

**EFFECTS OF PROBLEM-SOLVING AND COOPERATIVE METHODS ON
BUSINESS EDUCATION STUDENTS' PERFORMANCE IN FINANCIAL
ACCOUNTING IN COLLEGES OF EDUCATION IN NORTH-WEST NIGERIA**

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**A DISSERTATION SUBMITTED TO THE SCHOOL OF
POSTGRADUATESTUDIES, AHMADU BELLO UNIVERSITY, ZARIA, IN
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ZARIA, NIGERIA**

JUNE, 2018

DECLARATION

I declare that the work in this dissertation titled “Effects of problem-solving and cooperative methods on Business Education students’ performance in Financial Accounting in Colleges of Education in North-west Nigeria” has been carried out by me in the Department of Vocational and Technical Education. The information derived from the literature has been duly acknowledged in the text and the list of references provided. No part of this dissertation was previously presented for another degree ordiploma at this or any other institution.

Samuel Sahu SAKANAS

Date

CERTIFICATION

This dissertation titled EFFECTS OF PROBLEM-SOLVING AND COOPERATIVE METHODS ON BUSINESS EDUCATION STUDENTS' PERFORMANCE IN FINANCIAL ACCOUNTING IN COLLEGES OF EDUCATION IN NORTH-WEST NIGERIA by Samuel Sahu SAKANAS meets the regulations governing the award of Master's of science education degree of Ahmadu Bello University and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

This research work is dedicated to the memory of my late parents, Mr. and Mrs. Sebastian K. Agwot.

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OPERATIONAL DEFINITION OF TERMS

The following words are defined as used in the study:

Academic performance: Refers to what students achieve in their studies and how they cope with or accomplish different learning experiences.

Cooperative method: The learning strategy in which students work together in small heterogenous group to complete a task or any instructional goal.

Financial accounting: The branch of accounting that is concerned with reporting financial information.

Problem-SolvingMethod: The ability to identify and solve problems by applying appropriate skills systematically.

Teaching method: The process of transmitting facts, skills, information and knowledge with an appropriate integration of instructional materials so as to engage students in meaningful learning.

LIST OF ABBREVIATIONS

- AAA - American Accounting Association
- AAT - Accounting Achievement Test
- AECC - Accounting Education Change Commission
- AICPA - American Institute of Certified Public Accountants
- ANCOVA - Analysis of Covariance
- FAAT - Financial Accounting Achievement Test
- HEAT - Home Economics Achievement Test
- IPFA - Instructional Package for Financial Accounting
- LBL - Lecture-Based Learning
- NBC - National Business Certificate
- NCCE- National Commission for Colleges of Education
- NCE - Nigeria Certificate in Education
- PBL - Problem-based Learning
- PBTM - Problem-based Teaching Method
- SAAT - Students' Algebra Achievement Test
- SDL - Self-directed Learning
- SPQ - Study Process Questionnaire
- STAD - Student-Teams-Achievement Divisions
- TGT - Team Game Tournament

ABSTRACT

The study investigated the Effects of problem-solving and cooperative methods on Business Education Students' Performance in Financial Accounting in Colleges of Education in North-West Nigeria. The study had five objectives, five research questions, and five null hypotheses which were formulated and tested at 0.05 level of significance. A quasi-experimental design with pre-test, post-test and control group was adopted for the study. The population for the study was 1471 NCE II business education students for 2016/2017 academic session in Colleges of Education offering financial accounting in North-west Nigeria. Purposive sampling technique was used to select Federal College of Education, Zaria, for the study and 153 students as sample size. The instruments used to generate data for the study were two self-designed Instructional package for financial accounting and financial accounting achievement Test. Mean and standard deviation were used to answer the stated research questions. Simple Logistic Regression was used to test null hypotheses one and two, while t-test statistic was employed in testing null hypotheses three to five. From the results of the study, all the five null hypotheses were rejected. The study revealed that both problem-solving and cooperative methods affected the students' positively and there was no significant difference in the performance of students' in problem-solving and cooperative methods as a result of gender. Therefore, it was concluded that both methods have effect on financial accounting students' performance. Among the recommendations made was that, in order to promote the use of both methods in teaching Financial Accounting, government and Colleges of Education through the National Commission for Colleges of Education should be implored to give enough grants to procure equipment and facilities necessary for using the two methods.

CHAPTER ONE INTRODUCTION

1.1 Background to the Study

Education is fundamental to development and growth of any country. It is a veritable instrument for effecting positive change in the behavior of citizens. National policy on Education (FRN, 2013) emphasizes the goals of education in Nigeria to include inculcation of the right type of values, attitudes, communication skills as well as life-long skills. These can only be achieved through effective teaching and learning. Teaching and learning process is a two-way process where the teacher sends out the message while the students acknowledge through feedback, but this give and take processes could only be effective when the teaching method applied is appropriate. Teaching entails giving instruction, imparting knowledge, facts, skills, attitudes, interest, and aptitude. Modebelu (2007) defines teaching as an activity consisting of a body of actions and programmes planned and directed towards inculcating learning through conscious and deliberate efforts of the teacher.

In order to have the right skills and attitudes imparted to the learners, teaching must be effective. Effective teaching according to Mkpa (2009) consists of four elements: Purposeful and planned teaching, Mastery of subject matter, display of conceptual skills and instructional materials. Mkpa (2009) posited that teaching method is the totality of all strategies, techniques, and ways that a teacher employs to maximize and facilitate classroom interaction. Teaching method is therefore the process of transmitting facts, skills, information and knowledge with an appropriate integration of instructional materials, so as to engage students in meaningful activities for learning and to achieve the objective of the lesson. There are different teaching methods such as: Lecture, problem-

solving, demonstration, peer teaching, cooperative, guided-discovery and play way that can be applied during teaching and learning of Financial accounting to enhance students performance.

Financial accounting is the branch of accounting that is concerned with reporting financial information. American Accounting Association (AAA) in Osuala (2004) posits that financial accounting is the process of identifying, measuring and communicating economic information. Accounting is in this context, a process of providing financial information about the financial transactions carried out by business organizations, so that decisions about the financial activities of the business could be ascertained by users. Oladele (2009) stated that accounting involves the maintenance of an organization's financial records of revenue and expenditure as well as accounting for the flow of funds into and out of an organization. One major problem faced by accounting students today is not what the teachers teach, but how they teach them. The researcher's experience during his NCE programme and some of his course mates showed that only a few out of the many business education students who did not have the opportunity to offer financial accounting in their secondary schools perform well in financial accounting due to the methods of teaching used by some of the lecturers. Also, an interaction with some of the students buttressed that their poor performance in financial accounting is due to the predominantly used traditional teaching method by most lecturers thereby giving them little or no time to participate. Therefore, students' ability to solve financial accounting problems well depends on teachers' ability to use meaningful methods in teaching the students.

Problem-solving method also known as problem-based learning/inquiry method is a student-centered pedagogy in which students learn about a subject through the experience of solving an open-ended problem found in trigger material. Problem-solving is the ability to identify and solve problems by applying appropriate skills systematically. Problem-based learning is a learner-centred environment, which models a way in which humans learn throughout their lives. Barrows & Tamblyn, (2010) defined problem-solving learning as one kind of learning, which works through the process of understanding and solving problems to obtain results. The goal of problem-solving method is to cultivate in the students' the ability to identify problems through the application of knowledge and skills to the process of solving problems.

On the other hand, Cooperative learning strategy is a method of teaching in which students work together in small heterogeneous group to complete a problem, project or any other instructional goal, while teachers act as a guide or facilitator. The use of cooperative instructional method is characterized in such a way that learners positively depend on each other. They engage in face to face interaction, assessed individually and held accountable for equally having and contributing to the mastery of learning goals. They also develop appropriate collaborative and interpersonal skills to teach and encourage each other to learn, reflect and assessed the effectiveness of growing for future learning (Johnson and Johnson, 2009). The main purpose of Cooperative method is to promote students' teamwork competence; improves their learning effectiveness and cultivates their ability to improve the effectiveness of the education system and also enhances students' abilities to think, apply knowledge, as well as foster their socialization skills.

Students' performance portrays their ability in intellectual functioning. Performance refers to what students achieve in their studies and how they cope with or accomplish different learning experiences given to them by their teachers. Ibrahim (2011) reported that in educational institution, success is measured by academic performance, or how well students meet standards set out by institution.

Nicholes, (2007) stated that educationists have made an effort at developing psychological rational essential for answering the question "how school subjects be taught to ensure effective and meaningful learning?" there are several assumptions that meaningful learning occurs when learners are actively in knowledge getting process. This includes use of learner centred methods. These methods ensure an absolute shift of learning from class teacher domination to learner self-guided learning process. To this regard, teacher remains an active facilitator in knowledge inquiry and skill acquisition. Therefore, in order to achieve the set objectives of teaching financial accounting in Colleges of education, financial accounting teachers should employ learner friendly instructional methods in teaching the subject such as problem-solving and cooperative teaching methods. All the aforementioned variables constituted the background against which this current study was conducted with regard to the Effects of Problem-solving and Cooperative methods on business education students' performance in accounting in Colleges of education in North-west Nigeria.

1.2 Statement of the Problem

Many people believed that the learning outcome of most students depend on the type of teaching strategy/method employed by the teacher during instructional delivery. Ideally, students trained as business educators ought to be able to integrate into the

teaching and business professions as professionals. Unfortunately, this is not so with most graduates of Colleges of education in Nigeria. Raymond&Ogunbameru, (2005) showed that some teaching methods adopted by most teachers in teaching accounting do not seem to allow teachers to adequately cater for the diverse learning interests of most students. The weakness of such methods contributes to the poor performance of students in accounting. Also, interactions between the researcher and some accounting lecturers and students in some Nigerian Colleges of education in North-west attributed the problem of poor performance to teaching methods used in teaching financial accounting. According to them, the lecture method has been the traditional and conventional method used, but performance in financial accounting examination continues to be discouraging. While other students complained that the subject was too difficult to assimilate as it required a lot of calculation. This they say is due to the expository (lecture) method predominantly used in most tertiary institutions which are teacher centered, learner passive and do not allow students to actively involved in the learning process thereby making the subject difficult. For example in Federal College of education Kano, the NCE II summary of financial accounting result collected from the examination office show that, for the year 2012/2013 session, 75.15% of NCE II failed to score credit and above in financial accounting. In 2013/2014 and 2014/2015 74.13% and 78.30% respectively failed to score credit grade in financial accounting, and in 2015/2016 session, the result also indicated that 76.52% did not score credit grade

Similarly, in Federal College of Education Zaria, the summary of NCE II financial accounting examination results collected from the examination office showed that for the year 2010/2011 session, 53.07% failed to score credit and above. In 2011/2012

and 2012/2013 session 57.53% and 27.91% respectively failed to score credit and above in financial accounting exams, and in 2013/2014 session, the result also showed that 27.60% did not score credit grade and in 2014/2015 session, out of 146 NCE II students, only 58.96% failed to score credit and above. Perhaps, other colleges of education in Nigeria might be experiencing the same problem.

On the other hand, many people perceived that accounting is gender neutral, while some perceived that accounting is only a profession for males. That is why males were found mostly in accounting profession than their female counterparts. Many of the previous research that seeks to examine the causes of students' poor performance in financial accounting suggested that factors such as gender and prior knowledge to accounting can cause difference in students' scores, Guney, (2009). Also, the researcher through discussions with both male and female students' revealed that most female students' perform better in financial accounting through the use of both student-centred and traditional based-ways than their male counterparts who mostly perform better when using methods that are student centred where they work with each other and develop their active learning attitude.

With the onset of the knowledge-based era, the business environment has become more complex, challenging and competitive. The education system is deeply affected by this trend. The traditional subject-based teaching method is teacher-centered, which mainly focuses on imparting knowledge and memorization instead of training students to think independently, to collaborate with others, and to apply knowledge to solve real-life problems. Therefore, for meeting the needs of the ever-changing environment, the purpose of teaching is not only to pass on knowledge but also to cultivate in students their

ability to cooperate, collect, analyze, aggregate, judge and apply the knowledge they learn to find solutions to a problem. To attain these goals, cooperative learning and problem-based learning are two of the most useful and popular methods. It is in view of this that the researcher examined the effects of problem-solving and cooperative methods on Business education students' performance in Financial accounting in Colleges of education in North-west Nigeria.

1.3 Objectives of the Study

The major objective of the study was to determine the effects of problem-solving and cooperative teaching methods on business education students' performance in financial accounting in Colleges of education in North-west Nigeria. The specific- objectives of the study are to:

1. determine the effect of the problem-solving method on business education students' performance in Financial accounting in Colleges of education in North-west Nigeria.
2. determine the effect of cooperative teaching method on business education students' performance in Financial accounting in Colleges of education in North-west Nigeria.
3. ascertain the difference in the mean performance of business education students taught Financial accounting using problem-solving method, and those taught using cooperative method in Colleges of education in North-west Nigeria.
4. compare the differences in the mean performance of male and female business education students' taught Financial accounting using problem-solving method in Colleges of education in North-west Nigeria.

5. compare the differences in the mean performance of male and female business education students' taught Financial accounting using cooperative method in Colleges of Education in North-west Nigeria.

1.4 Research Questions

Based on the specific objectives of the study, the following questions were formulated to guide the study:

1. What is the effect of problem-solving method on business education students' performance in Financial accounting in Colleges of education in North-west Nigeria?
2. What is the effect of cooperative method on business education students' performance in Financial accounting in Colleges of education in North-west Nigeria?
3. What is the difference in the mean performance of business education students' taught Financial accounting using problem-solving method, and those taught using cooperative method in Colleges of education in North-west Nigeria?
4. What is the difference in the mean performance of male and female business education students' taught Financial accounting using problem-solving method in Colleges of education in North-west Nigeria?
5. What is the difference in the mean performance of male and female business education students taught Financial accounting using cooperative method in Colleges of education in North-west Nigeria?

1.5 Research Hypotheses

The following null hypotheses were formulated for the study:

1. There is no significant effect of problem-solving method on business education students' performance in Financial accounting in Colleges of education in North-west Nigeria.
2. There is no significant effect of Cooperative method on business education students' performance in Financial accounting in Colleges of education in North-west Nigeria.
3. There is no significant difference in the mean performance of business education students taught Financial accounting using problem-solving method and those taught using cooperative method in Colleges of education in North-west Nigeria.
4. There is no significant difference in the mean performance of male and female business education students' taught Financial accounting using problem-solving method in Colleges of education in North-west Nigeria.
5. There is no significant difference in the mean performance of male and female business education students' taught Financial accounting using cooperative method in Colleges of education in North-west Nigeria.

1.6 Significance of the Study

The findings of this study after it has been published in journals and other media would be of significance to the following: accounting students', lecturers, society, National Commission for Colleges of Education (NCCE), administrators of colleges of education, and researchers. The findings of this study may help motivate accounting students' through the effective application of appropriate teaching methods by their lecturers. Business education students would also improve which consequently may

reduce the poor performance of students' in financial accounting in Colleges of education in North-west Nigeria.

The result of these findings may be made available to lecturers in tertiary institutions through workshops, seminars, and publication who will find it useful. It would make their teaching job easier and interesting as they applied the research outcome which would make them applied best teaching methods that may make students perform excellently in financial accounting. Lecturers through the use of this result may also improve classroom instructions which will invariably improve students' performance.

The study may be of great benefit to the general public that will enjoy the services of accounting graduates who will be well-equipped in terms of skills to contribute to the growth and development of the country economic and the society at large. Graduates would be self-employed and in turn be employers of labour, pay taxes, volunteer in their communities and less likely to involve in criminal activities.

The result of this work may enlighten National Commission for Colleges of Education curriculum planners because it would suggest relevant teaching methods for teaching different topics in the curriculum which will invariably improve teaching quality for a better academic performance. Also, the results will advise textbook authors to put into consideration teaching methods revealed by this study when writing accounting textbooks.

The findings of this study may be useful to administrators of Colleges of education as they will have an insightful understanding of appropriate methods they will advise in teaching financial accounting in colleges of education. It may also help them in

implementing good policies that would ensure the effective use of the right teaching methods by lecturers with a view to improving students' academic performance. Finally, the study may also be useful to researchers who may want to draw reference from this study as input to their review of literature in the similar area of study and the findings would be accessible to beneficiaries through publications. It may serve as reference materials and empirical studies to them.

1.7 Basic Assumptions of the Study

For the purpose of this study, the following assumption was made:

It is assumed that the best way to improve business education students' performance in financial accounting is to make teachers adopt the use of problem-solving and cooperative methods as they improve classroom instruction.

1.8 Delimitation of the Study

The study was delimited to manufacturing accounts. The reason was that it is one of the topics of financial accounting offered in NCE II. The study was delimited to problem-solving and cooperative teaching methods. This was because they are not commonly used by lecturers in teaching financial accounting in colleges of Education in North-west Nigeria. The study was delimited to nine (9) Colleges of education in North-

west Nigeria. The reason was that they are the colleges of education offering business education program in North-west Nigeria.

The study among the nine (9) colleges of education was delimited to Federal College of education Zaria. This was because it has adequate and functional instructional facilities and it also has adequate experienced staff. The study was delimited to NCE II business education students 2016/2017 academic session. This was because they are a stable class and are more conversant with the environment. Finally, the study was delimited Financial Accounting. Reason is that, it is one of the NCE II business education students' courses.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter reviews literature related to the study based on the following subheadings:

- 2.1 Theoretical Framework
- 2.2 Conceptual Framework
 - 2.2.1 Concept of Business Education
 - 2.2.2 Concept of Accounting
 - 2.2.3 Concept of Problem-solving Method
 - 2.2.4 Concept of Cooperative Method
 - 2.2.5 Concept of Academic Performance
- 2.3 Methods of Teaching
 - 2.3.1 Problem-solving Method
 - 2.3.2 Cooperative Method
 - 2.3.3 Lecture Method
- 2.4 Effects of teaching Methods on Students' Performance
- 2.5 Historical development of Accounting
- 2.6 Review of Empirical Studies
- 2.7 Summary of Reviewed Literature

2.1 Theoretical Framework

This study was premised on constructivist theory propounded by Bruner (1960). Constructivism is a contemporary instructional theory of education whose pedagogy potentials in promoting meaningful learning rapidly receiving the attention of

educationists and researchers. Constructivism views learning as a process in which students actively construct their knowledge of the situation at hand based on the already existing knowledge (Oyedekan, 1998).

