



## **Assessing the Effect of Cooperative Learning on Financial Accounting Achievement among Secondary School Students**

### **Umar Inuwa**

Department of Vocational and technology Education, Abubakar Tafawa Balewa University, Bauchi, Nigeria, inuwa\_umar@oyagsb.uum.edu.my  
+60165010442, *alummari@gmail.com*

### **Zarifah Abdullah**

Tunku Puteri Intan Safinaz School of Accountancy, Universiti Utara Malaysia, Malaysia, *zarifah@uum.edu.my*

### **Haslinda Hassan**

Tunku Puteri Intan Safinaz School of Accountancy, Universiti Utara Malaysia, Malaysia, *lynn@uum.edu.my*

This study examined the effect of cooperative learning approach on financial accounting achievement among secondary school students in Gombe state, Nigeria. A pre-test-post-test-control group design was adopted. 120 students participated in the study were selected randomly from six schools. The students were divided into two equal groups, namely: experimental (i.e., cooperative learning approach) and control group (i.e., conventional approach), both at random. A Financial Accounting Achievement Test (FAAT) was used as an instrument for data collection. The study found that at the pre-test stage, there was no statistically significant difference between the achievement of cooperative learning students and conventional approach students, the results suggested that the students were initially equal in terms of their achievements. Nevertheless, at the post-test stage, the achievement of students who were exposed to the cooperative learning was found to be significantly better than the achievement of students who were exposed to the conventional approach. The findings further suggested that cooperative learning approach effectively enhanced the financial accounting achievement of the secondary school students. It is, therefore, recommended that government should encourage both curriculum planners and secondary schools' teachers to adopt cooperative learning approach as an instructional approach for teaching financial accounting in secondary schools to improve students' achievement in the subject.

**Keywords:** cooperative learning, financial accounting, secondary school students, learning, achievement

**Citation:** Inuwa, U., Abdullah, Z. & Hassan, H. (2017). Assessing the Effect of Cooperative Learning on Financial Accounting Achievement among Secondary School Students. *International Journal of Instruction*, 10(2), 31-46. <https://doi.org/10.12973/iji.2017.1033a>

## **INTRODUCTION**

Financial accounting goes far beyond recording and keeping of business transaction. It concerned with recordkeeping system, preparation, analysis, and communication of financial information (Francis, 2014). In Nigeria, financial accounting is part of the vocational subjects offered at secondary school level to enable the students to acquire the relevant knowledge and skills that are necessary for national growth and development (Seyi, 2014). According to the National Examination Council (2004), the purposes of teaching this subject to the senior secondary school students in Nigeria are: to enable them to appreciate the basic accounting practices, principles, and their application in the contemporary business activities, and to prepare them to further their study in accounting and related courses at the higher level of learning. Hence, financial accounting subject is very imperative to the Nigerian economy as it provides the basis for preparing future entrepreneurs, accountants, managers, and other financial controllers (Francis, 2014).

In spite of the enormous importance of financial accounting to the Nigerian economy, the achievement of secondary school students in this subject is far from impressive, especially in their national examination (Adeleke, Binuomote, & Adeyinka, 2013; Mohammed, 2011). The massive and consistent failure recorded among secondary school students in national examinations are mostly due to the instructional approach employed by the teachers (Afolabi & Akinbobola, 2009; Aremu & Sokan, 2008; Ezeagba, 2014) and the persistent use of the conventional teaching approach (Mohammed, 2011).

The conventional teaching approach completely focuses on the intellectual and disregards experiential learning (Salako, Eze & Adu, 2013). Prior studies (see, for example, Abimbola & Abidoeye, 2013; Hossain & Tarmizi, 2013; Majoka, Khan, & Shah, 2011) have argued that conventional teaching approach was not effective in enhancing students' academic achievement, they further argued that students are not fully partaking in the learning process. However, constructivism learning theory suggests that a classroom is no longer a place where learners just wait for instructors to impart the knowledge; the students learn by generating their own idea through active participating in the learning process (Boghossian, 2006). Likewise, Akintelure (1998) asserted that the financial accounting subject is not learned by simple memorization of basic accounting rules and principles; rather, it requires full partaking of students in the learning activities. The use of 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 (Kohle, 2002). Hence, an appropriate teaching method for teaching financial accounting at the secondary schools needs to be sought to address the students' low academic achievement in the subject, especially in their national examination. One of the teaching methods is cooperative learning.

