# Efficacy of Peer Tutoring on Tutees’ Attitude and Retention in Financial Accounting

\***Olugbenga A. IGE, Lecturer/Researcher,** School of Social Sciences and Language Education, University of the Free State, Bloemfontein Campus, Republic of South Africa. \*Corresponding Author

**Olulowo Taiwo Grace**, Lecturer, Department of Social Science Education, Faculty of Education, Adekunle Ajasin University, Akungba Akoko, Nigeria.

**Ernest O. Ugwoke**, PhD, University of Nigeria, Nsukka, Nigeria. Department of Business Education, University of Nigeria, Nsukka, Nigeria.

\*ADDRESS FOR CORRESPONDENCE: Olugbenga A. IGE, Lecturer/Researcher, School of Social Sciences and Language Education, University of the Free State, Winkie Direko Building, 205 Nelson Mandela Drive, Parkwest, Bloemfontein, 9301 Republic of South Africa. **E.mail:** IgeOA@ufs.ac.za

## Abstract

*This research appraised the efficacy of peer tutoring in improving students’ attitude and academic retention in selected concepts in financial accounting. A non- randomized pre-test- post-test and delayed posttest control group quasi-experimental design was employed. The sample for the study was 137 students purposively selected from eight secondary schools. The experimental group was taught with PTIS, while the control group was trained with conventional lecture method by the learners’ financial accounting teachers. The data analysis shows that peer tutoring improved students’ attitude and knowledge retention in financial accounting better than the conventional lecture method. In addition to this, there was no statistically significant difference in the attitude and knowledge retention of students in financial accounting based on gender. This study concludes that peer tutoring is a resourceful instructional strategy for improving attitude and knowledge retention of students in selected concepts in financial accounting than the conventional lecture method. Several recommendations for teachers arose in this study: peer tutoring is appropriate to foster male and female students learning outcomes in financial accounting i.e. not gender sensitive; and, future research should control for the confounding effects of self-concept and anxiety to financial accounting when instructions are delivered through peer tutoring instructional strategy.*

# 1.0 Introduction

In secondary schools, the foundational knowledge of accounting and book-keeping is necessary as part of the professional subjects presented by teachers and an admired vocational subject by learners [1] offered in senior secondary schools in Nigeria. Financial accounting is a compulsory subject at the senior cadre of secondary schooling from the policy documents of the National Examination Council (2004) [2], because it provides senior secondary school students with the skills and competencies required to recognize the full worth of basic rules, functions and accounting principles. Also, to endow students with solid foundation to upskill their competency in accounting and associated courses at advanced level of education and to facilitate their comprehension of basic accounting concepts and conventions, and their applications to commercial activities [3].

Going by this objective, students should have been endowed with comprehensive understanding, foundational and retained knowledge of financial accounting which will facilitate their learning and improve their academic achievements in accounting in tertiary institutions; thereby making better the world of work as accountants play an important role in all types of organizations. This, therefore, calls for adequate teaching and learning of the subject. This exposes students to basic understanding and utter retention as the approach adopted by the teacher to deliver instructions can either facilitate or restrain the ability of learners to use assorted expertise to reason and decipher problems. Knowledge retention of financial accounting concepts could lead to high academic achievement and attitude in the subject [4]. This implies that the ability of students to retain knowledge of financial accounting could improve their academic achievements and attitude towards the subject.

The pursuit of retained knowledge of and improvement of student’s attitude towards financial accounting is not isolated from the instructional strategy adopted by teachers since they are saddled with the responsibility of using innovative strategies to implement the curriculum; however, delivery of financial accounting instructions over the years has been done principally via traditional system of teaching which deprived the students the likelihood to participate in learning and this could instill into them negative attitude towards the subject.

Cepni, Tas, Kose, (2006) [5] stated that the application of conventional lecture method in giving instructions only encourages students to comprehend the content of the subject at the first level of cognitive domain. This is because they usually memorize the theory without having deeper understanding of the concepts due to its passive nature, hence, the need for a more active and participatory instructional strategy that enables students’ involvement and commitment. This in turn enhances students’ conceptual understanding and knowledge retention of financial accounting. The quest for instructional strategy that will involve students in learning process requires the assessment of peer tutoring’s effectiveness in improving students’ retained knowledge and attitude towards the subject and previous studies revealed inconclusive result. There are scholarly evidences on the benefits inherent in peer tutoring to improve students’ learning outcomes [6, 7, 8]. There are other studies also that have reported no significant improvements or benefits [9]; hence, the need to prove the effectiveness of this strategy in improving attitude and academic retention of students in financial accounting concepts.

# 2.0 Literature Review

The mutual nature of peer tutoring is embedded in Vygotsky’s socio-cultural and constructivist ideas about learning [10]. One of the theoretical basis for peer-tutoring is scaffolding which refers to a procedure that allows a child or beginner to find solution to any difficulty, perform an assignment or attain a particular goal which is likely to be above his/her capabilty [11] [12]. Consequently, peer tutoring involves a more conversant or dexterous peer (a tutor) who works mutually with a tutee to improve their learning opportunities.

Peer tutoring is beneficial to improve the academic skills and social behaviours of learners. It is a philosophical instructional strategy that draws on peers to provide one-on-one instruction accompanied with detailed explanation of concepts [13] [14]. Peer tutors are support or circuitous transfer of knowledge through tutoring from the teacher to students [15]. Peer tutoring is a form of making delivery of instruction easier as classes with large number of students makes learning more complex, thereby making students learn on their own or seeking academic support from their peers. Peer tutoring is a philosophical instructional mode that fosters mutual dependence among peers and distributes tasks to the tutee and tutor. It has potentials to improve learners’ social skills and emotional support [16, 17, 18, 19, 20, 21, 22, 23].