Constructivism learning theorist believed that learners actively acquire or construct new knowledge by relating new information to prior experience. Students' existing knowledge of any given phenomenon is often referred to as prior knowledge (Driver & Erickson, 1983). Constructivism theory further posited that knowledge is internalized by learners through the process of accommodation and assimilation. Bruner (1960) asserted that the knowledge acquired by students should not be supplied by the teacher as a ready-made product. This view is shared by social learning theorist like Bandura (1962), who is also of the view that learning is imitating reality by observing a model identifying with the model, then imitating the model.

Several constructivist instructional strategist exist, some of which includes; guided-discovery approach which Olagunju (2002) described as a process which allows students' to solve problems in a legal and systematic manner with the teachers guidance. It is also described as one that offers learners the opportunity to discover scientific facts, concepts and principles to themselves.

Another constructivist approach is problem-solving method described variously by different researchers. For instance, Adesoji (2008), opined that it is processed based and a "fundamental part of doing science". Problem-based learning follows a constructivist perspective in learning since the role of the instructor is to guide and challenge the learning process. Students' learn about a subject through the experience of

problem solving. It is important to achieve the right balance between the degree of structure and flexibility that is built into the learning process. Learners should learn to discover principles, concepts, and facts for themselves. Learning is viewed as active, where guesswork and intuitive thinking are encouraged. Learners with different skills and backgrounds are encouraged to collaborate in tasks and discussions to arrive at a shared understanding of the truth.

Constructivist believes that learners actively construct their own understanding rather than passively absorb or copy the understanding of others (Neyland, in Kaya, 2008). Constructivism is a process whereby learners actively connect new knowledge and make it theirs by constructing their own interpretation (Mathews, 2006). Students play a central role as active participants in the learning process. This knowledge evolves from the learners previous experiences, combined with active engagement in new activities. This means that through assimilation and accommodation, a new relationship is established between previous experiences and new activities. This activity of establishing new relationship plays a critical role in the construction of knowledge and the creation of new ideas (Yager in Kaya, 2008). This research work is related to Bruner's constructivist learning theory because it is based on activity learning. Problem-solving and cooperative learning address the need to promote lifelong learning through the process of inquiry and constructivist learning. This is considered a constructivist approach to instruction because it emphasizes collaborative and self-directed learning while being supported by tutor facilitation.

2.2 Conceptual Framework

For the purpose of this study, the following concepts were discussed; business education, accounting, problem-solving method, cooperative method and academic performance.

2.2.1 Concept of Business Education

Business education is an integral part of vocational and technical education. It is specialized education designed to prepare individuals for and about business. It is the education for the acquisition and development of skills and competencies, attitudes, attributes which are necessary for the efficiency of the economic system. There are many definitions of business education as there are business educators. For example, a business educator once described business education in relation to the parable of the blind men and the elephant. Depending on which part of the elephant he touched each one then defined the elephant either as a wall, a spear, a snake, or a rope. Their ideas about the elephant were limited by their own perception and experience (Aliyu, 2001).

Business education has been defined by various authors. Aliyu (2006) see business education as education for business. It is the intellectual and vocational preparation for earning a living in a contemporary industrial and business environment. Udoh (2010) defines business education as a programme of study that covers a wide range of the spectrum of economic activities in any society. It equips scholars with desirable competencies necessary for self-employment which is very important in the present depressed global economic situation. However, business education is an aspect of education whose primary purpose is to prepare an individual for gainful employment in

recognized occupation through the acquisition of skills, knowledge, attitudes, and understanding necessary for productive activities. In addition, Osuala (2004) postulated that it is a training system that enables the beneficiary to acquire skills that will make him fit into the world of work. Ibrahim (2008) opines that business education encompasses knowledge, attitudes, and skills needed by all citizens in order to effectively manage their personal resources and participate effectively in the economic system.

Adeshina (2007) stated that business education is an embodiment of vocational knowledge and skills needed for entry-level employment and advancement in a broad range of business careers. Ukoje (2010) posited that business education provides individuals with skills and knowledge about business and for business. He also stresses those individuals who study courses that produce goods and services, financial institutions, management of funds, due process in offices, a trader within and across countries and government policies concerning their operations. The National Policy on Education (2013) looks at business education as a conglomerate of courses/subjects that is concerned with the acquisition, development and inculcation of the proper values for the survival of the individual and society, the development of the intellectual capacities of the individuals to understand and appreciate the environment, the acquisition of both physical and intellectual skills which will enable individuals to develop into useful members of the community; the acquisition of an objective view of the local and external environments.

From the aforementioned, this study observes that business education has many descriptions and definitions. People outside the field have different perceptions of it too. Therefore, the researcher sees business education as a discipline designed to inculcate in

the learner; attitudes, skills, knowledge and values that are needed in the business world. Furthermore, the knowledge of business education produces responsible, productive and self-reliant citizens.

2.2.2 Concept of Accounting

Accounting has rightly been termed as the language of business and the basic function of a language is to serve as a means of communication. Accounting communicates the result of business operations to various parties who have some stake in the business viz; the proprietor, creditors, investors, government and other agencies. Accounting is a discipline which records, classifies, summarizes and interprets financial information about the activities of a going concern so that intelligent decisions can be made about the concern. Accounting data are processed into accounting information through the use of accounting principles and conventions.

Udoh (2004) posits that accounting is a discipline concerned with the recording, analyzing and forecasting of incomes and wealth of business and other entities. Ibrahim (2011) defined accounting theory as a logical reasoning in the form of a set of broad principles that provide a general frame of reference by which accounting can be evaluated; guide the development of new practices and procedures; and providing a coherent set of logical principles that form the general frame of reference for the evaluation and development of sound accounting practices.

The study of accounting is traditionally divided into two parts according to the types of users of the accounting information (Ezegwui, 2014). They are financial accounting and management accounting. Financial accounting is primarily concerned

with the needs of users outside the business or other organizations. Therefore, it relates to the external control and management of resources (for example by shareholders of the company in which they have invested their funds, or by banks making loans). A vital part of financial accounting is reporting the performance and position of the business to these external users, via the financial statements. The form and content of financial statements are usually highly regulated. On the other hand, management accounting is concerned with the needs of users inside the business. There it relates to the internal control and management of resources (for example, by directors, management accounting statements may be more detailed than those prepared for external users and do not normally need to meet any legal requirement). Countries around the world organize their economic and financial activities in different ways. So inevitably, legal requirements, regulation, and administrative procedures also vary across countries.

The American Institute of Certified Public Accountants (AICPA) defined financial accounting as “the art of recording, classifying and summarizing in a significant manner and in terms of money transactions and events which impart at least of a financial character and interpreting the results thereof”

Osuala (2007) corroborates that financial accounting as a specialized area of instruction that deals directly with business skills and techniques, business knowledge and facts, business attitudes and appreciations necessary to understand and adjust to the economic and social institution called “business”. Igben (2009) explains that financial accounting is a process of collecting, recording, presenting and analyzing/interpreting financial information for the users of financial statements.

Asaolu (2012) asserted that “financial accounting is the process of recording, classifying, selecting, measuring, interpreting, summarizing and reporting financial data of an organization to the users for objective assessment and decision making”. It incorporates measurement and reporting of profit and loss. Students are often overwhelmed by the amount of information presented in the introductory financial accounting course. By focusing on the fundamental concept in a logical sequence, students are able to fully comprehend the material rather than memorize seemingly unrelated terms and topics. Asaolu (2012) in Eze gwui (2014) stated that the goal of financial accounting concept is to enable students to understand how any given business event affects the financial statements. The “financial statements model” is highly praised feature because it allows students to visualize the simultaneous impact of business events on all the key financial statements (the income statement, the balance sheet, and the statement of cash flows). Eze gwui (2014) outlined the following as some of the topics that make up financial accounting; Principles and practice of double-entry accounts, Bank reconciliation statement, Manufacturing account, Final accounts. Final account is one of the most important topics in financial accounting. It refers to the position of a company at the end of its accounting period. Final account is divided into three segments.

Trading account: The trading account shows the income from sales and the direct costs of making those sales. It includes the balance of stocks at the start and end of the year.

Profit and loss account: profit and loss show you the summary of the trading transactions of business; how much it sold, how much it spent, and the profit. This account can be updated regularly and shows how much profit or loss a business is making. A profit can be made in several ways, for example, trading, in the case of a high street

shop, i.e. buying and selling items such as clothes and shoe. Another example is manufacturing, a company like Kraft produces chocolate bars and other food stuff. It buys in raw materials such as cocoa and sugar which it processes to make chocolate. The purpose of the profit and loss account is to show whether a business has made a profit or loss over a financial year. It also describes how the profit or loss arose e.g. categorizing costs between “cost of sales” and operating costs.

A balance sheet: A balance sheet is a statement of the total assets and liabilities of an organization at a particular date usually the last of an accounting period. The balance sheet is split into four parts; A statement of fixed assets, current assets, current liabilities and long-term liabilities assets. It summarizes an organization or individual’s assets, equity, and liabilities at a specific point in time. A balance sheet is like a snapshot taken at a particular moment in time giving a summary of the overall position of a business. However, a balance sheet isn’t just an expensive bit of paper. It can actually be a valuable tool for you in assessing how well your business is doing and the areas you need to focus on in the future. Your balance sheet will contain a standard set of information that gives anyone looking at it basic information about your business and its performance.

2.2.3 Concept of Problem-Solving Method

Problem-solving method is a student-centered pedagogy in which students learn about a subject through the experience of solving an open-ended problem found in trigger material. The Problem-solving learning process does not focus on problem-solving with a defined solution, but it allows for the development of other desirable skills and attributes. This includes knowledge acquisition, enhanced group collaboration, and communication. Problem Solving can be referred to as a process of finding answers or approaching

solutions creatively. This process requires the learner to be totally involved in the learning process.

Okoli (2011) sees problem-solving as the process of applying previously acquired knowledge to obtain a satisfactory solution to new and unfamiliar problems. The free encyclopedia Wikipedia (2010) reported that problem-solving is a mental process and is part of the larger problem that includes problem finding and problem shaping. Consider the most complex of all intellectual function; problem-solving has been defined as a higher-order cognitive process that requires the modulation and control of more routine or fundamental skills. This means that students need to develop critical thinking abilities to be able to solve problems. It is in relation to the aforementioned statement that Snyder and Snyder (2007) in Okoli (2011) stated that critical thinking skills are important because they enable students to deal effectively with social, scientific and practical problems. Simply put, students who are able to think critically are able to solve problems effectively.

According to Ajoma (2009), it appears scientific and it helps both the teachers and students of business education to learn new concepts and ideas through problem-solving, leading to discovery, apply previous knowledge to solve problems in Business education and identify problem areas of students based on what they have learned. Problem-based learning is a learner-centered environment, which models a way in which humans learn throughout their lives, as well as through the application of knowledge and skills to the process of solving problems. Barrows and Tamblyn in Ajoma (2009) stated that problem-solving learning is one kind of learning, which works through the process of understanding and solving problems to obtain results while Cooperative learning

promotes students' teamwork competence; improves their learning effectiveness and cultivates their ability to improve the effectiveness of the education system and business education students' performance in financial accounting.

2.2.4 Concept of Cooperative Learning Method

Cooperative learning is the instructional use of small groups in which students work together to maximize and gain from each other (Johnson and Johnson, 2009). In cooperative learning, students are expected to help, discuss and argue with each other; assess each other's current knowledge, and fill any gaps in each other's understanding. There are many different cooperative learning techniques; however, all of them have certain elements in common as established by Johnson, Johnson, and Holubec (2008). These elements are the ingredients necessary to ensure that when students do work in groups, they work cooperatively; first, the members of a group must perceive that they are part of a team and that they all have a common goal; second, group members must realize that the problem they are to solve is a group problem and that the success or failure of the group will be shared by all members of the group; third, to accomplish the group's goal, all students must talk with one another to engage in discussion of all problems; finally, it must be clear to all that each member's individual work has a direct effect on the group's success. Teamwork is utmost important.

Cooperative learning also enhances students' abilities to think, problem-solve and apply knowledge, as well as foster their socialization skills in improving student's academic performance. They further asserted that in the past three decades, modern cooperative learning has become a widely used instructional procedure in preschool through graduate school levels, in all subject areas, in all aspects of instruction and learning, in

non-traditional as well as traditional learning situations, and even in after-school and non-school educational programs. There is the broad dissemination of co-operative learning through teacher preparation programs, in-service professional development, and practitioner publications. The use of co-operative learning so pervades education that it is difficult to find textbooks on instructional methods, teacher journals or instructional materials that do not mention and utilize it (Johnson and Johnson, 2009).

2.2.5 Concept of Academic Performance

Academic performance has to do with how well students' meet up with educational standard- aims, goals, and objectives of education at a particular time. It is how students deal with their academic programmes, and how they cope with or accomplish different tasks given to them by their teachers. Academic performance is the outcome of education, the extent to which a student, teacher, and institution have achieved their educational goals. Academic performance is often defined in terms of performance in the examination. Nnaobi (2007) stated that academic performance in teaching/learning process has to do with the attainment of set objectives of instruction. In the school system, if a learner accomplishes a task successfully and attains the specified goals for a particular learning experience, he is said to have achieved.

Gouch (2009) maintained that performance is the way and manner students deal with their studies and how they cope with or accomplish different tasks given to them by their teachers. Students' success depends on the amount of learning that takes place in the classroom and other related areas (Akinsolu, 2010). Mamman (2011) explained that academic achievement/performance in an educational institution is how well a student

meets standards set out by the government and the institution itself. Ibrahim (2011) added that academic performance has to do with the ability to not only understand and assimilate facts but to be able to recall these facts in future.

From the ongoing, one could conclude that students' academic performance has to do with the acquisition of knowledge, ability to make this knowledge part of them, use the acquired knowledge to perform the well academic task given them now and in future.

2.3 Methods of Teaching

Research on methods of teaching has for long been of interest to educationist. Methods of teaching consist of recurrent instructional process applicable to various types of subject matter and useable by more than one teacher. It is a set of patterns of interaction between the teachers and students or between students and activities intended to lead to the achievement of predetermined educational objectives. Mkpa (2009) explained the method of teaching as a way of doing the business of teaching, the procedure, orderliness, in planning and execution of teaching proper with the appropriate integration of instructional materials to achieve the objectives at the classroom level and beyond.

Teaching strategy is the act of using teaching as a tool in achieving the purpose of the teaching-learning process in and outside the classroom setting (Mkpa, 2009). There are many teaching strategies and they take different forms based on the subject matter to be taught. A good method of teaching and teaching strategies plus effective use and integration of instructional materials, help the teacher to impart knowledge that brings about desirable changes in behavior in learners.

Akintelure (1998) in Raymond and Ogunbameru (2005) reported that financial accounting teachers' effectiveness in instructional delivery depends on their consideration of the nature of the subject matter during instructional planning. According to him, financial accounting is not a subject that could be mastered by mere memorization of the basic rules. It requires the total involvement of the learner in the learning process, sound theoretical knowledge and intensive practice in the application of basic principles. Akintelure in Raymond and Ogunbameru reported that the problem of poor performance in financial accounting was due to the teachers' insensitivity to the nature of the subject when planning instructional activities in the classroom.

There are many methods of teaching a teacher can employ in the course of his teaching. It is generally believed that there is no particular method of teaching which can be regarded as the best, and which the teacher must always use. Nnaobi (2007) in agreement with the above statement asserted that there is no best method of teaching but the effective scientific method of teaching that can be regarded as the best method of teaching should be laboratory-centered and activity oriented rather than textbook or lecture dominated methods which are seen to characterize the Nigerian schools. Any instructional method a teacher uses has an effect on learners. The obvious task ahead of the teacher, therefore, is to select an instructional method that best fits a particular lesson situation.

Obeka (2010) opined that there is no one correct method of teaching a particular lesson, but there are some criteria that pertain to each that can help a teacher make the best decision possible. It can thus be argued that for a particular teaching method to suffice is determined by the nature of the subject and the topic at hand. All subjects vary

and this calls for the application of different and best suitable method(s) in the realization of the intended goal.

For effective teaching to take place, the teacher needs to adopt different methods and techniques at his disposal, even though there are diverse teaching methods. Edson and Marci (2012) pointed out that the teaching method adopted by a teacher could have an influence on students' in the development of several abilities such as; cooperation, leadership, responsibility, self-confidence, independence, decision making, and communication skills. It is better for a teacher to use poor methods, which he can handle well than a good method clumsily handled (Edson & Marci, 2012). Therefore, for the purpose of this study problem-solving and cooperative methods were examined.

2.3.1 Problem-solving Method

Problem-solving teaching method originated from a concept of small group learning for business education that was introduced during the 1920s. McMaster University in Canada modified this tutorial process in the University in the 70s through research and development into "student-centered "pedagogy in which students learn" "from the problem" "within small groups" and through discussions" (Kwan & Lee 2009). Problem-solving method is concerned with students' competencies in three primary aspects: (1) core knowledge, (2) cognitive skills (e.g. analysis, integration, evaluation, and critical thinking), and (3) action skills (e.g. conflict handling, time management, resource allocation, organization and negotiation skills) Burch (2011).

Barrows (2006) see problem-solving teaching method as a learning method which involves student-centered learning in small groups led by a tutor or "expert", rather than teaching using traditional lecture teaching method. The role of the tutor is to guide the

students toward discovering answers on their own rather than to simply provide the correct answer. Through the guiding process, the tutor will stimulate the students' cognitive learning process and problem-solving skills with self-directed learning (SDL), also known as auto didacticism. Auto didacticism, which is commonplace in higher learning, is the idea that the teacher does not need to schedule learners' private time. Students are expected to be able to organize their lives, studies and learning in a manner which prepares them for their chosen profession (Armstrong, 2012). However, the tutor needs to lay out the curriculum/plan according to the concrete seven-jump method which is to be followed when working with problem-based learning. These seven "steps" according to Bokonjic and Egidius (2009), are as follows:

1. **Clarifying terms** – First, the group of participating students draw a table on the board in the classroom, consisting of four columns: Facts in the text, Problem, Hypotheses about cause and effect, and Learning objectives. The text with the problem to be identified and solved is then introduced to the students, and unknown terminologies' explained and clarified. After this, the facts presented in the text are listed in the "facts in the text" column on the board.

