EFFECT OF MASTERY LEARNING TEACHING METHOD ON STUDENTS' ACADEMIC PERFORMANCE IN FINANCIAL ACCOUNTING

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Abstract

Business education whose objective is to be a programme of excellence is concerned with quality assurance and standard maintenance. However, while very few business education students perform well in Financial Accounting, the vast majority of them perform poorly. It is as a result of this poor performance that this study was conducted to examine the effects of mastery learning on students' academic performance in financial accounting in Niger state, Nigeria. Two specific purposes, two research questions guided the study and two hypotheses were formulated for the study. Pretest, posttest nonequivalent control group quasi-experimental design was used for the study. The population of the study comprised 3733 senior secondary school students offering Financial Accounting in Niger State. The purposive sampling technique was used to determine the sample size of 198 students for the study. The instrument for data collection was a self-designed Financial Accounting Performance Test (FAPT) which was validated by four experts. A reliability coefficient of 0.96 was obtained for the test item using Cronbach Alpha. Mean and standard deviation were used to answer the research question, while Analysis of Co-Variance (ANCOVA) was used to test the hypotheses at a 0.05 level of significance. The findings revealed that students who are taught Financial Accounting using the mastery learning method performed better than those taught using the conventional teaching method (M = 85.33, SD = 7.40); there was a significant main effect of treatment of mastery learning teaching method on academic performance of secondary school students in Financial Accounting ($F_{(1,134)}$ = 924.927; P = 0.000); there was a significant gender effect on the academic performance of students taught financial accounting with mastery learning method of teaching($F_{(1,134)}$= 4.619; P = 0.033).Based on the findings of the study, it was concluded that mastery learning method has positive effects on students' academic performance in Financial Accounting. The study recommends among others that teachers of financial accounting should adopt mastery learning teaching methods in their classes because the method is capable of stimulating students learning, which will lead to better academic performance.

Keywords: *Mastery Learning Teaching Method, Gender, Financial Accounting*

Introduction

Teaching and learning is a two-dimensional affair whereby the teacher sends out the information while the learners communicate back via evaluation, but this in-and-out process can be good if teaching methods are appropriate. The objective of teaching is to help the students develop their potential on their journey to adulthood so that they can become good, productive, and useful citizens of their nation. Teaching methods is the term used to denote the means or strategy by which teacher provides/delivers their subject matter to the students in the class, based on predetermined instructional objectives to promote learning in the students. The teaching method also refers to the manner of transmitting facts, skills, information, and knowledge by the teacher/instructor, to involve learners in meaningful events for training and to achieve the objective of the lesson (Joe, 2014). Also, Ajoma (2017) viewed teaching method as a professional technique that teachers adopt regularly in instructional exercises to enable them to impart relevant knowledge and skills to the learner. For a teacher to effectively adopt any teaching method, certain factors like the instructional objective, the subject, the learners, and the classroom environment must be considered. Financial Accounting teachers also employ various teaching methods to impart knowledge to students.

Financial Accounting is the process of recording; classifying, selecting, measuring, interpreting, and communicating financial data of an organization to enable users to decide. It incorporates the measurement and reporting of profit and loss (Ibrahim &Kazeem, 2015). Accounting facts are converted into financial details via the usage of accounting laws, concepts, and conventions. These are fundamentals that usually give Accountants direction in keeping and assessing financial data as well as the planning and giving meaning to business records. Given this, Financial Accounting is one of the subjects taught in all commercial classes of secondary schools in Nigeria as spelt out by the Federal Ministry of Education-Department of Basic and Secondary Education.

In attempt to achieve effective delivery of the knowledge of Financial Accounting to students, Financial Accounting teachers use different teaching methods in teaching and learning processes. Ezenwosu and Nworgu (2013) opined that most teachers adopted the conventional method which is the oral presentation of knowledge, ideas, and principles to students. Abubakar and Dantani (2014) explained that the conventional method is a teaching style which allows the teacher to present a wide content to a large class of learners with little or no interaction among learners and even the teacher. Azih and Nwosu (2011) indicated that student-centred methods which are characterized by the total participation of learners in the learning process could be an important factor in improving students' performance in accounting. Student-centred methods include the unguided-discovery method, independent study method, demonstration method, Socratic method, problem-based method, guided-discovery method, case study method, mastery learning method, individualized instructional teaching method and discussion method among others (Awotua-Efebo, 2015).

