

EFFECTS OF COOPERATIVE AND PROBLEM-BASED LEARNING METHODS ON SECONDARY SCHOOL STUDENTS INTEREST IN FINANCIAL ACCOUNTING IN AKOKO-EDO, EDO STATE, NIGERIA

HARUNA JIBRIN¹, YEMI LAWRENCE OLOWODUN^{2*}, BALA MOHAMMED³,
ABUBAKAR LANDAM ZANWA⁴

¹Department of Vocational and Technology Education, Faculty of Education,
Federal University Lafia, Nasarawa state, Nigeria

^{2,3,4}Department of Vocational and Technology Education, Faculty of Technology Education,
Abubakar Tafawa Balewa University, Bauchi, Nigeria.

*Corresponding author: lawyemi2014@gmail.com

To cite this article (APA): Jibrin, H., Olowodun, Y. L., Mohammed, B., & Zanwa, A. L. (2024). Effects of cooperative and problem-based learning methods on secondary school students interest in financial accounting in Akoko-Edo, Edo State, Nigeria. *AAU Journal of Business Educators*, 4(1), 414-422.

Abstract

This study examined the effects of cooperative and problem-based learning on secondary school students interest in financial accounting in Akoko-Edo, Edo State, Nigeria. A quasi-experimental research design was employed to achieve the goal of the study. A population of 217 SS II students from three secondary schools in 2021/2022 academic session was employed as participants for the study. The instrument for data collection was a structured questionnaire validated by some experts with a reliability coefficient value of 0.75. a pre-treatment questionnaire was administered before the intervention and a post-treatment questionnaire was administered after the intervention. Data collected from the respondents were analyzed with a Statistical Package of Social Sciences (SPSS). Mean and standard deviation statistics was used to answer the research questions. Analysis of Variance (ANOVA) was used to test the hypotheses at a significant level of 0.05. The outcome of the study indicated that cooperative and problem-based learning methods increase secondary school students interest in financial accounting in Akoko-Edo, Edo state, Nigeria. The authors of the present study concluded that the use of cooperative and problem-based learning methods would help to increase secondary school students interest in financial accounting in Akoko-Edo, Edo State, Nigeria. The authors of the study recommended, among others, that secondary school stakeholders such as Ministry of Education and Principals should endeavour to create an enabling environment that would provide opportunity for teachers to use cooperative and problem-based learning methods and for students to exert high interest in financial accounting in secondary schools in Edo State.

Keywords: Cooperative Learning Method, Financial Accounting, Interest, Problem-Based Learning Method, Secondary Schools.

Introduction

Financial accounting can be seen as the process of recording, classifying, summarizing and interpreting the financial transactions and communicating the results to the users of such information.

American Accounting Association (2017) described financial accounting as the process of identifying, measuring and communicating economic information to permit informed judgments and decisions by the users of the information. Therefore, financial accounting can be seen as a business subject which helps in preparing future office managers, entrepreneurs, accountants and other financial controllers. The curriculum content of financial accounting at the senior secondary school level by the West Africa Examination Council (WAEC) and the National Examination Council (NECO) are stated as follows: Introduction to Financial Accounting, Principles and Practice of Double Entry, Final Accounts of a Sole Trader, Reserves and Provisions, Manufacturing Accounts, Control Accounts and self-Balancing Ledgers, Single Entry and Incomplete Records, Accounts of Not-For-Profit Making Organizations, Accounting Concepts and Conventions, Partnership Accounts, Company Accounts, Departmental and Branch Accounts, Public sector Accounting, and Introduction to Data Processing. In addition to the above, the NECO syllabus added the following topics to the financial accounting curriculum: Hire Purchases Accounts, Consignment Accounts, and Joint Venture Accounts.