2. **Defining the problem** – The second step consists of group discussions of what the problem is and which methods can be used to find the solution. The identified problem is then written down in the "problem" column on the board.

3. **Brainstorming** – Another group discussion is held where the students use their prior knowledge to come up with ideas for different hypotheses to explain the problem. During this step, all students are encouraged to speak their mind and all ideas are valued and noted.

4. **Structuring and hypothesis** – A review of step 2 and 3 is carried out and different possible explanations of the problem are given, eventually leading up to one final structured hypothesis, which is then written down in the “hypotheses about cause and effect” column.

5. **Learning objectives** – When the hypothesis is chosen and formulated the students must agree on achievable and comprehensible learning objectives for the task. These objectives will be the necessary knowledge the students need to acquire before they will be able to continue on working with their hypothesis. These learning objectives are written down in the “Learning objectives” column on the board.

6. **Searching for information** – The search for information is done individually and with emphasis on mutual learning objectives. This will provide the students with a more profound knowledge regarding the problem they are working on. The minimum time for this research is two days, but can preferably go on for a longer amount of time, since the students are given the opportunity to find their own resources and might need the extra time to research their credibility.

7. **Synthesis** – During the final step, the members of the group share the results of their individual findings, including structures, functions, causes etc. with each other. With this new information, they analyze the stated problem and, hopefully, they come to an understanding of and solution to the identified problem.

8. **(Feedback)** – Feedback is given both from the students and the teacher, regarding their individual and group process, the organization of the task, and the teacher guidance. This is done with the aim of improving the work process for the next session.

Anderson and White (2004) postulated that problem-solving teaching method is the process of students exploring non-routine questions, using a range of strategies to solve unfamiliar tasks, as well as developing the processes of analysis, reasoning, generalizing and abstracting". They further stress that it approaches investigations, open-ended questions, and modeling tasks as well as providing opportunities for students to pose questions and explore new ideas. A problem-solving teaching method is, therefore, an approach in which teachers see themselves as guides, listeners, and observers rather than authorities and answer givers.

Problem-solving teaching method can be viewed as a teaching philosophy that advocates student-centered and teacher facilitated learning. According to constructivism, learners through interaction with the environment use the experiences they gained to construct new knowledge. In a problem-based learning context, the teacher should develop students' problem consciousness, guide and support their learning, and avoid giving immediate answers; students' should show their self-management and knowledge seeking spirit and learn through group collaboration. As each learner has different life experiences and prior knowledge, learners within the same group are enabled to contemplate issues from different perspectives. Through sharing of knowledge and opinions, learners can collectively construct a meaningful knowledge system (Yang 2012).

The American Accounting Association (AAA) recommended that students of accounting education should be encouraged to become active and independent learners rather than passive recipients of information (AAA 1986). The Accounting Education Change Commission (AECC) pointed out that students should be prepared for lifelong

learning. It also stressed the importance of “learning by doing” and “group learning” (AECC 1990). Following the Accounting Education Change Commission (AECC) report, American Institute of Certified Public Accountants (AICPA) clearly pointed out that curriculum design should be guided by a problem-solving learning approach. (Milne & McConnell 2001) had similar views that advocated the incorporation of problem-solving teaching method in accounting education.

Taiwan Education Ministry (TAME 2010) pointed out that problem-solving teaching method is based on real-life world problems. The emphasis of student-centered education is on thrusting students’ into the complex. Meaningful problem scenarios which need to be tackled through team work. This kind of learning will help them acquire problem-solving and self-motivated learning skills. Through teamwork, students collectively gather, interpret, and analyze data to seek answers and to construct their own meaningful knowledge systems.

Problem-solving teaching method places major emphasis on the student with the teacher playing a catalytic role in cognitive coaching, guiding and training students to actively explore knowledge, to acquire the know-how’s of effective lifelong learning to gain collaborative problem-solving skills. As a driving force for reforms in teaching concepts and teachers’ self-renewal, a problem-solving teaching method is a promising tool for improving accounting students’ performance. The advantages and disadvantages of Problem-solving method according to Wood (2009) are:

Advantages

It is student-focused, which allows for active learning and better understanding and retention of knowledge. It also helps to develop life skills that are applicable to many domains. It can be used to enhance content knowledge while simultaneously fostering the development of communication, problem-solving, critical thinking, collaboration, and self-directed learning skills. PBL may position students to optimally function using real-world experiences. By harnessing collective group intellect, differing perspectives may offer different perceptions and solutions to a problem.

Disadvantages

The major disadvantage to this process involves the utilization of resources and tutor facilitation. It requires more staff to take an active role in facilitation and group-led discussion and some educators find problem-based learning facilitation difficult and frustrating. It is resource-intensive because it requires more physical space and more accessible computer resources to accommodate simultaneous smaller group-learning. Students also report uncertainty with information overload and are unable to determine how much study is required and the relevance of information available. Students may not have access to teachers who serve as the inspirational role models that traditional curriculum offers.

2.3.2 Cooperative Method

Cooperative method, which is a structural and systematic teaching strategy, is popular in Europe and America. It assigns students into different groups who work together, encourage each other, and develop their active learning attitude and, hence, improve learning effectiveness. Cooperative learning is a successful teaching strategy in which small teams, each with students of different levels of ability, use a variety of learning activities to improve their understanding of a subject. Each member of a team is responsible not only for learning what is taught but also for helping teammates learn, thus creating an atmosphere of achievement. According to Uwameiye (2016), a Cooperative learning strategy is a method of teaching in which students work together in a small heterogeneous group to complete a problem, project or any other instructional goal, while teachers act as a guide or facilitator. Researchers have found that cooperative learning is helpful in promoting students' curriculum achievement, learning motivation, and interpersonal relationships. Up to now, many models have been developed for cooperative learning.

Brown & Abel (2007) outlined the 5 basic and essential elements of cooperative learning:

1. Positive interdependence
 - a. Students must fully participate and put forth effort within their group
 - b. Each group member has a task/role/responsibility, therefore, must believe that they are responsible for their learning and that of their group
2. Face-to-face promotive interaction
 - a. Members promote each other's success

- b. Students explain to one another what they have or are learning and assist one another with understanding and completion of assignments
- 3. Individual and group accountability
 - a. Each student must demonstrate mastery of the content being studied
 - b. Each student is accountable for their learning and work, therefore eliminating "social loafing"
- 4. Social skills
 - a. Social skills that must be taught in order for successful cooperative learning to occur
 - b. Skills include effective communication, interpersonal and group skills
 - i. Leadership
 - ii. Decision-making
 - iii. Trust-building
 - iv. Friendship- development
 - v. Communication
 - vi. Conflict-management skills
- 5. Group processing
 - a. Group processing occurs when group members reflect on which member actions were helpful and make a decision about which actions to continue or change.
 - b. The purpose of group processing is to clarify and improve the effectiveness with which members carry out the processes necessary to achieve the group's goals.

In order for student achievement to improve considerably, two characteristics must be present:

1. When designing cooperative learning tasks and reward structures, individual responsibility and accountability must be identified. Individuals must know exactly what their responsibilities are and that they are accountable to the group in order to reach their goal.
2. All group members must be involved in order for the group to complete the task. In order for this to occur each member must have a task that they are responsible for which cannot be completed by any other group member.

The application of these principles makes learning more certain to involve learners, less abstract, less tedious and less threatening which clearly support the principle of learner-centered technique. Several methods may have these qualities but cooperative learning strategy was ranked first in teaching approaches that promote greater wonder thinking, problem-solving and achievement (Uwameiye 2016).

There are a great number of cooperative learning techniques available. Some cooperative learning techniques utilize student pairing, while others utilize small groups of four or five students. Hundreds of techniques have been created into structures to use in any content area. Among the easy to implement structures are think-pair-share, think-pair-write, variations of Round Robin, and the reciprocal teaching technique. A well known cooperative learning technique is the Jigsaw, Jigsaw II, and Reverse Jigsaw. The cooperative learning techniques according to Slavin (1991) in Anthony (2013) are as follows:

Think-pair-share

According to Slavin (1991) in Anthony (2013), Think-pair-share allows for students to contemplate a posed question or problem silently. The student may write down thoughts or simply just brainstorm in his or her head. When prompted, the student pairs up with a peer and discuss his or her idea(s) and then listen to the ideas of his or her partner. Following pair dialogue, the teacher solicits responses from the whole group. When teachers use this technique they don't have to worry about students not volunteering because each student will already have an idea in their heads, therefore, the teacher can call on anyone and increase discussion productivity.

Jigsaw

Students are members of two groups: home group and expert group. In the heterogeneous home group, students are each assigned a different topic. Once a topic has been identified, students leave the home group and group with the other students with their assigned topic. In the new group, students learn the material together before returning to their home group. Once back in their home group, each student is accountable for teaching his or her assigned topic. Anthony (2013) outlined the following jigsaw methods:

Jigsaw II

Jigsaw II is a variation of Jigsaw in which members of the home group are assigned the same material, but focus on separate portions of the material. Each member must become an "expert" on his or her assigned portion and teach the other members of the home group.

Reverse jigsaw

It differs from the original Jigsaw during the teaching portion of the activity. In the Reverse Jigsaw technique, students in the expert groups teach the whole class rather than return to their home groups to teach the content.

Inside-outside circle

This is a cooperative learning strategy in which students form two concentric circles and take turns on rotation to face new partners to answer or discuss the teacher's questions. This method can be used to gather a variety of information, generate new ideas and solve problems.

Reciprocal teaching

It is a cooperative technique that allows for student pairs to participate in a dialogue about the text. Partners take turns reading and asking questions of each other, receiving immediate feedback. Such a model allows for students to use important metacognitive techniques such as clarifying, questioning, predicting, and summarizing. It embraces the idea that students can effectively learn from each other.

The Williams

Students collaborate to answer a big question that is the learning objective. Each group has differentiated questions that increase in cognitive ability to allow students to progress and meet the learning objective.

STAD (Student-Teams-Achievement Divisions)

Students are placed in small groups (or teams). The class in its entirety is presented with a lesson and the students are subsequently tested. Individuals are graded

on the team's performance. Although the tests are taken individually, students are encouraged to work together to improve the overall performance of the group.

Rally Table

Rally Table is another process of cooperative learning. In this process, the class or the students are divided into groups. This is done to encourage group learning, team building, and cooperative learning. It is the written version of Robin Table.

TGT (Team Game Tournament)

Students are placed into small groups to study and prepare for a trivia game. This gives students incentive to learn and have some fun learning the material. This is a group exercise so not one student is to blame if a team loses.

The advantages and disadvantages of Cooperative method according to Shindler (2009) are as follows:

Advantages of Cooperative method

It has been shown to have a positive effect on student learning when compared to individual or competitive conditions; it has the potential to produce a level of engagement that other forms of learning cannot; students may explain things better to another student than a teacher to a class. Students learn how to teach one another and explain material in their own words; questions are more likely to be asked and answered in a group setting; positive interdependency is achieved as individuals feel that they cannot succeed unless everyone in their group succeeds; interpersonal and collaboration skills can be learned in a cooperative learning activity. Cooperative learning has the potential to meet more learning style needs more of the time than individualized direct instruction; sends the symbolic message that the class is egalitarian and classless. Higher ability students are in

a position to be experts, leaders, models, and teachers; lower ability students get the benefits of having higher ability students in their group.

Disadvantages of Cooperative Method

A burden is making the students responsible for each other's learning apart from themselves; one study showed that in groups of mixed ability, low-achieving students become passive and do not focus on the task; depending on an individual's motivation and interest on a particular subject that will determine how well they would learn; the goal of scaffolding is for students to become independent and able to think by themselves, without the help of others; high stakes create increased chances for conflict and therefore need for conflict resolution skills; it is difficult for the teacher to be sure that the groups are discussing the academic content rather than something else; higher ability students may not experience the stimulation or challenge that they would with other higher ability students. Lower ability students may feel perpetually in need of help rather than experiencing the role of leader or expert relative to the others in their group.

2.3.3 Lecture Method

The lecture method is sometimes referred to as "exposition", reception learning or chalk and talk approach. Ajoma (2009) described lecture method as a process whereby teachers give a talk on a subject to students, while the students listen and think about it. In the lecture method, the teacher gives an address to the class and his talks dominate the activity of the class. The lecture method is seen as one which leads to an easy coverage of the school syllabus. A large amount of material could be covered to a large class size in a single period. According to her, this method involves a verbal presentation of ideas, concepts, generalization, and facts. The practice here is that of spoon-feeding the learner with information or facts, while the students swallow. Therefore, the teacher takes most

of the time and thus making teaching teacher-centered, while the student is merely or mostly a passive learner who must accept the information imparted to him. The lecture method is mostly used for students in the tertiary institutions, where the material to be learned is given in a completed form to the learner (Akinsolu, 2010). The teacher dishes out the information to the learner, and in most cases, the learners are passive like empty vessels to be filled. The lecture method, therefore, reverses the concept of education which maintains that the best learning is that which results from purposeful activity. Furthermore, anything which puts the pupil in a passive situation and stresses activity for the teacher is bound to benefit the teacher more than the pupil (Edwin, 2011). Under the setting of the lecture method, it is the teacher who learns to use reference so as to outline, to organize ideas, to formulate conclusions and to speak. The advantages and disadvantages of lecture Teaching Method according to Marilla (2006) are:

Advantages of Lecture Method

The lecture method can be used in any class size and it is often the only option in large; a well-presented lecture can be motivating to the students and inspire them to pursue a topic on their own; a lecture can be a model of the functioning profession against which students can assess their behavior; the lecture method of teaching is sometimes the only way of presenting current material which is not available in print; the instructor has total control over what occurs in class when it comes to this method of teaching; most importantly, many grounds are covered within a lesson; the presentation of the lesson is often orderly because there is little distraction; most importantly, many grounds are covered within a lesson; the presentation of the lesson is often orderly because there is little distraction to the lectures; this method gives learners a framework

or structure to which further learning can be achieved; no money is spent purchasing items; many learners (over a thousand people) can receive information from one lecturer.

Disadvantages of Lecture Method

The lecturer is teacher-centered teacher-paced method, which does not allow for excess in students learning styles or rates; because students' participation is minimal, differ lecturing promotes passivity in students; learning from lecture method largely depends on students' abilities to take notes; because the lecture is teacher-centered, it tends to promote a one-way communication and the notion is that the truth resides in the instructor; feedback is usually different with such an approach; this method is not suitable for the young or pupils who may have no note-taking skills and whose attention span is short; the fundamentals of the lesson may not be understood by students during a lecture; Learning through active involvement is omitted because the learner is only put in the position of a listener; as this method is didactic, the learner is easily bored, frustrated and this may resort to restlessness and subsequent disruption; this method encourages memorization and regurgitation of information without necessarily aiding understanding.

2.4 Effects of Teaching Methods on students' Academic Performance

The challenges that educators face in the 21st century are so diverse that using better teaching methods is more crucial now than ever before. The methodology is very vital in any teaching-learning situation (Ameh & Dantani, 2012). These authors further posited that the method adopted by the teacher may sharpen mental activities and curiosity thus making self-reliance and survival difficult. Teacher influence on students' goes beyond and interacts with teaching methods to influence students' learning. These effects may include the teachers' knowledge of and experience with teaching financial

accounting, coverage of curriculum as it is assessed at the end, of course, the rapport between the teacher and students' and classroom management practices. Any of these teacher influences can interact with teaching methods to enhance or detract from it.

Raymond (2012) conducted a study on the influence of teaching methods in business courses using different teaching methods. In the experimental group with (58 students) the researcher used directed small group activities and t-tests results showed that while both teaching methods had a significant influence on students' academic performance, the small group study performed better. The results also showed that students' attitude toward the class did not affect academic performance; however, students' attitude was affected by the teaching methods used in the class.

Raymond (2012) emphasized that there is something in teaching that opens the gate of learning. It is true that successful learning depends on various factors that are not all teacher-related, but the methods that a teacher uses continue to play an important role in their academic achievement. Gibbs and Jenkins in Raymond (2012) argued that the context of class and society has changed, but the teaching methods have remained unchanged. Various recent studies attempting to address the issue that affects teaching methods and student learning today include educational technology integration (Abbit, 2011), students' attitudes (Akkuzu & Akcay, 2011), as well as the increased interdependence of society today (Schul, 2011). These phenomena are affecting higher education globally today. This is true especially when considering how students should be taught.

Studies like Pascarella and Trentini in Raymond (2012) have shown that there is both increased interest and knowledge in the area of teaching strategies and learning

theories. For many years, the search for better teaching methods to provide the best learning has been the goal of education. However, the teaching method is not a one-size-fits-all proposition. Flexibility is crucial in adapting teaching methods in the class. Since all teachers are different, the strategies they use, and the way they use them will depend on the context and situation of their class (McCornac & Phan Thuy, in Raymond 2012), as well as their own personality and biases.

The main question that still lingers, even after a large number of studies that have been done is, what are the most suitable teaching methods, and how do they impact students' learning in today's setting, especially in a large class? Can cooperative learning provide better results than just lecture teaching method in this situation? Do students' attitudes toward the class have any relationship with teaching and learning? The effect of teaching methods on students' learning should be the interest of every teacher. In the field of business teaching, there have been various studies done in an attempt to measure teaching methods. Robinson and Colleagues in Raymond (2012) conducted a study on several teaching methods in business studies to explore the reasons for their use, and perceptions of effectiveness. The result of their study suggested that various methods do influence teaching effectiveness. Xu and Yang (2010) acknowledged the positive impact of social interaction in groups. They also stated that cooperative learning teaching method had a positive effect on students' performance. This is not surprising since research has shown that cooperative learning has good potential for increasing understanding (Schul, 2011).

