Instructional Scaffolding Teaching Approach on Senior Secondary School Students' Academic Achievement in Financial Accounting in Obafemi-Owode Local Government Area, Ogun State

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Abstract

This study examined the effect of Instructional Scaffolding approach on the academic achievement of senior secondary school students in Financial Accounting in Obafemi-Owode Local Government Area, Ogun State. A pretest, post-test, control group, quasi-experimental design was used with a 3x2 factorial design. The sample size consisted of 114 SS2 commercial students from three schools within the Local Government Area. Purposive Sampling Technique was used in selecting the schools and an intact financial accounting class was adopted. Data collection tools include questionnaire and achievement test, with a Computer-Aided Instruction (CAI) package developed

by the researchers. T-test at a significance level of 0.05 was used to test the hypotheses. Results revealed a mean difference of 19.23, indicating higher performance scores for students in the experimental group. Instructional Scaffolding approach exhibits a differential effect on academic achievement. Gender differences were observed, with a slight advantage favoring female students in the mean difference of Instructional Scaffolding Teaching Method (1.03). However, male students outperform their female counterparts under conventional teaching methods with a mean score of 13.69. Recommendations include the implementation of this method in financial accounting curricula to enhance students' engagement and foster improved academic achievement.

Keywords: Instructional Scaffolding, Academic Achievement

Introduction

Financial Accounting is a standard term covering both the bookkeeping and accounting aspects of an economic entity. It is a subject offered at the secondary level that equips students with relevant knowledge and skills required for occupation in business and accounting area. It is also a service function designed to inform management about interested parties like investors, creditors, shareholders and so on, about the financial implications and their effects on the organisation. Financial Accounting is equally referred to as the determination, analysis, interpretation and communication of economic data (Alrawili, Osman and Alimuntasheri, 2021). Accounting is important for businesses of any size to keep well-organised and up-to-date records of their daily transactions. It helps businesses to plan and manage financial matters more effectively. Recording and reporting daily business transactions by using accounting techniques which helps owners to identify cash flow, cost of production, assets and liabilities (Noviani, 2021).

It aims at providing specialized instruction to prepare students to assume their economic role as consumers, workers and citizens (Chinedu, Nkechi and Okeke, 2020). It also assists students in preparing for professional careers requiring advanced studies in Financial Accounting as well as to acquire skill for personal use in future.

Academic achievement has been defined by various authors and researchers differently. Academic It is the accomplishment of a given task that is measured against predetermined standards of accuracy, completeness, cost and speed (Stetsenko and Arievich, 1997). Academic achievement is also viewed the way students deal with their studies and how they cope with or accomplish different tasks given to them by their teacher. It is seen as the ability of students to study, remember facts and being able to communicate it (Erbil, 2020).

However, despite the importance of Financial Accounting in preparing students to be self-reliant, acquire skills that will make them successful in the globally changing world of work, a documented report has shown that students' academic achievement in financial accounting has been poor and not encouraging. According to the State Ministry of Education result of 2017 – 2021 on financial accounting which is shown in the Table 1, revealed the trend analysis of financial accounting students' performance.

Five years analysis of students' achievement in Financial Accounting in West African Examination Council from 2017 to 2021.

YEAR	PASS %	FAIL %
2017	41.8	58.2
2018	49	41
2019	47.2	52.8
2020	42.2	57.8
2021	39.8	60.2

Source: *Ogun State Ministry of Education Report (2017 – 2021).*

This suggests that students with poor academic achievement in financial accounting are less likely to be employed in business organisations. Academic Achievement is examination marks, teachers' given grades and percentiles in academic subjects (Olivan-Blazquaz, Aguilar-Latorre, Gascon-Santos, Gomez-Poyato, Valero-Errazu, Magallon-

Botaya and Porroche-Escudero, 2022). Likewise, the mass failure of the secondary school students in the national examination is due to the instructional approach employed by the teachers (Deci, Olafsen and Ryan,2017; Cents-Boonstra, Lichtwarck-Aschoff, Denessen, Aelterman and Haerens, 2021; Ryen and Deci, 2019) and the persistent use of the conventional teaching approach where teacher dominates the class and does not encourage students to participate in the learning process (Fishbach and Woolley, 2022).