Several studies have revealed the efficacy of peer tutoring in meliorating learners’ attitude and retention in various disciplines. For instance, Tella (2013) [24] established that peer tutoring approach was more effective than conventional lecture method because it significantly improved students’ academic achievements in and attitudes to Mathematics. Candeias, Rebelo and Oliveira, (2010) [25] opined that students with poor academic achievements, in most cases, have a negative thoughts towards acquisition of knowledge and opined that going to school to be educated will not facilitate their accomplishment in the future. Furthermore, Kubiatko (2013)

1. argued that if mind-set towards a subject and school are positive, the success of students will improve also.

In a similar vein, Kelli and Berry (2008) [27] affirmed that peer tutoring augment students’ energetic involvement in science and advance superior attainment and better retention than individualistic strategy. The effectiveness of peer tutoring recorded by these scholars was not unconnected with the collaborative discussion of the subject matter which helped the students to attain group goals. Similarly, Essien Edem Udo, Fstan (2016) [28] revealed that peer tutoring instructional strategy produced better results than lecture method because it promoted students’ academic performance and retention in basic scientific concepts.

Besides, the impact of gender on students’ attitude and knowledge retention has been of great apprehension to countless scholars. Several inquiries have revealed incongruous verification in learners’ knowledge retention with respect to gender. For instance, Sofiani, Maulida, Fadhillah and Sihite (2017) [29] reported that gender had no effect on students’ attitude to science concepts. Specifically, Udousoro (2000) [32], and Ifeakor (2005) [31], Aluko (2005) [30] established no considerable divergence in the knowledge retention of students in chemistry based on gender. Moreover, Oludipe (2012) [33], Ezenwosu and Nworgu (2013) [34] and Olagunju and Babayemi (2014) [35] established significant differences of gender on students’ achievement and retention in Integrated Science, Chemistry, Biology and Basic Science, respectively.

In line with socio-economic status, Ebong (2004) [36]; Mgbado (2002) [37] and Tina (2001) [38] reported in their research that learners of high socio-economic status were found to perform higher than the learners from the middle and low socio-economic background. Also, Edinyang, Ubi, Usang and Adalikwu (2013) [39] found that socio-economic status had a significant main effect on students’ academic retention. Scholars have explored the relationship between financial resources which is a subset of socio-economic status and students’ ability to persist (i.e. retention) [53]. Some of these researchers stated that poor students are confronted with myriad of factors that make them vulnerable to non-completion of their academic pursuits [54,55]. Another school of thought asserted that learners from poorer households lack the requisite skills and support to survive academically on their own [56]. The positions of these scholars on the link between socio-economic status and students’ retention notwithstanding, we agreed the learners with low socio-economic status would grapple to survive academically without support. However, we do not feel that these students lack the necessary skills for their academic pursuit since what separates from learners with high socio-economic status is the support given by their sponsors. Scholars opined that there are diverse variables such as time spent by mothers in the labour market, provision of appropriate materials for play, family structure, parental wealth etc that gives information about learners socio-economic status [57,58]. The evaluation of socio- economic status in terms of occupation, education, and income [59] has received criticisms from different scholars. These criticisms are connected to the limited variables put forward by these researchers. Despite these criticisms from previous researchers, the definition of Herrnstein and Murray (1994) [59] is the most relevant to socio-economic status in the context in which this study was conducted. In this study, socio-economic status was evaluated using variables such as parents’ monthly incomes i.e. household income, parents’ occupations, and parents’ highest qualifications. The current scholarly literature on peer tutoring shows divergent outcomes on the impact of gender and socio-economic status on students’ academic retention and attitude when tutored with peer tutoring instructional strategy and taught with conventional lecture method. It is in the light of this background that the present study was conducted.

# 2.1 Aim of the study and Hypotheses

This study determined the effectiveness of peer tutoring on learners’ attitude and retention in selected concepts in financial accounting with respect to gender and socio-economic status. In the light of this, the following hypotheses were formulated:

H01: Students’ attitude towards financial accounting will improve significantly as a result of peer tutoring.

H02: Students’ retention of financial accounting concepts will improve significantly as a result of peer tutoring.

H03: No statistically significant main effect of gender and socio-economic status on students' attitude towards Financial Accounting.

H04: No statistically significant main effect of gender and socio-economic status on students' retention of Financial Accounting concepts.

H05: No statistically significant interaction effect of treatment and gender on students' retention of Financial Accounting concepts.

H06: No statistically significant interaction effect of treatment and socio-economic status on students' retention of Financial Accounting concepts.

**3.0 Methods**

*3.1 Research Design*

The non-randomized pre-test-post-test delayed posttest control group quasi-experimental design was used in this study. The delayed posttest was employed to capture students’ retention. The design is schematically presented:

Z1 Y1 Z3 E1 Z5 Experimental Group

Z2 Y2 Z4 E2 Z6 Control Group

Where Z1 and Z2 are pre-tests of experimental and control groups. Z3 and Z4 represent the post- test of experimental and control groups while Z5 and Z6 represent the delayed post-test of experimental and control groups, respectively.

Z1 – Peer Tutoring Instructional Strategy

Z2 – Conventional Lecture Method

In this research, instructional strategy manipulated at two levels namely, Peer Tutoring Instructional Strategy and Conventional Lecture Method. The mediating variables of gender was manipulated at two levels which are male and female, while socio-economic status was varied at three levels which are low, moderate, and high.

# *3.2 Population and Samples*

The population of this study was made up of SS2 students taking Financial Accounting in the Ondo State Northern Senatorial District in Nigeria out of which 137 students (68 males and 69 females) were purposively selected. The 137 students in senior secondary school II were chosen for the study because financial accounting is taught at the senior level of schooling in Nigeria, and these students were not preparing for the external examinations. The selected learners were drawn from eight intact classes in the selected senior secondary school II. 53 learners in four of the selected schools were assigned to peer tutoring while 84 in the other four schools used the conventional lecture method. The selected schools were based on the following criteria:

* 1. The schools are co-educational
	2. The schools are public schools
1. Financial accounting is taken by the learners as one of the business or vocational subjects,
2. The school must be accredited for terminal examinations in Financial Accounting by the regional examination body in west africa i.e. West African Examination Council and National Examination Council (NECO) in Nigeria.

iii. The school must be accessible to the researchers.

