RELATIONSHIP BETWEEN ENTRY GRADES IN MATHEMATICS AND STUDENTS PERFORMANCE IN FINANCIAL ACCOUNTING IN FEDERAL COLLEGES OF EDUCATION IN NIGERIA

BY

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DEPARTMENT VOCATIONAL AND TECHNICAL EDUCATION
FACULTY OF EDUCATION
AHMADU BELLO UNIVERSITY ZARIA,
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NIGERIA.

AS ONE OF THE REQUIREMENTS FOR THE AWARD OF
M.ED IN BUSINESS EDUCATION

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DECLARATION

Relationship **between Entry Grades in Mathematics and Students Performance in Financial Accounting in Federal Colleges of Education in Nigeria** has been written by performed by Jubril, Alhaji Haruna in the Department of Vocational and Technical Education under the supervision of Dr A.A. Udoh and Dr M.M. Aliyu. The information obtained from literature has been duly acknowledged in the text and a list of references provided. There is no part of this Thesis that was previously presented for another degree at any university.

…… ……

Jubril, Alhaji Haruna Date

CERTIFICATION

This Thesis titled "Relationship **between Entry Grades in Mathematics and Students Performance in Financial Accounting in Federal Colleges of Education in Nigeria" written by Jubril, Alhaji Haruna** meets the regulation governing the award of the degree of M. Ed (Business Education) of Ahmadu Bello University, Zaria and it is approved for its contribution to knowledge and literary presentation.

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DEDICATION

This research work is dedicated to my late grand father and father Alhaji Usman Osewu and Alhaji Haruna Usman. May Almighty Allah grant their souls eternal rest.

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All praise is due to Allah (SWT) for His guidance, blessings and protection in my life so far and my educational career. I am grateful and indebted to my distinguished supervisors, Dr A.A. Udoh and Dr M.M. Aliyu, who truly utilized their employed their naturally endowed scholastic prowess to guide me throughout the period in which the research was carried out. Much gratitude is owed for their advice, encouragement and patience throughout the duration of this research work. Their moral and academic advice, no doubt facilitated the completion of this research work.

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ABSTRACT

*The study was carried out to determine "**Relationship between Entry Grades in Mathematics and Students Performance in Financial Accounting in Federal Colleges of Education in Nigeria"**. Correlation design was used for the study. As a guide to the researcher, five research questions and five Null hypotheses were raised. The population of the selected students in 10 Federal Colleges of Education offering Accounting option stood at 655 and the sample size was 270. Random sampling technique was employed. Descriptive statistics of frequency distribution, percentages, mean scores and range were used for analysing personal data as well as answering the five research questions raised. Pearson Product Moment Correlation was used to test the null hypotheses one and two. Linear Regression was adopted for test of null hypothesis three and Z-test analysis was used for test to null hypotheses four and five at 0.05 level of significance. The findings revealed among others that there was significant relationship between students' entry grades in mathematics and their ability of solving problems in Financial Accounting within a stipulated time in Federal Colleges of Education in Nigeria; to this end the Null hypothesis one was rejected. The study further revealed that there was significant relationship between students' entry grades in mathematics and their performance in Financial Accounting in Federal College of Education in Nigeria. On this ground the hypothesis was also rejected. The result of Null hypothesis three indicated that difference exists between the Male and Female entry grades in Mathematics and their performance in Financial Accounting in Federal Colleges of Education in Nigeria, to this end the null hypothesis was retained. In view of the findings the study recommended among others that Orientation programs should be mounted to enlighten the secondary school students on the need to develop interest in mathematics, because it will provide them with the necessary knowledge, skills and abilities that will enable them to cope up with further educational challenges.*

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Accounting and Book-keeping can be defined as the process of identifying, measuring, recording, and communicating economic information about an organization or other entity, in order to permit informed judgments by users of the information. In the business world, Accounting is one discipline of study that all people, regardless of job position, should have some knowledge of. Its concepts can be applied to all job specialties, its importance has been promoted in recent years, and it is useful in people's everyday lives (Enron 2002). Jones and Kent (2001) observed that the importance of Accounting education can be applied in all fields of job specialties. The secretaries must use Accounting skills to manage the company cheque book and orders, auditors have to study financial statements to evaluate the accuracy and integrity of the business, and executives need to judge the success of their business using Accounting statements from the past and present, companies require some basic knowledge of Accounting to avoid financial misstatements.

People use Accounting information and principles to make investment decisions, assess interest rates to pay off their house mortgages, and calculate rates for car payments. In the business world, Accounting is utilized in much greater depth, but each individual encounters some activities in his/her everyday life that requires knowledge of

Accounting principles. This explained why Enron (2002) observed that all business students should have some background knowledge in Accounting because in recent years, people in the business world have been held more accountable for their financial practices.

Mathematics is the process of describing relationships between numbers and other measurable quantities. Mathematics can express simple equations as well as interactions among the smallest particles and the farthest objects in the known universe. Mathematics is of great importance in business and economics, and has been for many thousands of years. Kenneth (1971) in Kiger (2004) observed that mathematics used is in most aspects of daily life. He added that many of the top jobs such as business consultants, computer consultants, airline pilots, company directors and a host of others require a solid understanding of basic mathematics, and in some cases require quite detailed knowledge of mathematics. It is on this ground that Edward (2001) in Umar (2003) observed that many of the earliest advances in mathematics was motivated by business applications, such as recording the size of herds of cattle and flocks of sheep, or measuring the sizes of fields for growing crops and calculation of interest rates. It is obvious that commercial organizations use the mathematics in Accounting, Inventory Management, Marketing, Sales forecasting and financial analysis

Mathematics provides many important tools for economics and other business fields and since the discipline of Accounting is concerned with accurate numerical measurement

of precisely defined operational concepts, it follows that practitioners of Accounting should be comfortable with mathematics in general and numbers in particular. In line with this, Brechner (2006) in Amber (2008) opined that mathematics skills are important for students to understand Accounting systems and financial statement analysis. It seems obvious that academic and professional success in Accounting will be facilitated by a high level of mathematical skill. It is on this ground that the researcher is conducting a study on relationship between entry grades in mathematics and students performance in Financial Accounting in Federal Colleges of Education in Northern States of Nigeria as a basis for providing recommendation towards enhancing students' performance in Principles of Accounting.

1.2 Statement of the Problem

Mathematics is an important subject and knowledge of it enhances students' reasoning, problem-solving skills, and in general, the ability to think. Hence it is important for understanding of sciences, social sciences and even arts subjects. Mathematical tools and principles are used to mapping market trends and forecasting of the same. Statistics and probability which are branches of mathematics are used in everyday business and economics. The discipline of Accounting is concerned with accurate numerical measurement of precisely defined operational concepts. It follows that students of Accounting Education should be comfortable with numbers. Marine (2003) in Guest (2009) observed that to meet the demands and expectations of society on enhancing students'

performance in Accounting, students require a range of generic skills in mathematics and problem-solving skills, together with the ability to apply these skills in Principles Accounting, thus mathematical skills and knowledge are a critical factor in the success of Accounting Education students in tertiary institution in Nigeria. This was also endorsed by Smith and Schumacher (2005) who observed that there is a positive correlation between mathematical knowledge and academic success of students in Accounting.

It seems obvious that academic and professional success in Financial Accounting will be facilitated by a high level of mathematical skill. The researcher interaction with Accounting lecturers in tertiary institutions revealed that the knowledge of mathematics has an influence on students in Financial Accounting. Perhaps this may likely be one of the reasons why most business schools have implemented at least credit in mathematics as one of the requirements for gaining admission into Business Education Programme. However it is unfortunate the general complain of students with myopic knowledge of the importance of mathematics to business education programme is that emphasizing on credit in mathematics for candidates of business education is a strategY for admission denial. This may be one of the reasons why Kenneth (1971) in Marine (2003) observed that Accounting discipline does not profit from the knowledge of mathematics, he stressed that presenting trivial mathematics applications to accounting students only makes matters worse, since they are clearly recognizable as being of little importance.

