EFFECTS OF JIGSAW INSTRUCTIONAL STRATEGY ON STUDENTS' ACADEMIC ACHIEVEMENT IN FINANCIAL ACCOUNTING

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Abstract

The study investigated the effects of jigsaw instructional strategy on students' academic achievement in financial accounting in Anambra State. Two research questions guided the study and three null hypotheses were tested at 0.05 level of significance. The study adopted a quasi-experimental research design, of pre-test, post-test, non-equivalent control group design. The population of the study comprised 3,482 Senior Secondary Two (SS2) students. Purposive sampling technique was used to select two schools comprising 98 students (51 students in control group and 47 students in experimental group) from two intact classes. The control group comprised 19 males and 32 females while the experimental group comprised 19 males and 28 females. The instrument for data collection was a 25-item multiple-choice Financial Accounting Achievement Test (FAAT). The face and content validity of the instrument were established by three experts, two from the Department of Business Education and one from Measurement and Evaluation unit, all from Nnamdi Azikiwe University, Awka. The reliability of the instrument was determined using Kuder-Richardson Formula 20 (KR-20), which yielded a coefficient value of 0.86. Mean and standard deviation were used to answer the research questions, while Analysis of Covariance (ANCOVA) was used to test the null hypotheses. Findings revealed that jigsaw instructional strategy was more effective in enhancing students' academic achievement in financial accounting when compared to the conventional lecture instructional strategy. Furthermore, a significant difference was found between the academic achievement of students taught financial accounting using Jigsaw strategy and those taught using the conventional lecture strategy. However, there was no significant difference between the mean achievement scores of male and female students taught financial accounting using Jigsaw instructional strategy. The study concluded that the integration of Jigsaw strategy into the teaching of financial accounting at the senior secondary school level holds considerable potential for improving students' academic performance. Based on the findings of the study, the researchers recommended, among others that, financial accounting teachers should adopt jigsaw instructional strategy in the teaching and learning of financial accounting in order to improve the academic achievement of both male and female students in financial accounting.

Keywords: Jigsaw Instructional Strategy, Conventional Lecture Instructional Strategy, Academic Achievement, Secondary School Students, Financial Accounting

Introduction

Education plays a fundamental role in national development by equipping learners with the knowledge, skills and attitude required for productive participation in society. In Nigeria, post basic education serves as a critical stage for preparing students for higher education and the labour market. Among the vocational and business-related subjects offered at this level, Financial Accounting is one of the subjects offered at the post basic level of education. Financial Accounting develops students' abilities in financial record-keeping, analysis, decision-making, and entrepreneurial competence. It exposes students to the principles and practices of accounting laying solid foundation for further study in financial accounting and its related disciplines (Obidile & Uzoekwe, 2018). Despite its importance, students' academic achievement in Financial Accounting has remained a concern in many Nigerian schools in post basic level of education, with persistent reports of poor performance attributed to ineffective instructional approaches and inadequate learner engagement (Inuwa, 2024).

Academic achievement represents the outcome that indicates the extent to which a person has accomplished specific goals that were the focus of activities in educational setting. It is the outcome of students' effort in examinations (Eze, Ezenwafor & Obidile, 2016). Academic achievement in Financial Accounting depends not only on students' abilities but also on the quality of instructional methods employed by teachers. Most common instructional method usually employed by teachers (including accounting teachers) is the conventional lecture method. Conventional lecture teaching strategy, which emphasize passive reception of information, often limits students' participation, critical thinking and collaborative problem-solving. Consequently, many scholars have advocated for learner-centred instructional strategies that actively involve students in constructing knowledge and interacting with peers. Learner-centred instructional strategies are increasingly recognized as effective means of improving understanding, motivation, retention and overall academic performance of students in business-related disciplines (Bukki, Olayiwola & Olatoye, 2024).

One of such learner-centred approach is the Jigsaw Instructional Strategy. It is a cooperative learning technique originally developed to encourage interdependence and active participation among students. Under this strategy, students are divided into heterogeneous groups where each member learns a specific portion of the learning material before returning to the home group.

This process promotes communication skills, teamwork and deeper conceptual understanding while reducing over-reliance on the teacher (Ojekwu & Ogunleye, 2020). The strategy aligns with social constructivist principles, which posit that knowledge is constructed through interaction and collaboration among learners (Akpan, Igwe, Mpamah & Okoro, 2020). Some empirical evidence suggest that the Jigsaw instructional strategy can positively influence students' academic outcome across different subject areas. For example, Okudo and Ughelu (2024) reported a significant improvement in students' academic achievement following the utilization of Jigsaw Instructional Strategy in language education, demonstrating its effectiveness compared to conventional teaching methods. Similarly, Okeke (2023) found that the application of Jigsaw teaching technique significantly enhanced university students' academic achievement. Furthermore, another literature review also concluded that Jigsaw strategy consistently improved students' academic achievement and retention by fostering collaboration (Jimoh et al., 2025).