The existing literature found a conventional teaching approach as not effective in enhancing students' academic achievement (Francis, Mukhtar and Sadiq, 2023; Adeleke, Binuomote and Adeyinka, 2013; Ng, H, Lai, Su, Yap, Teoh and Lee, 2017; Olulowo, Ige and Ugwoke, 2020). This is because the students are less engaged in the learning process. It was argued that the financial accounting subject is not learnt by simple memorisation of basic accounting rules and principles, rather it requires the full participation of learners in the learning process[21]. The use of the predominant teaching method (i.e., conventional teaching approach), which involves reading, telling, and memorizing of concepts, has failed to cope with the problem of low academic achievement among secondary school students[22]. Thus, the focus of this study is on Instructional Scaffolding Approach as a teaching methodology. Poor method of instruction can be supplemented with enhanced activity-based and participatory method of instruction.

Instructional Scaffolding Approach is referred to as a teaching method where the teacher or instructor helps the students to learn progressively and make them attain a higher level of understanding through assistance. It is an effective method that bridges learning gap. Instructional scaffolding is a learning process conceived to actively encourage a profound level of learning[25]. It is the support given to students during the learning process which is shaped to their needs with the intention of helping them achieves their learning objectives. It is the method used to describe the kind of support which students receive in

their interaction with teachers, parents, and other mentors as they move towards new theories/concepts, skills, or levels of understanding. Scaffolding teaching approach as a teaching technique involves building connections for learners. Scaffolding is defined as a guide or support giving by a teacher/instructor or other knowledgeable person that enable students to achieve their learning goals[26]. Scaffolding instruction, as a teaching strategy, originated from Vygotsky's socio-cultural theory and his concept of the zone of proximal development (ZPD). 'Zone of Proximal Development is the difference between what children can do by themselves and the next learning that they can be assisted to achieve with reliable and competent person' [27]. The main aspiration of teaching in the ZPD is to see students being actively engaged in their learning with the future prospect of becoming self-directed and lifelong learners. The definition of the ZPD implies the meaning of teaching as construction of knowledge between the teacher and the learner and further transformation of that knowledge into individual knowledge of the learner[28]. The scaffolding teaching strategy provides individualized support based on the learner's ZPD[29]. ZPD provides educational experts a clear and simple guideline about how to support learners at each learning stage[30]. It suggests that the teacher should provide tasks that are at a level just higher than the learners are currently able to do, and teach rules that will help them to make the next stage without help. The concept Zone of Proximal Development (ZPD) is widely used to study children's mental development as it relates to education. The zone of proximal development is seen as scaffolding, a structure of 'support points' for performing an action[31]. It refers to the help or guidance received from an adult or more competent peer to permit the child to work within the zone of proximal development. Scaffolds facilitate a student's ability to build on previous knowledge and incorporate new information.

Students' participation in teaching and learning process is an essential quality in any educational experience. Most researchers are of the view that students' participation increases their critical thinking ability,

enhances their intellectual development and improves their academic achievement (Abdullah, Bakar & Mahbob, 2015; Siti Maziha, 2010). Student's participation in classroom activities implies involvement in the classroom processes and procedures. This involvement may be described as active or passive. While active participation includes asking questions, voicing opinion or involving in class discussion in the class; passive participation involves taking notes, sitting quietly and listening (Abdullah, Bakar and Mahbob, 2015). However, Steel, Laurens and Huggins (2013) provided a broader perspective of classroom participation when they described it as "a range of student activities undertaken before, during and after class." This suggests that class participation can be categorized as in-class participation and out-of-class participation. Whether activities are outside or inside the classroom, it is important that students engage actively. In this study, students' participation in financial accounting implies students' involvement in both in-class and out-of-class activities associated with the learning of the subject. Participation of students in and outside financial accounting classroom may enhance their interest in learning the subject. However, there is a dearth of research on its effect on students' interest, and participation but given the activity-based nature of Instructional Scaffolding Approach, it might enhance students' participation and interest which could culminate into high academic achievement. For this reason, there is the need to ascertain its effects on students' academic achievement in financial accounting within Obafemi Owode Local Government Area, Ogun State, Nigeria.