Penelope, James and George (2009) endorsed that mathematics skills are important for students to understand accounting systems and financial statement analysis, this explained why Cynthia (2009) observed that many Accounting companies prefer graduates with joint degrees with mathematics than just an accountancy qualification. It is on this basis that the researcher is carrying out a research work on the relationship between entry grades in Mathematics and students performance in Financial Accounts in Federal Colleges of Education in Nigeria.

1.3 Objectives of the Study

The general objective of the study is to determine the relationship between entry grades in Mathematics and students performance in Financial of Accounting in Federal Colleges of Education in Nigeria.

The specific objectives of this study are to:

1 determine the relationship between students' entry grades in Mathematics and their ability of solving problems in Financial Accounts within a stipulated time in Federal Colleges of Education in Nigeria.

2 determine the relationship between students, entry grades in Mathematics and their performance in Financial Accounts in Federal Colleges of Education in Nigeria.

3 assess the extent to which students' entry grades in Mathematics influences their performance in Financial Accounts in Federal Colleges of Education in Nigeria.

4 determine the differences that exist between student performance in the first and the second Accounting Diagnostic Test in Federal Colleges of Education in of Nigeria.

5 determine the difference that exists between the male and female entry grades in Mathematics and their performance in Financial Accounts in Federal Colleges of Education in Nigeria.

14. Research Questions

The research work will provide answers to the following research questions:

1. What is the relationship between students' entry grades in Mathematics and their ability of solving problems in Financial Accounts within a stipulated time in Federal Colleges of Education in Nigeria?
2. What is the relationship between students, entry grades in Mathematics and their performance in Financial Accounting in Federal Colleges of Education in Nigeria?
3. To what extent do students' entry grades in Mathematics influences their performance in Financial Accounts in Federal Colleges of Education in Nigeria?
4. What is the difference that exists between student performances in the first and the second Accounting Diagnostic Test in Federal Colleges of Education in Nigeria?

5. What difference exists between the male and female entry grades in mathematics and their performance in Financial Accounting in Federal Colleges of Education in Nigeria?

1.5 Research Hypotheses

In line with the research questions, the following Null hypotheses were raised for this study.

Ho_1 There is no significant relationship between students' entry grades in mathematics and their ability of solving problems in financial accounting within a stipulated time in Federal Colleges of Education in Nigeria.

Ho_2 There is no significant relationship between students' entry grades in mathematics and their performance in Financial Accounting in Federal Colleges of Education in Nigeria.

Ho_3 There is no significant relationship that exists between students' entry grades in mathematics and the extent of their performance in Financial Accounting in Federal Colleges of Education in of Nigeria.

H_{O4} There is no significant difference between students' performance in the first and the second Accounting Diagnostic Test in Federal Colleges of Education in Nigeria.

H_{O5} There is no significant difference between the male and female entry grades in mathematics and their performance in Financial of Accounts in Federal Colleges of Education in Nigeria.

1.6 Significance of the Study

The result of this research study will be of significance and most beneficial in the following ways:-

- It is hoped that the result of the study would contribute, shed more light and spur up other researches on the influence of mathematics ability on students' performance in Financial Accounting.

- Presenting this work in Educational Conference will enable academic researchers and accounting lecturers to better understand on the needs of the accounting students and to help them in their learning process and difficulties on Financial Accounting in tertiary institutions.

- Furthermore, the study will help the government, particularly the Business Education Department, to have idea on what kind of courses, skills and knowledge for all qualified educators or lecturers teaching accounting subject in order to improve their methods and efficiency of teaching.

- Enabling students to have access to this work in the library will enable Business Education students understand that there is a relationship between mathematics and accounting; thus their knowledge of mathematics and skills in solving mathematics problem will enhance their understanding on Financial Accounting.

- The study through Educational conference will reveal to policy makers, specifically the admission officers to better understand the importance of mathematics in almost all subjects in tertiary institution and emphasize on it as a basic requirement for admitting students into business education programme.

- Publication of this work in Educational Journals will enable the accounting teachers and lecturers to better understand the importance of mathematics knowledge and skills on students' performance in principles of accounting, and the need for motivating them to develop positive attitudes towards mathematics which will serve as a basis for understanding of Financial Accounting.

- An access to this work in the library will enable Business Education students understand that it is time to collectively change their approach to the learning process, and particularly, take advantage of the power of their foundation in mathematics and other related subjects to improve learning outcomes and foster their creativity. This will enable them do better in Financial Accounting and achieve their objectives in schools.

- It is hoped that this research work will assist in providing new or continuing accounting teachers with the resources to investigate new concepts, strategies, and methodologies for use in a dynamic and creative learning environment.

1.7 Assumptions for the Study

For the purpose of this study, the following assumptions were made;

1. Credit entry grades in mathematics will influence students' performance in Financial Accounts.
2. The knowledge of mathematics will improve students' performance in Financial Accounts.
3. Student's knowledge in mathematics will help in developing positive attitudes on Financial Accounts.
4. Accounting teachers with knowledge and skills in mathematics will teach Financial Accounts better.

1.8 Delimitation of the Study

The study is on the relationship between entry grades in mathematics and students' performance in Financial Accounts in Federal Colleges of Education in three geo-political zones of Nigeria (North Central, North East and North West). The research work will concentrate on Federal Colleges of Education offering Business Education Programme only.

The study will further be delimited to N.C.E. III students in the selected institutions. The choice of this is because it is at this level that students select area of specialization, in addition this will enable the researcher have students with same year of entry, similar classroom environment, and the same exposure in Principles of Accounting. Finally, since the study is experimental in nature, the study will further be delimitated to one Federal College of Education in each of the three geo-political zones in the region.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter highlights related literature on Financial Accounts and relationship between entry grades in mathematics and students performance in Financial Accounts. The chapter is organized under the following sub-headings;-

2.9 The Concept of Accounting

2.10 History of Accounting in Nigeria

2.11 The Accounting Concepts and Conventions

2.12 Importance of Accounting Education

2.13 Relationship between Mathematics and Accounting

2.14 Strategies towards enhancing Student Performance in Financial Accounting

2.15 Empirical Studies on the Related Area.

2.16 Summary of Literature Review

2.1 Concept of Accounting

Accounting is the study of how businesses track their income and assets over time. Accountants engage in a wide variety of activities besides preparing financial statements and recording business transactions including computing costs and efficiency gains from new technologies, participating in strategies for mergers and acquisitions, quality management, developing and using information systems to track financial performance, tax strategy, and health care benefits management. Kieso and Weygandt (2001) in Kalbers (2003) defined financial Accounting has "the branch of accounting that focuses on the general-purpose reports on financial position and results of operations known as financial statements". He added that these statements provide a continual history quantified in money terms of economic resources and obligations of a business enterprise and of economic activities that change theses resources and obligations"

Guest (2006) also defined Accounting as a practice of recording, classifying, summarizing, analysing and interpreting the financial transactions and communicating the results thereof to the persons interested in such information, he stated that accounting deals with recording financial transactions of business in the first book called Journal; Classifying the recorded data of similar nature in a book called Ledger; summarising the classified data to know the result of business operation and its financial position in a book called Trial balance, Income statement and Balance sheet; analysis and interprets the summarised data in such a way to get a meaningful judgment about the operational result

and financial position of the business; communicating the interpreted data to the various users; maintaining record of the business; calculating of profit or loss; assessing the financial position of business and providing financial information to various users.