Based on the general background, this study sought to further explore a better understanding of the effects of problem-solving and cooperative teaching methods on

accounting students performance in Colleges of education in North-west, Nigeria. The focus would be on discovering related variables in a class setting that might help us understand teaching and learning better. In Nigeria where class sizes are usually large and teacher-directed class is considered the norm, it is important to see how cooperative learning method can play a role in students' academic performance. Cooperative learning has been found to be a popular choice of teaching methods in recent years. Cooperative learning allows students' to work well together for specific tasks. The core point of cooperative learning is the positive interdependence-learning atmosphere created as the students work in a group. Numerous studies indicate that cooperative learning is a favorable teaching approach for academic and social gain when used responsibly. Ediger (2011) argued that class could go beyond lecture and include active learning where collaboration is encouraged. Cooperative learning is also considered to help students develop the requisite skill of knowing how to work together in today's pluralistic society. It is also seen as an integrative and holistic approach to learning, with a focus on social implications (Schul, 2011).

Bell, Jasper, and Quazi in Raymond (2012) suggested that cooperative learning and small group activities are closely correlated with students' learning. The traditional teaching method also has strong literature support. Various research studies showed that lecture method is still the most widely used teaching method today (Berrett, 2012; Kauffman, 2012). A recent study by Covill (2011) on college students' perceptions of the traditional lecture method suggests that lecture is a great value and receives positive responses from students. Covill (2011) further suggested that the lecture method may

carry learning characteristics such as problem-solving and critical thinking, usually found only in active learning.

The lecture is seen as the most convenient teaching method even though it may not have the greatest impact on student teaching because it seems to be the easiest to prepare compared to other methods. Nevertheless, the impact of the lecture should not be underestimated. Tormey and Henchy (2008) stated that the effect will be even greater when the lecture is revised and combined with other teaching methods or used with educational technology. This sort of enhanced lecture does contribute to student learning (Burke, James & Ahnadi, 2009; Campbell, & Mayer, 2009).

Several studies showed that students' attitude has a relationship with teaching method and academic performance. Sadi and Cakiroglu's (2011) study found out that the method used seemed to affect students' attitude toward the class, and this may be the factor that most influences learning. A study by Akkuzu and Akcay (2011) showed a relationship between students' attitude and their academic performance. They suggested that students' positive attraction toward certain kinds of teaching may help increase their academic performance. Eastman and Iyer, (2011) suggest that when students' have a positive attitude toward something, they will do the task well.

2.5 Historical Development of Accounting

Accounting has its roots in the earliest history of civilization. With the rise of agriculture and trade, people needed a way to keep track of their goods and transactions. Around 7500 B.C., Mesopotamians began using clay token to represent goods such as animals, tools, food items or units of grain. This helped owners keep track of their property. Instead of counting heads of cattle or bushels of grain every time one was

consumed or traded, people could simply add subtract tokens. Different shapes were used for different goods. Around 400 B.C., the Sumerians began placing these token in sealed clay envelope. Each token would the stamped into the clay outside, but the tokens themselves would be kept safe from tampering or loss. This practice of pressing the tokens into the clay may have been the earliest genesis of writing. A few hundred years later, more complex token began to be used. These tokens had special markings to denote different units or types of goods. Starting around 3000 B.C. the Chinese developed the abacus, a tool for counting and calculating (Debonis and Gigliobiano, 2000)

However, Udoh (2004) reported that the system of accounting known today was developed in the late 15th century by Luca Pacioli (1445-1515). Paciolo an eminent mathematician and logician, was disturbed by the frantic pace of economic activity and the often haphazard manner in which financial records were maintained. He first applied theory to the solution of these practical problems and published the foundation for accounting in his mathematical treatise, *SUMMA DE ARITHMETICAL GEOMETRIA, PROPORTION ET PROPORTION ACITA*, in 1494 which led to double entry principles in financial accounting.

In Nigeria, the introduction of financial accounting and book-keeping was first noticed in the last two decades of the nineteenth century when some Nigerian nationals in a business partnership with overseas exporters had to learn simple arithmetic, book-keeping, business communication and typing so as to facilitate a business transaction between them (Aliyu, 2001).

Igben (2007) reported that pre-colonial Nigeria consisted of an aggregation of basically subsistence economies which did not require the services of Accountants.

However, some historical evidence revealed that some form of traditional accounting practice existed prior to the coming of the British colonial rulers. Longe and Kazeem (2012) observed that book-keeping and accounting records were used in the recording of a financial transaction such as credit sales, loans and periodical contributions called “Esusu” before the coming of British. Modern book-keeping and accounting began in Nigeria with the amalgamation in 1914 of Northern and Southern protectorates to form the territory now called Nigeria. Based on the British system, the colonial Governor is the chief executive and accounting officer of the government to the colonial office in London. However, private sector book-keeping and Accounting might have been in practice with accounts rendered to company head offices as a result of foreign companies operating in Nigeria as at then.

2.6 Review of Empirical Studies

Quite a number of researchers have carried out studies related to the present research in the past. Eze, Ezenwafor, and Obidile (2016) conducted a research on the effects of problem-based teaching method on students’ academic performance and retention in Financial accounting in Technical Colleges in Anambra State. Two research questions guided the study and four null hypotheses were tested at 0.05 level of significance. The design of the study was the quasi-experimental design of pretest, post-test non-randomized control group. The population of the study was all the 168 National Business Certificate (NBC) year II accounting students of State-owned technical colleges. A sample of 138 was purposively selected from two intact groups. An instrument for data collection was Accounting Achievement Test (AAT) validated by three experts with a reliability coefficient of 0.83. Arithmetic mean was used to analyze data relating to

research questions while analysis of covariance (ANCOVA) was used to test the null hypotheses. The findings revealed that students taught financial accounting using problem-based teaching method performed better with higher post-test scores than those taught using lecture teaching method. Also, there was no interaction effect of treatment and gender on students' academic achievement and retention in financial accounting. Based on the findings, it was concluded that problem-based teaching method has the potential to improve students' academic performance and retention in financial accounting.

The difference between the current study and that of Eze, Ezenwafor, and Obidile (2016) is that the present study used five specific objectives, five research questions, five related null hypotheses. t-test and simple logistic regression models were used to test the null hypotheses, while the past study used two research questions and four null hypotheses. The similarities between this present study and the past study are that the past study used quasi-experimental design, pre-test and post-test non-randomized control group and the present study would also use same. However, the past study failed to carry out a pilot study which could have given an insight on possible difficulty that might arise during the course of the study and perhaps a better result. Also, the past study did not mention any specific objective(s)

Uwameiye (2016) conducted a research on co-operative learning strategy and student's academic achievement in Home Economics. The researcher used quasi-experimental design. A simple random technique (table of random numbers) was utilized to select a total of 169 students for the study. The instrument used was the Home

Economics Achievement Test (HEAT). Data collected from the pre-test and post-test were analyzed using mean, standard deviation and t-test at 0.05 level of significance.

Findings from the study showed that the experimental group had a mean score of (57.5) with a standard deviation (SD) of 3.7. The control group had a mean score of (42.3) with a standard deviation (SD) of 3.1. A comparison of the mean scores on the post-test showed that the students in the experimental group produced a higher level of achievement in Home Economics than those in the control group-test revealed that the t-calculated value of 4.21 is greater than the t-critical table of the value of 1.96 at $P < 0.05$ level. Hence the null hypothesis is rejected. There is a difference between scores of students taught with co-operative learning strategy and scores of those taught with lecture method.

The current study is related to the past study as both determined the effect of cooperative teaching method on students' achievement. Also, the current study used quasi-experimental design. The present and past study differ in the area of scope where the past research work was conducted in Secondary schools in Edo State, South-South while, the current research work was conducted in colleges of education in North-west Nigeria.

The past study used the simple random technique to select a population of 169 students while the present study used an intact class of 150 students. The researcher used large population and better statistical tools used as such a good result emerged, which was helpful for the current research study. Also, the work was helpful to this current research work by drawing the attention of the researcher on insight about teaching strategies.

Olarinoye (2015) carried out a research on comparative effects of cooperative and Guided-discovery methods on students' performance in Accounting in senior secondary schools in Plateau State. Five research questions were raised, five hypotheses were formulated and tested at 0.05 level of significance. A quasi-experimental design was used for the study. The population comprised of all the SS II students offering Accounting in Government Senior Secondary Schools with a population of 1,540 in the Plateau State of Nigeria. Two schools that offered Accounting were selected as sample for the study.

The instrument used for data collection was the Accounting Achievement Test (AAT). Students in the experimental group were taught using the two methods separately. The experiment lasted for four weeks after which a post-test was administered. Data were analyzed using mean, standard deviation, and t-test. The result of the study indicated that students taught using guided-discovery methods show significant performance than students in cooperative and control group. However, the performance score of students in the control group and those in the cooperative group does not significantly differ.

Previous research work is related to the current research work in the sense that it was conducted on two methods of teaching Accounting; one cooperative learning method and the other guided-discovery; both researches works developed a quasi-experimental design for the study.

The previous research explained cooperative method extensively which the researcher made use of some for review of the literature. Despite their similarities, the previous research work is different from the current research work. Because, the previous research work was conducted in secondary schools in plateau state, North-Central Nigeria, whereas the present research work was conducted in Colleges of education in

North-west Nigeria. Eventhough, Olarinoye found that there is asignificant difference in the performance of the students in the three groups, but the study failed to further run a Post Hoc test like Ducan, sheffe, to find the group that caused the difference.

Mutuah (2014) carried out a research on the effects of cooperative learning, problem-solving and strategies on junior secondary school student's performance in business studies in Kaduna state". The objective of the study was to determine the effects of cooperative learning, problem-solving and strategies on junior secondary school student's performance in business studies in Kaduna state.

The population of the study was 39,227 and the sample size was 270. Six research questions were raised and six null hypotheses were formulated. The instrument used in collecting data was standardized business achievement test (SBAT). Data collected from the study was statistically analyzed using mean, standard error and standard deviation for the research questions, and the null hypotheses were tested using independent t-test at 0.05 level of significance.

One of the findings revealed that there was asignificant difference between the mean performances of students taught business studies using cooperative learning than those using lecture strategies, it was concluded that cooperative learning strategy was the most effective method in teaching business studies in junior secondary schools. The recommendation was that teachers should help students along the road to independent learning.

The previous study is related to the present study because it made use of independent t-test in analyzing the data, but differ because of the area of scope. Also, the previous study used business studies while the present study used financial accounting. The literature reviewed for the study guided the current research which was used to establish

the gap of the study. The present study used quasi-experimental with pre-test, post-test, and control group. Five objectives were raised, five research questions, five null hypotheses and t-test and simple logistic regression will be used in testing the null hypotheses. However, the previous study failed to mention the design used and the sampling technique in selecting the sample size. Also, the sample size population was too much for a better result.

Ajai, Imoko, and O'kwu (2013) conducted a research on comparison of the learning effectiveness of problem-based learning (PBL) and conventional method of teaching Algebra. The study was undertaken to find out the effect of problem-based learning approach on senior secondary school students' achievement in algebra.

The design of the study was a quasi-experimental pre test-post test control group. Four hundred and forty-seven senior secondary one (SSI) students of six grant-aided and government schools sampled using multistage sampling were involved in the study. Two hundred and eleven students were assigned to the experimental group while two hundred and thirty-six students were assigned to the control group. Students' Algebra Achievement Test (SAAT) constructed by the researchers was the main instrument used for data collection. Four hypotheses were raised for the study and tested using Analysis of Covariance (ANCOVA) at 0.05 level of significance. Findings of the study showed that students taught using PBL achieved significantly higher in the post-test than those taught algebra using conventional method. The interaction effects on achievement due to methods and gender was not significant (at $P < .05$). However, the present study is related to that of Ajai, Imoko, and O'kwu because they both measured the effect of different

teaching methods on students' academic performance and used the same design but differ in the statistical tool used for data analysis and also in the area of scope.

The literature reviewed of the past research work was important to the current research which was used in the current research. The past study selected 440 students' as sample population which was too large for quasi-experimental; the present study used 153 students for the experiment. In the past research work, only 4 research questions were raised, the present study used 5 research questions. In the same vein, the past researcher did not conduct any pilot test and did not raise any null hypothesis, while the present research work conducted a pilot test and ensured the reliability coefficient using Kuder-Richardson Formula to measure reliability of the instrument, and will use mean, standard deviation for answering the 5 research questions and t-test and simple logistic regression to answer the 5 research hypotheses.

Gokhan (2010) conducted a research on the effect of cooperative learning on students' approach to general gymnastics course and academic achievements for universities students at Agric Ibrahim Cecen University (AGRI) Turkey. The purpose of the research was to determine the effectiveness of two different teaching methods over students' academic achievements and their general approach to gymnastics class and to weight students' opinions about the cooperative learning method.

The subject of the study was made up of 50 university students. Treatment groups were selected randomly for this research. The following instruments were used for data collection: the leaning style inventory (LSI), the gymnastics academic achievement test (GAAT), Gymnastic practicing evolution forms (GPEF), the gymnastics attitude scale (GAS) and the student opinion scale (SOS). The data collected were subject to analysis

using Chi-square for data set from LSI test; descriptive statistic and one MANOVA for pre-test and post-test data from the GAAT and GPEF tests, and independent sample t-test for data sets from GAS'S Likert type questions.

The findings of the study include that, theoretical and practical skills of students who are exposed to the cooperative learning improve greater than those of the students who were exposed to the traditional learning. The research work is related to the current research in that, they are both on the effect of teaching strategies on student performance but on different levels of education. The study is useful to the current research because it explained the methods of teaching which the current research used some of them. However, the sample population was too small if not better findings would have resulted.

Ewang (2008) in his study compared and evaluated the efficacy of a traditional, lecture-based learning and problem-based learning in improving performance and outcomes for students enrolled in the accounting and business degrees. Research methods to compare outcomes and performances were evaluated using modified versions of several LBL and PBL related survey questionnaires and a Study Process Questionnaire (SPV) developed by John Biggs for use with Australian tertiary students and validated for use with students in several Asian countries.

Data regarding students' perceptions of LBL and a combination of LBL and PBL were further collected using a 13-point interview questionnaire. Responses from a Likert scale were calculated in percentages and considered in terms of a mean response and data from the qualitative responses coded in NVIVO and analyzed thematically. Also, 'tests scores' (assignments and final exam results - mostly problem questions) from a traditional LBL class were compared with the scores from a mixture of both LBL and PBL. Though

groups' means of both LBL and PBL were closer, the results combined with other indicators revealed that students studying the course through a combination of both lectures and PBL tutorials in a teaching session performed significantly better. This study recommended a cumulative dual approach to effective course delivering methods.

The current research work is related to the Ewang (2008) research work because it was conducted on traditional, lecture-based learning and problem-based learning in improving students' performance. But they differ entirely in the instrument for data collection and statistical tool used for analysis. The current study was carried out in Colleges of education in North-west, Nigeria while, the past study was carried out at Charles Sturt University, Australia.

The past researcher did not conduct any pilot test, having no specific objective(s) spelt out, failed to state the sample population and did not raise any null hypothesis, while the present research work conducted a pilot testing and ensured the reliability coefficient using Kuder Richardson Formula to measure reliability of the instrument, a sample population of 150 students' and will use mean, standard deviation for answering the 5 research questions and t-test and simple logistic regression to answer the 5 research hypotheses. However, the work was helpful to this current research work as it drew the attention of the researcher to some of the teaching strategies.

2.7 Summary of the Reviewed Literature

In this chapter, the theoretical framework which is constructivism teaching and learning theory on which the study will be anchored upon was discussed. Literature related to the study was reviewed and the review was done in stages. The literature on business education concepts was reviewed following different definitions from different authors. The literature on academic performance was reviewed. Students' academic performance has been defined in various ways by researchers. However, there is a general agreement among them that the performance of students has for long generated a lot of interest among educators, researchers, government officials, parents and the students themselves. The literature on methods of teaching was reviewed. The review shows that teaching methods are very significant in determining students' performance. Problem-solving and Cooperative teaching methods are reviewed by the researcher based on the opinion of different authors. Many researchers have reported that teaching methods if appropriately use have effects on students' academic performance in teaching and learning process.

The literature on concepts, historical and theory of Accounting was also reviewed. Accounting experts have pointed out that with any discipline or body of knowledge, some underlying theoretical structure is required if a logical and useful set of practices and procedures are to be developed in order to attain the goals of the accounting profession and for expanding knowledge in that field. The history and development of accounting have been traced to the Mesopotamians who began using clay tokens to represent goods such as animals, tools, food items, or units of grain, which helps in the keeping of records. Literature regarding the concepts of accounting profession was reviewed by the

researcher and this includes both accounting concepts and conventions such as; Business as an entity, Money measurement, Going concern, Accounting periodic/Time concepts, Historical cost, Dual aspect, Realisation concept, Matching concept, Accrual concept, Objectivity, Consistency convention, Conservation convention, and Materiality convention.

This study reviewed related literature from several research works in areas related to the present study. Notably among the reviews were that of the problem-based method on performance and retention of financial accounting in Technical Colleges, effects of a cooperative method to study home economics, cooperative and problem-solving methods to study business studies in junior secondary schools and cooperative method in teaching financial accounting in senior secondary schools. The reviews revealed that problem-solving and cooperative methods enhance students' performance in financial accounting, business studies, algebra and home economics in junior and senior secondary schools. It was discovered that based on the aforementioned review related literature, problem-solving and cooperative methods though successfully implemented in secondary schools has not been tested in Colleges of education in North-west Nigeria. It was also discovered that Manufacturing account as a topic of financial accounting has not been used to test the above-mentioned methods in colleges of education as there was no such evidence in the reviewed literature. It is in view of this that the researcher examined the effect of Problem-solving and Cooperative methods on business education students' performance in Financial accounting in Colleges of education in North-west Nigeria. This is the gap this study has filled.

CHAPTER THREE RESEARCH METHODOLOGY

This chapter outlines the methodology and procedure that was used in this study.

The chapter was organized under the following sub-headings:

- 3.1 Research Design
- 3.2 Population for the Study
- 3.3 Sample Size and Sampling Procedure
- 3.4 Instrument for Data Collection
 - 3.4.1 Validation of the Instrument
 - 3.4.2 Pilot Study
 - 3.4.3 Reliability of the Instrument
- 3.5 Procedure for Data Collection
- 3.6 Procedure for Data Analysis

3.1 Research Design

The research design employed was quasi-experimental design with pre-test, post-test, and control group. The design involved selecting groups upon which a variable is tested without any random selection (Richards 1981 as cited in Ado 2016). The design was therefore selected because the study involves experimental groups which lacks randomization for which the researcher used intact classes for the study.