Cooperative learning is an instructional approach in which learners work in small learning groups to address the problems and other learning objectives while the teacher acts as a facilitator (Duplass, 2005). It is the approach that allows students to work

together to attain their learning objectives (Abrami, Poulsen, & Chambers, 2004). It is one of the student centered approaches that has been documented in the existing literature as an effective approach for helping students to acquire effective communication skills, practical learning skills and skills for understanding knowledge (Johnson & Johnson, 2008; Slavin, 2011). The approach minimizes competitive learning environment by encouraging working together among the students. Furthermore, it improves the students' positive relationships, develops their self-esteem and cohesiveness (Johnson & Johnson, 2005; Sahin, 2011).

To the best of the authors' knowledge, no published study was found to have focused on the effectiveness of cooperative learning approach on financial accounting achievement among secondary school students. However, studies by Gokkurt, Dundar, Soyulu and Akgun (2012) and Hossain and Tirmizi (2013) on the effect of cooperative learning on students' achievement in mathematics suggested that future studies should focus on the effect of cooperative learning on students' achievement in various subjects, hence, this study examined the cooperative learning effect on the financial accounting achievement among secondary school students in Gombe state, Nigeria following the suggestions of Gokkurt et al. (2012) and Hossain and Tirmizi (2013).

The expected outcome of this study will be of great significance to financial accounting students in the sense that good teaching method has a positive influence on the students' success. Specifically, the study's findings are expected to be relevant to stakeholders, especially government, curriculum planners, and financial accounting teachers of secondary schools, in terms of the benefits of adopting cooperative learning approach in teaching financial accounting and how this approach could be used to enhance their students' achievement. It is also hoped that the massive failure among the financial accounting students of the secondary schools may be reduced and their grade in the subject be improved.

#### **LITERATURE REVIEW**

A number of studies have documented that cooperative learning has the potentials for enhancing students' academic achievement. For instance, Gambari, Shittu, and Taiwo (2013) in the context of Nigeria have proved that cooperative learning approach allows students to share their ideas with one another, brainstorm responses, work together in solving mathematics problems; these helped them to significantly outperform their counterparts in conventional teaching group. In a related study, Jebson (2012) has focused on the impact of cooperative learning on mathematics performance of senior secondary school students. The study found cooperative learning as a valuable approach for helping learners to accomplish better learning outcome in mathematics. The effectiveness of cooperative learning approach could be relatively due to the fact that the students of cooperative learning approach receive academic and emotional support that help them to persist against the many obstructions they face in their learning. Similar findings were reported in the studies of Alabekee and Samuel (2015), Ibraheem (2011), Oludipe and Awokoy (2010), Gokkurt et al. (2012), Hossain and Tirmizi (2013) and Zakaria et al. (2010) in the context of Malaysia. In addition, Oludipe and Awokoy (2010) have argued that the chemistry anxiety of students was minimized drastically as a

result of their exposure to the cooperative learning approach. However, a contradictory finding was reported by Duxbury and Tsai (2010) in the context of Taiwan.

Recently, researchers have examined the effects of cooperative learning approach on physics achievement of secondary school students. Adebayo and Judith (2014), in the context of Zambia, found that cooperative learning approach has improved students' achievement and motivation towards learning physics. Similar to Adebayo and Judith (2014), Gambari and Yusuf (2014) have argued that due to the carefully organized activities of cooperative learning approach, the approach has contributed significantly to the achievement of secondary school students in physics. These findings are consistent with Majoka et al. (2012), and Salako et al. (2013) in social studies; and Kupczynski, Mundy, Goswami and Meling (2012) in distance learning program. Nevertheless, the findings contrast with the study of Parveen, Mahmood, Mahmood, and Arif (2011). In Parveen et al. (2011), cooperative learning was not found to be more powerful and influential than the conventional approach in improving the social studies achievement of students. Parveen et al.'s (2011) study was however conducted for a period of 15 days only which is not enough to arrive at a valid and sound conclusion on the effectiveness of cooperative learning approach or otherwise. Based on the above discussion, the following hypotheses are, therefore, formulated:

H1: There is no significant difference between the financial accounting achievement of cooperative learning students and that of those of conventional approach students before exposing them to the treatment.

H2: There is significant difference between the financial accounting achievement of cooperative learning students and that of those of conventional approach students after exposing them to the treatment.

## METHOD

This research work adopted a pre-test-post-test-control group design to examine the cooperative learning effect against the conventional teaching approach on financial accounting achievement among secondary school students in Nigeria. The pre-test-post-test-control group design is a randomized experimental design which consists of experimental and control group. The study's design is as follows:

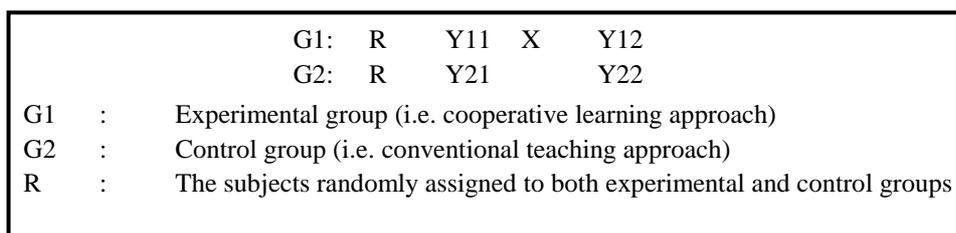


Fig. 1  
Pre-test-post-test-control group design.