Within Anambra State, concerns regarding students' performance in Financial Accounting have stimulated interest in innovative instructional practices that promote learner-centred participation. Recent evidence indicates a strong positive relationship between the use of Jigsaw teaching methods and students' academic achievement among secondary school learners in the State, suggesting that the strategy may offer practical solutions to persistent learning challenges (Umezulike et al., 2026). Nevertheless, some teachers in the State, continue to rely predominantly on teacher-centred methods, leaving a gap between recommended pedagogical practices and students' academic achievement. Given the continued concerns about students' achievement in Financial Accounting in Nigerian schools at the post basic level and the growing evidence supporting learner-centred instructional methods such as Jigsaw, there is a need for experimental studies that specifically examine the effectiveness of the Jigsaw Instructional Strategy in the teaching and learning of financial accounting. Such research would provide empirical evidence to inform teachers, curriculum developers, and students on the effectiveness or otherwise of Jigsaw instructional strategy on students' academic achievement in financial accounting.

Statement of the Problem

Financial Accounting is a subject that equips the students with essential knowledge and skills in financial recording, analysis and decision-making. Despite its importance in preparing learners

for higher education and the world of work, students' academic achievement in Financial Accounting in many Nigerian secondary schools have remained below expectations. Reports from many scholars indicate that many students struggle to master fundamental accounting concepts, resulting in unsatisfactory learning outcomes and reduced interest in the subject. One of the factors frequently associated with this challenge is the continued reliance on teacher-centred instructional methods that encourage passive learning and provide limited opportunities for collaboration and active engagement (Inuwa, 2024).

In response to these concerns, educators have advocated the adoption of learner-centred instructional strategies capable of improving students' understanding and achievement. Such strategies include Jigsaw, Problem-based method, Think-Pair-Share, among others. The Jigsaw Instructional Strategy has gained attention as a cooperative learning approach that promotes positive interdependence, peer teaching and active participation. Recent studies have reported that Jigsaw-based instruction enhanced students' academic achievement and retention when compared with conventional teaching methods across different disciplines and educational levels (Jimoh et al., 2025; Okudo & Ughelu, 2024). However, the extent to which the Jigsaw Instructional Strategy can significantly improve secondary school students' academic achievement in Financial Accounting under experimental conditions in Anambra State remains inadequately established. Hence the study, to ascertain the effects of Jigsaw instructional strategy on students' academic achievement in financial accounting.

Research Questions

The following research questions guided the study:

1. What is the difference between the mean achievement scores of students taught financial accounting using Jigsaw strategy and those taught using conventional lecture strategy?
2. What is the difference between the mean achievement scores of male and female students taught financial accounting using Jigsaw strategy?

Null Hypotheses

The following null hypotheses were tested at 0.05 level of significance:

$H0_1$ There is no significant difference between the mean achievement scores of students taught financial accounting using Jigsaw strategy and those taught using conventional lecture strategy.

$H0_2$ There is no significant difference between the mean achievement scores of male and female students taught financial accounting using Jigsaw strategy.

$H0_3$ There is no significant interaction effects of the teaching strategies and gender on students' academic achievement in financial accounting.

Methodology

The study adopted a quasi-experimental design, specifically a pre-test, post-test non-equivalent control group design. The structure of the design is presented as follows:

Pre-Test	Treatment	Post-Test	Groups
O_1	X_1	O_2	E
O_1	$X_{\sim}$	O_2	C

Where O_1 - Pre-test

X_1 – Treatment I – Jigsaw teaching strategy

$X_{\sim}$ – No treatment – Conventional lecture teaching strategy

O_2 = Post-test

E – Experimental group

C – Control group

This study was carried out in Anambra State, Nigeria which is situated within the tropical rainforest zone of the Eastern region and has common boundaries with Kogi State to the North, Enugu State to the East, the Imo State to the South, and Delta State to the West. The population of the study consisted of 3,482 senior students in post basic level 2 offering Financial Accounting in 202 public schools in Anambra State. Purposive sampling technique was used to select two schools comprising 98 students (51 students in control group and 47 students in experimental

group) from two intact classes of students offering Financial Accounting. The control group comprised 19 males and 32 females while the experimental group comprised 19 males and 28 females. Data were collected using Financial Accounting Achievement Test (FAAT). Items on FAAT were drawn from WAEC standardized multiple-choice tests from 2015 to 2024. The reliability of FAAT was determined using Kuder-Richardson Formula 20 (KR-20) and reliability coefficient of 0.86 was obtained. Research questions were answered using mean and standard deviation while hypotheses were tested using Analysis of Covariance (ANCOVA) at 0.05 level of significance. A null hypothesis was rejected if the probability value (p-value) is less than or equal to significant value of 0.05 but if otherwise, ($p>0.05$), the null hypothesis was not rejected. The analysis was carried out using SPSS version 25.

