fundamental problem that attracts public concern in Nigeria in the modern day, is the gender gap in the academic performance of students. This gap is anchored on such factors as social, economic, and cultural background.

The researchers tried to find out the effect of class-wide and cross-age peer tutoring on students' academic performance in business studies at junior secondary school level in Nigeria.

Statement of the Problem

At the completion of three years of junior secondary school, students are expected to have acquired practical business and entrepreneurial skills needed for self-employment (Federal Government of Nigeria, 2008). Inspite of the importance of business studies to nation-building and in ensuring self sustainability of students after schooling, it was observed that few pains were made to ensure its effective teaching in secondary schools. Onifade (2010) attributed this poor teaching of the subject to failure of the government to provide services intended for the teaching and learning of such business studies as typewriting, shorthand, and accounting which are skill-oriented. This is contrary to curriculum planners who expected the students.

Teachers in the 21st Century are faced with the challenge of being obsolete of the modern methods of teaching using new technology. The modern students prefer the teachers who engage them in teaching and learning process especially with the dynamic nature of business concepts.

The study is carried out to explore more effective instructional strategies meant for improving students' academic achievement in business studies at junior secondary school level in South-Western Nigeria.

Purpose of the Study

The purpose of the study is to:

1. Investigate the effects of class-wide and cross-age peer tutoring on academic Performance of students in Junior Secondary Schools
2. Establish the effect of Class-Wide peer tutoring on academic performance of Junior Secondary Schools

3. Ascertain the effect of Cross-Age peer tutoring on academic performance in Junior Secondary Schools

Research Questions

The following research questions are raised to guide the study:

1. What is the difference in the academic performance of students taught using Class-Wide peer tutoring and those taught using the traditional method?
2. What is the difference in the academic performance of students taught using Cross-age peer tutoring and individuals taught using the traditional method?
3. What is the difference in the academic performance of male and female students taught using class-wide and cross-age peer tutoring?
4. What is the variation in the academic performance of rural and urban students taught using class-wide and cross-age peer tutoring?

Research Hypotheses

The following null hypotheses are formulated and tested at 0.05 significant level.

H_{01}: There is no significant effect of treatment of Class-wide peer tutoring method on the academic performance of students taught business studies in secondary schools.

H_{02}: There is no significant effect of treatment of cross-age peer tutoring method on the academic performance of students taught business studies in Junior secondary school.

Significance of the Study

The study is expected to be of benefit to students, teachers, parents, government and researchers.

The students who receive instruction using these two types of peer tutoring approach might

become better learners which may likely improve their academic performance. Through peer tutoring students may discover that they are engaged in their process of learning, this may likely motivate them to have interest in the method of teaching to enhancing their performance

Research Method

The study adopted quasi-experimental research design of the non randomized pre-test post-test non-equivalent control group. The study adopted a factorial research of 3×3 to test the hypotheses formulated while first three factorial levels constituted the three experimental groups namely: class-wide, and cross-age peer tutoring and one control group which is the traditional method of teaching. The sample size consisted of 230 Junior Secondary School students offering business studies in Southwest Nigeria who were selected using multistage sampling procedure. The key instrument used for gathering data was an adapted Standardized Cognitive Achievement Test (SCAT) of Junior Secondary School National Examination Council 2016-2018 questions on Business Studies. The instrument was subjected to face and content validity. Test re-test technique of reliability was employed to attest the internal reliability of the instrument. The two tests were correlated using Pearson Product Moment Correlation test to obtain reliability coefficient of 0.67

Mean and standard deviation were used to answer the research questions while inferential statistics of Analysis of Covariance (ANOVA) was used to test the hypotheses formulated at 0.05 level of significance.

DATA ANALYSIS

Research Question 1: What is the effect of Class-Wide peer tutoring on students' academic performance in Business Studies?

This research question is answered using Business Studies Achievement Pre-test and post-test scores obtained by the students.

Table 1: Mean and standard deviation of class-wide peer tutoring method and students' academic performance in business studies

GROUP	Experimental Group (Class-Wide Peer tutoring)			Control Group (Traditional Method)		
	N	X	**SD**	**N**	X	**SD**
PRE-TEST	55	13.07	3.60	65	13.48	5.16
POST-TEST	55	17.44	5.45	65	13.60	2.98
MEAN & SD DIFFERENCE		4.37	1.85		0.12	2.18

Source: Field experiment, 2020

In Table 1, the experimental group were taught business studies using class-wide peer tutoring and mean score of 13.07 was obtained in the pre-test while a mean score of 17.44 was obtained in the post-test with standard deviation of 3.60 and 5.45 respectively. The low difference in standard deviation (1.85) means that the scores of students in both the pre-test and post-test are clustered around their respective mean scores. The mean score obtained from the traditional method group was 13.48 with standard deviation of 5.16 ($\overline{x}$ = 13.48; SD = 5.16) for the pre test but the mean score of 13.60 and standard deviation of 2.98 ($\overline{x}$ = 13.60; SD = 2.98) was obtained in the post test. This shows a difference of 0.12 . With this result, it is clear that class-wide peer tutoring method is more effective in enhancing students' academic performance in business studies as class-wide peer tutoring group performed more creditably than those in the traditional method group.