Y11 and Y21 were the initial measurements on the dependent variable or the pre-test scores. The X in the first line of Fig. 1 indicates that the treatment variable has been applied to the experimental group, G1. The absence of X in the second line of Fig. 1 shows that no treatment was applied to the control group, G2. Y12 and Y22 were the final measurements or post-test scores of the experimental group (G1) and the control group (G2), respectively. This design was followed because both groups have been randomized as well as exposed to pre-test and post-test. Therefore, whatever happens to the experimental group, apart from the treatment, also happens to the control group.

### **Population and Sample**

The target population of this study comprised all senior secondary school level two (SSII) financial accounting students in Gombe state, Nigeria. This is because in Nigeria, at this level, students are grouped according to their area of specialization (Akanbi & Kolawole, 2014). The study used only those students who have an interest in accounting and related courses.

A sample of 120 students was selected from six (6) senior secondary schools in Gombe state, Nigeria. The students were divided into two equal groups, namely: experimental (i.e., cooperative learning approach) and control group (i.e., conventional approach). A cluster sampling technique was used in the study. This sampling technique is used in a situation where the population members are naturally grouped into a unit that can be conveniently used as clusters (Uzoagulu, 2011). Gombe state has three senatorial districts, namely: Gombe north, Gombe central, and Gombe south. Forty (40) students were drawn from two schools in each of the senatorial districts to form the sample size. Both the students and the schools were selected at random.

### **Research Instrumentation**

The instrument used for data collection in this study is Financial Accounting Achievement Test (FAAT). The instrument, comprising of 40 objective questions, was adapted from the West African Examination Council's (WAEC) past examination based on the topics covered during the study. WAEC examination is reliable and valid because it has been constructed by the experts (Osadebe, 2014), usually with try-out, analysis, and revision. Several studies (see, for example, Ogologo & Wagbara, 2013) have also used the WAEC examination to measure the secondary school students' achievement in chemistry.

Prior to the actual study, the instrument was pilot tested on the students that are part of the population, but not included in the sample of the study. The instrument was also subjected to the validity and reliability test. The FAAT was prepared by the researchers and was assessed by two experts for content validity. The experts were from Abubakar Tafawa Balewa University, Bauchi, and Federal College of Education Technical, Gombe. This is to ensure that the content validity of the test instrument is established by expert judgment (Baykul, 2000).

Face validity was assessed by two Heads of Department (HODs) of financial accounting in senior secondary schools in Gombe state. The suggestions and inputs of the validators were taken into consideration in adjusting the instrument for final use.

The Cronbach alpha was used to determine the reliability of the research instrument. According to Hair et al. (2010), the Cronbach alpha value of more than .70 is acceptable and sufficient. The value of reliability coefficient in this study is .73, suggesting that the research instrument is reliable.

### **Treatment Procedure**

Six (6) financial accounting teachers with similar teaching qualification (Nigeria Certificate in Education) and with 5-7 years working experience were selected at random to carry out the experiment at the selected schools. The selected teachers were given a one-week orientation on how to execute the experiment. After that, the trained teachers were assigned to the selected schools at random for the actual treatment. The experiment (or the treatment) covered a period of four weeks, from 25<sup>th</sup> July to 19<sup>th</sup> August, and provided only to the experimental group using cooperative learning approach as their teaching approach. The control group, on the other hand, was taught using conventional teaching approach.

After assigning the students to their respective groups, the pre-test was administered to them (both the experimental and the control group students) by their respective teachers to measure their initial skills before the treatment. After the pre-test, the teachers of the experimental groups exposed their students to the cooperative learning approach, while the teachers of the control group taught their students using the conventional teaching approach. The activities of both the experimental and control groups were carried out simultaneously.

In the cooperative learning approach, the Slavin's (1994) Student Teams-Achievement Divisions (STAD) technique was followed in this study. In each class, the students were randomly divided into five heterogeneous sub-groups of four members each. Then, each class proceeded as follows: On the first day, the teacher presented the lesson using a conventional teaching approach for 40 minutes. On the second day, a worksheet covering the content of the lesson taught on the first day was provided to each cooperative group, and then the students worked within their teams for 40 minutes to make sure that all team members mastered the lesson. On the third day, all students took the individual test for 20 minutes and they were not allowed to help one another. Finally, the tests were marked and team scores were calculated based on team member's improvement scores. High scoring teams were recognized in the class as a super, excellent and good team. This treatment procedure continued in three days cycle for four weeks.