# *3.3 Data Collection and Instruments*

Four instruments were used in this study: Students’ Attitude to Financial Accounting Questionnaire (SAFAQ), Financial Accounting Achievement Test (FAAT), Teachers’ Instructional Guide for Peer Tutoring Instructional Strategy (TIGPTIS) and Teachers’ Instructional Guide for Conventional Lecture Method (TIGCLM). SAFAQ was designed by the researcher to measure students’ attitude towards Financial Accounting. The questionnaire consist of Section A that sought information on biographical data of the respondents. The B section of the questionnaire assessed the students’ attitude towards Financial Accounting. SAFAQ consists of 15 items on a four-point response scale. The items were structured on ordinal scale ranging from Strongly Agreed (SA), Agreed (A) to Disagreed (D), and Strongly Disagreed (SD). In scoring the SAFAQ, the scoring of positively structured statements was done in this order: SA-4, A-3, D-2 and SD-1; while the scoring of negatively structured statements was done in this order: SA-1, A-2 D-3, and SD-4. SAFAQ was trial-tested and Cronbach Alpha was used to obtain r=0.89. The reliability was tested using Cronbach Alpha because it checks the internal consistency of measurement with polychotomous data. SAFAQ was validated by experts in Test and Measurement Unit, Adekunle Ajasin University, Akungba-Akoko. The comments, suggestions and corrections made by the experts were used to produce the final draft of the instrument. The FAAT contained thirty multiple choice questions that were adapted from the past questions of West African Senior School Certificate Examination (WASSCE). Each item on the test had four options A-D with a correct option while others were distracters. The concepts included in the FAAT included “Depreciation of fixed asset, manufacturing accounts and accounts for non-profit making organizations.” The FAAT contains items such as *“Using the straight line method, calculate depreciation of an asset given the following data: cost is #10,000; the scrap value is estimated as #4000 while the estimated useful life is 4 years. a) 1000 b) 2000 c) 1500 d) 1800*

*The formula for calculating depreciation using straight line method is*

*a) Cost – Value b) Scrap – Cost c) Cost – Estimated scrap value d) Estimated value-Cost*

 *Years of useful life Years of useful life*

*The formula for calculating depreciation using reducing balance method is*

 a) r = Scrap value x Cost b) r = Scrap value -Cost

c) r= 1-*n S*

 *C*

 d) n-1 Scrap Cost

 Value

The reliability of FAAT was 0.83 when subjected to Kuder-Richardson Formula 21 (KR-21). It was adopted to test the reliability of FAAT because it checks the internal consistency of measurement with dichotomous data. It is applicable when each question is either right or wrong, where a correct question scores 1 and an incorrect question scores 0. The FAAT was used by participants in exposed to peer tutoring and conventional lecture method. The TIGPTIS and TIGCLM were designed by the researchers for teachers to ensure balance in the experimental and control activities. The specialists from the Department of Business Education (Accounting Option) at University of Nigeria, Nsukka vetted the instructional guides. The feedback that was provided by these experts were used by the researchers to improve the TIGPTIS and TIGCLM

# *3.4 Experiment Procedure*

There were five main phases that lasted for ten weeks (Research assistants training in the 1st week, administration of pre-test in the 2nd week, 3rd - 7th week was dedicated to the implementation of treatment in the experimental and control groups, the post-test administration in 8th week, whilst the 10th week was dedicated to administering the delayed-post-test) in the treatment and data collection procedure. In the first week, the researcher briefed the research assistants who were permanent teachers at the selected schools on outlined techniques for implementing the research. In the second week, the researchers and the assistants administered the pre-test on the learners in the treatment and control groups to benchmark students’ abilities of the selected accounting concepts before the commencement of the experimental activities. The experimental and control activities took place from third to seventh week regularly for eighty minutes. In the eighth week, post-test was given to participants in the control and experimental groups to prevent the hawthorn effect that could feature if the researchers administer the post- test. In the tenth week, the research assistants repeated the post-test to determine the participants’ retention of Financial Accounting concepts.

In addition, the researcher made efforts to control other superfluous variables such as teacher’s effect, test familiarity, and subject interaction variable. For instance, the teachers made sure that diverse lessons were going on concurrently in other SS2 classes to control subject interaction. This reduced roaming of the students and vetoed disruption. Also, the FAAT was used for the test before treatment, after treatment and delayed post-test. The questions were re-ordered in the tests to change the sequence for the respondents in appearance. Data collected during the pre- test, post-test, and delayed post-test for the two groups was used to answer the research questions and test the hypotheses raised for the study.

# *3.4.1 Experimental Group: Peer Tutoring Instructional Strategy*

Treatment in the experimental group involved these steps presented in Figure 1:

Figure 1: Treatment in the experimental group

# *3.4.2 Control Group: Conventional Instructional Strategy*

Control group was taught using the following steps presented in Figure 2:



Figure 2: Procedure for Teaching the control group

# *3.5 Data Analysis*

The data collected were analyzed using both descriptive and inferential statistics. Descriptive statistics such as Mean and Standard Deviation were adopted to evaluate the performance in the control and experimental groups across gender and socio-economic status. The hypotheses tested in this study were done at 0.05 level of significance with Analysis of Covariance (ANCOVA). The p-value was set at 0.05. ANCOVA was preferred because of its power to take care of the initial lack of equivalence in the groups since intact classes were used for the study (Ali, 1996 in Ogundola, 2017). The pre-test scores were used as covariates while Estimated Marginal Means (EMM) enabled the researchers to evaluate the magnitude of the differences in the groups. The significant differences were ascertained with Bonferroni post hoc analysis. The analysis was facilitated with the use of the Statistical Package for Social Sciences (SPSS).