3.2 Population for the Study

The population for the study was 1474 NCE II business education students for 2016/2017 academic session in Colleges of Education offering financial accounting in North-west Nigeria as shown in Table 1. This was because they are more conversant with the environment.

Table 1: Population for the Study

Name of the Colleges	No. of Students
–	
Federal College of Education (Technical), Bichi	144
Federal College of Education (Technical), Gusau	58
Federal College of Education, Kano	161
Federal College of Education, Katsina	110
Federal College Of Education, Zaria	153
Jigawa State College of Education, Gumel	165
Kaduna State College of Education, Gidan-Waya	319
Sa’adatu Rimi College of Education, Kumbotso	296
Shehu Shagari College of Education	68
Total	1474

Source: Field Study, (2017)

3.2 Sample Size and Sampling Procedure

The sample size was 153 NCE II Business Education students’ from Federal College of Education, Zaria, Nigeria. This was because quasi-experimental design suggested the use of intact class which lacks randomization. Reason for selecting FCE Zaria was that the college has adequate and functional instructional facilities with adequate and experienced staff.

The 153 students were divided into three different accounting groups by the department to be taught by different lecturers. The class was divided using their admission numbers serially. The first 51 students were named group ‘A’, the next 51

students that fall between 51 and 102 were named group ‘B’ while the last 51 students were named group ‘C’. Therefore, the researcher used those groups (A & B) for the experimental groups (Problem-Solving and Cooperative methods) and group ‘C’ for control group so as to satisfy the condition of intact class where everybody in the class must participate. The summary of the sample selection is presented in table 2.

Table 2: Sample Size for the Study

Groups	Treatment & Control Groups	Students’
Group A	Problem-solving teaching method	51
Group B	Cooperative teaching method	51
Group C	Lecture method (control group)	51
TOTAL:	153	

Source: Field study, (2017)

3.4 Instrument for Data Collection

The instruments for data collection were self-designed instructional package for financial accounting and Financial Accounting Achievement Test (FAAT). The instructional package for financial accounting comprised of a lesson plan on selected topics (Manufacturing Trading, Profit, and Loss Account) and presented using problem-solving teaching method (Appendices I-III), cooperative teaching method (Appendices IV-VI), and lecture teaching method (Control group) Appendices VII-IX. The lesson plan served as a guide that directed the researcher on how treatment was to be carried out within the time frame.

The FAAT was administered to the groups during pre-test and post-test. Both pre-test and post-test contained exercises in financial accounting. The exercises consist of two theory questions on the topic manufacturing account. The administration of the pre-test questions (Appendix II) and answers (Appendix III) lasted for 1 hour and was

conducted in order to determine the entrance behavior of the students before treatment began. Also, the post-test questions on the topic (Manufacturing Account) as in (Appendix IV) with answers in (Appendix V) were administered at the end of the treatment exercise. The instrument was scored 100% as divided thus; Question 1 carried 20 marks (options; 'a' 5 marks, 'b' 5 marks and 'c' 10 marks while in question 2, each correct entry and balance scored 1 mark and the headings equally carried 1 mark making a total of 80 marks for question two.

3.4.1 Validation of the Instrument

The instruments designed (IPFA and FAAT) was subjected to face and content validity for it to be consistent and fit for use in gathering data from the respondents. The instruments were scrutinized and vetted by the researcher's supervisors from the Department of Vocational and Technical Education and three (3) research experts of not below the rank of a senior lecturer from the Department of Educational Foundation and Curriculum, Faculty of Education, Ahmadu Bello University, Zaria. Suggested modifications on the test items were effected before the test was administered to students in the selected College of Education. Some of the corrections made were grammatical errors, spelling errors and ascertaining the content of the instruments. This support the view of Berg (1995) in Olarinoye (2015) who stated that any research instrument to ascertain its validity should be given to a panel of experts to determine if its items (contents) can elicit the desired data they are intended to elicit and this in essence is to ensure its content validity and also to ensure that necessary adjustments were made thereafter.

3.4.2 Pilot Study

In a bid to establish the reliability and consistency of the (FAAT), a pilot study was conducted using thirty (30) students of NCE II business education departments, Federal College of Education Kano. The conduct of the study was to enable the researcher to ascertain the possibility of any difficulty that may arise in the course of this study. The College was selected because its population has the same characteristics as that of the college under study.

3.4.3 Reliability of the Instrument

The split-half method was used in testing the test items. The data collected from the pilot study was subjected to statistical analysis using Kuder Richardson formula 20. Kuder-Richardson formula 20 is used to measure reliability for a test with binary variables (i.e. answers that are right or wrong). The method was selected because, according to Uzoagulu (2011), "Kuder Richardson Formula is used when administering a single form of test to a group of test takers". The reliability coefficient calculated was 0.73. This reliability coefficient was high and, therefore the instrument was adjudged stable and reliable as postulated by Olayiwola, (2007) that "a reliability estimate of 0.65 and above is good". Therefore this test instrument was termed as reliable

3.5 Procedure for Data Collection

The researcher collected an introductory letter as in (Appendix I) from the Department of Vocational and Technical Education Ahmadu Bello University, Zaria, for identification. The lecture period lasted for five (5) weeks using three (3) hours per week. 1 hour was used for each group. The lessons were from 8-9am for group 'A' (problem-solving method), 9-10am for group 'B' (Cooperative method) every Monday and every Tuesday from 10-11am for group 'C' (Lecture method) for the period of five weeks. The

first one week was used for introduction, familiarity and creating a rapport between the researcher and the students after which a pre-test was administered as in (Appendix G). The pre-test scores served as a basis for determining students' performance and level of understanding in financial accounting before treatment began. The researcher used the next three weeks for effective supervision and guidance of the experimental groups and then the post-test was conducted in the fifth week. The experimental groups were taught manufacturing account using problem-solving and cooperative methods while the control group was taught using lecture teaching method.

In the second week, students learned the meaning of manufacturing account, items that made up manufacturing, trading and profit and loss account using its format. In the third week, students learned how to prepare manufacturing account. In the fourth week, students learned how to prepare manufacturing, trading and profit and loss account and a balance sheet. Lastly, in the fifth week, post-test was administered (Appendix IV) to the three groups and marked by the researcher using the marking scheme (Appendix V).

3.6 Procedure for Data Analysis

Data collected was coded and analyzed with respect to the five (5) research questions using mean and standard deviation. Null hypotheses I and II were tested using Simple Logistic Regression (SLR). Null hypotheses III-V were tested using t-test. The t-test was selected to establish difference in accordance with the recommendation by Christian (2012) in Ado (2016) who stated that t-test is the best parametric statistical tool used to test a null hypothesis about the difference between two groups. All the null

hypotheses were tested at an alpha level of 0.05 ($P \leq 0.05$) in order to either accept or reject the hypotheses.

Decision Rule:

Any mean score between 50% and above indicated good performance while, any mean score below 50% indicate poor performance.

Null hypotheses: All the null hypotheses would be rejected when the calculated value is less than the alpha value otherwise it would be accepted.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

In this chapter, the researcher presented the results of data collected for analysis and discussion. The presentation was done under the following headings:

- 4.1 Answers to research questions
- 4.2 Testing of the Null Hypotheses
- 4.3 Summary of Major Findings
- 4.4 Discussions of Major Findings

4.1 Answers to Research Questions

Research question one: What is the effect of problem-solving method on business education students' performance in financial accounting in Colleges of education in North-west Nigeria?

The analysis of data used to answer research question one is shown in table 3

Table 3: Mean and standard deviation showing effect of problem solving method on academic performance of business education students' in financial accounting in colleges of education in North-west Nigeria

Variable	N	\bar{x}	SD	Mean Difference
Problem solving method	51	57.35	15.247	4.37
Conventional method	51	52.98	12.330	

Source: Field Study, (2017)

The study results in Table 3 showed the effect of problem solving method on academic performance of students in financial accounting. The analysis revealed a mean score of 57.35 and standard deviation of 15.247 of students taught financial accounting using problem solving method. The mean score of 52.98 and a standard deviation of 12.330 for students taught conventional method. This indicated a

mean difference of 4.37 showing that problem solving method had more effect on students' academic performance in financial accounting over the conventional method. Therefore, it can be infer that problem solving method can be more effective in teaching financial accounting in colleges of education in North-West Nigeria than the conventional method.

Research question two: What is the effect of Cooperative method on business education students' performance in financial accounting in Colleges of education in North-west Nigeria?

The analysis of data used to answer research question two is shown in table 4

Table 4: Mean and standard deviation showing effect of cooperative method on academic performance of business education students' in financial accounting in colleges of education in North-west Nigeria

Variable	N	\bar{x}	SD.	Mean Difference
cooperative method	51	68.00	18.365	15.02
Conventional method	51	52.98	12.330	

Source: Field Study, (2017)

The results of Table 4 showed the effect of cooperative method on academic performance of students in financial accounting. The analysis revealed a mean score of 68.00 and standard deviation of 18.365 of students taught financial accounting using cooperative method, and a mean score of 52.98 and a standard deviation of 12.330 for students taught using conventional method. This indicated a mean difference of 15.02 showing that cooperative method had more effect on students' academic performance in financial accounting over the conventional method. Therefore, it is concluded that cooperative method is likely to be more effective in

teaching financial accounting in colleges of education in North-west Nigeria than the conventional method.

Research question three: What is the difference in the mean performance of students taught financial accounting using problem-solving method, and those taught using Cooperative teaching method in Colleges of education in North-west Nigeria?

The analysis of data used to answer research question three is shown in table 5

Table 5: Mean and standard deviation showing performances of students taught financial accounting using problem-solving method and those taught using cooperative method in Colleges of education in North-west Nigeria

Variable	N	\bar{x}	SD	Mean Difference
Problem solving method	51	57.35	15.247	10.65
Cooperative method	51	68.00	18.365	

Source: Field Study, (2017)

The results of Table 5 showed the effect of problem solving method and cooperative method on academic performance of students in financial accounting. The analysis revealed a mean score of 57.35 and standard deviation of 15.247 of students taught financial accounting using problem solving method, and a mean score of 68.00 and standard deviation of 18.365 for students taught using cooperative method. This indicated a mean difference of 10.65 showing that cooperative method had more effect on students' academic performance in financial accounting over the problem solving method. Therefore, it is concluded that cooperative method is more likely to be effective in teaching financial accounting in colleges of education in North-West Nigeria than the problem solving method.

Research question four: What is the difference in the mean performance of male and female business education students taught Financial Accounting using problem-solving method in Colleges of education in North-west Nigeria?

The analysis of data used to answer research question four is shown in table 6

Table 6: Mean and standard deviation showing performance of male and female business education students taught financial accounting using problem-solving method in Colleges of education in North-west Nigeria

Model	N	\bar{x}	SD	Mean Difference
Problem solving (Male)	22	51.00	10.291	11.17
Problem solving (female)	29	62.17	16.731	

Source: Field Study, (2017)

The results of Table 6 showed the effect of problem solving method on academic performance of male and female students in financial accounting. The analysis revealed a mean score of 51.00 and standard deviation of 10.291 of male students taught financial accounting using problem solving method, and a mean score of 62.17 and standard deviation of 16.731 for female students taught using problem solving method. This indicated a mean difference of 11.17 showing that female students' academic performance was better when taught financial accounting using problem solving method. Therefore, it could be inferred that problem solving method is more likely to be effective in teaching financial accounting for female students in colleges of education in North-West Nigeria than their male counterparts.

Research question five: What is the difference in the mean performance of male and female business education students taught Financial Accounting using the Cooperative method in Colleges of education in North-west Nigeria?

The analysis of data used to answer research question five is shown in table 7

Table 7: Mean and standard deviation showing the performance of male and female business education students taught financial accounting using the cooperative method in Colleges of education in North-west Nigeria

Model	N	\bar{x}	SD	Mean Difference
Cooperative (Male)	17	71.88	19.576	5.82
Cooperative (female)	34	66.06	17.708	

Source: Field Study, (2017)

The results of Table 7 showed the effect of the cooperative method on the academic performance of male and female students in financial accounting. The analysis revealed a mean score of 71.88 and standard deviation of 19.576 of male students taught financial accounting using the cooperative method, and a mean score of 66.06 and standard deviation of 16.731 for female students taught using problem-solving method. This indicated a mean difference of 17.708 showing that male students' academic performance was better when taught financial accounting using the cooperative method. Therefore, it could infer that cooperative method is more likely to be effective in teaching financial accounting for male students in colleges of education in North-west Nigeria than their female counterparts.

4.2 Test of hypotheses

Ho: Hypothesis one: There is no significant effect of the problem-solving method on business education students' performance in financial accounting in Colleges of education in North-west Nigeria

Regression analysis used to test null hypothesis one is shown in table 8

Table 8: Regression analysis showing effects of the Problem-solving method on business education students' academic performance in financial accounting in Colleges of education in North-west Nigeria

Model	β	SE	T	R ²	Adj. R ²	Sig.
Constant	55.421	6.842	-	0.482	0.479	0.000
Problem solving method	1.053	0.115	9.157			0.000

P<0.05

Source: Field Study, (2017)

The regression analysis on Table 8 was to determine the effect of the problem-solving method on business education students' academic performance in financial accounting. The result revealed a constant beta value of 55.421. The coefficient of determination for problem-solving method was 1.053. The study results indicate that one unit increase in the teaching of financial accounting using problem-solving will increase students' academic performance in financial accounting by 1.053 or 105%. The result further indicated that the effect of problem-solving method on students' performance in financial accounting had been explained by a variance of 48% (Adj. R² 0.479). The $P \leq 0.000$ was less than α at 0.05 level of significance. This study result implies that problem solving method statistically and significantly had effect on students' academic performance in financial accounting in colleges of education in North-west Nigeria. Hence, the null hypothesis which states that there is no significant effect of the problem-solving method on financial accounting students' performance in Colleges of education in North-west Nigeria was rejected.

Ho: Hypothesis two: There is no significant effect of the Cooperative method on business education students' performance in financial accounting in Colleges of education in North-west Nigeria.

Regression analysis used to test null hypothesis two is shown in table 9

Table 9: Regression analysis showing effects of the cooperative method on business education students' academic performance in financial accounting in Colleges of education in North-west Nigeria

Model	β	SE	T	R^2	Adj. R^2	Sig.
Constant	53.476	6.751	7.922	0.548	0.540	0.000
Cooperative method	2.077	0.096	21.635			0.000

P<0.05

Source: Field Study, (2017)

The regression analysis on Table 9 was to determine the effect of the cooperative method on students' academic performance in financial accounting. The result revealed a constant beta value of 53.476. The coefficient of determination for the cooperative method was 2.077. The study results indicate that one unit increase in the teaching of financial accounting using cooperative method will increase students' academic performance in financial accounting by 2.077 or 208%. The result further indicated that the effect of the cooperative method on students' performance in financial accounting had been explained by a variance of 54% (Adj. R^2 0.540). The $P \leq 0.000$ was less than α at 0.05 level of significance. This study result implies that cooperative method statistically and significantly had effect on students' academic performance in financial accounting in colleges of education in North-west Nigeria. Hence, the null hypothesis which states that there is no significant effect of the cooperative method on financial accounting students' performance in Colleges of education in North-west Nigeria was rejected.

Ho: Hypothesis three: There is no significant difference in the mean performance of business education students' taught financial accounting using the problem-solving method and those taught using Cooperative method in Colleges of education in North-west Nigeria.

The t-test analysis used to test null hypothesis three is shown in table 10

Table 10: t-test analysis showing difference in performance of students taught financial accounting using problem-solving method and those taught using the cooperative method in Colleges of education in North-west Nigeria

Variable	\bar{x}	SD	Df	t-cal	Sig. (2 tailed)
Problem solving method	57.35	15.247	50	26.863	0.000
Cooperative method	68.00	18.365	50	26.442	0.000

P<0.05

Source: Field Study, (2017)

In Table 10, an independent sample t-test was conducted to compare the difference in the mean performance of students taught financial accounting using problem-solving method and those taught using the cooperative method. The analysis revealed that the mean (57.35) and standard deviation (15.247) for problem-solving method was lower than the mean (68.00) and standard deviation (18.365) for cooperative method with a degree of freedom at 50 respectively. The t value (26.863 and 26.442 respectively) calculated with a p-value of (0.000) which was lower than the *a priori* significant α value of 0.05. The result, therefore, shows a significant difference between the mean performances of students taught financial accounting using problem-solving method and those taught using cooperative method. Hence, the null hypothesis which states that there is no significant difference in the mean performance of business education students' taught financial accounting using the problem-solving method and those taught using Cooperative method in Colleges of Education in North-West Nigeria was rejected.

Ho: Hypothesis four: There is no significant difference in the mean performance of male and female business education students' taught financial accounting using the problem-solving method in Colleges of education in North-west Nigeria.

The t-test analysis used to test null hypothesis four is shown in table 11

Table 11: The t-test analysis showing difference in performance of male and female students taught financial accounting using problem-solving method in Colleges of education in North-west Nigeria

Variable	\bar{x}	SD	Df	t-cal	Sig. (2 tailed)
Male students	51.00	10.291	21	23.245	0.000
Female students	62.17	16.731	28	20.011	0.000

P<0.05

Source: Field Study, (2017)

In Table 11, an independent sample t-test was conducted to compare the difference in the mean performance of male and female students taught financial accounting using the problem-solving method. The analysis revealed that the mean (51.00) and standard deviation (10.291) for male students was lower than the mean (62.17) and standard deviation (16.731) for female students with a degree of freedom at 21 and 28 respectively. The t value (23.245 and 20.011 respectively) calculated with a p-value of (0.000) which was lower than the *prior* significant α value of 0.05. The result, therefore, shows a significant difference between the mean performances of male and female students taught financial accounting using problem-solving method in favour of female students. Hence, the null hypothesis which states that there is no significant difference in the mean performance of male and female business education students' taught financial accounting using the problem-solving method in Colleges of Education in North-West Nigeria was rejected.

Ho: Hypothesis five: There is no significant difference in the mean performance of male and female business education students' taught financial accounting using the cooperativemethod in Colleges of education in North-west Nigeria.