According to Deardeepak (2006) in Diddy (2006) Accounting means a system of recording, reporting financial transactions of the company into the books of the accounts, he categorized accounting transactions as Fixed Assets, Liabilities, Revenues, Expenses and Share Equity into the books of Accounts which provide useful information to Investors, Tax Authorities to take decision. This is in line with Guest (2006) who defined accounting as an art of recording, classifying, summarizing in a significant manner in terms of monetary transactions and events which are in a part of at least in financial statement and there result there of. In another development Rashik (2007) in Revaihi (2008) defined Accounting as a systematic practice of identifying, recording, measuring, classifying, summarizing, interpreting and communicating the financial transactions (In terms of Money) of a business firm or an individual following a set of rules and regulations. He stressed that the function is basically carried to maintain record of the business; evaluate the performance of a business; know the financial position of the business firm; control business activity effectively and to provide business information to the stake holders of the entity. This agreed with Franc (2007) who viewed Accounting as the process of identifying , measuring and communicating economic information to permit informed judgment and decision by user of the information.

Segun (1991) in Idra (2008) defined Accounting as the systematic recording of a financial transaction which involves the transfer of money's worth to or from the business. He stressed that Accounting is concerned not only with recording, but also with analysing and interpreting financial transactions. In summary, based on all academic definition of Accounting so far, it can be concluded that Accounting as systematic collection and recording financial transactions in monetary terms which will be used for determining financial worth of a business entity or cooperates body(s). This is in line with Amber (2008) who viewed Accounting as system of recording, verifying and reporting the transactions of the company into the books of accounts (ledgers). These transactions are categorized as assets, liabilities, revenues, expenses and shareholders' equity in the books of accounts. Accounting can really help the lenders, managers, tax authorities and the investors to make decisions. It can also help the accountants to ensure the fair and accurate information given to the users like investors. Therefore, accounting can play an important role in enhancing the transparency of the information and it provides standardized ways of recording transactions.

2.2 History of Accounting in Nigeria

The history of Accounting is as old as civilization, key to important phases of history, among the most important professions in economics and business, and fascinating. Accounting participated in the development of cities, trade and the concepts of wealth and numbers. This is in line with Gary (1999) in Minga. (2002), who observed that

the history of Accounting is as old as civilization, among the most important professions in economic and cultural development, and fascinating. Accountants invented writing, developed money and banking, innovated the double entry bookkeeping system that fueled the Italian Renaissance, were needed by Industrial Revolution inventors and entrepreneurs for survival, helped develop the capital markets necessary for big business so essential for capitalism, turned into a profession that brought credibility for complex business practices that sparked the economic boom of the 20th century, and are central to the information revolution that is now transforming the global economy. Twenty-first century accounting will resemble rocket science and will continue to be among the critical professions of the new century. Accountants have not excelled in public relations, but their story is fascinating and here it is. .Luca Pacioli wrote a math book in 1494 that had a few brief chapters on practical mathematics that addressed math used in businesses. This was the invention of double entry bookkeeping. Obviously accounting in some form had been around for many years. However, Pacioli introduced the world to the idea of debits and credits entered into journals and ledgers to help business owners "tell how they are doing" (Le Moine, 2004).

Many companies and individuals began to use the public accountant's services. The courts also employed them to aid in investigations of accounting matters, today know as forensic accounting. Also, "the arrival of the income tax laws was another major event in accounting history" (Le Moine, 2004). In 1920s, the legal profession believed that "since

income tax returns were legal documents, they would have exclusive rights to prepare them. Accountants replied that since that the bulk of the work in preparing a return involved accounting calculations, they were more properly accounting work" (Le Moine, 2004). The public accounting community saw a great opportunity in the tax arena. They had begun working vigorously with tax education and preparation. Meanwhile, US law firms began challenging the accountants for practicing law without a license. "Income tax preparation had been so thoroughly identified with accountants that the attorneys lost the case" (Le Moine, 2004).

Toward the end of the decade, the Great Depression and the stock market crash lead to an investigation into corporate accounting practices. Although, several companies' records were falsely stated due to individual's fraud, the discovery that bookkeeping was done on 'generally accepted accounting principles'. There were no established rules or standards that the profession was governed by. The problem here is that "since accountants were hired by and answered to corporate management, they served the needs of management, not the public. That meant that in practice; the primary function of accounting was to make management look good" (Le Moine, 2004). The American Institute of Certified Public Accountants (AICPA) was created as the profession's rule-making body. The Principles Committee was established to set standard practices for the industry. It was then decided that audited financial statements were limited to only to certified public accountants. These accountants would be held personally liable for their

audit reports to the public. Also, “the new Securities and Exchange Commission (SEC) required audit reports for all publicly traded companies” (Le Moine, 2004).

In 1959 the Accounting Principles Board (APB) was established and later replaced by the Financial Accounting Standards Board (FASB) in 1973. The FASB was independent of the AICPA. This new body began to produce many new rules for the profession to keep up with the pace of the changing economy. There were other accounting areas that also needed attention. The Cost Accounting Standards Board, the Governmental Accounting Standards Board, Accounting and Auditing Guides from the AICPA, Technical Bulletins, and Interpretations from FASB had created and overload of standards and regulation of the industry. By the 1980s, the AICPA released the Statements on Standards for Accounting and Review Services allowing CPAs to provide three levels of services. Firms could provide a compilation, review or an audit. Publicly traded companies’ financial statements were required by the Security Exchange Commission to be audited. The more accounting rules and auditing requirements deeply impacted small businesses financially.

Segun (1987) in Happy (2007) observed that there is no accurate record as to when book-keeping started in Nigeria before the advent of the Europeans. He observed that it can, however be said that some form of traditional book-keeping was used to record financial transactions, such as credit sales, loans and periodic contributions (ESUSU).

Segun observed that history shows that such transactions were usually recorded by making marks on walls.

It was observed that modern Book-keeping and Accounting began in Nigeria with the amalgamation in 1914 of the Northern and Southern Provinces to form the territory now called Nigeria. Based on the British system, the Colonial Governor being the Chief Executive and Accounting officer of the Colony rendered monthly and annually accounts of the colonial government to the colonial office in London. Private sector Book-keeping and Accounting might have begun earlier with the accounts rendered to its owners in the United Kingdom by the pioneering British Private Company- the Royal Niger Company which was trading then in Northern and Southern Provinces.

Since the Royal Niger Company was essentially a branch of its United Kingdom head Office, it would be right to assume that the accounts were prepared in the British Fashion. Segun highlighted that in the early 1930s, clerks were trained on the Job as Book-keepers to keep financial records in firms and government offices. In 1950s few Nigerians who went to the United Kingdom to study accounting returned to mount the accounting positions firms in public offices and thereby trained Nigerians in the art of Accounting. Between 1959 and 1969, some Accountants in Nigeria came together and thought of how to organize themselves into one group. As a result of this, the birth of the Institutions of Chartered Accountants of Nigeria (ICAN) came into being in September, 1965 with the passage of an Act of Parliament No. 15 of 1965. The Act established the

institute of a legal body responsible for the regulation of the practice of Accountancy in Nigeria. It empowered the Institute to formulate plan for the training of professional Accountants for country by organizing qualifying examinations for students and setting up regulations to control the conduct of its members.