# *3.6 Ethical Issues*

The Departmental research board in Business Education at the Faculty of Vocational and Technical Education in University of Nigeria, Nsukka authorized this research. Despite the approval by this research board, a written approval of the consent procedure was obtained from the Research Ethics Committee (The School Management Teams) while the informed consents were obtained and signed by the parents of the minors. The rationale behind getting the informed consents from the parents of the minors instead of the minors themselves, was because the minors were below 18 years of age.

# 4.0 Results

The data generated are presented below according to the earlier raised hypotheses

**H01:** Students’ attitude towards financial accounting will significantly improve because of peer tutoring.

# Table 1: Analysis of Covariance (ANCOVA) of Post-Attitude rating of Learners by Treatments, Gender and SES

**Dependent Variable: Post Attitude Rating**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Source** | **Type III Sum****of Squares** | **Df** | **Mean****Square** | **F** | **Sig.** | **Partial Eta****Squared** |
| Corrected Model | 4680.276a | 12 | 390.023 | 24.978 | .000 | .707 |
| Intercept | 369.861 | 1 | 369.861 | 23.687 | .000 | .160 |
| Pretest | 1466.805 | 1 | 1466.805 | 93.939 | .000 | .431 |
| Treatment | 1817.915 | 1 | 1817.915 | 116.425 | .000 | .484 |
| Gender |  4.948  | 1 |  4.948  | .317 |  .575  | .003 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| SES | 58.688 | 2 | 29.344 | 1.879 | .157 | .029 |
| Treatment\*Gender | 36.940 | 1 | 36.940 | 2.366 | .127 | .019 |
| Treatment\*SES | 91.771 | 2 | 45.885 | 2.939 | .057 | .045 |
| Gender\*SES | 24.013 | 2 | 12.006 | .769 | .466 | .012 |
| Treatment\*Gender\*SES | 49.471 | 2 | 24.736 | 1.584 | .209 | .025 |
| Error | 1936.191 | 124 | 15.614 |  |  |  |
| Total | 246440.000 | 137 |  |  |  |  |
| Corrected Total | 6616.467 | 136 |  |  |  |  |

R Squared = .707 (Adjusted R Squared = .679) Computed using alpha = .05

Table 1 reports a treatment’s main effect that is significant on students' attitude to Financial Accounting (F(1,124) =116.425; p< 0.05; η2=.484). 48% is the effect size which implies that 48% of the variance in the experimental variable is attributed to the manipulated variables. The output of the ANCOVA presented on Table 1 shows a significant difference in the post-attitude mean scores of students taught financial accounting concepts using the peer tutoring instructional strategies. Thus, hypothesis 1 on students’ attitude towards financial accounting is rejected. Consequent on this result, the estimated marginal means was carried out for the treatment groups. The output is presented in Table 2.

# Table 2: Estimated Marginal Means for Post-Attitude Rating by Treatment

|  |  |  |  |
| --- | --- | --- | --- |
| Treatment | Mean | Std. Error | 95% Confidence Interval |
| Lower Bound | Upper Bound |
| Peer Tutoring (PT) | 46.678a | .597 | 45.496 | 47.860 |
| Conventional | 38.547a | .447 | 37.663 | 39.431 |

* 1. Covariates appearing in the model are evaluated at the following values: PRETEST = 39.9197.

Table 2 reports the attitude of learners exposed to peer tutoring instructional strategy improved (𝑥̅=46.68) than learners in the conventional lecture group (𝑥̅=38.55). This output is mathematically presented as PTIS > CLM. Furthermore, Table 3 presents the source of the significant differences using Bonferroni post-hoc analysis.

# Table 3: Bonferroni Post-hoc Analysis of Post- Attitude Rating by Treatment

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| (I) Treatment (J) Treatment | Mean Difference (I-J) | Std. Error | Sig.b | 95% Confidence Interval for Differenceb |
| Lower Bound | Upper Bound |
| Peer Tutoring ConventionalConventional Peer Tutoring | 8.131\*-8.131\* | .754.754 | .000.000 | 6.639-9.622 | 9.622-6.639 |

a. Based on estimated marginal means \* Significant at the .05 level.

* 1. Bonferroni’s adjustment for multiple comparisons.

From Table 3, the Bonferroni post hoc analysis reported a significant distinction between PTIS and CLM. This, therefore, indicates that PTIS was significantly more effective than CLM in improving students’ attitude.

**H02:** Students’ retention of financial accounting concepts will improve significantly because of peer tutoring.

# Table 4: ANCOVA of Retention test of Students by Treatments, Gender and SES Dependent Variable: Retention Test

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Source** | **Type III Sum of Squares** | **Df** | **Mean Square** | **F** | **Sig.** | **Partial Eta Squared** |
| Corrected Model | 3773.099a | 12 | 314.425 | 138.785 | .000 | .931 |
| Intercept | 253.043 | 1 | 253.043 | 111.691 | .000 | .474 |
| Pretest | 3.632 | 1 | 3.632 | 1.603 | .208 | .013 |
| Treatment | 388.437 | 1 | 388.437 | 171.453 | .000 | .580 |
| Gender | 2.194 | 1 | 2.194 | .969 | .327 | .008 |
| SES | 11.268 | 2 | 5.634 | 2.487 | .087 | .039 |
| Treatment\*Gender | 7.813 | 1 | 7.813 | 3.449 | .066 | .027 |
| Treatment\*SES | 4.488 | 2 | 2.244 | .990 | .374 | .016 |
| Gender\*SES | 2.566 | 2 | 1.283 | .566 | .569 | .009 |
| Treatment\*Gender\*SES | 1.724 | 2 | .862 | .380 | .684 | .006 |
| Error | 280.930 | 124 | 2.266 |  |  |  |
| Total | 50739.000 | 137 |  |  |  |  |
| Corrected Total | 4054.029 | 136 |  |  |  |  |

R Squared = .931 (Adjusted R Squared = .924) Computed using alpha = .05

Table 4 reports a significant main effect of the treatment on students' retention in Financial Accounting concepts (F(1,124) =171.453; p< 0.05; η2=.580). 58% is the effect size which signifies that 58% of the variance in the experimental variable is attributed to the covariate. The output of ANCOVA justifies a significant difference in the retention mean scores of learners taught financial accounting based on the treatment (peer tutoring and conventional instructional strategies) given. The second hypothesis is therefore rejected. To determine the magnitude of the significant main effect across treatment groups, the estimated marginal means of the treatment groups was carried out and the result is presented in Table 5.