The importance of financial accounting according to Osuala (2014) include: (1) to prepare students for careers in accounting fields; (2) to provide fundamental instructions that will help students assume their economic roles as consumers, workers, and citizens; and (3) to provide background instructions to assist students in preparing for other professional careers requiring advanced study in book-keeping and accounting skills for personal and future use. Despite the importance, laudable objectives and benefits of financial accounting, the attitude of secondary school students towards the subject seems not to be encouraging. For instance, the enrolment and performance of secondary school students in Senior School Certificate Examination (SSCE) leave much to be desired. A preliminary investigation has shown that the academic performance of secondary school students in the subject is not encouraging. A survey of five schools revealed low registration of secondary school students in financial accounting between 2016 to 2020 at SSCE level, indicating that out of 11,520 secondary school students that registered for SSCE, only 427 secondary school students enrolled for financial accounting. This is a reflection on the choice of accounting in secondary school, where almost 100 SS1 secondary school students were taught accounting but only 4 students enrolled financial accounting in SS2

Interaction with some secondary school students attributed their attitude towards financial accounting based on the instructional approach adopted by their teachers. The teaching method adopted by their teachers fails to motivate student's interest towards the subject. The study conducted by Adamu and Kusa (2018) empirically found that teaching approaches have significant influence on students' attitude to towards their academics. Generally, scholars have agreed that when it comes to numerical subjects such as mathematics, statistics and element of finance among others, teacher's factor contributed most to the interest of students (Adeleke, Binuomote & Adeyinka, 2013; Salako, Eze & Audu, 2013). Similarly, Adamu and Jibrin (2017) criticized the current conventional teaching strategy at secondary school level as more teacher-centered approaches are used, and, as such, negates the interest and achievement/performance of students. They suggested the use of constructivist teaching approach. Specifically, Inuwa (2019) opined that adopting the most appropriate and effective method of teaching financial accounting will help to improve interest and performance of students in financial accounting. Ajaja and Mezieobi (2018) reported that cooperative learning method has a positive influence on attitude and learning outcomes of students in social studies.

In another related studies, scholars have reported the positive effect of problem-based learning (PBL) approach on students. For instance, Yidani (2018) opined that PBL increases the critical thinking skills, problem solving skills, academic performance and interest of students in Chemistry. Omega, Iji and Adeniran (2017) reported that PBL approach had a more positive effect on student's interest than conventional teaching approaches. Argaw, Haile, Ayalew and Kuma (2017) also reported that PBL approach is effective on increasing student's motivation and problem-solving skills in Physics. The purpose of this present study was: (1) to ascertain the difference among the experimental and control groups pre-treatment mean scores in secondary school students interest in financial accounting in Akoko-Edo, Edo State, Nigeria; and (2) to determine the difference among the experimental and control groups post-treatment mean scores in secondary school students interest in financial accounting in Akoko-Edo, Edo State, Nigeria.

Research Questions

The following research questions guided the study.

Research Question 1: What is the difference among the experimental and control groups pre-treatment mean scores in secondary school students interest in financial accounting in Akoko-Edo, Edo State, Nigeria?

Research Question 2: What is the the difference among the experimental and control groups post-treatment mean scores in secondary school students interest in financial accounting in Akoko-Edo, Edo State, Nigeria?

Research Hypotheses

The following null hypotheses were formulated and tested at a 0.05 level of significance.

Research Hypothesis 1: There is no significant difference among the experimental and control groups pre-treatment mean scores in secondary school students interest in financial accounting in Akoko-Edo, Edo State, Nigeria.

Research Hypothesis 2: There is no significant difference among the experimental and control groups post-treatment mean scores in secondary school students interest in financial accounting in Akoko-Edo, Edo State, Nigeria.

Methodology

Research Design

Quasi-experimental research design was used for the study. Quasi-experimental design involves selecting groups, upon which a variable is tested, without any random pre-selection processes. Nworgu (2011) described quasi-experimental design as the design adopted where random assignment of subjects to the experimental and control groups are not possible. In a quasi-experimental research design, the authors cannot create the groups to be used for the study artificially, hence the design is considered appropriate because it enabled the authors to use existing intact classes for the study without disrupting the class arrangement, time table, and contents of the lessons. The research design is shown in Table 1.

Table1: Layout of Pre-Treatment/Post-Treatment and Control Group Design

Groups	Pre-treatment	Treatment	Pre-treatment
Experimental 1	01	X1 CL	04
Experimental 2	02	X2 PBL	05
Control 3	03	X0 CG	06

Source: Sambo (2005), Key: 01=Pre-treatment Interest EX1; 02=Pre-treatment Interest EX11; 03=Pre-treatment Interest Control; X1CL=Cooperative based learning; X2PBL=Problem-Based Learning; X0CG=Demonstration Method; 04=Post-treatment Interest EX1; 05=Post-treatment Interest EII1; 06=Post-treatment Interest Control

Population and Sampling Procedure

The population for this study was all the SS II students offering financial accounting in the nine public senior secondary schools offering in Akoko-Edo Local Government Education Zone of Edo State in 2021/2022 academic session. A sample of 118 students offering financial accounting from three different schools, which were randomly selected for the study. The first school comprised of 46 students and were taught using cooperative learning method. The second school comprised of 30 students and were taught using PBL method and the third school comprised of 42 students and were exposed to a conventional teaching method.