Johnson (2009) observed that today Junior Secondary Schools, Senior Secondary Schools, Polytechnics, Colleges of Education and Universities train people in the field of Accounting. He stressed that to be a professional Accountants, one has to pass the prescribed examination of the accounting bodies, either in Nigeria or Overseas. He pinpointed that some of the recognised accounting bodies are:-

- The Institute of Chartered Accountants of Nigeria (ICAN)
- The Institute of Chartered Accountants in England & Wales (ACA)
- The Chartered Association of Certified Accountants (ACCA)
- The Chartered Institute of Public Finance and Accountants (CIPFA)
- The Chartered Institute of Cost and Management Accountants (ICMA)
- The Institute of Certified Public Accountants (CPA), USA

2.3 The Accounting Concepts and Conventions

In drawing up accounting statements, whether they are external "financial accounts" or internally-focused "management accounts", a clear objective has to be that the accounts fairly reflect the true "substance" of the business and the results of its

operation. The theory of accounting has, therefore, developed the concept of a *"true and fair view"*. The true and fair view is applied in ensuring and assessing whether accounts do indeed portray accurately the business' activities. **Williamson (2001) observed a**ccounting concepts and conventions as used in accountancy are the rules and guidelines by that the accountant lives, in addition **Duncan (2002) highlighted that that t**he objective of concept requires an accountant to draw up any accounts, and further analysis, only on the basis of objective and factual information. He opined that all formal accounting statements should be created, preserved and presented according to the concepts and conventions that follow.

Once an entity decides on one method of reporting (i.e. method of accounting for inventory) it must use that same method for all subsequent events. This ensures that differences in financial position between reporting periods are a result of changed in the operations and not to changes in the way items are accounted for. Udoh (2004) opined that in preparing final accounts there are a number of key accounting concepts which you need to be familiar with: The include the following:-

1. The going concern concept.
2. Business as an Entity
3. Money as common denominator
4. The accruals concept.

5. Realization concept

6 Dual Concept

7 Cost Concept

MODULE – 1 Basic Accounting (2003) Accounting concept refers to the basic assumptions which serve the basis of recording actual business transactions. The important accounting concepts are business entity, money measurement, going concern, accounting period, cost concept, duality aspect concept, realization concept, accrual concept, and matching concept.

1. Business entity concept assumes that for accounting purposes, the business enterprise and its owner(s) are two separate entities.
2. Money measurement concept assumes that all business transactions must be recorded in the books of accounts in terms of money.
3. Going concern concept states that a business firm will continue to carry on activities for an indefinite period of time.
4. Accounting period concept states that all the business transactions are recorded in the books of accounts on the assumption that profits of transactions is to be ascertained for a specified time period.

5. Accounting cost concept states that all assets are recorded in the books of accounts at their cost price.
6. Dual aspect concept states that every transaction has a dual effect.

2.3.1 Going Concern Concept

Accounting is based on Generally Accepted Accounting Principles (GAAP). These principles are the assumptions, practices and concepts that provide the basis for measuring and reporting on the results of business activities. These principles greatly influence the reported financial position of a business. One concept inherent in the GAAP is the concept of 'going concern'. This concept is also known as the 'going concern' assumption.

Duncan (2001) opined that this concept is the underlying assumption that any accountant makes when he prepares a set of accounts. This concept assumed that the business under consideration will remain in existence for the foreseeable future. Without this concept, accounts would have to be drawn up on the 'winding up' basis. That is, on what the business is likely to be worth if it is sold piecemeal at the date of the accounts. The winding up value would almost certainly be different from the going concern value shown. Such circumstances as the state of the market and the availability of finance are important considerations here.

MODULE - 1Basic Accounting (2003) highlighted that *t*his concept states that a business firm will continue to carry on its activities for an indefinite period of time. Simply stated, it means that every business entity has continuity of life. Thus, it will not be dissolved in the near future. In addition it is important assumption of accounting, as it provides a basis for showing the value of assets in the balance sheet. According to this concept every year some amount will be shown as expenses and the balance amount as an asset. Thus, if an amount is spent on an item which will be used in business for many years, it will not be proper to charge the amount from the revenues of the year in which the item is acquired. Only a part of the value is shown as expense in the year of purchase and the remaining balance is shown as an asset.

Now Master-Accounting (2009) observed that going concern as directs accountants to prepare financial statements on the assumption that the business is not about to go broke. More formally it states that, unless there is significant evidence to the contrary, accountants will base their measurement and reporting of financial data on the assumption that the business will remain in existence for an indefinite period or at least for the 'foreseeable future' (i.e. long enough for the business to meet its objectives and fulfill its commitments). It is important here to note that the 'going concern' concept does not imply that the business will actually make a profit.

Encyclopedia of Business, 2nd ed. (2010) observed that one of the most basic accounting assumptions is the concept that a business is a going concern. Unless there is

significant evidence to the contrary, it is assumed that a specific business enterprise will continue to operate for an indefinite period, or at least for the "foreseeable future"—long enough both to meet its objectives and fulfill its commitments. Importantly, while the going-concern concept assumes that the firm will continue to operate for the foreseeable future, it in no way implies that the firm will make a profit. Tutor2u (2010) opined that accountants assume, unless there is evidence to the contrary, that a company is not going broke. This has important implications for the valuation of assets and liabilities.

The researcher observed that this concept is the underlying assumption that any accountant makes when he prepares a set of accounts. This concept means that business under consideration will remain in existence for the foreseeable future. Without this concept, accounts would have to be drawn up on the 'winding up' basis. That is, on what the business is likely to be worth if it is sold piecemeal at the date of the accounts. The winding up value would almost certainly be different from the going concern value shown. Such circumstances as the state of the market and the availability of finance are important considerations here.

Implications of the 'Going Concern' Concept

MODULE - 1*Basic Accounting (2010)* highlight the following as significance of going concern concept;

- This concept facilitates preparation of financial statements.

- On the basis of this concept, depreciation is charged on the fixed asset.
- It is of great help to the investors, because, it assures them that they will continue to get income on their investments.
- In the absence of this concept, the cost of a fixed asset will be treated as an expense in the year of its purchase.
- A business is judged for its capacity to earn profits in future.

Now Master Accounting (2009) observed the following as the implication of Going Concern Concept

This concept has important implications for the valuation of assets and liabilities of the business. By applying the 'going concern' concept, accountants are able to report long-term assets in a Statement of Financial Position (balance sheet). If the assumption was not applied, the accountant would need to write these assets off as costs in the year of purchase. Applying the 'going concern' concept also allows accountants to properly allocate transactions which overlap two consecutive years (i.e. many credit transactions). Furthermore, by applying the concept of a 'going concern', accountants are able to record assets at historical costs rather than be constantly assessing the liquidation value of business assets when preparing the financial statements. This concept allows for the orderly allocation of long-term costs and revenues based on a presumption that the business will continue to operate into the future. For example, partly completed

manufactured goods (i.e. work-in-progress) would have little value in liquidation, but under the 'going concern' concept they are recorded at current costs which would be significantly greater than the liquidated value.

Financial statements are prepared on this concept and it is the responsibility of the directors to assess whether the 'going concern' assumption is appropriate when preparing the financial statements for their company. A company is required to disclose in the notes to the financial statements whether there are any factors that may put in doubt the company's status as a 'going concern'.

2.3.2 Realization Concept

This concept states that revenue from any business transaction should be included in the accounting records only when it is realised. The term realization means creation of legal right to receive money. Selling goods is realization, receiving order is not. This concept states that revenue from any business transaction should be included in the accounting records only when it is realised. **Duncan (**2001) pinpointed that the realization concept helps the accountant to determine the point at that he feels that a transaction is certain enough for the profit to be made on it to be calculated and taken to the profit and loss account. He added that realization occurs when a sale is made to a customer.

MODULE – 1 (2010) opined that Revenue is said to have been realised when cash has been received or right to receive cash on the sale of goods or services or both has been created. This agreed with Totur2u (2010) who observed that with this convention, accounts recognise transactions (and any profits arising from them) at the point of sale or transfer of legal ownership - rather than just when cash actually changes hands. For example, a company that makes a sale to a customer can recognise that sale when the transaction is legal - at the point of contract. The actual payment due from the customer may not arise until several weeks (or months) later - if the customer has been granted some credit terms.