# Table 5: Estimated Marginal Means for Retention Test by Treatment

|  |  |  |  |
| --- | --- | --- | --- |
| Treatment | Mean | Std. Error | 95% Confidence Interval |
| Lower Bound | Upper Bound |
| Peer Tutoring (PT) | 24.466a | .475 | 23.526 | 25.406 |
| Conventional | 14.579a | .328 | 13.930 | 15.228 |

1. Covariates appearing in the model are evaluated at the following values: PRETEST = 17.4161.

It is evident from Table 5 that learners exposed to peer tutoring instructional strategy (𝑥̅=24.45) retained the knowledge of financial accounting concepts better than the learners taught with conventional lecture method (𝑥̅=14.60). This outcome is mathematically presented as PTIS > CLM. In addition to these, the sources of the substantial differences reported on Table 6 are identified with Bonferroni post-hoc test.

# Table 6: Bonferroni Post-hoc Analysis of Retention Test by Treatment

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| (I) Treatment (J) Treatment | Mean Difference (I-J) | Std. Error | Sig.b | 95% Confidence Interval for Differenceb |
| Lower Bound | Upper Bound |
| Peer Tutoring Conventional Conventional Peer Tutoring | 9.887\*-9.887\* | .755.755 | .000.000 | 8.393-11.382 | 11.382-8.393 |

Based on estimated marginal means

\* Significant at the .05 level.

1. Bonferroni’s adjustment for multiple comparisons.

From Table 3, the Bonferroni post hoc analysis reports a significant difference between PTIS and CLM. This, therefore, means that PTIS proved more effective in enhancing students’ retention than CLM.

**H03:** No statistically significant main effect of gender and socio-economic status on students' attitude towards Financial Accounting.

Table 1 shows that there is no significant main effect of gender on students' attitude towards Financial Accounting F(1,124) = .317, p>0.05; η2=.003). Therefore, the null hypothesis is not rejected. This implies that there were no substantial differences in the post-attitude scores of the male and female participants.

Table 1 also shows that there is no significant main effect of SES on students' attitude towards Financial Accounting F(2,124) = 1.879, p>0.05; η2=.029). Therefore, the null hypothesis is not rejected. This implies that there was no significant difference in the attitude scores of the students based on their SES.

**H04:** No statistically significant main effect of gender and socio-economic status on students' retention of Financial Accounting.

Table 4 shows that there is no significant main effect of gender on students' retention in Financial Accounting concepts F(1,124) = .969, p>0.05; η2=.008). Therefore, the null hypothesis is

not rejected. This implies that there was no significant difference in the retention test scores of the male and female students. This implies that gender was not a determinant of the effectiveness of the instructional strategies.

Table 4 also shows that there is no significant main effect of SES on students' retention in Financial Accounting concepts F(2,124) = 2.487, p>0.05; η2=.039). Therefore, the null hypothesis is not rejected. This implies that there was no significant difference in the participants’ retention scores based on their SES.

**H05:** No statistically significant interaction effect of treatment and gender on students' retention of Financial Accounting concepts.

Table 4 shows that there is no significant two-way interaction effect of treatment and gender on students’ retention in Financial Accounting concepts (F(1,124) = 3.449, p>0.05 η2=0.27). This shows that the intervention and gender did not significantly interacted with learners’ retention in the selected concepts in Financial Accounting. Hence, this null hypothesis is therefore not rejected.

**H06:** No statistically significant interaction effect of treatment and socio-economic status on students' retention of Financial Accounting concepts.

Table 4 indicates no significant two-way interaction effect of treatment and socio-economic status on learners’ retention in the selected concepts in Financial Accounting (F(2,124) = .990, p<0.05 η2=0.16). This implies that treatment and socio-economic status had no significant interaction effect on students’ retention in Financial Accounting concepts. Hence, this null hypothesis is therefore not rejected.

# 5.0 Discussion

This study investigated the effectiveness of peer tutoring instructional strategies in improving students’ attitude and retention in selected concepts in Financial Accounting compared to conventional lecture method. The first and second hypotheses were on the main effect of treatment (instructional strategies) on the attitude and retention of students that took part in the study on the concepts selected from the syllabus of financial accounting in senior secondary schools. The attitude and retention of the selected students in Financial Accounting concepts became better after their exposure to the treatment provided in the experimental group. The tutees exposed to peer tutoring instructional strategy greatly improved on their attitude and retention of financial accounting concepts. This result demonstrates that peer tutoring was effective in enhancing subjects’ attitude and retention in concepts selected from the financial accounting curriculum.

The effectiveness of peer tutoring instructional strategy could be accredited to the fact that it gives students the opportunity to explain their ideas in such a way that the other students will easily comprehend Olulowo, Ige and Ugwoke (2020) [60]; it allows the transmission of classroom control to the students under the supervision of the teacher; learners are actively engaged in the process of learning; the tutees in a peer relation have freedom to express their opinions and ask questions using simple and similar language than that of teachers. As regards attitude, this finding corroborates the findings of Tella (2013) [24] that established that students taught with peer tutoring approach and those taught with lecture method differ significantly in their academic achievement and attitude towards Mathematics.