Data Collection Instrument

An interest inventory scale was used as the instrument for data collection. The instrument was adapted from the work Abdulahi (2020) titled Effects of Cooperative Teaching Strategy on Interest, Anxiety and Academic Achievements of Secondary School Students in Financial Accounting in Adamawa State, Nigeria. The instrument comprised of 25 items with a four-point rating scale response: Strongly Agree = 4; Agree =3; Disagree = 2 and Strongly Disagree =1. The scale was validated by two experts in Educational Psychology. They scrutinized the items in terms of their appropriateness to achieve the purpose of the study. Their comments were useful in modification of the instrument for trial data collection. A pilot study was carried in three schools. Cronbach's alpha was used in calculating the data collected from pilot study and a coefficient value of 0.75 was obtained. The instrument was considered reliable as suggested by Hair, Black, Babin and Anderson (2010) who maintained that a reliability value of 0.70 and above should be considered satisfactory and adequate for data collection in a research study.

Data Collection Procedure

The authors employed the service of three research assistants. To avoid any bias in the study and preventing the respondents from acting in any manner that can affect the outcome of the study, the authors used the research assistants who were the regular teachers of financial accounting and each of them were from the three schools. In the first phase of data collection, the authors in alliance with the research assistants, administered the pre-treatment interest inventory scale to the students. In the next stage of data collection, the three groups of students were taught manufacturing account independently, using respective lesson plans for five weeks. After the treatment, the post-treatment interest inventory scale was administered to both the experimental group and the control group.

Data Analysis

The data collected from the experimental intervention exercise were analyze using the IBM Statistical Package for Social Sciences (SPSS) version 25.0. The descriptive statistics such as mean

and standard deviation were used to answer the research questions and the analysis of variance (ANOVA) was employed to test the research hypotheses.

Results

Research Question 1: What is the difference among the experimental and control groups pre-treatment mean scores in secondary school students interest in financial accounting in Akoko-Edo, Edo State, Nigeria?

Table 2: Descriptive Statistics on Difference among the Experimental and Control Groups Pre-Treatment Mean Scores in Secondary School Students Interest in Financial Accounting.

Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>MR</i>	Remark
Control	46	2.35	.948		Disagree
PBL	42	2.26	.943	±0.17	Disagree
CBL	30	2.43	.935		Disagree
Total	118	2.35	.938		Disagree

Note. *n*=118, *M*=Mean, *SD*=Standard Deviation, *MR*=Mean Range.

Table 2 showed the mean score of 2.35 with standard deviation of .948 for 46 students in the control group. The 42 students in experimental group I (PBL) had mean interest of 2.26 with standard deviation of .943 while the 30 students in experimental group II exposed to CBL had mean interest of 2.43 with standard deviation of .935. The grand mean score of the 118 students involved in the study was 2.35 with standard deviation of .938. The mean ranged of the three groups of students which stood at ±0.17 suggested that there was trivial difference among the mean interest of the students prior to the treatment.

Research Question 2: What is the the difference among the experimental and control groups post-treatment mean scores in secondary school students interest in financial accounting in Akoko-Edo, Edo State, Nigeria?

Table 3: Descriptive Statistics on Difference among the Experimental and Control Groups Post-Treatment Mean Scores in Secondary School Students Interest in Financial Accounting.

Group	<i>n</i>	<i>M</i>	<i>SD</i>	<i>MR</i>	Remark
Control	46	2.30	.840		Disagree
PBL	42	3.19	.740	±0.89	Agree
CBL	30	3.10	.759		Agree
Total	118	2.82	.883		Agree

Note. *n*=118, *M*=Mean, *SD*=Standard Deviation, *MR*=Mean Range.