Siva (2006) endorsed that realization determines whether a revenue or expense has occurred so that it can be measured, recorded and reported in the financial reports. In general, revenue is recognized along with the associated expenses when an exchange has taken place, the earnings process is complete, the amount of income is determinable, and collection of amounts due is reasonably assured. Hareesh (2006) highlighted that revenues are recognized when they are earned or realized. Realization is assumed to occur when the seller receives cash or a claim to cash (receivable) in exchange for goods or services. This concept is related to conservatism in that revenue (income) is only recorded when it actually occurs and not at the point in time when a contract is awarded. For instance, if a company is awarded a contract to build an office building the revenue

from that project would not be recorded in one lump sum but rather it would be divided over time according to the work that is actually being done.

The researcher observed that realization concept helps the accountant to determine the point at that he feels that a transaction is certain enough for the profit to be made on it to be calculated and taken to the profit and loss account, this occurs when a sale is made to a customer. This concept emphasizes that profit should be considered only when realised. The question is at what stage profit should be deemed to have accrued? Whether at the time of receiving the order or at the time of execution of the order or at the time of receiving the cash? For answering this question the accounting is in conformity with the law and Recognises the principle of law i.e., the revenue is earned only when the goods are transferred. It means that profit is deemed to have accrued when property i goods passes to the buyer, viz., when sales are made.

Dual Aspect Concept

Dual aspect is the foundation or basic principle of accounting. It provides the very basis of recording business transactions in the books of accounts. This concept assumes that every transaction has a dual effect, i.e. it affects two accounts in their respective opposite sides. Therefore, the transaction should be recorded at two places. It means, both the aspects of the transaction must be recorded in the books of accounts. The knowledge of

dual aspect helps in identifying the two aspects of a transaction which helps in applying the rules of recording the transactions in books of accounts. The implication of dual aspect concept is that every transaction has an equal impact on assets and liabilities in such a way that total assets are always equal to total liabilities.

Duncan (2001) highlighted that this is the very foundation of the universally applicable double entry book keeping system and it stems from the fact that every transaction has a double (or dual) effect on the position of a business as recorded in the accounts. For example, when an asset is bought, another asset cash (or bank) is also and simultaneously decreased OR a liability such as creditors is also and simultaneously increased. Similarly, when a sale is made the asset of stock is reduced as goods leave the business and the asset of cash is increased (or the asset of debtors is increased) as cash comes into the business (or a promise to pay is made and accepted). Every financial transaction behaves in this dual way. Udoh (2004) observed that this is the concept that is at the core of modern accounting. With this concept, all business events or transactions are regarded as having a dual aspect. In other words, the aspect of double entry principle developed out of this concept.

This is the basic concept of accounting. Modern accounting system is based on dual aspect concept. Dual concept may be stated as "for every debit, there is a credit". Every transaction should have two sided effect to the extent of same amount. Sanket

*(2008) observed that d*ual concept may be stated as "for every debit, there is a credit." Every transaction should have two sided effect to the extent of same amount. This concept has resulted in accounting equation which states that at any point of time the assets of any entity must be equal (in monetary terms) to the total of owner's equity and outsider's liabilities. Husna (2010) defined dual Accounting concept as a double entry system where by in both debit and credit aspect of a transaction is recorded. Each transaction has equivalent debit and credit ledger. This is in line with Narasimhulu (2010) who viewed dual concept as a double entry system. He stressed that the entries of debit and credit side must tally. Hareesh (2010) also endorsed that dual accounting concept is a double entry system, wherein both debit and credit aspect of a transaction is recorded. Each transaction has equivalent debit and credit ledger accounts in the account boo.

Accounting to Mohammed (2010) Indian accounting principles are divided in to two types accounting concepts, and conventions and one of the accounting concept is dual aspect of accounting system according to this system every journal entry should be posted according to double entry system means for every debit there should be equal credit to what comes in debit it should comes in credit also and its a successful system of double entry system. This is in line with Musaib (2010) who opined that the Indian accounting principles are divided into two types that is accounting concepts and conventions. One of the accounting concepts is dual aspect of accounting system

according to this system every journal entry should be posted according to double entry system this means for every debit entry there should be equal corresponding credit entry.

Ravi (2010) considered dual accounting concept as nothing but double entry system, where debit transactions will by transactions were to be recorded in debit side and credit transactions will as well as recorded in credit side and ledger accounts will prepared for both debit and credit transactions. To Shaik (2010) dual accounting is also called as double entry system. He highlighted that the concept started in 1942 by "lucapaclio" as per Indian gasp the double entry system means "every debit there must be a corresponding credit". he explained that the general rules of accounting is to debit the receiver credit the giver debit what comes in credit what goes out

Raza (2010) dual accounting is a double entry system which comprises two way treatments of income & expenses by the use of two accounting tools debit and credit. This method facilitates a perfect process of accounting. This is in line with Hashim (2010) who view dual accounting as nothing but double entry system. The method of writing every transaction in to two accounts is known as dual accounting or double entry system of accounting of the two accounts, one account is given debit while the other account is given credit with an equal amount. Thus on any date the total of all debit must be equal to the total of all credits because every debit has a corresponding credit entry.

The researcher observed that dual concept is an accounting principle where by in any transaction there must be two entries, (credit and debit entries). This concept is the

basis that all accounting transactions must keep this equation balanced so when there is an increase on one side there must be an equal increase on the other side or an equal decrease on the same side

Significance of Dual Aspect Concept

1. This concept helps accountant in detecting error.
2. It encourages the accountant to post each entry in opposite sides of two affected accounts

2.3.4 Business as an Entity

This concept assumes that, for accounting purposes, the business enterprise and its owners are two separate independent entities. Thus, the business and personal transactions of its owner are separate. For example, when the owner invests money in the business, it is recorded as liability of the business to the owner. Similarly, when the owner takes away from the business cash/goods for his/her personal use, it is not treated as business expense. Thus, the accounting records are made in the books of accounts from the point of view of the business unit and not the person owning the business. This concept is the very basis of accounting.

Duncan (2001) highlighted that the idea here is that the financial transactions of one individual or a group of individuals must be kept separate from any unrelated financial transactions of those same individuals or group. The best example here concerns that of the sole trader or one man business: in this situation you may have the sole trader taking

money by way of 'drawings': money for his own personal use. Despite it being his business and apparently his money, there are still two aspects to the transaction: the business is 'giving' money and the individual is 'receiving' money. So, the affairs of the individuals behind a business must be kept separate from the affairs of the business itself. Udoh (2004) opined that this concept explains that every account kept in respect of any organization is operated or prepared on the premise that business is a separate entity (person) quite distinct from the proprietor or proprietors who provided the initial capital.

Ani (2007) observed that this concept, the task of measuring income and wealth is undertaken by accounting, for an identifiable Unit or Entity: The unit or entity so identified is treated different and distinct from its owners or contributors. In law the distinction between owners and the business is drawn only in the case of joint stock companies but in accounting this distinction is made in the case of sole proprietor and partnership firm as well. For example, goods used from the stock of the business for business purposes are treated as business expenditure but similar goods used by the proprietor i.e. owner for his personal use are treated as his drawings. Such distinction between the owner and the business unit has helped accounting in reporting profitability more objectively and fairly. It has also led to the development of "responsibility accounting" which enables us to find out the profitability of even the different sub-units of the main business. This agreed with tutor2u (2010) who observed that the convention seeks to ensure that private transactions

and matters relating to the owners of a business are segregated from transactions that relate to the business.