For retention, this finding agrees with Kelli and Berry (2008) [27] that peer tutoring instructional strategy augmented students’ energetic involvement in Science and advance superior attainment and better retention than individualistic strategy. Similarly, this finding is in harmony with the finding of Essien Edem Udo, and Fstan (2016) [28] who discovered that Basic Science students taught with peer tutoring strategy and those taught with lecture method were at variance significantly in their retention abilities. It was also gathered that peer tutoring was the most efficient in advancing students’ academic achievement and retention in Basic Science. The high retention score of financial accounting students in peer tutoring group might have been because of students’ encouragement to work together as a team to attain group goals by discussing subject content and assisting one another to acquire knowledge. Moreover, the comparative effectiveness of PTIS over CLM in increasing students’ knowledge retention and attitude could be ascribed to the fact that PTIS is student centered and activity based. PTIS is distinct from CLM, which subject students to be passive receiver of information from their teacher.

The third hypothesis holds that gender and socio-economic status have no substantial effect on the subjects’ attitude to selected concepts in financial accounting. The analysis of data shows no difference of a significant proportion in the mean attitude scores of male and female students in concepts selected in financial accounting. This finding is in conformity with the finding of Sofiani, Maulida, Fadhillah and Sihite (2017) [29] who reported that there was no significant effect of gender on the attitude of students towards Science. On the other hand, this finding is not in agreement with the findings of Imasuen and Omorogbe (2016) [35] who established significant differences between the attitude of male and female students in Mathematics. Also, this finding revealed that socio-economic status had no significant effect on the participants’ attitude. This finding is not in agreement with the findings of Edosomwan and Edosomwan (2015) [48] who reported that there existed significant relationship between socio-economic status and students’ attitude toward Computer Science.

Furthermore, there was no significant main effect of gender and socio-economic status on students’ post retention scores of male and female students in financial accounting concepts. This outcome agrees with Iloputaife’s (2001) and Oludipe’s (2012) research [49,50] that reported no significant variations in male and female students’ retention in Science outcomes. However, Ugwu (2007) [51], Lawal (2009) [34], and Bosede (2010) [52] reported no significant influence of gender on students’ academic retention in Science-related concepts. The outcome of this study shows no statistical significant influence of gender on students’ knowledge and retention from student-centered and action-oriented instructional strategies. Likewise, this finding reveals that socio-economic status had no significant main effect on students’ retention. This finding negates the findings of Edinyang, Ubi, Usang and Adalikwu (2013) [42] who found that socio-economic status had a significant main effect on knowledge retention of students.

In addition to these, the non-significant interaction effect of treatment and gender on academic retention of students in concepts selected in financial accounting was established in this study. This indicates that peer tutoring does not show gender preference but offers common opportunities to both male and female learners. This is in harmony with the findings of Iloputaife (2001) [49]; Adekoya and Olatoye (2011) [53]; Okoro (2013) [54] and Eze, Ezenwafor and Obidile (2016) [4] who in their separate studies discovered that treatment will not significantly interact with gender to influence knowledge retention of students. Although on the opposite, the outcome of the analysis deviates from the conclusion of Ezeudu (2013) [55] that there was a significant interaction effect of treatment and gender on knowledge retention of students. The outcome of the analysis of data gathered for this study on interaction effect of treatment and gender uphold other studies that discovered that treatment do not rely on gender of students to be efficient. This indicates that relative effectiveness of peer tutoring was consistent for male and female learners that participated in this study (Olulowo, Ige, and Ugwoke, 2020) [60]. Finally, treatment and socio-economic status had no significant interaction effect on students’ retention in concepts selected in financial accounting. This finding agrees Edinyang, Ubi, Usang and Adalikwu (2013) [42] who found that there was no significant interaction effect of treatment and socio-economic status on students’ achievement and retention in Social Studies.

# 6.0 Conclusion and Implications for Educational Practice

The conclusion that can be drawn from this study is that peer tutoring is an effective instructional strategy for improving attitude and academic retention of students in concepts selected in financial accounting compared to the control group. Also, peer tutoring is not gender biased and its efficacy is not based on students’ socio-economic status. Considering the findings of this study and previous research on improvement of students’ attitude and academic retention, peer tutoring is highly recommended for teachers, administrators and curriculum planners who want to improve post basic school students’ attitude and knowledge retention in financial accounting. However, this study considered only senior secondary school level two (SSII) financial accounting students. As beneficial as the results reported in this study are, the sample of 68 male and 69 female students were limited to eight reputable senior secondary schools in Ondo State, Nigeria. Consequently, the findings of the study is not widely applicable to financial accounting students in other levels secondary schooling. Future researchers should note that this sample size poses a limitation to generalize the outcomes of this study to other parts of Nigeria and the rest of the world.

The researcher, therefore, suggests that further studies are warranted for other levels of secondary schooling where financial accounting is offered. Similarly, future research should find improvements in other academic and psychological variables, such as self-concept, anxiety towards financial accounting when taught using peer tutoring instructional strategy.

# References

* 1. West African Examination Council. Chief examiners report: May/ June West African senior school certificate examination. 2004; Lagos: WAEC.
	2. National Examination Council. Regulations and syllabus for senior secondary school certificate examination. 2004; Minna: NECO.
	3. Federal Republic of Nigeria. National Policy on Education. 2013; 6th Edition, Lagos: NERDC Press.
	4. Eze, T. I., Ezenwafor, J. I., Obidile, I. J. Effects of problem-based teaching method on students’ academic performance and retention in financial accounting in technical colleges in Anambra State. Scholars Journal of Arts, Humanities and Social Sciences, 2016; 4(6) 634-639.
	5. Cepni, S., Tas, E., Kose, S. The effects of computer-assisted material on students’ cognitive levels, misconceptions and attitudes towards Science. Computers and Education, 2006; 46(1), 192-205. <https://doi.org/10.1016/j.compedu.2004.07.008>
	6. Tymms P, Merrell C, Thurston A, Andor J, Topping K, Miller D. Improving attainment across a whole district: school reform through peer tutoring in a randomized controlled trial. School Effectiveness and School Improvement. 2011; 22(3):265–289. <https://doi.org/10.1080/09243453.2011.589859>
	7. Galbraith J, Winterbottom M. Peer-tutoring: what’s in it for the tutor?. Educational Studies. 2010; 37 (3):321–332. <https://doi.org/10.1080/03055698.2010.506330>
	8. Moliner L, Alegre F Effects of peer tutoring on middle school students’ mathematics self- concepts. PLoS ONE 2020; 15(4) e0231410. <https://doi.org/10.1371/journal.pone.0231410>
	9. Bjerke A, Eriksen E. Measuring pre-service teachers’ self-efficacy in tutoring children in primary mathematics: an instrument. Research in Mathematics Education. 2016; 18(1):61–79. <https://doi.org/10.1080/14794802.2016.1141312>
	10. Clarkson, B., Luca, J. Promoting student learning through peer tutoring – A case study. In