After the four weeks experiment, the post-test was administered to the students of both experimental and control groups to determine the treatment effect. Both the pre-test and post-test were collected by research assistants immediately after the tests and passed to the researchers. The tests were marked by the researchers.

### Data Analysis

The data collected from the study were analyzed using independent samples t-test and analysis of covariance (ANCOVA). An independent samples t-test is a statistical tool used for comparing the mean score of the two different groups (Tabachnick & Fidell, 2007). This test was performed to determine whether there is a significant difference between the financial accounting achievement of cooperative learning students and that of the conventional approach students before exposing them to the treatment. Sambo (2005) argued that a usual statistical tool for the pre-test-post-test-control group design is ANCOVA. The ANCOVA was performed with the pre-test scores as a covariates to examine whether there is a significant difference between the financial accounting achievement of students who were exposed to cooperative learning approach and that of those who were exposed to the conventional teaching approach.

### FINDINGS

The result of the *independent-samples t-test* (Table 1) suggests that there was no statistically significant difference between the mean achievement score of cooperative learning students ( $M = 25.15$ ,  $SD = 4.008$ ) and conventional approach students ( $M = 24.18$ ,  $SD = 4.645$ ),  $t(118) = 1.221$ ,  $p = .255$ . Hypothesis 1 is, therefore, supported. This finding indicates that the students of the two groups are from the same population as they were equal in terms of their achievements at the initial stage.

Table 1

Independent samples t-test for pre-test scores between the two groups

<i>Levene's Test for Equality of Variances</i>								
Variable	Groups	N	F	Sig.	T	Mean	SD	Sig. (2tailed)
Pre-test	Cooperative	60	.978	.325	1.221	25.15	4.008	.255
	Control group	60				24.18	4.645	

Prior to ANCOVA, the assumptions of normality, homogeneity of variance, and homogeneity of regression slopes were checked and satisfied. The normality assumption was assessed using skewness and kurtosis analysis. According to Tabachnick and Fidell (2007), the values of skewness and kurtosis should be nearest to zero (0) if the data is normally distributed. In the present study, the skewness and kurtosis values of the two groups in both pre-test and post-test are less than  $\pm 1$  (see Appendix 1), suggested that the assumption of normality was fulfilled. With regard to the homogeneity of variance, the Levene's test of equality of variance showed that the variance for the two groups is similar (i.e., at the significant value of .116) (see Appendix 1). The homogeneity of variance assumption has, therefore, not been violated. Finally, the homogeneity of regression slopes was checked to examine whether there is any interaction between the treatment and the covariate. The result showed the significant value of .156 which is

above the cut-off of .05, suggested that no interaction between the covariate and the treatment (see Appendix 1).

After all the necessary assumptions related to the analysis of covariance were satisfied, an ANCOVA was performed to compare the financial accounting achievement of students who were exposed to the cooperative learning approach and that of those who were exposed to the conventional approach. In this analysis, the independent variable was the instructional approach (i.e., cooperative learning and conventional). The post-test scores of students were used as dependent variable while their pre-test scores were used as a covariate. The Results shows in Table 3 reveals that there was a statistically significant difference between the financial accounting achievement of students who were exposed to the cooperative learning approach and that of those who were exposed to the conventional approach,  $F(1,117) = 1526.442$ ,  $p = .000$ , partial eta squared = .929. Hypothesis 2 is, therefore, supported. The effect size is large (Cohen, 1988).

Moreover, the result of the descriptive statistics in Table 2 shows that the mean achievement score of students who were exposed to the cooperative learning approach ( $M = 67.87$ ,  $SD = 3.239$ ) was significantly better than the mean achievement score of students who were exposed to the conventional approach ( $M = 48.13$ ,  $SD = 4.264$ ).

Table 2

## Descriptive statistics

Group	Mean	Std. Deviation	N
Cooperative	67.87	3.239	60
Control group	48.13	4.264	60
Total	58.00	10.601	120

Table 3

## Analysis of covariance (ANCOVA) of students' achievement in cooperative learning approach and conventional teaching approach

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Sq
Corrected Model	12859.105 <sup>a</sup>	2	6429.552	1460.992	.000	.962
Intercept	5494.048	1	5494.048	1248.417	.000	.914
Pre-test	1176.972	1	1176.972	267.444	.000	.696
<b>Group</b>	<b>6717.583</b>	<b>1</b>	<b>6717.583</b>	<b>1526.442</b>	<b>.000</b>	<b>.929</b>
Error	514.895	117	4.401			
Total	417054.000	120				
Corrected Total	13374.000	119				

## DISCUSSION

The finding of this study suggested that there was equality in the achievement of students who were assigned to the cooperative learning approach and that of those who were assigned to the conventional teaching approach before exposure to the treatment. This finding is in line with the studies of Gokkurt, Dundar, Soylu, and Akgun (2012), and Zakaria, Chin, and Daud (2010).