The t-test analysis used to test null hypothesis five is shown in table 12

Table 12: The t-test analysis showing difference in performance of male and female students taught financial accounting using the cooperative method in Colleges of education in North-west Nigeria

Variable	\bar{x}	SD	Df	t-cal	Sig. (2 tailed)
Male students	71.88	19.576	16	15.140	0.000
Female students	66.06	17.708	33	21.752	0.000

P<0.05

Source: Field Study, (2017)

In Table 12, an independent sample t-test was conducted to compare the difference in the mean performance of male and female students taught financial accounting using the cooperative method. The analysis revealed that the mean (71.88) and standard deviation (19.576) for male students was higher than the mean (66.06) and standard deviation (17.708) for female students with a degree of freedom at 16 and 33 respectively. The t value (15.140 and 21.752 respectively) calculated with a p-value of (0.000) which was lower than the *a priori* significant α value of 0.05. The result, therefore, shows a significant difference between the mean performances of male and female students taught financial accounting using the cooperative method in favour of male students. Hence, the null hypothesis which states that there is no significant difference in the mean performance of male and female business education students' taught financial accounting using the Cooperative method in Colleges of Education in North-West Nigeria was rejected.

4.3 Summary of Major Findings

2. The result of research question one and null hypothesis one revealed that problem-solving method had a significant effect on students' academic performance in financial accounting with a mean of **57.35** and $p \leq 0.000$. The result indicated a single unit increase of the regression coefficient to improve students' performance in financial accounting using problem-solving method (1.053 or 105%).

3. The result of research question two and null hypothesis two indicated that cooperative method had a significant effect on students' academic performance in financial accounting with a mean of 68.00 and $p \leq 0.000$. The result further revealed that one unit increase in teaching financial accounting using cooperative method increases students' academic performance (2.077 or 208%).
4. **The result from research question three and null hypothesis three revealed that significant difference exists between the mean academic performance of students taught financial accounting using the problem-solving method and cooperative method with mean values of 57.35 and 68.00 respectively. The mean difference was found to be 10.65 in favour of the cooperative method with a $p \leq 0.000 \alpha$ at 0.05 level of significance.**
5. **The result from research question four and null hypothesis four revealed that significant difference exists between the mean academic performance of male and female students taught financial accounting using the problem-solving method with mean values of 51.00 and 62.17 respectively. The mean difference was 11.17 in favour of female students with a $p \leq 0.000 \alpha$ at 0.05 level of significance.**
6. **The result from research question four and null hypothesis four revealed that significant difference exists between the mean academic performance of male and female students taught financial accounting using the cooperative method with mean values of 71.88 and 66.06 respectively. The mean difference was 5.82 in favour of male students with a $p \leq 0.000 \alpha$ at 0.05 level of significance.**

4.4 Discussions of Major Findings

The study results revealed that problem-solving method had a significant effect on students' academic performance in financial accounting over conventional method with a mean of **57.35** with $p \leq 0.000$ α at 0.05 level of significance. This finding is in agreement with Eze, Ezenwafor, and Obidile (2016), who observed that students' taught financial accounting using problem-solving method perform better with higher post-test scores than those taught using lecture method. Also, based on their findings, it was concluded that problem-solving method has the potential to improve students' academic performance and retention in financial accounting. Ajai, Imoko, and O'kwu (2013), also affirmed that students' taught using problem-solving method achieved significantly higher than those taught using the conventional method because of its meaningful context in learning.

In contrary, Yavuz (2008) asserted that Students who were taught by problem-solving method understood that solving problems is a hard and difficult work thereby resulting in poor academic performance. On the other hand, students taught using lecture method did not recognize the difficulty of problem-solving thereby resulting in good performance. The findings further revealed that students' taught using problem-solving thought that they had to think twice before solving a problem, while those taught using lecture method thought they could easily solve problems. That result was supported by Kloosterman (2009), that connection with the students' beliefs and motivation are not as strong as it is believed. The result shows that the experimental group students' attitude toward problem-solving changed in a negative way after they learned how to solve a real problem. Their behaviors changed at the end of the experiment. Experimental group students did not want to solve problems anymore. Their

decision was in that way if they would solve a problem, they had to think too much and undergo a long process.

The study results also revealed that cooperative method had significant effect on students' academic performance in financial accounting over conventional method with a mean of 68.00 with $p \leq 0.000$ α at 0.05 level of significance. This is in line with Gokhan (2010), whose finding affirmed that theoretical and practical skills of students who are exposed to the cooperative learning improve greater than those of the students who were exposed to the traditional learning. In addition, Moore (2008) showed that after a classroom lecture by teachers, students were only able to retain 5% of the information presented and after a classroom demonstration by the teacher students were only able to retain 30% of the information both after 24 hours, but when co-operative learning was used students were able to retain 75% to 90% of the material after 24 hrs.

Mutuah (2014) also found that cooperative learning method is the most effective method of teaching because it promotes students' teamwork, competence and improves their learning effectiveness. Majoka, Khan, and Shah (2011), affirmed that cooperative learning method enhanced the students' ability to learn and that it has proved to be more effective than the traditional method for students labeled as high and average achievers. In support to these studies such as Abdul Ralin and Shakel (2009), Atencio (2008), and Lui (2009) all revealed that co-operative learning significantly improves achievement of students in various school subjects.

Moreover, the outcome of this study indicated that **cooperative method is more effective in teaching financial accounting in colleges of education in North-West**

Nigeria than the problem-solving method given the mean achievement scores of 68.00 and 57.35 respectively.

This is in agreement with Keramati (2010) who investigated the effect of cooperative learning and problem-solving methods on the academic achievement of students in Physics and result shared a clear significant difference in mean scores of 57.5 and 42.3 in favor of the cooperative method. Similarly, Van Dart Tran (2014) also investigated the effect of co-operative learning and problem-based learning on the achievement and knowledge retention of 110 first grade primary education students in Psychology. After eight weeks of instruction, the result showed that those who were instructed using co-operative strategy achieved significantly higher scores in the achievement and knowledge retention than those who were instructed with problem-based learning teaching.

Christian (2012) assessed the effect of co-operative and individualized learning strategies of students achievement in Chemistry, revealed that there was a significant difference in mean scores in favor of the co operative learning strategy. Based on the finding of the study, it is therefore concluded that co-operative learning strategy enhances achievement by helping students comprehend properly; this finding is not saying that teachers should abandon problem-solving method, rather co-operative strategy should be used to complement another instructional model to enhance students' interest.

The results of this study further show that there was a significant difference in the mean performance of male and female students taught financial accounting using problem-solving method in favor of female students with mean academic scores of 51.00 and 62.17 respectively. This in line with Akinbobola (2008), who affirmed that problem-

solving strategy, is more effective in learning financial accounting because it helps to improve student achievement and retention, increase self-esteem and intrinsic motivation and develop a more positive attitude towards learning skills and social skills. He also affirmed that female students performed significantly better than their male counterparts in learning with problem learning strategy with a mean score of 50.21 and 47.34 respectively.

In contrary, Ajaja & Eravewoke (2010) who found in his studies at various times, that male students achieved significantly better than female students in commercial subjects. Awoderu (2006) asserted that performance of male students under problem-based learning method was found high with about 60% than their female counterparts who were not because male students preferred instructional methods which are learner-centered and involved teamwork competence than any other method.

The results of this study further show that there was a significant difference in the mean academic performance of male and female students taught financial accounting using the cooperative method in favor of male students with mean academic scores of 71.88 and 66.06 respectively. In line with this finding, Kolawole (2007) in his study found that male students performed better than female students in the cognitive, affective and psychomotor skill achievements when taught using the cooperative method.

Wan-Ling & Yang-Chih (2010) asserted that gender had an obvious effect on students' cooperative learning attitude. In addition, after being taught financial accounting using cooperative learning method, both male and female groups showed obvious improvement in teamwork competence and learning achievement. Although, cooperative method influence both male and female students' but the performance of

male students' was improved in terms of cooperative learning attitude, problem-solving attitude and teamwork with a mean score of 52.4 while female students' scores 46.8.

In contrary, Mobark (2014) found in his study that there was no significant difference in academic performance of male and female students at the pretest, posttest, and delayed posttest levels respectively. He further asserted that competing with others is the predominant motivation, and this perhaps may be the reason why no significant difference was found in the academic performance between male and female students taught extensively by cooperative learning strategy. Based on his findings, it was concluded that there are no gender difference in students' academic performance when students are taught through cooperative learning strategy.

CHAPTER FIVE

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

This chapter was presented under the following sub-headings;-

- 6.1 Summary
- 6.2 Contributions to Knowledge
- 6.3 Conclusion
- 6.4 Recommendations
- 6.5 Suggestions for further study

5.1 Summary

The major objective of this research was to assess the effects of problem-solving and cooperative methods on business education students' performance in financial accounting in colleges of education in North-west Nigeria. Quasi-experimental research design was adopted using pre-test post-test and control group method. The study had five specific objectives, five research questions, and five null hypotheses to guide the researcher. The study made use of 51 students in an intact class and 51 students in a control class to collect the data for the study. The data collection lasted for about six weeks in which the pre-test, treatment and post-test exercises were conducted. In data analysis mean scores were used to express the students' academic performances and to answer all the research questions, regression analysis was used to test the null hypotheses 1 and 2 while t-test statistics were used to test null hypotheses 3, 4 and 5. All the null hypotheses were tested at 5% level of significance ($p= 0.05$).

The study findings on research question one and hypothesis one revealed that the mean academic scores and standard deviation of the problem-solving method (57.35 and

15.247) were higher than that of the conventional method (52.98 and 12.330). Yet, the mean difference (4.37) was in favour of problem solving method and the calculated $p \leq 0.000$ α at ≥ 0.05 level of significance, thus, the null hypothesis which states that there is no significant effect of problem-solving method on business education students' performance in financial accounting in Colleges of education in North-west Nigeria was rejected.

The study findings on research question two and hypothesis two revealed that the mean academic scores and standard deviations of the cooperative method (68.00 and 18.365) were higher than that the conventional method (52.98 and 12.330). Yet, the mean difference (15.02) in favour of the cooperative method and the calculated $p \leq 0.000$ α at ≥ 0.05 level of significance, thus, the null hypothesis which states that there is no significant effect of the cooperative method on business education students' performance in financial accounting in colleges of education in North-west Nigeria was rejected.

Study findings on research question three and hypothesis three indicated that the mean academic scores and standard deviations of problem-solving method (57.35 and 15.247) were lower than that of the cooperative method (68.00 and 18.365). The mean difference between the two methods was **10.65** in favour of cooperative method and the calculated $p \leq 0.000$ α at ≥ 0.05 level of significance, thus, the null hypothesis which states that there is no significant difference in the mean performance of business education students taught financial accounting using problem-solving method and those taught using cooperative method in colleges of education in North-west Nigeria was rejected.

Study findings on research question four and hypothesis four indicated that the mean academic scores and standard deviations of male students (51.00 and 10.291) were

lower than that of the female students (62.17 and 16.731) taught financial accounting using problem-solving. The mean difference between the two group of students was 11.17 in favour of female students and the calculated $p \leq 0.000$ α at ≥ 0.05 level of significance, thus, the null hypothesis which states that there is no significant difference in the mean performance of male and female business education students taught financial accounting using problem-solving method in colleges of education in North-west Nigeria was rejected.

Study findings on research question five and hypothesis five indicated that the mean academic scores and standard deviations of male students (71.88 and 19.576) was higher than that of the female students (66.06 and 17.708) taught financial accounting using the cooperative method. The mean difference between the two group of students was 5.82 in favour of female students and the calculated $p \leq 0.000$ α at ≥ 0.05 level of significance, thus, the null hypothesis which states that there is no significant difference in the mean performance of male and female business education students taught financial accounting using cooperative method in colleges of education in North-West Nigeria was rejected.

5.2 Contribution to Knowledge

1. Problem-solving method had a more significant effect than a conventional method on business education students' performance in financial accounting ($p=0.000$).
2. Cooperative method had a more significant effect than a conventional method on business education students' performance in financial accounting ($p=0.000$).
3. Cooperative method had a more significant effect than a problem-solving method on business education students' performance in financial accounting ($p=0.000$).

4. Female students performed significantly better than their male students' counterpart when taught financial accounting using problem-solving method with a mean difference of **11.17** and a calculated $p \leq 0.000$ α at **0.05 level of significance**.
5. Male students performed significantly better than their female students' counterpart when taught financial accounting using the cooperative method with a mean difference of a **5.82** and a calculated $p \leq 0.000$ α at **0.05 level of significance**.

5.3 Conclusion

Based on the outcome of this research work, the findings revealed that the two methods (problem-solving and cooperative) had positively affected students' performance in financial accounting. This is so because both methods had proved to be better techniques compared to conventional method. If this is the case, it could be concluded that students' taught accounting using the two methods are capable of earning good grades, gaining employment opportunities and admission into universities. It will also make them competent and productive members of the society after graduation.

5.4 Recommendations

Based on the outcome of the study, the following recommendations were made.

1. In order to make students learn and understand financial accounting, they should be occasionally encouraged to participate in group work, so that before they are taught, they will be able to in their own ways practiced financially related exercises.

2. In order to promote the use of both problem-solving method and particularly cooperative method in teaching financial accounting effectively, government and colleges of education through the NCCE and federal or states ministries of education should be implored to give enough grants to procure equipment and facilities necessary for using the two methods.
3. Specifically, cooperative teaching method should be incorporated in the new curriculum to supplement existing methodology in order to enhance students understanding and linking of concepts. This will go a long way in organizing an in-service teachers education programs, workshops and seminars to prepare teachers with respect to its philosophical, social, historical, objectives, theoretical and practical usage.

5.5 Suggestions for Further Studies

1. Effects of problem-solving and cooperative teaching methods on the academic performance of business Education students in financial accounting in Nigerian Universities need to be studied.
2. A survey research design can be adopted to explore the opinions of business education students on the influence of using problem-solving and cooperative teaching methods on their attitudes to financial accounting class.

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APPENDIX I



DEPARTMENT OF VOCATIONAL & TECHNICAL EDUCATION

AHMADU BELLO UNIVERSITY ZARIA, NIGERIA.

FACULTY OF EDUCATION

VICE CHANCELLOR: **Prof. Ibrahim Garba** (B.Sc., M.Sc. (ABU) Ph.D (London) D.I.C)

Telephone: 069-51755, 50692

HEAD OF DEPARTMENT: **Dr. E.E. Adamu**, OND (Kad Poly), B.Sc (Hons) ISU (USA) PGDE (ABU) M.ED (ABU) Ph.D. (ABU)

28th September, 2016

Your Ref: _____
P15EDVE8017

Date: _____

Our Ref: _____

Letter of Introduction

SAMUEL SAHU SAKANAS - P15EDVE8017

This is to certify that the above mentioned name is a Postgraduate student M.Ed (Business Education) in the Department of Vocational and Technical Education, Faculty of Education, Ahmadu Bello University, Zaria, carrying out a research topic; ***Influence of Problem Solving and Lecture Teaching Methods on Accounting Students Performance in Colleges of Education in North –West Geo-Political Zone, Nigeria.***

Please, kindly give him every assistance he may require.



Professor E.E. Adamu
HEAD OF DEPARTMENT

APPENDIX II

FINANCIAL ACCOUNTING ACHIEVEMENT TEST (FAAT)

PRE-TEST QUESTIONS

Question 1a. What is manufacturing account?

b. Mention four items found in a manufacturing account.

c. Explain the following types of cost:

i. Prime cost

ii. Factory overhead cost

Question 2. The following are balances extracted from the Manufacturing

Company of Mifi Ltd. for the year ended 31st December, 2015.

	₦
Sundry debtors	12,650
Sundry creditors	9,820
Purchase of raw materials	29,470
Factory lighting and cooling	2,885
Bank balance	71,316
Stock on 1/1/2015:	
Raw materials	5,360
Work in progress	4,972
Finished goods	16,295
Factory insurance	1,820
Rent	21,600

Cash in hand	3,751
Capital	296,180
Office insurance	550
Sales of finished goods	141,661
Drawings	2,500
Returns on raw materials	1,373
Bad debts	729
Stationery	1,586
Plant and machinery	225,066
Returns of finished goods	1,493
Provision for bad debts	308
Factory wages	13,582
Stock on 31 st December 2015:	
Raw materials	8,619
Work in progress	3,664
Finished goods	11,570
Furniture	38,420
Selling and admin expenses	2,174
Office electricity	1,569
Bank loan	75,000
Office salaries	9,629
Delivery vans	56,925
Additional information:	

- i. Interest is due on the bank loan at 5%
- ii. One third of the rent is to be allocated to the factory.
- iii. Provision for bad debts is to be 2% of the debtors
- iv. Depreciation is to be written off the plant and machinery at 2½% and at 5% on delivery vans and furniture.

You are required to prepare:

- Manufacturing, trading, profit and loss account for the year ended 31st December 2015
- Balance sheet as at that date

APPENDIX III

PRE-TEST MARKING SCHEME

- 1a. Manufacturing account is that type of account prepared to ascertain the cost of goods manufactured during the financial year. It is prepared to show the components of the cost of goods produced. It is also an extension of the trading account. 5 marks
- 1b. The items that can be found in the manufacturing account are as follows:
- stocks of raw material,
 - work in progress
 - Prime cost
 - factory overhead cost and
 - manufacturing wages. 5 marks
- c. Prime cost is an expense that can be traced directly to a particular production unit. They are directly related to the manufacturing process such as; direct materials, direct labour, direct expenses and other direct expenditure. 5 marks
- Factory overheads are expenditures incurred in running the factory which cannot be traced to a particular production unit. They are indirect costs consumed during production processes. Examples are; factory rent and rates, depreciation of plant and machinery, indirect wages upkeep of factory building etc. 5 marks

Q2.