Findings of the Study

Research Question 1

What is the difference between the mean achievement scores of students taught financial accounting using Jigsaw strategy and those taught using conventional lecture strategy?

Table 1: Pre-Test and Post-Test Mean Achievement Scores of Students taught Financial Accounting using Jigsaw strategy and those taught using Conventional Lecture Strategy

Instructional Strategy		Pre-Test		Post-Test		
	N	Mean	SD	Mean	SD	Mean Gain
Jigsaw strategy	47	52.66	1.32	64.70	1.76	12.04
Conventional Strategy	51	58.43	1.62	60.15	1.37	1.72
Mean Difference		5.77		4.55		10.32

Source: Field work, 2025

Table 1 shows the pre-test and post-test mean achievement scores of students taught Financial Accounting using jigsaw to be 52.66 and 64.70 respectively. It also shows the pre-test and post-tests mean achievement scores of students taught Financial Accounting using conventional lecture strategy to be 58.43 and 60.15 respectively. The mean gain for Jigsaw strategy was 12.04 which was more than that of conventional lecture strategy of 1.72. Although both groups demonstrated some gains in academic achievement, the conventional lecture strategy revealed slightly higher mean gain when compared to the Jigsaw method. This shows that Jigsaw

instructional strategy has a greater effect of improving the academic performance of students than conventional lecture strategy in the teaching and learning of financial accounting.

Research Question 2

What is the difference between the mean achievement scores of male and female students taught financial accounting using Jigsaw strategy?

Table 2: Pre-Test and Post-Test Mean Achievement Scores of Male and Female Students taught Financial Accounting using Jigsaw strategy

Gender		Pre-Test		Post-Test		
	N	Mean	SD	Mean	SD	Mean Gain
Male	19	53.58	1.23	67.47	1.28	13.89
Female	28	52.04	1.19	62.82	1.22	10.78
Mean Difference		1.54		4.65		3.11

Source: Field work, 2025

Table 2 shows that the male students taught financial accounting using Jigsaw strategy had pre-test mean score of 53.58 and post-test mean score of 67.47 with mean difference of 13.89, while their female counterparts had pre-test mean score of 52.04 and post-test mean score of 62.82 with mean gain of 10.78. This shows that both groups demonstrated substantial gains in their academic achievement. This means that, the Jigsaw strategy is effective for both male and female students in the teaching and learning of financial accounting.

Null Hypothesis 1

There is no significant difference between the mean achievement scores of students taught financial accounting using Jigsaw strategy and those taught using conventional lecture strategy.

Table 3: Summary of Analysis of Covariance on Pre-test and Post-test Mean Achievement Scores of Students Taught Financial Accounting Using Jigsaw strategy and those Taught Using Conventional Lecture Strategy

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	6772.691[a]	2	3386.345	79.643	.000	.626
Intercept	2122.096	1	2122.096	49.909	.000	.344
Pre-test	3836.207	1	3836.207	90.223	.000	.487

Instructional strategy	1541.106	1	1541.106	36.245	.000	.276
Error	4039.309	95	42.519			
Total	351950.000					
Corrected Total	10812.000					

R Squared =0.626 (Adjusted R Squared = 0.619)

Table 3 indicates that at 0.05 level of significance, 1df numerator and 97df denominator, the calculated F is 36.25 with P-value of 0.000 which is less than 0.05. This shows that P-value is significant. Therefore, the null hypothesis is rejected. So, there is a significant difference between the pre-test and post-test mean achievement scores of students taught financial accounting using Jigsaw strategy and those taught using conventional lecture strategy.

Null Hypothesis 2

There is no significant difference between the mean achievement scores of male and female students taught financial accounting using Jigsaw strategy.