Nevertheless, after exposing the students to the treatment, the financial accounting achievement of students who were exposed to the cooperative learning approach was significantly better than the financial accounting achievement of their counterpart who was exposed to the conventional approach. This finding suggested that the significant change and the better off performance of the cooperative learning students in the financial accounting were due to the fact that the approach promotes learning interest and interactive environment which allows students to connect their ideas in solving the problems and to reason intensely about the problems; unlike in the conventional teaching approach where students put all their focus on the teacher. Therefore, the massive and consistent failure of the financial accounting students of secondary schools in the national examination could be addressed using cooperative learning as an instructional approach. This finding concurs with the studies by Alabekee (2015), Gambari, Shittu, and Taiwo (2013), Gokkurt et al. (2012), Hossain and Tirmizi (2013), and Zakaria et al. (2010) in mathematics; Adebayo and Judith (2014), Gambari and Yusuf (2014) in physics; and Salako et al. (2013), and Majoka et al. (2012) in social studies. Nonetheless, this view contradicted the research finding of Parveen et al. (2011) in social studies. Parveen et al. (2011) argued that cooperative learning was not found to be more influential than the conventional approach in enhancing the students' achievement.

## **CONCLUSION**

The objective of this study was to examine the effect of cooperative learning on financial accounting achievement among secondary school students in Gombe state, Nigeria. A pre-test-post-test-control group design was adopted where Financial Accounting Achievement Test (FAAT) was used as the instrument. One hundred and twenty (120) students from six schools in Gombe state participated in the study.

The findings suggested that the achievement of financial accounting students who were exposed to the cooperative learning approach has improved significantly compared to that of their counterpart who were exposed to the conventional teaching approach. This is because cooperative learning approach promotes students' learning interest and creates an interactive environment that allows students to connect their ideas in solving the problems and to reason intensely about the problems. Conventional teaching approach makes students put all their focus on the teacher. It is, therefore, recommended that the government should encourage curriculum planners and financial accounting teachers of secondary schools to adopt the cooperative learning approach as an instructional approach for teaching financial accounting in secondary schools to improve their students' achievement in the subject.

Nonetheless, the present study uses only senior secondary schools level two (SSII) financial accounting students. The findings, therefore, cannot be generalized to other levels of financial accounting students in senior secondary schools. It is suggested that future research of this approach could be conducted in other levels of financial accounting students in senior secondary schools. In addition, future research should also investigate the cooperative learning effect on the secondary school students' knowledge retention in financial accounting.

## REFERENCES

- Abimbola, I. O., & Abidoye, F. O. (2013). Effect of qualification and experience of biology teachers on the status of ecology teaching in Kwara State. *Journal of Education and Practice*, 4(24), 1-8.
- Abrami, P. C., Poulsen, C., & Chambers, B. (2004). Teacher motivation to implement an educational innovation: Factors differentiating users and non-users of cooperative learning. *Educational Psychology*, 24(2), 201-216.
- Adebayo, A. S. and Judith, K. (2014). Comparative study of effectiveness of cooperative learning strategy and traditional instructional method in physics classroom: A case study of Chibote girls secondary school, Kitwe district, Zambia. *European Journal of Educational Sciences*, 1(1), 30-41.
- Adeleke, M. S., Binuomote, M. O., & Adeyinka, M. S. (2013). Determinants of students' academic performance in financial accounting among senior secondary school leavers in Oyo State. *International Journal of Business and Management Invention*, 2(5), 48-59.
- Afolabi, F., & Akinbobola, A. O. (2009). Constructivist problem based learning technique and the academic achievement of physics students with low ability level in Nigerian secondary schools. *Eurasian Journal of Physics and Chemistry Education*, 1(1), 45-51.
- Akanbi, A. A., & Kolawole, C. B. (2014) Effects of guided-discovery and self-learning strategies on senior secondary school students' achievement in biology. *Journal of Education and Leadership Development*, 6(1), 19-42.
- Alabekee, E. C. & Samuel, A. (2015). Effect of cooperative learning strategy on students learning experience and achievements in mathematics. *International Journal of Education Learning and Development*, 3(4), 67-75.
- Aremu, A. O., & Sokan, B. O. (2008). A multi-causal evaluation of academic performance of Nigerian learners: Issues and implications for national development. *Department of Guidance and Counselling, University of Ibadan*
- Baykul, Y. (2000). *Egitimde Ve Psikolojide Olcme: Klasik Test Teorisi ve Uygulaması* (Measurement in education and psychology: Classical test theory and application). Ankara: OSYM
- Bilesanmi-Awoderu, J. B. (2006). Effect of computer-assisted instruction and simulation/ games on the academic achievement secondary school students in biology. *Sokoto Educational Review*, 8, 49-60.
- Boghossian, P. (2006). Behaviorism, constructivism, and socratic pedagogy. *Educational Philosophy and Theory*, 38(6), 713-722.
- Duplass, J. A. (2005). *Middle and High School Teaching: Methods, Standards, and Best Practices*. Houghton Mifflin College Division.