Mastery learning is a teaching method that enables students to learn equally,

excellently, quickly, and self-confidently; that is, the teacher can help "dumb", "slow", and "unmotivated" students to learn like their "smart", "fast", and "motivated" peers. Students acquire personal competencies that generate lifelong effective teaching with mastery learning (Awotua-Efebo, 2015). The mastery learning method, therefore, means how much time a teacher should give learners in learning Financial Accounting at the secondary school level. Mastery learning as a teaching method evolved from research work started in the 1960s and conducted by educationists from behavioural, cognitive, and humanistic psychologists interested in improving students' academic performances in schools. Awotua-Efebo (2016) postulated that the level of mastery reached by a student on an instructional task (instructional objective) is a function of the time spent learning the material and the amount of time the student needs to master the material. Mastery one of the cutting-edge methods of teaching that Mamman and Oyinloye (2018) mentioned in their study. The amount of time a student spends learning the material depends on two factors; time allowed and perseverance. The amount of time needed by the student is dependent on three factors-aptitudes, quality of the instructional materials, and their ability to understand the instruction. Mastery learning is student-centred, that is, the curriculum is designed to provide the students with appropriate and available resources that can help each one of them achieve the curriculum objectives. Mastery learning teaching method is holistic, that is, it affects every aspect of a teacher's job in the teaching/learning environment – the curriculum, teaching, managing, assessing, and evaluating. This means that no part of the teacher's job in the classroom is snubbed.

Academic performance represents what learners attain in their classroom activities and ways to manage various teaching encounters expected of students by tutors. Okoro (2011) described academic performance as an evaluation technique whereby the results of learners are collated via learners' tasks at a particular time. Therefore, it implies that performance quantifies the behaviours of a learner that is visible at a given time. The performance of students is highly vital because this is the main standard whereby the efficiency and progress of an institution of learning might be justified.

The problem of students' under-performance in secondary schools in Nigeria has been a much-discussed educational issue. In solving any problem, however, it is pertinent to understand the causes of such problems. Many causes or agents have been studied as the etiological starting point for investigating the phenomena of school failure or success. These causes are investigated from several perspectives including the role of the students, teachers, parents or family, school environment, society, government etc. There seems to be agreement among most authors to explain failure from a multi-causal perspective where the phenomenon is analysed at several levels, and where multiple variables are involved. Gender is one of such factors also mentioned in the literature to have considerable effects on students' academic performances (Adesoji&Olatunbosun,2018). Gender is the range of physical, biological, mental, and behavioural characteristics of and differentiating between the feminine and masculine (female and male) population (Amosun, 2011). The importance of examining performance in relation to gender is based primarily on the socio-

cultural differences between girls and boys. Some vocations and professions have been regarded as men's (engineering, arts and crafts, agriculture among others) while others as women's (catering, typing, nursing and others). Parents assign a task like car washing, grass cutting, bulb fixing, climbing ladders to fix or remove things etc. to the boys. On the other hand, chores like washing dishes, cooking, cleaning and so on are assigned to the girls.

The main aim of teaching Financial Accounting is not only to develop the intellectual skills of students but also to provide them with opportunities to work individually, in pairs, small and large groups. Learners, aside from cognitive capabilities, are expected to have acquired competencies for example scripting, presenting, public talk show skills, decision-making skills, teamwork, and computer and information literacy. To attain this feat, new strategies, ideas, and techniques have to be injected into learning Financial Accounting as a field of study. Before this era, tutors had been viewed to be the only source of knowledge and learners moved to them in search of answers to any difficulty they come across. Consequently, in this present dispensation, teachers are pathfinders such that they majorly render services as tour guides to learners. Students centred teaching method gives chance to learners to improve their accounting skills and competencies, thereby giving room for personal growth and development over a reasonable time. Teaching methods used are expected to agree with the practical learning model whereby the objective of learning is to cause an interrelationship of the concept taught with the actual life experience.

Business education whose objective is to be a programme of excellence is concerned with quality assurance and standard maintenance. However, while very few business education students perform well in corporate accounting, most of them perform poorly (Mamman, 2016). This students' low academic performance in financial accounting is worrisome and has been attributed to many factors. Omotayo (2014) traced low students' academic performance in Financial Accounting to ineffectiveness in instructional method(s) employed by instructors. This kind of situation, therefore, calls for continuous research on teaching methods and students' academic performance. Analysis of students' performance in the study area over three years showed that students poorly performed every year.

Based on the researcher's interaction, students and teachers gave a different opinion on the failure of students in Financial Accounting, some students said they did not like a subject that involves calculation; some said they did not like the way and manner with which they are being taught the subject while others blamed the failure on their teachers' presentation of the subject, specifically, teaching methods. The teachers on the other hand said the failure was due to students' lack of interest and un-seriousness in the course. Some blamed the government and school authorities for refusing to provide adequate instructional materials with which they can effectively teach the subject using different techniques. To forestall continuous mass failure in Financial Accounting, this study addressed the afore-mentioned problems using empirical evidence of the effects of mastery

learning teaching methods on students' academic performance in Financial Accounting in Secondary schools.