Table 3 showed the post-treatment mean scores of the three groups of students involved in the study. From the Table, the post-treatment mean scores of students in the control group stood at 2.30 with the standard deviation of .840. The 42 students in experimental group I (PBL) had mean interest of 3.19 with standard deviation of .740. The 30 students in experimental group II exposed to CBL had mean interest of 3.10 with standard deviation of .759. The grand mean score of the 118 students involved in the study was 2.82 with standard deviation of .759. The mean ranged of the three groups of students which stood at ± 0.89 on 4-point scale. The mean score obtained indicated that there was difference in the mean interest of students of the three groups of students in favour of students in the experimental groups.

Research Hypothesis 1: There is no significant difference among the experimental and control groups pre-treatment mean scores in secondary school students interest in financial accounting in Akoko-Edo, Edo State, Nigeria.

Table 4: Analysis of Variance on Difference among the Experimental and Control Groups Pre-Treatment Mean Scores in Secondary School Students Interest in Financial Accounting.

	SS	df	MS	F	Sig.	Remark
Between Groups	.680	2	.340	.382	.683	H ₀ ₂ retained
Within Groups	102.278	115	.889			
Total	102.958	117				

Note. SS=Sum of Squares, MS=Mean Square.

Table 4 showed the F-value of .382 with $p = .683$. The $p = .683$ which was found to be greater than the alpha value of 0.05 indicated that there was no significant difference among the pre-treatment interest mean scores of financial accounting students in experimental and control groups in Secondary School Students. The null hypothesis two was therefore retained. This indicated that the students had the same interest level before the treatment.

Research Hypothesis 2: There is no significant difference among the experimental and control groups post-treatment mean scores in secondary school students interest in financial accounting in Akoko-Edo, Edo State, Nigeria.

Table 5: Analysis of Variance on on Difference among the Experimental and Control Groups Post-Treatment Mean Scores in Secondary School Students Interest in Financial Accounting.

	SS	df	MS	F	Sig.	Remark
Between Groups	20.347	2	10.174	16.498	.000	H ₀ ₅ rejected
Within Groups	70.915	115	.617			
Total	91.263	117				

Note. SS=Sum of Squares, MS=Mean Square.

Table 5 showed the $F=16.498$ with $p=.000$. The obtained p-value was less than the alpha value ($.000 < 0.05$). The result suggested that there was significant difference among the post-treatment interest mean scores of financial accounting students in experimental and control groups in Secondary School Students. The null hypothesis five was not retained.

Table 6: Tukey HSD Post Hoc Tests on Post-Test Mean Difference in the Post-Treatment Interest Mean Scores of Financial Accounting Students in the Experimental and Control Groups.

(I) Group	(J) Group	MD (I-J)	SE	Sig.
Control	PBL	-.88613*	.16759	.000
	CBL	-.79565*	.18428	.000
PBL	Control	-.88613*	.16759	.000
	CBL	.09048	.18772	.880
CBL	Control	.79565*	.18428	.000
	PBL	-.09048	.18772	.880

Note. MD=Mean Difference, SE=Standard Error.

Table 6 is used to figure out which groups in the sample differ. From the Table, the $p=$ value of control group and the experimental groups (PBL & CBL) stood at .000. The $p=.000$ suggested that the academic achievement of the group differ from the other groups significantly. The $p=.880$ between the PBL and BL suggested that there was no significant difference between the two groups. The result therefore indicated the significant difference in the post-treatment interest mean scores of students taught Financial Accounting Students using experimental and control groups is from the students in the control group that were exposed to conventional teaching method. The result suggested that the interest of financial accounting students in experimental group was higher.

Discussion

The data analyzed in research question 1 and the corresponding research hypothesis revealed that there was no much difference among the pre-test interest of financial accounting students in experimental and control groups. The result in Table 2 suggested that there was trivial difference among the mean interest of students in experimental group and control group. However, the result of the one – way analysis of variance (ANOVA) of hypothesis indicated that there was no significant difference among the pre-treatment interest mean scores of financial accounting students in experimental and control groups prior to treatment.

The data analyzed from research question two and the corresponding research hypothesis indicated that there was significant difference among post-treatment mean interest of financial accounting students in experimental and control groups. The mean interest was in favour of students in experimental groups introduced to cooperative and PBL. This finding was in line with the study of Yidani (2018) who found that experimental group developed significantly higher interest in the difficult concepts than the control group in chemistry. Corroborating this assertion, Omega, *et al.* (2017) stated that PBL approach had more positive effect on students' interest than the conventional teaching method.