- Duxbury, J. G., & Tsai, L. L. (2010). The effects of cooperative learning on foreign language anxiety: A comparative study of Taiwanese and American Universities. *International Journal of Instruction*, 3(1), 3-18.
- Ezeagba, C. (2014). The Problems in the teaching and learning of Accounting as a vocational subject in Nigeria Secondary Schools. *AFRREV STECH: An International Journal of Science and Technology*, 3(2), 208-226.
- Francis, N. P. (2014). Climate change and implication for senior secondary school financial accounting curriculum development in Nigeria. *Journal of Education and Practice*, 5(26), 153-157.
- Gambari, A. I., Shittu, A. T. & Taiwo, O. A. (2013). Enhancing students' understanding of algebra concepts through cooperative computer instruction. *Journal of Education*, 1(1), 29-43.
- Gambari, I. A., & Yusuf, M. O. (2014) Effects of three cooperative learning strategies on the performance of secondary school students in physics. *Bulgarian Journal of Science Education*, 23(3), 1-23.
- Gokkurt, B., Dundar, S., Soylu, Y., & Akgun, L. (2012). The effects of learning together technique which is based on cooperative learning on students' achievement in mathematics class. *Procedia-Social and Behavioral Sciences*, 46, 3431-3434.
- Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2013). *A Primer On Partial Least Squares Structural Equation Modelling (PLS-SEM)*. Thousand Oaks, CA: Sage Publications, Incorporated.
- Hossain, A., & Tarmizi, R. A. (2013). Effects of cooperative learning on students' achievement and attitudes in secondary mathematics. *Procedia-Social and Behavioral Sciences*, 93, 473-477.
- Ibraheem, T. L. (2011). Effects of two modes of student teams – achievement division strategies on senior secondary school students' achievement in chemical kinetics. *Asia-Pacific Forum on Science Learning and Teaching*, 12(2), 1–21.
- Jebson, S. R. (2012). Impact of cooperative learning approach on senior secondary school students' performance in mathematics. *Ife Psychologia*, 20(2), 107-111.
- Johnson, D. W., & Johnson, R. T. (2005). New developments in social interdependence theory. *Genetic, social, and general psychology monographs*, 131(4), 285-358.
- Johnson, D. W., & Johnson, R. T. (2008). Social interdependence theory and cooperative learning: The teacher's role. In *The teacher's role in implementing cooperative learning in the classroom* (pp. 9-37). Springer US.
- Kohle, K. (2002). Freedom, peace and personality. Education: A biannual collection of recent German contribution to the educational research, 24.

- Kupczynski, L., Mundy, M. A., Goswami, J. & Meling, V. (2012). Cooperative learning in distance learning: a mixed methods study. *International Journal of Instruction*, 5(2), 81-90.
- Majoka, M. Khan, H. I. S. (2011). Effectiveness of cooperative learning for teaching social studies to students with different ability at elementary level. *Interdisciplinary Journal of Contemporary Research in Business*, 3(11), 486–498.
- Mohammed, I. A. (2011). The challenges of teaching financial accounting in Nigerian secondary schools: A case study of Gombe state. Available at SSRN 1854322.
- National Examination Council (2004). Regulations and Syllabus For Senior Secondary School Certificate Examination. Minna: NECO.
- Ogologo, G., & Wagbara, S. (2013). Effect of demonstration, strategy on senior secondary school students' achievement in separation techniques in chemistry inbio/Akpor local government area, Rivers State. *Journal Vocational Education & Technology*, 10(2) 15-29.
- Oludipe, D., & Awokoy, J. O. (2010). Effect of cooperative learning teaching strategy on the reduction of students' anxiety for learning chemistry. *Journal of Turkish Science Education*, 7(1), 30-36.
- Osadebe, P. U. (2014). Construction of Economics achievement test for assessment of students. *World Journal of Education*, 4(2), 58.
- Sahin, A. (2011). Effects of Jigsaw III technique on achievement in written expression. *Asia Pacific Education Review*, 12(3), 427-435.
- Salako, E., Eze, I., & Adu, E. (2013). Effects of cooperative learning on junior secondary school students' knowledge and attitudes to multicultural education concepts in social studies. *Education*, 133(3), 303-309.
- Sambo, A. A. (2005). *Research Methods In Education*. Ibadan: Evans Brothers Nigeria Ltd.
- Seyi, D. (2014). An overview of vocational and technical education in Nigeria under secondary school education system. *International Journal of Technology Enhancements and Emerging Engineering Research*, 2(6), 119-122.
- Slavin, R. E. (1994). Student teams-achievement divisions. *Handbook of Cooperative Learning Methods*, 3-19.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics* (5th ed.). Boston: Pearson Education Inc.
- Uzoagulu, A. E. (2011). *Practical Guide In Writing Research Project Reports In Tertiary Institutions*. Enugu: Jacob's classical Publisher Ltd.
- Zakaria, E., Chin, L. C., & Daud, M. Y. (2010). The effects of cooperative learning on students' mathematics achievement and attitude towards mathematics. *Journal of social sciences*, 6(2), 272-2.