Research Question 2: What is the effect of Cross-age peer tutoring method on s school students' academic performance in business studies?

This research question was answered using Business Studies Achievement Pre-test and

post-test scores from the students.

Table 2: Mean and Standard Deviation of the cross-age peer tutoring method and students academic performance in business studies

GROUP	Experimental Group (Cross-age Peer tutoring)			Control Group (Traditional Method)		
	N	X	**SD**	**N**	X	**SD**
PRE-TEST	50	16.06	5.64	65	13.48	5.16
POST-TEST	50	18.92	5.50	65	13.60	2.98
MEAN & SD DIFFERENCE		3.86	0.14		0.12	2.18

Source: Field experiment, 2020

Table 2 shows the experimental group that were using cross-age peer tutoring with a mean score of 16.06 in the pre-test and a mean score of 18.92 in the post-test The standard deviation 5.64 and 5.50 were obtained for pre-test and post-test respectively. The result gave a pre-test, post-test mean gain of the experimental group taught with cross-age peer tutoring to be 3.86. The low difference in the standard deviation (0.14) implies that the scores of students in pre-test and post-test are clustered around their respective mean scores. The Mean score of 13.48 and standard deviation of 5.16 were obtained in the pre-test of a group taught using traditional method. The Mean score of 13.60 and Standard Deviation of 2.98 were obtained in the pre-test for the control group. Therefore, it is clear that cross-age peer tutoring method is effective in improving students' academic performance in business studies as students in the cross-age peer tutoring group performed better than those in the traditional method group.

Research Question 4: What is the effect of gender on the academic performance of secondary students taught business studies using class-wide and cross-age peer tutoring methods?

Table 3: Mean of pre-test and post-test of male and female students taught business studies using class-wide, and cross-age peer tutoring method

GENDER	N	Class-wide		Cross-age	
		$\bar{X}$	**SD**	$\bar{X}$	**SD**
MALE	125	18.18	6.57	19.63	5.21
FEMALE	105	16.94	4.60	17.67	5.91
MEAN & SD DIFFERENCE		01.24	1.97	01.96	0.70

Source: Field experiment, 2020

In Table 3, male students that were taught using class-wide peer tutoring had a mean mark of 18.18 and standard deviation of 6.57 ($\bar{X}$ = 18.18; SD = 6.57). In cross-age peer tutoring, the Mean score and standard deviation of students were 19.63 and 5.21 respectively. the female students taught business studies with class-wide peer tutoring had a mean score of 16.94 and 4.60 as standard deviation. In cross-age peer tutoring, female students had a mean score of 17.67 and standard deviation of 5.91 ($\bar{X}$ = 17.67; SD = 5.91 It therefore means that male students taught using class-wide peer tutoring had better mean score than their female counterparts ($\bar{X}_{male}$ = 18.18; $\bar{X}_{female}$ = 16.94). Also, the table shows that the male students taught using cross-age peer tutoring had higher mean score than female students ($\bar{X}_{male}$ = 19.63; $\bar{X}_{female}$ = 17.67). Thus the difference in the academic performance attributed to gender was as a result of the different methods of teaching used . That is, class-wide and cross-age peer tutoring methods of teaching.

Hypotheses Testing

H_{01}: There is no significant effect of treatment of Class-wide peer tutoring method on the academic performance of students taught business studies in secondary schools.

Table 4: Summary of Analysis of Covariance (ANCOVA) of class-wide peer tutoring

method and academic performance of students in business studies

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	498.860	4	124.715	6.788	.000
Intercept	2218.386	1	2218.386	120.751	.000
Pre-test	35.006	1	35.006	1.905	.170
Treatment	462.794	1	462.794	25.191	.000
Gender	6.788	1	6.788	.369	.544
Treatment*gender	13.138	1	13.138	.715	.399
Error	2112.731	115	18.372		
Total	30917.000	120			
Corrected Total	2611.592	119			

a. R Squared = .191 (Adjusted R Squared = .163)

Source: Field experiment, 2020

The Table 4 shows the F-calculated values for effects of treatment of class-wide peer tutoring method on academic performance of students in business studies. Class-wide peer tutoring method was found to have significant effect of treatment on academic performance of students with F= 25.191 and P = .000. Thus, there was a significant effect of treatment of class-wide peer tutoring method on the academic performance of students. In other words, using class- wide peer tutoring method had significant effect on the students' academic performance in business studies. Thus, the effect observed was due to the main treatment given to the students.