Research Questions

1. What is the effect of mastery learning teaching method on the academic performance of senior secondary school students in Financial Accounting?
2. What is the effect of gender on the academic performance of students taught Financial Accounting with mastery learning method of teaching in senior secondary schools?

Research Hypotheses

Ho1. There is no significant main effect of mastery learning method on the academic performance of secondary school students in Financial Accounting.

Ho2. Gender has no significant effect on the academic performance of students taught Financial Accounting with mastery learning method of teaching.

Methodology

This study adopted pre-test, post-test nonequivalent control group quasi-experimental design. The researchers used intact class for the study. The population of the study consisted of 311,786 students offering financial accounting in senior secondary schools in Niger state. Three schools were selected from the three senatorial districts of the state, which served as the sample for the study. One hundred and ninety-eight participants were selected from the total population of the study. The study used the researcher-developed Financial Accounting Performance Test (FAPT) as the instrument for data collection. APT was duly validated by four experts. The Cronbach Alpha was used to establish the reliability of the research instrument which resulted in a reliability coefficient of 0.96. Ethical considerations such as informed consent and voluntary participation were ensured. One hundred and ninety-eight participants started the experiment, but 139 participants completed the experiment. Therefore, the analysis was based on the number of the participants that completed the experiment. The data for the research questions were analyzed using mean and standard deviation. Analysis of Co-Variance (ANCOVA) was used to test the hypotheses at a 0.05 level of significance.

Results

Research Question One: What is the effect of mastery learning teaching method on the academic performance of secondary school students in Financial Accounting in Niger State?

Table 1: Mean and standard deviation of the effect of mastery learning teaching method on academic performance of secondary school students in Financial Accounting

Group	N	Pre-test		Post-test		Mean Difference
		Mean	SD	Mean	SD	
Experimental Group (Mastery learning teaching method)	61	42.00	10.66	85.33	7.40	43.33
Control Group (Lecture Method)	78	35.36	12.70	40.06	12.36	5.42
Mean & Standard Difference		6.64	2.04	45.27	4.96	37.91

Source: Field Experiment 2022

Table 1 reveals that the experimental group taught financial accounting with mastery learning teaching method had a mean score of 42.00inthe pretest and a mean score of 85.33 in the post-test with standard deviations of 10.66 and 7.40 for pre-test and post-test, respectively, pre-test ($\bar{x}$ = 42.00; SD = 10.66), post-test ($\bar{x}$ = 85.33; SD = 7.40). The result gave a pre-test, post-test mean gain of 43.33 for experimental group one exposed to mastery learning teaching method. The low standard deviation (7.40) for the posttest shows that the scores of students are clustered around the mean. The conventional method group had a mean score of 35.36 and a standard deviation of 12.70 ($\bar{x}$ =35.36; SD = 12.70) in the pretest and a mean score of 40.06and standard deviation of 12.36 ($\bar{x}$ = 40.06; SD = 12.36) in the posttest, giving a pre-test post-test mean gain in the control group taught Financial Accounting with conventional method to be 5.42. Comparing the mean difference between experimental group one and the control group, the result gave a mean gain of 37.91. With this result, it is clear that mastery learning teaching method is slightly effective in teaching students financial accounting because the mastery learning teaching method group did slightly better than the conventional method group.

Research question two: What is the effect of gender on the academic performance of students taught Financial Accounting with mastery learning method of teaching in senior secondary schools?

Table 2: Mean and standard deviation of effect of gender on academic performance of students taught Financial Accounting with mastery learning method of teaching in senior secondary schools

Gender		Pretest		Posttest		Mean Difference
	N	$\overline{X}$	SD	$\overline{X}$	SD	
Male	25	40.60	10.82	85.48	9.66	44.88
Female	36	42.97	10.60	85.22	5.48	42.25
Mean & SD Difference		2.37	2.35	0.26	4.18	2.63

Source: Field experiment, 2022

The data presented in Table 2 shows that male students taught financial accounting with the mastery learning teaching method had mean scores of 40.60 and 85.48 for pretest and posttest, respectively. The standard deviations are10.82 and 9.66 for pretest and posttest, respectively, male pretest ($\overline{x}$ = 40.60; SD = 10.82) and male posttest ($\overline{x}$ = 85.48; SD = 9.66). On the other hand, female students taught financial accounting with mastery learning method had mean scores of 42.97 and 85.22 for pretest and posttest, respectively. The standard deviations are10.60 and 5.48 for pretest and posttest, respectively, female pretest ($\overline{x}$ = 42.97; SD = 10.60) and female posttest ($\overline{x}$ = 85.22; SD = 5.48). Comparing the posttest mean score of male and female students, ($\overline{x}_{male}$ = 85.48; $\overline{x}_{female}$= 85.22), the male financial accounting students did better in mastery learning teaching method than their female counterparts with a mean difference of 2.63. This might be because the male students enjoy learning financial accounting when they are taught using mastery learning teaching method.