Angura and Abakpa, (2018) further found that there was a significant difference in the mean interest of students taught Basic Science and Technology using cooperative instructional strategies

and those students taught using conventional teaching method. The experimental group recorded high interest in the subject compared to the control group. The study conducted by Abdullahi, (2020) agreed with the above assertion that cooperative learning strategies significantly improved secondary school students interest in financial accounting than the conventional teaching method. The author concluded that since students interest in the subject is improved, it in turn improved students' academic achievement.

Conclusion

This study was carried out to investigate the effects of cooperative and PBL on secondary school students interest in financial accounting in Akoko-Edo, Edo State, Nigeria. The study was informed by the persistent low enrolment of students in financial accounting in secondary schools in Akoko-Edo Local Government Area of Edo State. The outcome of the present study showed that the two teaching approaches (that is, cooperative and PBL had positive effects on secondary school students interest in financial accounting. The authors concluded, therefore, that adopting cooperative and PBL approaches would help to improve secondary school students interest in financial accounting in Edo State.

Recommendations

The following recommendation were made based on the findings of the study. The Ministry of Education and Principals of secondary schools should endeavour to create an enabling environment for teachers to adopt cooperative and PBL methods in fostering secondary school students interest in financial accounting in Edo State.

References

- Abdullahi, S. M. (2020). Effects of cooperative teaching strategy on interest, anxiety and academic achievements of secondary school students in financial accounting in Adamawa State, Nigeria. An Unpublished Ph.D. Thesis of Abubakar Tafawa Balewa University, Bauchi, Nigeria.
- Adamu, I., & Jibrin, A.H. (2017). Effects of flipped and conventional teaching approach on performance and retention ability of students in advance financial accounting in Abubakar Tafawa Balewa University, Bauchi, Nigeria. *Journal Psikologi Malaysia*, 1, 12-20.
- Adamu, I., & Kusa, G. W. (2018). Effect of peer-tutoring learning teaching method on academic performance of financial accounting students in Federal Unify colleges in North –Eastern, Nigeria. *Journal of advanced research in social Sciences*, 1(1), 7-15.
- Adamu, I. (2015). The effect of cooperative learning strategies on elementary students' science achievement and social skills. *International Journal of Science and Mathematics Education*, 3 (2), 293-314.
- Adeleke, M. S, Binuomote, M. O., & Adeyinka, S. F. (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.
- Ajaja, R., & Mezieobi, S. A. (2018). Effect of cooperative learning strategy on students' performance in social studies. *International Journal of Education and Evaluation*, 4 (9), 96-103.



- American Accounting Association (A.A.A) (2017). Meaning of financial accounting. Retrieved from <http://lexicon.ft.com/term?Term=American-Accounting-Association>.
- Angura, M. T., & Abakpa, V. O. (2018). Impact of cooperative instructional strategies and conventional teaching methods on students' achievement and interest in upper basic education science and technology in Nigeria. *International Journal of Innovative Research and Development*, 7 (2), 38-45.
- Argaw, A. S., Haile, B. B., Ayalaw, B. T., & Kuma, S. G. (2017). The effects of problem-based learning (PBL) instruction on students' motivation and problem solving skills of physics. *Eurasia Journal of Mathematics Science and Technology Education* 13 (3), 857-871.
- Inuwa, U. (2019). The effect of instructional approach on the financial accounting achievement among students. *Indian-Pacific Journal of Accounting and Finance*, 3 (2), 39-51.
- Omega, J. O., Iji, C. O., & Adeniran, S. A. (2017). Effect of problem-based learning approach on secondary school students' interest and achievement in electricity in Bauchi State, Nigeria. *Journal of Science, Technology and Education*, 5 (1), 63-70.
- Osuala, E. C. (2014). *Principle and method of business and computer education*. Cheston Agency Ltd. Students in Financial Accounting in Secondary Schools in Abakaliki Urban Ebonyi State, Nigeria.
- Salako, E., Eze, I., & Adu, E. (2013). Effects of cooperative learning on junior secondary school student's knowledge and attitudes to multicultural education. *Concepts in Social Studies Education*, 133 (3), 303 -309.
- Yidani, M. B. (2018). Comparative effects of problem-based and cooperative instructional approaches on student academic achievement in senior high school economics. *International Journal of Education and Evaluation*, 4 (1), 31-53.