**APPENDIX 1**

**Test for Normality**

Group	Variable	Skewness		Kurtosis	
		Statistic	SE	Statistic	SE
Cooperative	Pre-test	.380	.309	.008	.608
	Post-test	.099	.309	-.223	.608
Control Group	Pre-test	.414	.309	-.167	.608
	Post-test	.062	.309	-.054	.608

**Levene's Test of Equality of Error Variances<sup>a</sup>**

F	df1	df2	Sig.
2.512	1	118	.116

**Test for Homogeneity of Regression Slopes**

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	12868.019 <sup>a</sup>	3	4289.340	983.365	.000
Intercept	5457.407	1	5457.407	1251.153	.000
Group	335.031	1	335.031	76.809	.000
Pre-test	1163.998	1	1163.998	266.856	.000
<b>Group * Pre-test</b>	<b>8.914</b>	<b>1</b>	<b>8.914</b>	<b>2.044</b>	<b>.156</b>
Error	505.981	116	4.362		
Total	417054.000	120			
Corrected Total	13374.000	119			

**Turkish Abstract****Orta Dereceli Okul Öğrencileri Arasındaki İşbirliğine Dayalı Öğrenmeyle Finansal Muhasebedeki Başarılarının Etkilerini Değerlendirme**

Bu çalışma, Nijerya'nın Gombe şehrindeki orta dereceli okul öğrencileri arasındaki işbirliğine dayalı öğrenmeyle finansal muhasebedeki başarılarının etkilerini incelemiştir. Araştırmada ön test-son test- kontrol gruplu dizayn kullanılmıştır. Öğrenciler, deneysel grup (işbirliğine dayalı öğrenme yaklaşımı uygulanan) ve kontrol grubu (geleneksel yaklaşım) olmak üzere rasgele olarak seçilmiş iki eşit gruba ayrılmıştır. Veri toplama aracı olarak Finansal Muhasebe Başarı Testi (FAAT) kullanılmıştır. Çalışmada öntest aşamasında geleneksel yöntem kullanılan ve işbirliğine dayalı öğrenme yöntemi kullanılan gruplar arasında anlamlı bir farklılığa rastlanmamıştır. Sonuçlar öğrencilerin başlangıç aşamasındaki başarılarının eşit olduğunu göstermiştir.

Anahtar Kelimeler: işbirliğine dayalı öğrenme, finansal muhasebe, orta dereceli okul öğrencileri, öğrenme, başarı

**French Abstract****Évaluer l'Effet de Coopérative Apprenant sur l'Accomplissement Comptable Financier parmi des Étudiants de Collège d'enseignement général**

Cette étude a examiné l'effet de coopérative apprenant l'approche sur l'accomplissement comptable financier parmi des étudiants de collège d'enseignement général dans l'état de Gombe, le Nigeria. Un design de groupe "teste pré le contrôle postal de test" a été adopté. Les étudiants ont été divisés dans deux groupes égaux, à savoir : expérimental (c'est-à-dire, coopérative apprenant approche) et groupe témoin (c'est-à-dire, approche conventionnelle), tous les deux au hasard. Un Test d'Accomplissement Comptable Financier (FAAT) a été utilisé comme un instrument pour la collecte de données. L'étude a constaté que à l'étape de pré-test, il n'y avait pas statistiquement la différence significative entre l'accomplissement de coopérative apprenant des étudiants et des étudiants d'approche conventionnels, les résultats ont suggéré que les étudiants soient initialement égaux en termes de leurs accomplissements.