Statement of the Problem

Due to the persistent students' poor academic achievement in financial accounting, as evident in the State Ministry of Education results of 2015-2019 which showed 41.8% passed in 2015, 49% in 2016, 47.2% in 2017, 42.2% in 2018 and 39.8% in 2019, this is dismal and is not encouraging. The direct method of instruction mainly used in secondary schools seems not to give students enough opportunity to actively participate in classroom activities. This may affect their ability to gain

processing and reasoning skills in financial accounting, which are necessary for application in the world of work. Based on the above view, it becomes pertinent that a study on an innovative, collaborative and participative approach, which can help students become more active, is carried out. Instructional scaffolding is one of such innovative and collaborative type of approach needed to increase the academic achievement of Senior Secondary Students.

This study addresses a significant gap in the field of education by tackling the issue of poor academic achievement among students in financial accouning. Despite the crucial role of financial accounting objectives in imparting essential skills for both self-employment and further education, a notable number of students struggle to perform well in this subject. The distinctiveness lies in its innovative approach of integrating the teaching method of Instructional Scaffolding. This approach rectifies the limitations of the conventional teaching method currently employed by senior secondary school teachers. By transitioning to instructional scaffolding, students are empowered to take greater ownership of their learning journey, leading to improved retention and application of acquired knowledge. Additionally, its application offers targeted support and guidance to assist students in overcoming challenges and comprehending intricate concepts more effectively. The adoption of instructional scaffolding technique potentially bridges the gap between theoretical knowledge and its real-world application. This holistic approach holds the promise of enhancing students' academic achievement in financial accounting, regardless of their gender or academic background, thereby addressing a critical gap in the current educational landscape.

Objectives of the Study

The objectives are to:

i. determine the main effect of Instructional Scaffolding teaching method on students' academic achievement of financial

accounting students in Obafemi Owode Local Government Area, Ogun State.

ii. investigate the performance mean scores of male and female financial accounting students taught with Instructional scaffolding and those taught with conventional method in Obafemi Owode Local Government Area, Ogun State.

iii. investigate the interactive effect of Instructional scaffolding on financial accounting students' performance mean scores in Obafemi Owode LGA, Ogun State.

Research Questions

1. What is the difference between pre-test and post-test mean scores of financial accounting students taught with Instructional Scaffolding against the conventional teaching method?
2. What is the difference in the performance mean scores of male and female financial accounting students taught with instructional scaffolding and those taught with conventional method?
3. What is the difference in the performance mean scores of financial accounting students taught with instructional scaffolding against the conventional method?
4. What is the interactive effect of Instructional scaffolding on financial accounting students' performance mean scores in Obafemi-Owode LGA, Ogun State.

Hypotheses

The following hypotheses were formulated to be tested at 0.05 level of significance:

$H_0$1: There is no significant difference between pre-test and post-test mean scores of financial accounting students taught with Instructional Scaffolding against the conventional teaching method in Senior Secondary Schools in Obafemi-Owode LGA, Ogun State.

$H_0$2. There is no significant difference in the performance mean scores between male and female financial accounting students taught with Instructional Scaffolding method and those taught with conventional method in Senior Secondary Schools in Obafemi-Owode LGA, Ogu State.

$H_0$3. There is no significant interactive effect of treatments and gender on academic performance of students taught financial accounting with conventional and scaffolding approach in Obafemi Owode LGA, Ogun State.

Methodology

This study utilised a quasi-experimental design to investigate its objectives.