Table 4: Summary of Analysis of Covariance on Pre-test and Post-test Mean Achievement Scores of Male and Female Students Taught Financial Accounting Using Jigsaw strategy

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1889.451[a]	2	944.725	19.331	.000	.468
Intercept	1339.922	1	1339.922	27.417	.000	.384
Pretest	1644.465	1	1644.465	33.648	.000	.433
Gender	150.520	1	150.520	3.080	.086	.065
Error	2150.379	44	48.872			
Total	200799.000	47				
Corrected Total	4039.830	46				

R Squared = 0.468 (Adjusted R Squared = 0.444)

Table 4 reveals that at 0.05 level of significance, 1df numerator and 46df denominator, the calculated F is 3.08 with P-value of 0.086 which is greater than 0.05 (not sig). Therefore, the null hypothesis is not rejected. So, there is no significant difference between the pre-test and post-test mean achievement scores of male and female students taught financial accounting using Jigsaw strategy.

Null Hypothesis 3

There is no significant interaction effects of the teaching strategies and gender on students' academic achievement in financial accounting.

Table 5: Summary of Analysis of Covariance on Effects of the Teaching Strategies and Gender on Students' Academic Achievement

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	10232.696[a]	6	1705.449	45.444	.000	.656
Intercept	2360.805	1	2360.805	62.906	.000	.306
pretest	6871.025	1	6871.025	183.086	.000	.561
Instructional strategy	1598.205	2	799.103	21.293	.000	.229
Gender	39.650	1	39.650	1.057	.306	.007
Instructional strategy * Gender	104.667	2	52.333	1.394	.251	.019
Error	5366.637	143	37.529			
Total	550810.000	150				
Corrected Total	15599.333	149				

R Squared = 0.656 (Adjusted R Squared = 0.642)

The result in Table 5 shows that there is no significant effects of the teaching strategies and gender on students' academic achievement in financial accounting. At 0.05 level of significance, 2df numerator and 149df denominator, the calculated F is 1.394 with P-value (Sig.) of 0.251 which is greater than 0.05. The null hypothesis of no significant interaction between the two groups is therefore not rejected. Hence, there is no significant interaction effect of the teaching strategies and gender on students' academic achievement in financial accounting.

Discussion of Findings

Finding of Research Question 1 revealed that financial accounting students performed better with jigsaw instructional strategy when compared to conventional lecture strategy. This is evident in the mean difference of pre-test and posttest scores of students. The higher mean difference recorded for students who were taught financial accounting using jigsaw instructional strategy is an indication that jigsaw instructional strategy is more effective than conventional lecture

strategy in improving students' achievement in the teaching and learning of financial accounting. This finding is in line with the findings of Ojekwu and Ogunleye (2020) which found that students taught Biology with Jigsaw strategy achieved greater improvement in their mean scores than those taught with conventional lecture method. Similar findings by Nwankwo and Okigbo (2021); Ibrahim, Dazi and Adam (2023); Safkolem et al., (2023) also revealed that Jigsaw strategy enhanced students' understanding and improved their academic performance. The findings of Hypothesis One revealed that there was a significant difference between the pre-test and post-test mean achievement scores of students taught Financial Accounting using jigsaw and those taught using conventional lecture instructional strategy. This also agrees with the findings of Umar and Abdulmutallib (2017) which revealed that there was a significant difference between the pre-test and post-test mean achievement scores of students taught Financial Accounting using Jigsaw and those taught using Guided inquiry method, in favour of those taught using Jigsaw.

Findings of the study in Research Question 2 and Hypothesis 2 revealed that there is no significant difference between the posttest mean scores of male and female students taught financial accounting using Jigsaw instructional strategy. This finding is in line with the findings of Msuur, Isah and Asibi (2022) which revealed that there was no significant difference between the mean academic performance scores of male and female divergent students taught Basic Science using Jigsaw strategy. This shows that both groups demonstrated substantial improvement in their academic achievement when taught using Jigsaw. Nevertheless, the findings of Yaduvanshi and Singh (2018) revealed that female students performed significantly better than the male students when taught using Jigsaw strategy which is contrary to the findings of this study.

The findings of Hypothesis 3 revealed no significant interaction effect of the teaching strategies and gender on students' academic achievement in financial accounting. This is in line with the findings of Msuur, Isah and Asibi (2022) which revealed that there was no significant interaction effect of the teaching strategies and gender on students' academic achievement in Basic Science.

Conclusion

The findings demonstrated that Jigsaw strategy constitute more effective pedagogical approach to conventional lecture instructional strategy in the teaching and learning of financial accounting.

Based on the findings, the study concludes that the integration of Jigsaw strategy into the teaching and learning of financial accounting holds considerable potential for improving students' academic achievement in financial accounting.

Recommendations

In view of the findings of the study, the following recommendations are made:

1. Financial accounting teachers should adopt jigsaw instructional strategy in the teaching and learning of financial accounting in order to improve students' academic achievement.
2. Secondary school management should organize workshops and seminars for the training and re-training of teachers in the use of Jigsaw instructional strategy, so as to improve students' academic achievement in financial accounting.

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