Significance of Business as an Entity

The following points highlight the significance of business entity concept:

1. This concept helps in ascertaining the profit of the business as only the business expenses and revenues are recorded and all the private and personal expenses are ignored.
2. This concept restraints accountant from recording of owner's private/personal transactions.
3. It also facilitates the recording and reporting of business transactions from the business point of view
4. It is the very basis of accounting concepts, conventions and principles

2.3.5 Money Measurement Concept

This concept assumes that all business transactions must be in terms of money that is in the currency of a country. In our country such transactions are in terms of rupees. Thus, as per the money measurement concept, transactions which can be expressed in terms of money are recorded in the books of accounts. Another aspect of

this concept is that the records of the transactions are to be kept not in the physical units but in the monetary unit. Duncan (2001) highlighted that the money measurement concept is one of the simpler concepts. It simply and clearly states that only those transactions that are true financial transactions may be accounted for. That is, only those transactions that may be expressed in money values (whatever the currency) are of interest to the accountant. Udoh (2004) highlighted that to have accurate facts about a particular business; money is used to explain this fact. For instance, landed property of the business will be converted to money by costing it. This will make it to add or subtract from other items owned or borrowed by the business.

This agreed with Tutor2u (2010) who observed that Accountants do not account for items unless they can be quantified in monetary terms. Items that are not accounted for (unless someone is prepared to pay something for them) include things like workforce skill, morale, market leadership, brand recognition, quality of management etc.

Significance of Money Measurement Concept

The following points highlight the significance of money measurement concept:

1. This concept guides accountants what to record and what not to record.
2. It helps in recording business transactions uniformly.
3. If all the business transactions are expressed in monetary terms, it will be easy to understand the accounts prepared by the business enterprise.
4. It facilitates comparison of business performance of two different periods of the same firm or of the two different firms for the same period.

Accounting Period Concept

All the transactions are recorded in the books of accounts on the assumption that profits on these transactions are to be ascertained for a specified period. This is known as accounting period concept. Thus, this concept requires that a balance sheet and profit and loss account should be prepared at regular intervals. This is necessary for different purposes like, calculation of profit, ascertaining financial position, tax computation etc. Further, this concept assumes that, indefinite life of business is divided into parts. These parts are known as Accounting Period. It may be of one year, six months, three months, one month, etc. But usually one year is taken as one accounting period which may be a calendar year or a financial year.

As per accounting period concept, all the transactions are recorded in the books of accounts for a specified period of time. Hence, goods purchased and sold during the period, rent, salaries etc. paid for the period are accounted for and against that period only. Ani (2007) highlighted that accounting practice believes in continuing entity concept i.e. life of the business is perpetual but still it has to report the 'results of the activity undertaken in specific period (normally one year). The accounting attempts to present the gains or losses earned or suffered by the business during the period under review or any other period depending upon the convenience of the business or as per the business practices in country concerned.

Significance of Accounting Period Concept

1. It helps in predicting the future prospects of the business.
2. It helps in calculating tax on business income calculated for a particular time period.
3. It also helps banks, financial institutions, creditors, etc to assess and analyse the performance of business for a particular period.
4. It also helps the business firms to distribute their income at regular intervals as dividends.

2.3.6 Realization Concept

This concept states that revenue from any business transaction should be included in the accounting records only when it is realised. The term realization means creation of legal right to receive money. Selling goods is realization, receiving order is not. In short, the realization occurs when the goods and services have been sold either for cash or on credit. It also refers to inflow of assets in the form of receivables. Udoh (2004) highlighted that this concept explains that revenue of any business is considered earned on the day it is realized and that is when goods are transferred to the customer in exchange for valuable, this agreed with Ani (2007) who observed that this concept emphasizes that profit should be considered only when realized. The question is at what stage profit should be deemed to have accrued? For answering this question the accounting is in conformity with the law (Sales of Goods Act) and recognizes the principle of law i.e. the revenue is earned only when the goods are transferred. It means that profit is deemed to have accrued when 'property in goods passes to the buyer' viz. when sales are affected.

Tutor2u (2008) endorsed that with this convention, accounts recognise transactions (and any profits arising from them) at the point of sale or transfer of legal ownership - rather than just when cash actually changes hands. For example, a company that makes a sale to a customer can recognise that sale when the transaction is legal - at

the point of contract. The actual payment due from the customer may not arise until several weeks (or months) later - if the customer has been granted some credit terms.

Significance of Realization Concept

1. It helps in making the accounting information more objective.
2. It provides that the transactions should be recorded only when goods are delivered to the buyer.

2.4 Importance of Accounting

In the business world, an average business man has to keep records of his activities to enable him give an accurate report of the results of his enterprise. To achieve this end the needs to engage competent book-keepers to keep permanent records of his purchases, sales and cash dealings.

Edeh (2002) observed that accounting has four main purposes.

- Accounting helps in identifying, measuring and recording transactions which show the relationship of the organization with other bodies
- Accounting acts as a language for business, since the commercial world communicates in accounting terms, eg. It enables business enterprises to decide amount to be paid to a supplier or by a customer.
- The accounting information acts as a steward, using this record for reporting to the owners of company, i.e. the shareholders, on transactions made during a period and the effect these transactions made during a period and the effect these transactions have had on their investment.

- Lastly accounting information helps management to operate the business. Accounting figures are important in planning future operations via the budget, in making decisions between alternative in allocating scarce resources, and in controlling the business by reporting on events soon after they have taken place and comparing them with the budget or plan.

Johnson (2009) postulated the following as importance of accounting in today's world

- First, an accounting education is important because it can be applied in all job specialties. Secretaries must use accounting skills to manage the company check book and orders, auditors have to study financial statements to evaluate the accuracy and integrity of the business, and executives need to judge the success of their business using accounting statements from the past and present. These are just a few of the many possible positions where an understanding of accounting is necessary.

- Another reason all business students should have some background in accounting is because in recent years, people in the business world have been held more accountable for their financial practices. Since the Enron and WorldCom crisis when independent auditor Arthur Anderson failed to report illegal accounting practices, the SEC has been monitoring public corporations more closely. Thus, companies require some basic knowledge of accounting to avoid any future misstatements unintentionally occurring.

- Additionally, it is vital that everyone, not just business students, acquire an understanding of accounting for personal benefit. People use accounting in their daily lives when they study financial statements to make investment decisions, assess interest rates to pay off their house mortgages, and calculate rates for car payments. In the business world, accounting is utilized in much greater depth, but each individual encounters some activities in his/her everyday life that requires knowledge of accounting principles. Accounting is the most basic framework of business. Without an accounting education, students would be unprepared for the real world.

In a study no Segun (1991) in Abiola (2008) he observed Book-Keeping and

Accounting information is needed because it provide accurate reports on financial stands

of a business; it provide records for tax information and assessment; provide true financial position of a business at a particular time and make financial records and information available for planning. This agreed with Trapez (2008) who opined the following importance of accounting information:-

- The two major asset types are tangible and intangible; using your accounts ledger to conduct accounting information can help an individual to record assets, breaking it down further into fixed and current assets.
- The importance of accounting helps in protecting company's asset as matter of pride. In partnership liabilities and joint tenancy agreements there are great chances of losing out if accounts ledgers are not accurate. Bonds, stock values and shares act as financial accounting support, with accounting concepts using cash spreadsheets to avoid problematic situations.
- Financial accounting can correctly identify an asset or assets are in no way controlled by legal enforcement but are said to be the sum of liabilities and capital in an accounts ledger book as well as balance sheet.
- Challenging yourself and ensuring you keep track of accounting for business now can help you with varying accounting concepts and will assist on business planning. Information provided by accountants such as bank and cash spreadsheets record the amount expended on the assets of a company which can yield money and add value to business, will always add charm and new dimensions to company.