MIFI NIGERIA LTD

Manufacturing Trading profit and Loss Account for the year ended 31st December, 2015

	₦	₦		₦
Opening stock of R/materials		5,360	Market value of gds produced	57,260
Add Purchase of R/materials	29,470			
Less Returns of R/materials	<u>1,373</u>	<u>28,097</u>		
		33,457		
Less closing stocks of R/m		8,619		
Cost of R/materials consumed		24,838		
Factory wages		<u>13,582</u>		
Prime cost		38,420		
Add factory overheads				
Factory lighting and cooling	2,885			
Factory insurance	1,820			
Factory rent	7,200			
Depn of plant and machinery	<u>5,627</u>	<u>17,532</u>		
		55,952		
Add opening stock w.i.p.		<u>4,972</u>		
		60,924		
Less closing stock w.i.p.		<u>3,664</u>		
Cost of Production		<u>57,260</u>		<u>57,260</u>
Opening stock of F/goods		16,295	Sales	141,661
Add cost of production		<u>57,260</u>	Less Returns inwards	<u>1,493</u> 140,168
		73,555		
Less closing stock of F/goods		<u>11,570</u>		
		61,985		
Gross profit		<u>78,183</u>		
		<u>140,168</u>		<u>140,168</u>
Expenses				
Selling and admin		2,174	Gross profit b/d	78,183
Office rent		14,400	Reduction in prov. for b/debts	<u>55</u>
Bad debts		729		78,238
Stationery		1,586		
Office electricity		1,569		
Interest on loan		3,750		
Office salaries		9,629		
Office insurance		550		

Depreciation:		
Delivery van	2,846	
Furniture	1,921	
Net profit	<u>39,084</u>	
	<u>78,238</u>	<u>78,238</u>

BALANCE SHEET AS AT 31ST DECEMBER 2015

₦

₦

Capital	296,180	Fixed assets		
Add net profit	<u>39,084</u>	Plant and machinery	225,066	
		Less depreciation	<u>5,627</u>	219,439
335,264		Delivery van	56,925	
Less Drawings	<u>2,500</u>	Less depreciation	2,846	54,079
32,764		Furniture	38,420	
Current Liabilities		Less depreciation	<u>1,921</u>	<u>36,499</u>
Bank loan	75,000			310,017
Accrued Int. on loan	3,750	Current assets		
Creditors	<u>9,820</u>	Stock of raw materials	8,619	
		Stock of work in progress	3,664	
		Stock of finished goods	11,570	
		Bank balance	71,316	
		Cash balance	3,751	
		Debtor	12,650	
		Less provision	<u>253</u>	<u>111,317</u>
				<u>421,334</u>
<u>421,334</u>				

Each correct entry including the headings carries 1 mark

Manufacturing trading, profit and loss account has 49 entries and balances totaling = 49marks

Balance sheet has 31 entries and balances including the heading totaling = 31marks

80mark

APPENDIX IV

FINANCIAL ACCOUNTING ACHIEVEMENT TEST (FAAT)

POST-TEST QUESTIONS

Question 1a. What is manufacturing account?

- b. Mention four items found in a manufacturing account.
- c. Explain the following types of cost:
 - i. Prime cost
 - ii. Factory overhead cost

Question 2. The following are balances extracted from the Manufacturing Company of Mifi Ltd. for the year ended 31st December 2015.

	₦
Sundry debtors	12,650
Sundry creditors	9,820
Purchase of raw materials	29,470
Factory lighting and cooling	2,885
Bank balance	71,316
Stock on 1/1/2015:	
Raw materials	5,360
Work in progress	4,972
Finished goods	16,295
Factory insurance	1,820
Rent	21,600

Cash in hand	3,751
Capital	296,180
Office insurance	550
Sales of finished goods	141,661
Drawings	2,500
Returns on raw materials	1,373
Bad debts	729
Stationery	1,586
Plant and machinery	225,066
Returns of finished goods	1,493
Provision for bad debts	308
Factory wages	13,582
Stock on 31 st December 2015:	
Raw materials	8,619
Work in progress	3,664
Finished goods	11,570
Furniture	38,420
Selling and admin expenses	2,174
Office electricity	1,569
Bank loan	75,000
Office salaries	9,629
Delivery vans	56,925
Additional information:	

- v. Interest is due on the bank loan at 5%
- vi. One third of the rent is to be allocated to the factory.
- vii. Provision for bad debts is to be 2% of the debtors
- viii. Depreciation is to be written off the plant and machinery at 2½% and at 5% on delivery vans and furniture.

You are required to prepare:

- Manufacturing, trading, profit and loss account for the year ended 31st December 2015
- Balance sheet as at that date

APPENDIX V

POST-TEST MARKING SCHEME

- 1a. Manufacturing account is that type of account prepared to ascertain the cost of goods manufactured during the financial year. It is prepared to show the components of the cost of goods produced. It is also an extension of the trading account. 5 marks
- 1b. The items that can be found in the manufacturing account are as follows:
- stocks of raw material,
 - work in progress
 - Prime cost
 - factory overhead cost and
 - manufacturing wages. 5 marks
- c. Prime cost is expenses that can be traced directly to a particular production unit. They are directly related to the manufacturing process such as; direct materials, direct labour, direct expenses and other direct expenditure. 5 marks
- Factory overheads are expenditures incurred in running the factory which cannot be traced to a particular production unit. They are indirect costs consumed during production processes. Examples are; factory rent and rates, depreciation of plant and machinery, indirect wages upkeep of factory building etc. 5 marks

Q2.

MIFI NIGERIA LTD

Manufacturing Trading profit and Loss Account for the year ended 31st December, 2015

	₦	₦		₦
Opening stock of R/materials		5,360	Market value of gds produced	57,260
Add Purchase of R/materials	29,470			
Less Returns of R/materials	<u>1,373</u>	<u>28,097</u>		
		33,457		
Less closing stocks of R/m		8,619		
Cost of R/materials consumed		24,838		
Factory wages		<u>13,582</u>		
Prime cost		38,420		
Add factory overheads				
Factory lighting and cooling	2,885			
Factory insurance	1,820			
Factory rent	7,200			
Depn of plant and machinery	<u>5,627</u>	<u>17,532</u>		
		55,952		
Add opening stock w.i.p.		<u>4,972</u>		
		60,924		
Less closing stock w.i.p.		<u>3,664</u>		
Cost of Production		<u><u>57,260</u></u>	<u>57,260</u>	
Opening stock of F/goods		16,295	Sales	141,661
Add cost of production		<u>57,260</u>	Less Returns inwards	<u>1,493</u> 140,168
		73,555		
Less closing stock of F/goods		<u>11,570</u>		
		61,985		
Gross profit		<u>78,183</u>		
		<u>140,168</u>		<u>140,168</u>
Expenses				
Selling and admin		2,174	Gross profit b/d	78,183
Office rent		14,400	Reduction in prov. for b/debts	<u>55</u>
Bad debts		729		78,238
Stationery		1,586		
Office electricity		1,569		
Interest on loan		3,750		
Office salaries		9,629		
Office insurance		550		
Depreciation:				

Delivery van	2,846	
Furniture	1,921	
Net profit	<u>39,084</u>	
	<u>78,238</u>	<u>78,238</u>

BALANCE SHEET AS AT 31ST DECEMBER 2015

₦

₦

Capital	296,180	Fixed assets	
Add net profit	<u>39,084</u>	Plant and machinery	225,066
335,264		Less depreciation	<u>5,627</u> 219,439
Less Drawings	<u>2,500</u>	Delivery van	56,925
332,764		Less depreciation	2,846 54,079
Current Liabilities		Furniture	38,420
Bank loan	75,000	Less depreciation	<u>1,921</u> 36,499
Accrued Int on loan	3,750		310,017
Creditors	<u>9,820</u> 88,57	Current assets	
		Stock of raw materials	8,619
		Stock of work in progress	3,664
		Stock of finished goods	11,570
		Bank balance	71,316
		Cash balance	3,751
		Debtor	12,650
		Less provision	<u>253</u> 12,397 111,317
			<u>421,334</u>
<u>421,334</u>			

Each correct entry including the headings carries 1 mark

Manufacturing trading, profit and loss account has 49 entries and balances totaling =

49marks

Balance sheet has 31 entries and balances including the heading totaling = 31 marks

80marks

APPENDIX VI

LESSON PLAN ON PROBLEM-SOLVING TEACHING METHOD (WEEK 2)

Name of Teacher: Samuel Sahu SAKANAS

School Name: Federal College of Education Zaria

Class: 200L

Average Age: 18-24 Years

Subject: Financial Accounting II

Topic: Manufacturing account

Method of Teaching: Problem-solving Method

Duration: Two hours (2hrs)

Gender: Mixed

General objectives: To guide students as they learn the meaning, items that make up a manufacturing, trading profit and loss account and format of manufacturing trading profit and loss account.

Behavioural objective: At the end of the lesson, students should be able to:

- i. Define manufacturing account
- ii. Identify the items that make up a manufacturing account
- iii. Explain Prime cost and Factory overhead cost
- iv. Draw the format of a manufacturing account

Instructional Materials: Visual material (Format of manufacturing account on a cardboard paper)

Previous knowledge: Students have learned about trading, profit and loss account

APPROACH	TEACHERS ACTIVITY	STUDENTS ACTIVITY
Introduction	The teacher introduces his lesson by explaining to the students the topic and steps to follow in solving problems after which he gives them the task of the day	Students respond to the questions among themselves in the group as follows:

	<p>thus:</p> <ul style="list-style-type: none"> ➤ How do we calculate gross profit in Trading, P & L account? ➤ How do we determine the net profit in P & L account? ➤ What is manufacturing account? ➤ What is the difference between prime cost and factory overhead cost? ➤ Where do we post opening stock of raw material? 	
Step I		Students respond to the questions as they clarify terms, identify the problem and discuss among them on which method they can apply to find solution.
Step II		Students after brainstorming and coming up with different ideas will then specify what every student ought to do to arrive at the final answer.
Step III		Students will now go their separate ways individually to find solutions to the given problem at a specified time after which they regroup to share the results of their individual findings with each other. They will then analyze the stated problem and hopefully come to an

		understanding of and solution to the given problem.
Evaluation	The teacher evaluates the group by going round to ensure that every member of the group participate actively in solving the problem and in the question and answer sessions after all they have learned and taught themselves.	
Conclusion/Assignment	Teacher gives students assignment to go and learn how to prepare manufacturing account.	Students take note of the assignment

APPENDIX VII

LESSON PLAN ON PROBLEM-SOLVING TEACHING METHOD (WEEK 3)

Name of Teacher: Samuel Sahu SAKANAS
School Name: Federal College of Education Zaria
Class: 200L
Average Age: 18-24 Years
Subject: Financial Accounting II
Topic: Manufacturing account
Method of Teaching: Problem-solving Method
Duration: Two hours (2hrs)
Gender: Mixed
General objectives: To guide students on how to prepare manufacturing account
Behavioural objective: At the end of the lesson, students should be able to:
➤ Prepare Manufacturing account
Instructional Materials: Chalkboard
Previous knowledge: Students have learned the meaning, items that make up Manufacturing account and the format of manufacturing account

APPROACH	TEACHERS ACTIVITY	STUDENTS ACTIVITY
Introduction	The teacher introduces his lesson by giving them the task of the day thus: ➤ What is manufacturing account? ➤ Differentiate between prime cost and factory overhead cost ➤ Mention four items that make up a manufacturing account.	Students respond to the questions among themselves in the group as follows:

➤ The following are balances extracted from the Manufacturing Company of Mifi ltd. for the year ended 31st December 2015.

	₦
Sundry debtors	12,650
Sundry creditors	9,820
Purchase of raw materials	29,470
Factory lighting and cooling	2,885
Bank balance	71,316
Stock on 1/1/2015:	
Raw materials	5,360
Work in progress	4,972
Finished goods	16,295
Factory insurance	1,820
Rent	21,600
Cash in hand	3,751
Capital	296,180
Office insurance	550
Sales of finished goods	141,661
Drawings	2,500
Returns on raw materials	1,373
Bad debts	729
Stationery	1,586
Plant and machinery	225,066
Returns of finished goods	1,493
Provision for bad debts	308
Factory wages	13,582
Stock on 31 st December 2015:	
Raw materials	8,619
Work in progress	3,664
Finished goods	11,570
Furniture	38,420
Selling and admin expenses	2,174
Office electricity	1,569
Bank loan	75,000
Office salaries	9,629
Delivery vans	56,925

Additional information:

- i. Interest is due on the bank loan at 5%
- ii. One third of the rent is to be allocated to the factory.

	<p>iii. Provision for bad debts is to be 2% of the debtors</p> <p>iv. Depreciation is to be written off the plant and machinery at 2½% and 5% on delivery vans and furniture.</p> <p>You are required to prepare:</p> <p>Prepare manufacturing account for the year ended 31st Dec,2015</p>	
Step I		Students respond to the questions as they clarify terms, identify the problem and discuss among them on which method they can apply to find solution.
Step II		Students after brainstorming and coming up with different ideas will then specify what every student ought to do to arrive at the final answer.
Step III		Students will now go their separate ways individually to find solutions to the given problem at a specified time after which they regroup to share the results of their individual findings with each other. They will then analyze the stated problem and hopefully come to an understanding of and solution to the given problem.
Evaluation	The teacher evaluates the group by going round to ensure that every member of the group participate actively in solving the problem and in the question and answer sessions after all they have learned and taught themselves.	
Conclusion	Teacher gives students assignment to go and study the format of a balance sheet.	Students take note of the assignment

APPENDIX VIII

LESSON PLAN ON PROBLEM-SOLVING TEACHING METHOD (WEEK 4)

Name of Teacher: Samuel Sahu SAKANAS
 School Name: Federal College of Education Zaria
 Class: 200L
 Average Age: 18-24 Years
 Subject: Financial Accounting II
 Topic: Manufacturing account
 Method of Teaching: Problem-solving Method
 Duration: Two hours (2hrs)
 General objectives: To guide students on how to prepare Manufacturing, trading, profit and Loss account and a balance sheet
 Behavioural objective: At the end of the lesson, students should be able to:

- Prepare Manufacturing, trading, profit and loss account
- Balance sheet

Instructional Materials: Chalkboard
 Previous knowledge: Students have learned the meaning, items that make up manufacturing account to trading profit and loss account and the Format.

APPROACH	TEACHERS ACTIVITY	STUDENTSACTIVITY
Introduction:	The teacher gives students the task of the day thus: <ul style="list-style-type: none"> ➤ How do we calculate prime cost? ➤ Where do we post purchase on raw materials 	Students respond to the questions among themselves in the group as follows:
	EXERCISE TWO The following are balances extracted from the Manufacturing company of	

Mifi ltd. for the yr ended 31st December 2015.

	₹
Sundry debtors	12,650
Sundry creditors	9,820
Purchase of raw materials	29,470
Factory lighting and cooling	2,885
Bank balance	71,316
Stock on 1/1/2015:	
Raw materials	5,360
Work in progress	4,972
Finished goods	16,295
Factory insurance	1,820
Rent	21,600
Cash in hand	3,751
Capital	296,180
Office insurance	550
Sales of finished goods	141,661
Drawings	2,500
Returns on raw materials	1,373
Bad debts	729
Stationery	1,586
Plant and machinery	225,066
Returns of finished goods	1,493
Provision for bad debts	308
Factory wages	13,582
Stock on 31 st December 2015:	
Raw materials	8,619
Work in progress	3,664
Finished goods	11,570
Furniture	38,420
Selling and admin expenses	2,174
Office electricity	1,569
Bank loan	75,000
Office salaries	9,629
Delivery vans	56,925

Additional information:

- v. Interest is due on the bank loan at 5%
- vi. One third of the rent is to be allocated to the factory.
- vii. Provision for bad debts is to be 2% of the debtors
- v. Depn is to be written off the plant and machinery at 2½% and

	5%	<p>on delivery vans and furniture You are required to prepare:</p> <p>a. Balance sheet as at that date.</p>
Step I		Students respond to the questions as they clarify terms, identify the problem and discuss among them on which method they can apply to find solution.
Step II		Students after brainstorming and coming up with different ideas will then specify what every student ought to do to arrive at the final answer.
Step III		Students will now go their separate ways individually to find solutions to the given problem at a specified time after which they regroup to share the results of their individual findings with each other. They will then analyze the stated problem and hopefully come to an understanding of and solution to the given problem.
Evaluation	The teacher evaluates the group by going round to ensure that every member of the	

	group participate actively in solving the problem and in the question and answer sessions after all they have learned and taught themselves.	
Conclusion	Teacher gives students assignment to go and practice more problems on manufacturing, trading, profit and loss account and a balance sheet.	Students take note of the assignment

APPENDIX IX

LESSON PLAN ON COOPERATIVE LEARNING METHOD (WEEK 2)

Name of Teacher:	Samuel Sahu SAKANAS
School Name:	Federal College of Education Zaria
Class:	200L
Average Age:	18-24 Years
Subject:	Financial Accounting II
Topic:	Manufacturing account
Method of Teaching:	Cooperative Method
Duration:	Two hours (2hrs)
Gender:	Mixed
General objectives:	To guide students on how to learn the meaning, items that make up manufacturing, trading profit and loss account and format of manufacturing trading profit and loss account.
Behavioural objective:	At the end of the lesson, students should be able to: <ul style="list-style-type: none">i. Define manufacturing accountii. Identify the items that make up a manufacturing accountiii. Explain Prime cost and Factory overhead costiv. Draw the format of a manufacturing account
Instructional Materials:	Visual material (Format of manufacturing account on a Cardboard paper)
Previous knowledge:	Students have learned about trading, profit and loss account

APPROACH	TEACHERS ACTIVITY	STUDENTS ACTIVITY
Introduction	The teacher in his introduction explains to the students the jigsaw technique which they shall apply in this method. Students under this technique comprised of two groups (home group and expert group) teacher then give students the following questions to answer in their home group after which he help them regroup to the expert	Students Respond to the questions among themselves in the group as they follow the steps below:

	<p>groups where they shall learn together.</p> <ul style="list-style-type: none"> ➤ How do we calculate gross profit in Trading, P & L account? ➤ How do we determine the net profit in P & L account ➤ What is manufacturing account? ➤ What is the difference between prime cost and factory overhead cost? ➤ Where do we post opening stock of raw material? 	
Step: I		Students in the home group after assigning different problems to each student as the task of the day shall leave the home group and group with other students in the expert group where they shall learn the material together.
Step: II		Students after learning the material in the expert group shall return to their home group and each student is accountable for teaching his or her assigned topic.
Evaluation	The teacher evaluates the students after returning to their home group by calling on any student to explain any of the day's task as that will increase their discussion productivity.	Students ask and answer questions among themselves and can ask the guide where necessary for clarifications.