P. Barker & S. Rebelsky (Eds.), Proceedings of ED-MEDIA 2002--World Conference on Educational Multimedia, Hypermedia & Telecommunications (pp. 1176-1181). Denver, Colorado, USA: Association for the Advancement of Computing in Education (AACE).

* 1. Wood, D., Bruner, J. S., Ross, G. The role of tutoring in problem solving. Journal of Child Psychology and Psychiatry, 1976; 17, 89-100. [https://doi.org/10.1111/j.1469-](https://doi.org/10.1111/j.1469-7610.1976.tb00381.x) [7610.1976.tb00381.x](https://doi.org/10.1111/j.1469-7610.1976.tb00381.x)
	2. Luis Ignacio, H. B., José David, L. R., John Jairo, V. G. Online Peer-Tutoring: A Renewed Impetus for Autonomous English. Learning HOW 2019; 26(2), 13-31. ISSN 0120-5927. Bogotá, Colombia. <https://doi.org/10.19183/how.26.2.503>
	3. Utley, C. A., Mortweet, S. L. Peer-mediated instruction and interventions. Focus on Exceptional Children, 1997; 29, 1–23. h[ttps://doi.org/10.1177/074193250102200102](https://doi.org/10.1177/074193250102200102)
	4. Spilles, M., Hagen, T., Hennemann, T. Playing the good behavior game during a peer- tutoring intervention: Effects on behavior and reading fluency of tutors and tutees with behavioral problems. Insights into Learning Disabilities, 2019; 16(1), 59-77.
	5. Boz Yaman, B. A multiple case study: What happens in peer tutoring of calculus studies? International Journal of Education in Mathematics, Science and Technology (IJEMST), 2019; 7(1), 53-72. <https://doi.org/10.18404/ijemst.328336>
	6. Falchikov, N., Goldfinch, J. Student peer assessment in higher education: A meta analysis comparing peer and teacher marks. Review of Educational Research, 2000; 70(3), 287-323. <https://doi.org/10.18404/ijemst.328336>
	7. Hattie, J. A. C. Visible learning: A synthesis of over 800 meta-analyses relating to achievement. 2009; London, UK: Routledge.
	8. Johnson, D. W., Johnson, R. T., Smith, K. The State of Cooperative Learning in Postsecondary and Professional Settings. Educational Psychological Review 2007; 19(1), 15-29. <https://doi.org/10.1007/s10648-006-9038-8>
	9. Martino, L. When students help students. The Executive Educator,

1993; 15(1), 31-32.