- Accounting information helps in asset management and keeping track of income and outgoings on cash spreadsheets and ideally a good accounts ledger may be the sole accounting job done by your accountant.

  Cathy (2009) agreed with Trapez (2008) he observed the following as importance of accounting education

- Accounting is a life blood of running any business. It serves as a tool for improving her business and helps it reach its full potential.
- Accounting statements are used by individuals externally to determine the value of a company.
- Starting a small business requires a reliable accounting system. This could help you maintain an earnings record of all the revenue and the expenditure of your business on a daily basis.
- Recording this data is essential because it is needed when filing tax returns. You will also require it for legal purposes. This will be helpful when you apply for a loan to expand your business.
- Accounting will help you keep track of the progress of how your business is doing.
- Financial accounting statements can be used to assess management effectiveness by showing the spending of allotted resources and helping to assess whether management should be sent to work in another department or replaced altogether to increase the profitability of the company.

- Accounting shows information in determining a company's worth to persons who will assess such externally.

2.5 Relationship between Mathematics and Accounting

The literature review in this sub-heading focuses on relationship between mathematics and student's performance in Accounting in Federal Colleges of Education. Prior studies indicate that students' mathematical backgrounds positively influence their success in Financial Accounting. This agreed with Marcoli and Achille (2002) in Nick (2002) highlighted that the first link between mathematics and economics dates back to calculations of a commercial nature, which merchants had to carry out daily in ancient times. This relationship was later enriched by the financial calculations needed by usurers and bankers: it developed into a corpus of applications of mathematics that is nowadays called accounting. He stressed that its practical relevance is at the basis of the importance attributed to the ability of getting sums right, or numeracy, by anyone investing their savings, carrying out a breakdown of tax in an invoice or filling in their tax returns declaration.

Nick (2002) noticed that there are strong parallels between accounting and two important areas of mathematics the elementary algebra and the calculus. Nick added that these reflect the origins of algebra in accounting and origins of some of the basic concepts

behind the calculus in accounting. A research has shown that accounting students who perform well tend to have strong mathematical skills (Gist, 1998) in (Nick 2002). Factors included in deciding not to major in accounting include mathematics. (Gist 1990) in (Nick 2002). Rob (2002) endorsed that Mathematics is an excellent foundation for, and is usually a prerequisite to, all areas of science and engineering. Students in such areas as anthropology, sociology and psychology, as well as law, business and medicine benefit from a solid background in mathematics and statistics. In addition, mathematical training will help you to better understand science and technology and their effects on our world.

Minga (2002) observed that the relationship between certain mathematical and communication skills and success in university level accounting courses has been reported. Average matric scores and aptitude test results have been found to be associated with grades obtained in elementary and intermediate level accounting courses. Considering these findings and testing them to the environment under study may provide some explanation for the observed difference in the grades scored by white and black students. Based on the review of findings reported by prior studies, it follows that practitioners of accounting should be good in handling numbers. Previous studies revealed that mathematics skills are important for students to understand accounting systems and financial statement analysis. It seems obvious that academic and professional success in accounting will be facilitated by a high level of mathematical skill. This agreed with Marco and, Achille (2002) who examined that the training and

background of all the past great accountants had, or acquired, at least an intermediate mathematical training.

Guest (2003), argued that the relational level of cognitive complexity of mathematics that is achieved could facilitate student's performance in accounting courses thereafter, helping them to integrate relevant points into a coherent structure. He stressed that imply that the extent to which such externalities exist in teaching and learning depend on how closely the topics are related, what fundamental concepts, methods of analysis and ways of understanding are common to all of the topics. Mathematics is crucial not only for success in school, but in being an informed citizen, being productive in one's chosen career, and in personal fulfillment. In today's technology driven society, greater demands have been placed on individuals to interpret and use mathematics to make sense of information and complex situations.

Adelman, Trusty and Niles (2003) examined the effect of different backgrounds in Mathematics on college education, using the longitudinal database from the eighth grade to eight years after high school. This study used four intensive courses in Mathematics Algebra 2, Trigonometry, Pre-calculus, and Calculus--while controlling several background factors such as gender, socio-economic status, race, and ethnicity. The findings of Trusty and Niles confirmed what Adelman had reported. Students who earn credits in intense mathematics courses have an increased likelihood of completing their college education; in

addition, each of these four intensive courses proved to be an important factor in overall academic success.

Schumacher and Smith (2005) further examined the relevance of students' mathematical backgrounds to their success in college by focusing on actuarial science courses, they reported that students' grade point averages in actuarial science courses were a function of Scholastic Aptitude Test scores in mathematics, verbal Scholastic Aptitude Test scores, percentile rank in their high school graduating class, and percentage scores on college mathematics placement exams. In addition, they found that the relative importance of these variables varied depending on gender. Verbal Scholastic Aptitude Test scores were important for males, while Scholastic Aptitude Test scores in mathematics were significant for females. Similarly, Tai et al. (2006) attempted to identify the factors that determine the final course grades of college students, and found that demographic and educational factors are both particularly significant. The educational factors included high school mathematics grades, Scholastic Aptitude Test scores in mathematics, and the completion of a high school calculus course.

Nonetheless, no previous studies had examined how students' mathematical backgrounds positively influenced their college education. In the case of Smith and Schumacher, it is intuitive that students' mathematical knowledge has a positive effect on their academic success in actuarial science, in which concepts are expressed using mathematical notation. Students who are not equipped with strong background in

mathematics will find it difficult to choose Accounting Education option, and thus majority of business education students with weak Entry Qualification in Mathematics need remedial work in the area of mathematics. Mathematics has always been considered as one of the essential skills that students need to successfully complete a college education. Prior studies investigating the influence of mathematical knowledge and skills on academic performance have therefore focused primarily on students in quantitative subjects (Smith and Schumacher, 2005).

http://wiki.answers.com/Q/ (2010) highlighted that accounting has close relationship with mathematics. The dual aspect concept, which is the basic concept of accounting, is expressed as a mathematical equation, known as accounting equation. Accounting computations such as computation of depreciation, determination of loan installment, ascertaining of cash price in case of hire purchase and installment systems requires use of mathematical techniques. Accountants now use statistical models, computers and operation research techniques. All these require knowledge of mathematics. Budi (2007) highlighted that mathematics is indispensable to economics and business. Mathematics is compulsory for students of accounting and business from the diploma program up to the graduate program. For undergraduate students, mathematics-related courses are even given in two to three semesters. They are given under different course names: mathematics for economics, mathematics for business, mathematics of finance, mathematical analysis, quantitative methods, quantitative analysis, and management

science. The problem is, in most universities, students of accounting and business only learn mathematics that is of little relevance to them but of high relevance to students of economics. This paper tries to criticize the relevancies of the contents of the mathematics courses for accounting and business students. To support the career of accounting and business graduates, mathematics taught to them should be differentiated from mathematics for economics students. For accounting and business students, the topics of set theory, limit, differentiation, partial and total derivatives, matrices, unconstrained and constrained optimization, and integration, all of which are covered in mathematics for economics, are just “nice to know”. But, they fail to be “essential to know.” It is much more important for the students of accounting and business to know how to make a savings schedule for financial/pension planning; calculations of various yields, returns, interest rates, and stock indices; and valuations of any assets and securities (stocks and bonds) using present value approach.

The above skills are needed by any accountant or finance manager and anyone working in the finance-related institutions such as banks, leasing, insurance, pension funds, and security companies. Such knowledge is also required for any cash surplus (investors) to select the investment with the highest return, given risk; for any cash deficit (borrower) to obtain the cheapest financing; and for anyone dealing with banks.