The population of this research consists of all Senior Secondary School II (SS 2) students within Obafemi-Owode LGA, Ogun State. The selection process was guided by the purposive sampling method, enabling the selection team to make informed choices driven by well-defined intentions. The criteria for selection will include factors such as proximity to urban centers, availability of consistent teachers taking the subject, ensuring accessibility to reliable network services and efficient monitoring. Additionally, the chosen schools shared common attributes, including the presence of qualified financial accounting educators and a consistent history of participation in national examinations like WAEC and NECO over an extended period. In total, there are 144 participants in the study, with 78 females and 66 males, distributed among the various groups.

Results

Research Questions

Research Question 1: What is the main effect of Instructional Scaffolding method on students' academic achievement of financial accounting students in Obafemi Owode LGA, Ogun State?

Mean performance scores of students taught financial accounting using and Instructional Scaffolding against the conventional teaching method

Teaching Methods	**N**	**Pre-test**	**Post-test**	**Mean difference**
Instructional Scaffolding Approach	46	6.37	17.22	10.85
Conventional Teaching Method	50	5.56	13.26	7.70
Total	**96**	**11.93**	**30.48**	**18.55**

Source: Field work, 2023

The result shows the pretest and posttest mean score of the control and the experimental groups. From the table, pretest mean scores of the students are as follows; for Instructional Scaffolding Approach, 6.37, and for Conventional Teaching Method 5.56. The post-test scores on the other hand, are as follows; for Instructional Scaffolding Approach 17.22, and for Conventional Teaching Method 13.26. The total means score for the pre-test is 11.93 while the total mean score for the posttest is 30.48 leaving a mean difference of 18.55, which shows that the students in the experimental group had higher mean performance scores after treatment than those in the control group, hence Instructional Scaffolding Approach has differential effect on Financial Accounting students' academic performance.

Research Question 2: What is the difference in the performance mean scores of male and female financial accounting students taught with instructional scaffolding and those taught with conventional method?

Pre-test and Post-test Mean Ratings and Standard Deviation of Male and Female Students taught using with instructional scaffolding and those taught with conventional method.

Gender	N	Pre-test Mean	SD	Post-test Mean	SD	Mean difference	Remark
Male	65	6.69	2.069	15.52	2.646	8.83	
Female	79	5.46	2.526	15.87	3.834	9.86	
Total	144	6.01	2.403	15.72	3.344	**1.03**	Little difference

Source: Field work, 2023

The result presented here showed that pre-test mean score of 6.69 and post-test mean score of 15.52 with mean gain of 8.83 for the male students treated with the instructional scaffolding methods. The table also shows pre-test mean score of 5.46 and post-test means score of 15.87 with mean gain of 9.86 for the female students also exposed to the experimental. The mean difference in instructional scaffolding teaching methods of 1.03 favours female gender and shows a slight difference in academic performance between male and female students. But in all, there is no significant effect of gender on academic performance of Financial Accounting students. This shows that both male and female performed relatively equal irrespective of the treatment applied.

Research Question 3: What is the difference in the performance mean scores of financial accounting students taught with instructional scaffolding against the conventional method?

Post-test Academic Performance Mean Scores of students based on Teaching Methods and Gender.

Teaching Method	Gender	N	Post-test	SD
Scaffolding Approach	Male	22	17.05	2.478
	Female	24	17.38	3.019
	Female	26	17.73	2.677
Conventional Teaching Method	Male	21	13.67	2.352
	Female	29	12.97	3.630

Source: Field work, 2023

Data here shows that the female students performed more than their male counterpart in scaffolding teaching method and flipped learning approach. This is shown by the mean scores of 17.38 and 17.73 respectively. While the male students under conventional teaching method performed better than their female counterpart with the mean score of 13.69.

Hypotheses Testing

Three null hypotheses were raised and tested in the study in order to determine the differential effect of instructional scaffolding teaching method approach on students' academic performance in Financial Accounting. The null hypotheses were tested as follows:

Hypothesis 1($H_0$1): There is no significant difference between pre-test and post-test mean scores of financial accounting students

taught with Instructional Scaffolding against the conventional teaching method in senior secondary schools in Obafemi-Owode LGA, Ogun State.