Mots Clés: apprentissage de coopérative, comptabilité financière, étudiants de collège d'enseignement général, apprentissage, accomplissement

**Arabic Abstract****تقييم أثر التعلم التعاوني على تحصيل المحاسبة المالية بين طلبة المدارس الثانوية**

وقد بحثت هذه الدراسة تأثير نهج التعلم التعاوني على الإنجاز المحاسبي المالي بين طلبة المدارس الثانوية في ولاية غومبي، نيجيريا. واعتمد تصميم مجموعة ما قبل الاختبار البعدي. تم تقسيم الطلاب إلى مجموعتين متساويتين هما: التجريبية (أي نهج التعلم التعاوني) ومجموعة الضبط (أي النهج التقليدي)، بشكل عشوائي. تم استخدام اختبار إنجاز المحاسبة المالية (FAAT) كأداة لجمع البيانات. ووجدت الدراسة أنه في مرحلة ما قبل الاختبار، لم يكن هناك فرق ذو دلالة إحصائية بين تحصيل طلاب التعلم التعاوني وطلاب النهج التقليدي، فقد أشارت النتائج إلى أن الطلاب كانوا متساويين في البداية من حيث إنجازاتهم.

الكلمات الرئيسية: التعلم التعاوني، المحاسبة المالية، طلاب المدارس الثانوية، والتعلم، والإنجاز

**German Abstract****Beurteilung des Einflusses des kooperativen Lernens auf die Finanzbuchhaltung bei den Schülerinnen und Schülern**

Diese Studie untersuchte die Wirkung des kooperativen Lernansatzes bei der Finanzbuchhaltung bei den Gymnasiasten in Gombe, Nigeria. Ein Pre-Test-post-Test-Control-Gruppen-Design wurde angenommen. Die Schüler wurden in zwei gleiche Gruppen aufgeteilt, nämlich: experimentelle (d.h. kooperative Lernansätze) und Kontrollgruppe (d.h. herkömmlicher Ansatz), sowohl zufällig als auch. Als Instrument für die Datenerhebung wurde ein Finanzbuchhaltungs-Test (FBT) verwendet. Die Studie ergab, dass es in der Pre-Test-Phase gab es keinen statistisch signifikanten Unterschied zwischen der Erreichung von kooperativen Lernstudenten und konventionelle Ansatz Studenten, die Ergebnisse vorgeschlagen, dass die Schüler waren anfangs gleich in Bezug auf ihre Leistungen.

Schlüsselwörter: kooperatives lernen, finanzbuchhaltung, sekundarschüler, lernen, leistung

**Malaysian Abstract****Menilai Kesan Pembelajaran Kooperatif dalam Pencapaian Perakaunan Kewangan dalam kalangan Pelajar Sekolah Menengah**

Kajian ini mengkaji kesan pendekatan pembelajaran kooperatif terhadap pencapaian perakaunan kewangan dalam kalangan pelajar sekolah menengah di negeri Gombe, Nigeria. Satu reka bentuk kumpulan ujian pra-ujian pos kumpulan kawalan telah diterima pakai. Pelajar-pelajar telah dibahagikan kepada dua kumpulan yang sama, iaitu: eksperimen (iaitu, pendekatan pembelajaran kooperatif) dan kumpulan kawalan (iaitu, pendekatan konvensional), kedua-dua secara rawak. Ujian Pencapaian Perakaunan Kewangan (FAAT) telah digunakan sebagai alat untuk pengumpulan data. Kajian mendapati bahawa pada peringkat pra-ujian, tidak ada perbezaan statistik yang signifikan antara pencapaian pelajar pembelajaran kooperatif dan pelajar pendekatan konvensional, keputusan mencadangkan bahawa pelajar pada mulanya sama dari segi pencapaian mereka.

Kata Kunci: pembelajaran kooperatif, perakaunan kewangan, pelajar sekolah menengah, pembelajaran, pencapaian

**Russian Abstract****Оценка Влияния Кооперативного Обучения на Достижение Финансового Учета Среди Учащихся Средних Школ**

В этом исследовании изучалось влияние подхода кооперативного обучения на достижение финансового учета среди учащихся средних школ штата Гомбе, Нигерия. Дизайн претест-пост тест контрольной группы был принят. Студенты были разделены на две равные группы, а именно: экспериментальный и контрольная группа. Тестирование Достижения Финансового Учета (ФААТ) был использован в качестве инструмента для сбора данных. Исследование показало, что на стадии претест, не было статистически значимой разницы между достижениями учащихся Кооперативного Обучения и обычным подходом учащихся. Результаты показали, что студенты изначально были равны в своих достижениях.

Ключевые Слова: кооперативное обучение, финансовый учет, учащиеся средних школ, обучение, достижения