Test of Hypotheses

Ho1: There is no significant main effect of mastery learning method on academic performance of secondary school students in Financial Accounting.

Table 3: Summary of Analysis of Covariance (ANCOVA) of Test of Significance of main effect of treatment of Mastery learning teaching method on academic performance of secondary school students in Financial Accounting

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	77426.737[a]	4	19356.684	334.315	.000
Intercept	18553.253	1	18553.253	320.438	.000
Pre-test	6530.641	1	6530.641	112.793	.000
Treatment	53552.904	1	53552.904	924.927	.000
Gender	267.411	1	267.411	4.619	.033
Treatment * Gender	45.308	1	45.308	.783	.378
Error	7758.544	134	57.900		
Total	584386.000	139			
Corrected Total	85185.281	138			

Source: Field experiment, 2022

The data presented in Table 3 shows the F-calculated values for effects of treatment of mastery learning teaching method on academic performance of secondary school students in Financial Accounting. The table shows that there was a significant main effect of treatment of mastery learning teaching method on academic performance of secondary school students in Financial Accounting ($F_{(1,134)}$ = 924.927; P = 0.000). As a result, the hypothesis that there is no significant effect of mastery strategy on academic performance of secondary school students in Financial Accounting was rejected. This suggests that the mastery learning teaching method improves academic performance of secondary school students in Financial Accounting. The interaction effect of treatment and gender on academic performance of secondary school students in financial accounting was not significant ($F_{(1,134)}$ = 0.783; P = 0.378). This means that the main effect observed is due to the treatment given to participants.

Ho2. Gender has no significant effect on the academic performance of students taught Financial Accounting with mastery learning method of teaching.

Table 3 also shows the F-calculated values for gender effect on the academic performance of students taught financial accounting with mastery learning method of teaching. The table shows that there was a significant gender effect on the academic performance of students taught financial accounting with mastery learning method of teaching($F_{(1,134)}$= 4.619; P = 0.033). As a result, the null hypothesis that there is no significant effect of gender on the academic performance of students taught Financial Accounting with mastery learning method of teaching was rejected. This indicates that the

male participants (mean = 64.02) did better than their female counterparts (mean = 61.20) in Financial Accounting.

Discussion of Findings

The study determined the effect of mastery learning teaching method on the academic performance of secondary school students in financial accounting. The study found that mastery learning method is effective in improving the academic performance of secondary school students in Financial Accounting. This means that when students are taught with mastery learning method, their academic performance will be better. Also, there was a significant main effect of treatment of mastery learning teaching method on academic performance of secondary school students in Financial Accounting. This means that students taught financial accounting with mastery learning outperformed those taught with the conventional method of teaching. This finding supports the earlier finding of Ajoma (2017) who found that mastery learning teaching methods help students to think critically, leading to better academic performance. The finding is also in line with Mamman (2016) who stated that student-centred teaching methods make students active learners rather than passive listeners of which mastery learning method is one. It's related to the findings of Garuma (2012) who found the guided-discovery teaching method to be more effective in improving students' achievement in teaching secondary school students, both methods are student centred and in both methods students are guided by the teacher. The study also found that male students taught financial accounting with mastery learning teaching method had a slightly higher mean score than their female counterparts. This means that male students benefited more under mastery learning method than their female counterparts. Also, the study reveals that there was a significant gender effect on the academic performance of students taught financial accounting with mastery learning method of teaching. This finding corroborates the finding of Fabunmi (2014) who observed a significant difference between the academic performance of male and female students with the boys performing better, though many factors contributed to this situation.

Conclusion

Based on the findings of the study which revealed that mastery learning teaching method is effective in improving the academic performance of students in financial accounting, it is concluded that mastery learning method has positive effects on students' academic performance in Financial Accounting. If this is the case, it means the conventional teaching method that is predominantly used in teaching financial accounting is no longer effective. The continuous use of the conventional teaching method will affect the secondary school students' academic performance in financial accounting negatively, which may consequently discourage them from pursuing accounting as a course in their higher education.

Recommendations

Based on the findings from this study, the following recommendations are made.

1. Teachers of financial accounting should adopt mastery learning teaching methods in their classes because the method is capable of stimulating students learning, which will lead to better academic performance.
2. Teachers of financial accounting should acquire knowledge and skills of utilizing mastery learning teaching method through in-service training and seminars so that they will be able to apply the method on their students, especially the male students.

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