Paired Samples T-test summary showing mean score difference between pre-test and post-test mean scores of financial accounting students taught with Instructional Scaffolding.

Variables	Score	N	X	SD	Df	t-value	Sig.	P	Decision
Students' academic performance	Pretest	144	6.01	2.403	143	33.743	0.000	P<0.05	Reject H0
	Post-test	144	15.72	3.344					

Source; Field survey, 2023

The results of this study indicate that there is a statistically significant difference between the mean test scores of the experimental group and the control group. Specifically, the experimental group had a higher mean test score than the control group. These findings suggest that the new study strategy effectively improved test performance, with a small to medium effect size.

Hypothesis 2($H_0$2): There is no significant difference in the performance mean scores between male and female financial accounting students taught with Instructional Scaffolding method and those taught with conventional method in senior secondary schools in Obafemi-Owode LGA, Ogun State.

ANCOVA Summary of mean academic performance of male and female students taught financial accounting using scaffolding teaching method Dependent Variable: Male and Female

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	188.633[a]	2	94.317	9.427	.000	.118
Intercept	2955.181	1	2955.181	295.373	.000	.677
Pretest	184.256	1	184.256	18.417	.000	.116
Gender	30.356	1	30.356	3.034	.084	.021
Error	1410.693	141	10.005			
Total	37163.000	144				
Corrected Total	1599.326	143				

R Squared = .118 (Adjusted R Squared = .105)

Results here show an F-value of 3.034 and a p-value of 0.084 (p-value =0.084 > α=0.05) which fall on the acceptance region of the hypothesis. This implies that there is no significant difference between the mean academic performance of male and female students taught financial accounting using Instructional Scaffolding method and those taught with conventional method in senior secondary schools in Obafemi-Owode LGA, Ogun State.

Hypothesis 3 ($H_0$3): There is no significant interaction effect of treatments and gender on academic performance of students taught financial accounting with conventional, Instructional scaffolding approach in Obafemi Owode LGA, Ogun State.

ANCOVA Summary of Interaction Effect of Treatments and Gender on academic performance of students taught financial accounting conventional, Instructional scaffolding approach.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	518.136[a]	5	103.627	13.227	.000	.324
Intercept	35319.959	1	35319.959	4508.135	.000	.970
Method	434.244	2	217.122	27.713	.000	.287
Gender	9.942	1	9.942	1.269	.262	.009
Method * Gender	43.222	2	21.611	2.758	.067	.038
Error	1081.191	138	7.835			
Total	37163.000	144				
Corrected Total	1599.326	143				

a. R Squared = .324 (Adjusted R Squared = .299)

The result here shows an F-value of 2.758 and a p-value of 0.067 (p-value =0.067 > α=0.05) which falls on the acceptance region of the hypothesis. This implies that there is no significant interaction effect of treatments and gender on the academic performance of students taught financial accounting with conventional, flipped learning and scaffolding approach. in Obafemi Owode LGA, Ogun State.

Discussion of Findings

Effect of Instructional scaffolding approach on students' academic achievement scores in financial accounting.

The result of this findings contradicts one of the variables that lead to the disparities in students' achievement. According to some academics, reduced students' academic achievement in Instructional Scaffolding Teaching method classrooms may be due to students spending less time on homework compared to those in traditional face-to-face classes (Marshall and Bolt-Lee, 2022). Students in Instructional Scaffolding Teaching method classroom did not take notes on the lectures, resulting in less involvement with the topic material and worse performance (Obafemi, Saadu, Yahaya, Obafemi and Yakubu, 2023).