* 1. Prince, M. Does active learning work? A review of the research. Journal of Engineering Education, 2004; 93(3), 223-231.
	2. Rohrbeck, C. A., Ginsburg-Block, M. D., Fantuzzo, J. W., Miller, T. R. Peer-assisted learning interventions with elementary school students: A meta-analytic review. Journal of Educational Psychology, 2003; 94(20), 240-257.
	3. Slavin, R. E. Never streaming: Preventing learning disabilities. Educational Leadership, 1996; 53(5), 4-7.
	4. Topping, K. J. Effective peer tutoring in further and higher education: a typology and review of the literature. Higher Education, 1996; 32(3), 321-345.
	5. Tella, A. The effect of peer tutoring and explicit instructional strategies on primary school pupils learning outcomes in mathematics. *Bulgarian Journal of Science and Education Policy (BJSEP),* 2013; 7(1), 5-25.
	6. Candeias, A. A., Rebelo, N., Oliveira, M. Student’ attitudes toward learning and school– study of exploratory models about the effects of socio-demographics and Personal Attributes. 2010; Retrieved January 10, 2016 from <http://www.projectored.uevora.pt/documentos/LICE.pdf>
	7. Kubiatko, M. Postoje žiakov druhého stupňa základných škôl k prírodovedným predmetom. Habilitačná práca. Brno: 2013; Masarykova Univerzita.
	8. Kelli, L. Berry, N. Peer tutoring: A guide to learning by teaching. 2008; London: Kogan Ltd.
	9. Essien Edem Udo, Fstan. Effect of peer tutoring on students’ academic performance and retention in junior secondary school basic science. *International Journal of Educational Benchmark (Ijeb),* 2016; 3(1) 97-111.
	10. Sofiani, D., Maulida, A. S., Fadhillah, N, Sihite, D. Y., Gender differences in students’ attitude towards science. *Journal of Physics,* Conference Series 2017; 1-7.
	11. Udousoro, U.J. Gender difference in computing participation: The case of university of Uyo. International Journal of Educational Development, 2000; 2(1), 190-199.
	12. Ifeakor, A.C. Effect of Commercially produced Computer Assisted Instructional Package on Students’ Achievement and Interest in Secondary School Chemistry. 2005; (Unpublished Ph.D. Dissertation, University of Nigeria, Nsukka). Retrieved 14 April 2015 from the University of Nigeria, Nsukka Library.
	13. Aluko, A.Y. Social factors underlying gender variations of school enrolment in Nigeria. Ife Psychologia, 2005; 13(1), 74-78.
	14. Oludipe, B. M. Peer tutoring-assisted instruction: An invention for increasing senior secondary school student achievement in physics. Africa Journal of Education 2003; 9(2) 42-48.
	15. Ezenwosu, S. U., Nworgu, L. N. Efficacy of peer tutoring and gender on students' achievement in biology. International Journal of Scientific and Engineering Research, 2013; 4(12) 944-950.
	16. Olagunju, A. M., Babayemi, J. O. Effects of crossword-picture puzzle teaching strategy and gender on students’ achievement in basic science. Journal of Education and Leadership Development, 2014; 6(1) 43-54.
	17. Ebong, E. O. Students' socio-economic background in social studies. 2004; *Published M.Ed Thesis,* Faculty of Education, University of Calabar, Calabar, Nigeria.
	18. Mgbado, F. N. The relative effect of socio-economic status and teacher qualification on students' achievement and retention in social studies. 2002; *Published M.Ed. Thesis.* Faculty of Education, University of Lagos.
	19. Tina, A. O. Effect of the family socio economic status on the academic performance of senior secondary II students in English Language in Mbaitoli L. A. of Imo State. 2001; *An Unpublished Ph.D, Thesis,* Department of Curriculum and Teaching. Faculty of Education. University of Calabar, Calabar.
	20. Edinyang, S. D., Ubi, I. E., Usang, E. E., Adalikwu, R. A. Effects of gender, socio economic status, teacher qualification and their interaction on students' retention ability in social studies in Akwa Ibom State, Nigeria. Journal of Culture, Society and Development, 2013; 2, 35-40.
	21. Melero, M. A., Fernandez, P. Peer learning. In P. Fernandez, & M. A. Melero (comps.). Social interaction in educational contexts. 1995; Madrid: 21st century.
	22. Rudland, S. C., Rennie, J. R. Medical faculty opinions of peer tutoring. Abington Print. 2014; 27, 4- 9 doi: 10.4103/1357-6283.134290.
	23. Guerrero Flores, D. I., Urdiales Ibarra, M. E., Villarreal Treviño, M. G., Castro Campos, C., Martínez Martínez, C. L. Peer tutoring as an improvement strategy for school exploitation. European Journal of Educational Research, 2018; 7(4), 953-961. doi: 10.12973/eu-jer.7.4.953
	24. AbdulRaheem, Y., Yusuf, H. T., Odutayo, A. O. Effect of peer tutoring on students' academic performance in economics in Ilorin South, Nigeria, Journal of Peer Learning, 2017; 10(2) 95-102.
	25. Ogundola, P. I. Effects of peer tutoring strategy on academic achievement of senior secondary school students in technical drawing in Nigeria. British Journal of Education, Society & Behavioural Science, 2017; 19(1) 1-10.
	26. Edosomwan, J. H., Edosomwan, T. O. Correlation between attitude and socio-economic status of students’ performance in computer science. Science Journal of Education: 2015; 3(4) 75-77.
	27. Iloputaife, E.C. Effect of Analogy and Conceptual Change Instructional Model on Physics Achievement of Secondary School Students. 2001; (Unpublished PH.D. Thesis, University of Nigeria, Nsukka). Retrieved 14 April 2015 from the University of Nigeria, Nsukka Library.
	28. Oludipe, D. Gender difference in Nigerian junior secondary students’ academic achievement in basic science. Journal of Educational and Social Research, 2012; 2(1), 76-81.
	29. Ugwu, A.U. Effect of Analogy Model of Instruction on Students’ Achievement and Retention in Biology in Secondary Schools in Enugu. 2007; (Unpublished M.Sc. Thesis, Enugu State University of Science and Technology, Enugu, Nigeria). Retrieved 21 April 2015 from the Enugu State University, Enugu Library.
	30. Bosede, A.F. Influence of sex and location on relationship between students’ problems and academic performance. The Social Science, 2010; 5(4), 340-345.
	31. Adekoya, Y.M., Olatoye, R.A. Effect of demonstration, peer tutoring and lecture teaching strategies on senior secondary school students’ achievement in an aspect of agricultural science. Pacific Journal of Science and Technology, 2011; 12(1), 320-332.
	32. Okoro, R. C. Effect of project-based learning on secondary school students’ academic achievement, interest and retention in home economics. Faculty of Education, University of Nigeria, Nsukka. 2013; An M.Ed Project presented to the Department Of Arts Education (Curriculum Studies). Faculty of Education University Of Nigeria, Nsukka.
	33. Ezeudu, F.O. Influence of concept maps on achievement retention of senior secondary school students in organic chemistry. Journal of Education and Practice, 2013; 4(19), 35- 43.
	34. Van Zyl, A. The contours of inequality: The links between socio-economic status of students and other variables at the University of Johannesburg. Journal of Student Affairs in Africa, 2016; 4(1), 1-16. <https://doi.org/10.14426/jsaa.v4i1.141>.
	35. Wessel R.D., Bell, C. L., McPherson, J.D., Costello, M.T. & Jones, J.A. Academic disqualification and persistence to graduation by financial aid category and academic ability. Journal of College Student Retention, 2006; 8(2), 185-198.
	36. Kuh, G.D., Kinzie, J., Buckley, J.A., Bridges, B.K. & Hayek, J.C. Piecing together the student success puzzle: Research propositions, and recommendations. Association for the Study of Higher Education (ASHE) Report, 2007; 32(5), 200 pp.
	37. Caison, A.L. Determinants of systemic retention: Implications for improving retention practice in higher education. Journal of College Student Retention, 2005; 6(4), 425-441.
	38. Gorard, S., & See, B.H. The impact of socio‐ economic status on participation and attainment in science, Studies in Science Education, 2009; 45:1, 93-129, https://doi.org/ 10.1080/03057260802681821
	39. Loury, L. Letter to the editor. Commentary, 1995; 100, 2.
	40. Herrnstein, R., & Murray, C. The bell curve. 1994; New York:

Simon and Schuster.

* 1. Olulowo, T.G., Ige, O.A. Ugwoke, O.E. Using Peer Tutoring to Improve Students’ Academic Achievement in Financial Accounting Concepts. Education Research International, 2020; <https://doi.org/10.1155/2020/8871235>.