Conclusion/Assignment	The teacher concludes by giving students assignment to go and study how to prepare manufacturing account.	Students take note of the assignment
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APPENDIX X

LESSON PLAN ON COOPERATIVE LEARNING METHOD (WEEK 3)

Name of Teacher:	Samuel Sahu SAKANAS
School Name:	Federal College of Education Zaria
Class:	200L
Average Age:	18-24 Years
Subject:	Financial Accounting II
Topic:	Manufacturing account
Method of Teaching:	Cooperative Method
Duration:	Two hours (2hrs)
Gender:	Mixed
General objectives:	To guide students on how to prepare manufacturing account
Behavioural objective:	At the end of the lesson, students should be able to: ➤ Prepare Manufacturing account
Instructional Materials:	Chalkboard
Previous knowledge:	Students have learned the meaning, items that make up manufacturing account and the format of manufacturing account

APPROACH	TEACHERS ACTIVITY	STUDENTS ACTIVITY
Introduction	Teacher introduces the class by giving students the day's task in their home group after which he ask them to group in their expert groups and deliberate on the given problem thus: ➤ What is manufacturing account? ➤ Differentiate between prime cost and factory overhead cost ➤ Mention four items that make up a manufacturing account.	Students respond to the questions among themselves in the group as they follow the steps below:

➤ The following are balances extracted from the Manufacturing Company of Mifi ltd. for the year ended 31st December 2015.

	₦
Sundry debtors	12,650
Sundry creditors	9,820
Purchase of raw materials	29,470
Factory lighting and cooling	2,885
Bank balance	71,316
Stock on 1/1/2015:	
Raw materials	5,360
Work in progress	4,972
Finished goods	16,295
Factory insurance	1,820
Rent	21,600
Cash in hand	3,751
Capital	296,180
Office insurance	550
Sales of finished goods	141,661
Drawings	2,500
Returns on raw materials	1,373
Bad debts	729
Stationery	1,586
Plant and machinery	225,066
Returns of finished goods	1,493
Provision for bad debts	308
Factory wages	13,582
Stock on 31 st December 2015:	
Raw materials	8,619
Work in progress	3,664
Finished goods	11,570
Furniture	38,420
Selling and admin expenses	2,174
Office electricity	1,569
Bank loan	75,000
Office salaries	9,629
Delivery vans	56,925

Additional information:

viii. Interest is due on the bank loan at 5%

ix. One third of the rent is to be allocated to the factory.

	<p>x. Provision for bad debts is to be 2% of the debtors</p> <p>xi. Depreciation is to be written off the plant and machinery at 2½% and 5% on delivery vans and furniture.</p> <p>You are required to prepare:</p> <p>Prepare manufacturing account for the year ended 31st Dec,2015</p>	
Step I		Students in the home group after assigning different problems to them as the task of the day shall leave the home group and group with other students in the expert group where they shall learn the material together.
Step II		Students after learning the material in the expert group shall return to their home group and each student is accountable for teaching his or her assigned problem.
Evaluation	The teacher evaluates the students after returning to their home group by calling on any student to explain any of the day's task as that will increase their discussion productivity.	Students ask and answer questions among themselves and can ask the guide where necessary for clarifications.
Conclusion/Assignment	The teacher concludes by giving students assignment to go and study how to prepare manufacturing account, trading, profit and loss account and a balance sheet.	Students take note of the assignment

APPENDIX XI

LESSON PLAN ON COOPERATIVE LEARNING METHOD (WEEK 4)

Name of Teacher:	Samuel Sahu SAKANAS
School Name:	Federal College of Education Zaria
Class:	200L
Average Age:	18-24 Years
Subject:	Financial Accounting II
Topic:	Manufacturing account
Method of Teaching:	Cooperative Method
Duration:	Two hours (2hrs)
General objectives:	To guide students on how to prepare Manufacturing, trading, profit and Loss account and a balance sheet
Behavioural objective:	At the end of the lesson, students should be able to: <ul style="list-style-type: none"> ➤ Prepare Manufacturing, trading, profit and loss account ➤ Balance sheet
Instructional Materials:	Textbook and Chalkboard
Previous knowledge:	Students have learned the meaning, items that make up manufacturing account to trading profit and loss account and the format

APPROACH	TEACHERS ACTIVITY	STUDENTS ACTIVITY						
Introduction:	The teacher introduce the lesson by giving students the following questions as task of the day in their home group thus: <ul style="list-style-type: none"> ➤ How do we calculate prime cost? ➤ Where do we post purchase on raw materials 	Students Respond by answering the questions among themselves in the group by following the steps below:						
	➤ The following are balances extracted from the Manufacturing Company of Mifi ltd. for the year ended 31 st December 2015. <table style="margin-left: 40px; margin-top: 10px;"> <tr> <td></td> <td style="text-align: right;">₦</td> </tr> <tr> <td>Sundry debtors</td> <td style="text-align: right;">12,650</td> </tr> <tr> <td>Sundry creditors</td> <td style="text-align: right;">9,820</td> </tr> </table>		₦	Sundry debtors	12,650	Sundry creditors	9,820	
	₦							
Sundry debtors	12,650							
Sundry creditors	9,820							

	Purchase of raw materials	29,470
	Factory lighting and cooling	2,885
	Bank balance	71,316
	Stock on 1/1/2015:	
	Raw materials	5,360
	Work in progress	4,972
	Finished goods	16,295
	Factory insurance	1,820
	Rent	21,600
	Cash in hand	3,751
	Capital	296,180
	Office insurance	550
	Sales of finished goods	141,661
	Drawings	2,500
	Returns on raw materials	1,373
	Bad debts	729
	Stationery	1,586
	Plant and machinery	225,066
	Returns of finished goods	1,493
	Provision for bad debts	308
	Factory wages	13,582
	Stock on 31 st December 2015:	
	Raw materials	8,619
	Work in progress	3,664
	Finished goods	11,570
	Furniture	38,420
	Selling and admin expenses	2,174
	Office electricity	1,569
	Bank loan	75,000
	Office salaries	9,629
	Delivery vans	56,925
	Additional information:	
	xii. Interest is due on the bank loan at 5%	
	xiii. One third of the rent is to be allocated to the factory.	
	xiv. Provision for bad debts is to be 2% of the debtors	
	v. Depn is to be written off the plant and machinery at 2½% and 5% on delivery vans and furniture	
	You are required to prepare:	
	a. Balance sheet as at that date.	

Step I		Students in the home group after assigning different problems to them as the task of the day shall leave the home group and group with other students in the expert group where they shall learn the material together.
Step II		Students after learning the material in the expert group shall return to their home group and each student is accountable for teaching his or her assigned problem.
Evaluation	The teacher evaluates the students after returning to their home group by calling on any student to explain any of the day's task as that will increase their discussion productivity.	Students ask and answer questions among themselves and can ask the guide where necessary for clarifications.
Conclusion	The teacher concludes by giving students assignment to go and solve more problems on manufacturing, trading, profit and loss account and a balance sheet.	Students take note of the assignment

APPENDIX XII

LESSON PLAN ON LECTURE TEACHING METHOD (WEEK 2)

Name of Teacher:	Samuel Sahu SAKANAS
School Name:	Federal College of Education Zaria
Class:	200L
Average Age:	18-24 Years
Subject:	Financial Accounting II
Topic:	Manufacturing account
Method of Teaching:	Lecture Method
Duration:	Two hours (2hrs)
Gender:	Mixed
General objectives:	To teach students the meaning, items that make up a manufacturing to trading profit and loss account and format of manufacturing trading profit and loss account.
Behavioural objective:	At the end of the lesson, students should be able to: <ol style="list-style-type: none">i. Define manufacturing accountii. Identify the items that make up a manufacturing accountiii. Explain Prime cost and Factory overhead costiv. Draw the format of a manufacturing account
Instructional Materials:	Visual material (Format of manufacturing account on a cardboard paper)

Previous knowledge:	Students have learned about trading, profit and loss account
Introduction:	The teacher introduces his lesson by reviewing the knowledge of trading, profit and loss account and relate it with manufacturing account thus:
Presentation:	The teacher presents his lesson as follows:
Step 1:	The teacher defines manufacturing account thus: Manufacturing account is that type of account prepared to ascertain the cost of goods manufactured during the financial year. It is prepared to show the components of the cost of goods produced. It is also an extension of the trading account.
Step 2.	The teacher state and explain the items that constitute manufacturing account thus: Prime cost, factory overhead cost, work in progress, Raw/materials, manufacturing wages etc.
Step 3	The teacher explains prime cost and factory overheads thus: Prime cost is expenses that can be traced directly to a particular production unit. They are directly related to the manufacturing process such as: direct materials, direct labour, direct expenses and other direct expenditure.

Factory overheads are expenditures incurred in running the factory which cannot be traced to a particular production unit. They are indirect costs consumed during production processes. Examples are: factory rent and rates, depreciation of plant and machinery, indirect wages upkeep of factory building etc

Step 4. The teacher draws and explains the format of a manufacturing, trading, profit and loss account.

Evaluation: The teacher ask students the following questions to test their level of understanding:

- i. What is manufacturing account?
- ii. Differentiate between prime cost and factory overhead cost
- iii. Where do we post opening stock of R/materials?

Summary: The teacher briefly goes over the topic stressing the importantpoints

Conclusion: The teacher concludes by giving students assignment to go and read more on manufacturing account.

APPENDIX XIII

LESSON PLAN ON LECTURE TEACHING METHOD (WEEK 3)

Name of Teacher:	Samuel Sahu SAKANAS
School Name:	Federal College of Education Zaria
Class:	200L
Average Age:	18-24 Years
Subject:	Financial Accounting II
Topic:	Manufacturing account
Method of Teaching:	Lecture Method
Duration:	Two hours (2hrs)
Gender:	Mixed
General objectives:	To teach students the meaning, items that make up a manufacturing to trading profit and loss account and format of manufacturing trading profit and loss account.
Behavioural objective:	At the end of the lesson, students should be able to: <ul style="list-style-type: none">➤ Prepare manufacturing account
Instructional Materials:	Textbook and Chalkboard
Previous knowledge:	Students have been taught the meaning, items that make up manufacturing account and the format of manufacturing account
Introduction:	The teacher introduces his lesson by asking students questions on the previous knowledge thus:

- What is manufacturing account?
- Differentiate between prime cost and factory overhead cost
- Mention four items that make up a manufacturing account

Presentation: The teacher presents his lesson through the following steps:

Step I. The teacher presents an exercise as follows:

The following are balances extracted from the manufacturing company of Mifi ltd. for the year ended 31st December 2015.

	₦
Sundry debtors	12,650
Sundry creditors	9,820
Purchase of raw materials	29,470
Factory lighting and cooling	2,885
Bank balance	71,316
Stock on 1/1/2015:	
Raw materials	5,360
Work in progress	4,972
Finished goods	16,295
Factory insurance	1,820
Rent	21,600
Cash in hand	3,751
Capital	296,180
Office insurance	550
Sales of finished goods	141,661
Drawings	2,500
Returns on raw materials	1,373
Bad debts	729
Stationery	1,586
Plant and machinery	225,066
Returns of finished goods	1,493
Provision for bad debts	308
Factory wages	13,582
Stock on 31 st December 2015:	
Raw materials	8,619
Work in progress	3,664
Finished goods	11,570

Furniture	38,420
Selling and admin expenses	2,174
Office electricity	1,569
Bank loan	75,000
Office salaries	9,629
Delivery vans	56,925
Additional information:	

- ix. Interest is due on the bank loan at 5%
- x. One third of the rent is to be allocated to the factory.
- xi. Provision for bad debts is to be 2% of the debtors
- xii. Depreciation is to be written off the plant and machinery at 2½% and at 5% on delivery vans and furniture.

You are required to prepare manufacturing account for the year ended 31st Dec, 2015 and a balance sheet as at that date.

Step II. To provide answers to the exercise, the teacher will ask students while he solve the problem on the board

Evaluation: The teacher evaluates his lesson by asking student's questions thus:

- What are the components of prime cost?
- Mention the items of factory overhead cost

Summary: The teacher summarizes the lesson by highlighting the major points

Conclusion: The teacher round up the lesson by giving students assignment to go and solve an exercise on manufacturing account

APPENDIX XIV

LESSON PLAN ON LECTURE TEACHING METHOD (WEEK 4)

Name of Teacher:	Samuel Sahu SAKANAS
School Name:	Federal College of Education Zaria
Class:	200L
Average Age:	18-24 Years
Subject:	Financial Accounting II
Topic:	Manufacturing account and a balance sheet
Method of Teaching:	Lecture Method
Duration:	Two hours (2hrs)
General objectives:	To teach students how to prepare Manufacturing, trading, profit and Loss account and a balance sheet.
Behavioural objective:	At the end of the lesson, students should be able to: <ul style="list-style-type: none">➤ Prepare manufacturing, trading, profit and loss account and a balance sheet as at that date.
Instructional Materials:	Textbook and Chalkboard
Previous knowledge:	Students have been taught the meaning, items that make up manufacturing account to trading profit and loss account and the format.
Introduction:	The teacher introduces the lesson by asking students question on their previous knowledge thus: <ul style="list-style-type: none">➤ How do we calculate prime cost?➤ Where do we post purchase on raw materials?

- Presentation: The teacher presents the lesson thus:
- Step I. The teacher presents the previous example question which comprises manufacturing trading profit and loss account and a balance sheet items.
- Step II. The teacher calls on students and asks them to explain how each item in the question will be posted to the balance sheet while he solve the problem on the board.
- Evaluation: The teacher evaluates the lesson by asking students' questions thus:
- What are the items that make up the liabilities and on which side of the balance sheet can they be found?
 - Mention three items of fixed asset and three items of current asset.
- Summary: The teacher summarizes his lesson by recapping the major points discussed.
- Conclusion: The teacher round up the lesson by giving them assignment to go and solve more exercises on manufacturing trading profit and loss account and extract a balance sheet.

APPENDIXV. RESULTS FOR PRE-TEST AND POSTTEST

S/N	PROBLEM-SOLVING METHOD		COOPERATIVE LEARNING METHOD		CONVENTIONAL (LECTURE) METHOD	
	PRE-TEST	POSTTEST	PRE-TEST	POSTTEST	PRE-TEST	POSTTEST
1	40	66	40	50	40	59
2	50	60	35	97	40	50
3	40	85	30	66	35	52
4	55	50	70	98	50	48
5	45	40	35	50	40	41
6	30	45	40	56	25	46
7	40	50	10	42	30	50
8	75	95	25	98	40	42
9	55	60	45	66	85	56
10	45	40	40	80	45	66
11	30	50	50	76	60	85
12	60	60	55	80	60	71
13	30	40	40	95	55	42
14	35	45	60	98	55	44
15	60	55	55	95	40	52
16	50	60	45	60	70	74
17	40	50	45	70	70	69
18	35	45	50	65	50	62
19	55	50	25	68	25	35
20	50	55	55	98	50	58
21	50	60	60	52	50	48
22	50	56	40	58	80	79
23	60	60	50	66	30	47
24	45	55	45	60	35	49
25	40	51	40	60	55	51
26	35	40	15	54	35	60
27	35	83	35	46	25	53
28	55	50	10	30	60	42
29	25	34	55	98	50	40
30	30	40	35	50	50	43
31	50	91	40	83	55	52
32	55	64	55	45	40	57
33	40	50	60	40	30	58
34	50	50	35	38	15	40
35	65	58	75	98	35	31
36	25	54	50	60	20	40
37	30	56	30	60	45	40
38	65	98	20	80	70	60
39	40	52	50	80	40	66
40	50	60	35	53	50	53
41	50	55	45	70	40	48
42	40	50	50	51	40	39
43	35	70	60	59	45	45
44	05	40	25	78	45	54
45	45	56	40	88	60	61
46	30	40	65	62	45	85
47	85	90	35	66	15	32
48	40	60	60	73	40	55
49	35	50	65	81	55	53
50	70	66	50	57	45	59
51	65	85	60	64	35	60
TOTAL	2315	2925	2240	3468	2300	2702

APPENDIX XVI

MALE AND FEMALE PRE-TEST, POSTTEST RESULTS

S/N	PROBLEM-SOLVING METHOD				COOPERATIVE LEARNING METHOD				CONVENTIONAL (LECTURE) METHOD			
	PRE-TEST		POSTTEST		PRE-TEST		POSTTEST		PRE-TEST		POSTTEST	
	M	F	M	F	M	F	M	F	M	F	M	F
1	55	40	50	66	70	40	98	50	40	40	59	50
2	45	50	40	60	10	35	42	97	40	35	42	52
3	30	40	45	85	45	30	66	66	85	50	56	48
4	40	75	50	95	55	35	80	50	45	40	66	41
5	30	55	50	60	60	40	98	56	60	25	85	46
6	30	45	40	40	55	25	95	98	55	30	42	50
7	35	60	45	60	45	40	60	80	55	60	44	71
8	50	60	60	55	25	50	68	76	50	40	62	52
9	35	40	45	50	55	40	98	95	25	70	35	74
10	55	50	50	55	60	45	52	70	50	70	58	69
11	50	50	56	60	40	50	58	65	50	80	48	79
12	60	40	60	51	40	50	60	66	55	30	51	47
13	45	35	55	40	35	45	50	60	35	35	60	49
14	55	35	50	83	40	15	83	54	55	25	52	53
15	25	50	34	91	75	35	98	46	40	60	57	42
16	30	55	40	64	60	10	59	30	30	50	58	40
17	50	40	50	50	50	55	57	98	15	50	40	43
18	40	65	52	58		55		45	35	70	31	60
19	50	25	55	54		60		40	20	50	40	53
20	40	30	60	56		35		38	45	45	40	45
21	35	65	50	98		50		60	40	60	66	61
22	65	50	85	60		30		60	40	45	48	85
23		40		50		20		80	40	40	39	55
24		35		70		50		80	45	55	54	53
25		05		40		35		53	15		32	
26		45		56		45		70	45		59	
27		30		40		50		51	35		60	
28		85		90		25		78				
29		70		66		40		88				
30						65		62				
31						35		66				
32						60		73				
33						65		81				
34						60		64				
TOTAL	950	1365	1122	1803	820	1420	1222	2246	1145	1155	1384	1318