The study aligns with previous research that has examined the differential impact of Instructional scaffolding teaching methods on students' academic performance. Significant difference in the achievement of Financial Accounting Achievement Test (FiAAT) pupils exposed to Instructional scaffolding instructional strategies, favoring the explicit group. The findings underscored the practical utility of Instructional scaffolding approach in teaching Financial Accounting (Mahmood and Mohammadzadeh, 2022). Instructional Scaffolding Teaching method students were more involved in asynchronous activities, which positively associated with an improvement in student achievement (Uduafemhe, 2015). Also, another study illuminated the effectiveness of the scaffolding approach in enhancing students' achievement in mathematics, while also mitigating gender-based biases. The result of this study is also in line with a similar study which compared the pre-test and post-test results that revealed 57% pass in the post-test group‘s mean score which indeed indicated that students taught financial accounting with Instructional scaffolding method perform better which invariably are replica of the effects of scaffolding method of teaching on students‘ academic achievement.

Gender influence on the effectiveness of Instructional scaffolding approach and students' academic performance in financial accounting

Research questions two sought to investigate whether there is difference in the performance mean scores of male and female financial accounting students taught with instructional scaffolding and those taught with conventional method. The result of the research question two and null hypothesis two as shown in here respectively showed that, there is no significance difference in the academic achievement of male and female students taught using Instructional Scaffolding method and those taught with conventional method in Senior Secondary Schools of Obafemi Owode LGA, Ogun State with the difference, favouring the male students.

The findings of a study on the effect of gender on students' achievement using scaffolding method has proved that male students performed better than the female students[7].

The findings also affirm the opinions of some researchers who believed that male students often out-perform female students in most subject areas[8,9]. The result however disagree the views of a researcher who submit that women are getting more exposure to educational activities more than ever[7]. Similarly, the findings also oppose an opinion that female performed better than their male counterparts in financial accounting when taught using scaffolding teaching method.[8]

Interaction effect of treatments and gender on academic performance of students taught financial accounting with conventional and Instructional scaffolding approach.

The result of the study showed that there was no significant interaction effect of treatments and gender on the academic performance of students taught financial accounting using traditional and Instructional scaffolding methods of teaching in Senior Secondary Schools of Obafemi-Owode LGA, Ogun State. This means that the teaching

methods used had no interaction effect on gender with respect to students' performance in financial accounting. This result is in contrast with research finding which result showed that there was a significant interaction effect between concept maps and lecture method and gender in students' performance and retention in organic chemistry.[10]

This supported the findings of previous researchers which reported that gender had no significant interaction with teaching approach on students' mean achievement scores in financial accounting.[11,12] There is no significant interaction effect of teaching method and gender in the present study which confirms the efficacy of Instructional scaffolding in improving the academic performance of financial accounting students in Ogun State.

Conclusion

The predominant use of conventional method in teaching financial accounting in secondary schools is ineffective because it does not enhance achievement for all students and does not promote meaningful learning of the subject. Interest is a key ingredient for recording high performance in any academic pursuit. This study therefore, ascertained the effects of Instructional Scaffolding teaching method as a powerful innovation in the teaching and learning of financial accounting which is capable of increasing the achievement grades of instruction. It was, however, concluded that irrespective of the students' gender, the challenge of preparing business studies students for better academic achievement could be met by teachers' application of students centered approach of Instructional Scaffolding teaching method in secondary schools.

Recommendations

Sequel to the findings and conclusions of the study, the following recommendations are put forward:

1. Teachers should teach Financial Accounting using Instructional Scaffolding teaching method because it facilitates the academic achievement of male and female students. Continuous assessment and feedback mechanisms to monitor the effectiveness of the approach and make necessary adjustments for improved student outcomes.
2. School authorities and ministries of Education should ensure adequate and regular supervision of schools and instructions to ensure that suitable instructional teaching methods are used by teachers with a view to ensure a rise in students' academic achievement.
4. Stakeholders in business education like ministries of education, state management boards, post primary school service commission, education commissions, school principals and teachers should organise seminar, workshops, symposium and conferences for teachers to learn the best use of Instructional Scaffolding method in teaching.

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