Table 5: Estimated marginal means of both the treatment and control groups

Groups	Mean	Std. Error
Class-wide peer tutoring method	17.581	0.590
Traditional method	13.585	0.534

Source: Field experiment, 2020

Table 5 shows estimated marginal means for the two groups. The students in the treatment group (Class-wide peer tutoring method) did better than their counterparts in control

group (Traditional method) with higher adjusted post mean score of 17.581 as against the adjusted post-

test mean score of 13.585 of the control group. The implication is that teaching with class-wide peer tutoring method is more effective than other methods used.

H_{02}: There is no significant effect of treatment of cross-age peer tutoring method on the academic performance of students taught business studies in secondary school.

Table 6: Analysis of Covariance (ANCOVA) for test of significance of main effect treatment of cross-age peer tutoring method

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	1298.869	4	324.717	23.070	.000
Intercept	1383.389	1	1383.389	98.286	.000
Pre-test	449.824	1	449.824	31.959	.000
Treatment	424.454	1	424.454	30.156	.000
Gender	43.244	1	43.244	3.072	.082
Treatment*gender	14.534	1	14.534	1.033	.312
Error	1548.262	110	14.075		
Total	31968.000	115			
Corrected Total	2847.130	114			

a. R Squared = .456 (Adjusted R Squared = .436)

Source: Field experiment, 2020

From Table 6, F-calculated values for effects of treatment of cross-age peer tutoring on academic performance of students in business studies is unveiled. The F value of 30.16 and P value of .000 were obtained. Comparing the two values indicates that the null hypothesis had to be rejected. Teaching with cross-age peer tutoring method positively affect students' academic performance in business studies. This further means that the effect was as a result of the main treatment given to the students.

Table 7: Estimated marginal means of the treatment and control groups

Groups	Mean	Std. Error
Cross-age peer tutoring method	18.083	0.562
Traditional method	14.005	0.472

Source: Field experiment, 2020

Table 7 shows the estimated marginal means for two groups. The members in treatment group (Cross-age peer tutoring method) performed better than their counterparts in control group (Traditional method) because they had the higher adjusted post mean score of 18.083 when compared with of the control group with mean of 14.005. The implication here is that teaching with cross-age peer tutoring was more effective method than any other method used.

Table 4 shows F-calculated value of 0.369 and P value of 0.544 for gender effect on academic performance of students taught business studies with class-wide peer tutoring method. In the table, there was no significant gender effect on academic performance of students taught business studies using Class-wide peer tutoring method with F value.

Also, the table 6 showed F-calculated ratio of 3.072 and P value of 0.082 for gender effect on academic performance of students taught business studies with cross-age peer tutoring method. This means that there was no significant gender effect on academic performance of those students taught business studies using cross-age peer tutoring method. This implies that Class-wide and cross-age peer tutoring method have no significant effect on the academic performance of students based on gender.

Discussion of Findings

The research question one determined the effect of class-wide peer tutoring on business studies students academic performance in junior secondary schools and it was revealed that class-wide

peer tutoring significantly improved students' academic performance in business studies because the class wide peer tutoring group performed better than the traditional method group. The null dhypothesis one was also rejected indicating a significant treatment effect of class-wide peer tutoring on students' academic performance in business studies. This result is in line with Majdoleen's (2017) finding revealed an improvement in the mean scores of students in business studies using class-wide peer tutoring in South West. That Implementation of class-wide peer tutoring changed the learning environment from a traditional environment to a more stimulated environment that allowed students to interact with each other, gain knowledge, social skills, and involve in the teaching - learning process.

Similarly, this study supported the study of Anne (2018) in such that class-wide peer tutoring yielded positive significant improvement in academic performance of students when compared with students taught using traditional method of teaching. This is as a result of class-wide that enables one-to-one support and increases opportunity to respond while smaller groups. Moreover, the findings also agreed with the findings of Najabat, Muhammad and Jaffar (2015) who reported that class-wide peer tutoring gives opportunity to the students to utilize their knowledge and learned experience in a meaningful way as learners get closer attention. It also allows both tutor and tutee to gain self-assurance. The research question two ascertained effect of cross age peer tutoring on academic performance of business studies students. The study showed the cross age peer tutoring as an effective method for improving academic performance in business studies.

However, this study is in contrast to the study of Ndirika and Ubani (2017) that there was no significant difference in the mean scores of students who were exposed to cross-age peer tutoring and conventional teaching methods.

Conclusion and Recommendations

The class-wide and cross-age peer tutoring had significant positive effect on students' academic performance in business studies as class-wide peer tutoring was found to be more effective in urban area of south-west in Nigeria.

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

1. Business Studies teachers should use class-wide peer tutoring to improve the academic performance of students in business studies.
2. Business Studies teachers should use cross-age peer tutoring to improve the academic performance of business studies students.
3. The female students offering business studies in junior secondary schools should be encouraged to participate in class-wide, and cross-age peer tutoring for improved academic performance like their male counterpart.

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