In summary, accounting was based on mathematical knowledge as codified in Luca Pacioli’s book of mathematics. Using the mathematical perspective, the present

paper reviews several basic issues in textbooks of accounting principles commonly employed so far, and presents a rationality based on clear arguments over the rules of debits and credits. By designing a mathematics-oriented learning, it is expected that the study of accounting principles would be dynamic and capable of developing the capacities for inquiry, abstract logical thinking, and critical analysis (AECC, 1990).

The development of the mathematical pillar in accounting would enable it to develop faster rather than remaining just a tool to provide information as it essentially is right now. As a result, the way is open wide for the addition of the elements of accounting equations as well as new accounting topics developed mathematically.

2.6 Strategies towards enhancing Student Performance in Financial Accounting

The traditional approaches to course and content delivery do have their place; the changing nature of contemporary education has provided both direction and opportunity for new methods. In particular, educators seek new ways of enhancing course content, improving educational quality, while maintaining sufficient time for research and administration responsibilities. In effect, both sides of the contemporary education market are seeking flexibility. As the number of tertiary education providers increases globally, the need for such flexibility also increases. Accounting educators have undertaken numerous efforts to improve the quality of accounting education. The significance of enhancing teaching and learning becomes the core in the process of global educational reform,

where teaching strategies must take this responsibility (Taiwan, 2001; National Research Council [NRC], 2001 in Chang 2008). Strategies for facilitating the adoption and effective learning of financial accounting are issue of importance to educational administrators and teachers around the world.

Greer (2001); De Lange et al. (2003); Marriott and Lau (2008) highlighted that the techniques used to motivate introductory accounting students include offering novel ways to learn and giving immediate feedback, although one study claimed that without significant course credit, students will not complete extra work voluntarily. Motivating effort may be one of the largest issues in principles of accounting courses and likely an even more exaggerated problem for weak and less confident students. Bueschel (2008) opined that successful extra instruction likely needs to require a small effort and be distinctly different from traditional course supplements.

Nonis and Hudson (2004) stated five dimensions of students' perceptions of effective teaching which include rapport, classroom interaction, enthusiasm, clarity and learning. Berk (2005) derived twelve strategies to measure effective teaching which include student ratings, pear ratings, self evaluation, videos, student interviews, alumni ratings, employer ratings, administrator ratings, teaching scholarship, teaching awards, learning outcome measures and teaching portfolios. Miron and Segal (2004) state the university student rated their lecturer by their ability to transmit knowledge rather than

according to the university's criteria of research and publication. They added that good teacher and effective instruction were used interchangeably although they are not identical

On the teaching method issues, Walberg (1999) in Nonis and Hdson (2004) defined teaching-centered approach as direct teaching which emphasizing systematic sequencing of lessons, a presentation of new content and skill, guided students practice, feedback and independent practice by student. Eble (1971) in Miron and Segal (2004) pointed out that there are five components of effective teaching as perceived by the students. They include teacher must use an analytic/synthetic approach, well organized, teacher-group interaction, teacher-individual students interaction and dynamism/enthusiasm manner. Smith (1980) in Berk (2005) contributed a checklist for good teaching by including test prerequisite skills, provides feedback to the teacher, adopts to individual differences, provide feedback to the students, flexible, promotes active student learning, motivates students and clear and well-organized. Perkins and Saris (2001) and Yoder and Hachevar (2005) further included that research on group-oriented discussion methods has shown that team learning and student-led discussion not only produce favorable student performance outcome but foster greater participation, self confidence and leadership ability.

Regarding the impact of educational technology on accounting students' performance, Watson *et al*. (2003) argued that the use of technology in the assessment of student learning remains important area for future accounting education research. Results

from experiments with the use of various forms of educational technology in teaching accounting courses seem to indicate that accounting students have a positive attitude towards the use of technology and that using computer technology, at the minimum, will not harm their academic performance (Basile and D'Aquila, 2002; Dowling *et .al*., 2003; De Lange *et. al*., 2003; Kalbers and Rosner; 2003). In addition, the real benefits of integrating modern technology in teaching may not be easy to measure over the short term (Kalbers and Rosner, 2003). On the integration of AL techniques with technology, Rainsbury and Malcolm's (2003) analysis revealed that students' reactions were positive. They also reported that students with a non-English background participated more when using an electronic discussion board.

Kiger, (2004) highlighted that the methods used to educate students in accounting have been criticized. There have been repeated calls to incorporate real-life work skills rather than emphasizing the memorization of technical rules in response to these criticisms, accounting education researchers have carried out action research to test alternative approaches to the accounting curriculum. Fry; Love and Boland (2004) observed that there is a need for the accounting instructors to reflect on their teaching strategies when using a Virtual Learning Environment (VLE) if the benefits expected are to be realized pointed out that students who speak English as a second language prefer a computer-assisted learning environment.

A great number of experts have been discussing the need of changes in the teaching methods of accounting; this view is inline with Sack (2000); Rankin et al. (2003); Hartnett et al. (2004). Albrecht and Borthick (2004), they noted that there is the need of changes in the teaching methods of accounting and that the traditional curriculum of accounting, which emphasizes memorizing skills, may actually hinder the student's effort to develop the requisite competencies in accounting, such as critical thinking. The AECC has suggested the needs for restructuring accounting principles through learning by using a user model instead of a preparer model (Lee and Bisman 2006) and Goldwater and Fogarty (2007) suggested the use of information technology to improve the effectiveness of accounting study.

It has been commented that the "why" approach to accounting is more successful than the "how" approach (Tuhkanen, 1976 in Harris 2007). But the current methods of teaching Principles of Accounting have focused on the "how" approach, and usually this has been accomplished via the vehicle of rote learning. Often, this process involves a combination of lecture by the instructor covering the concepts of any given chapter, followed by a review of exercises and problems located at the end of the chapter. Examination procedures usually require students to complete multiple choice and true/false questions and solve by calculation a variety of problems as covered in the reading material. This pedagogy results in passive participation on the part of the student.

The literature has reinforced the recognition that this passive student/learner model is predominant (Beegle & Coffee, 1991 in Harris 2007). This same review acknowledges that a wider range of learning techniques and models are currently available, and, although not predominant, are being used on an increasing basis. These methods require students to take an active role in the learning process that, it is believed, will result in better student retention and performance.

Some of these instructional models show that, at least at the Principles level, an overall review of the accounting concepts is preferable to a detail driven approach (Lovell, 1992 in Harris 2007)). This study identified a shift in the accounting approach away from didactic teaching methods and courses swamped by technical detail. Along this same line, a need within the accounting profession showed a shift of the skills needed by accounting students after entering the workforce. Due to technological innovations and a greater concentration on strategic accounting approaches, it is believed that instructors must adapt their teaching methods.

Educators have long realized that developing learning skills in students is of greater importance than rote learning of technical and specialized material. Much has been written in the literature as to how this theory applies to the teaching of accounting. Many writers have identified the development of communication skills as vital in accounting courses (Colvin, 1994 in Umar 2007). Often communication skills can be enhanced via the application of group activities and projects. These group activities and

projects are usually of an unstructured nature and assist the students in group problem solving and understanding of the accounting concepts and principles. This method of teaching helps to develop students' critical thinking skills rather than the retention of a common body of knowledge.

While not necessarily utilized at the Principles of Accounting level, the use of case studies has been identified as a key success factor for students completing intermediate-level accounting courses (Feldmann & Dow, 1997 in Harris 2007). This review has also supported the idea that group activities that enhance student communication and interaction encourage a more active learning environment. Concurrently, it is important in this type of learning environment that instructors grade written assignments for both content and communication skills. Examination methods could utilize more essay, case analysis and short answer question types that would encourage the development of these communication skills.

In order to facilitate teaching and learning of principles of accounting, (Collis, Vingerhoets and Moonen 1997 in Umar 2007) highlighted that teachers should explore the idea of focusing their courses and programs on the concepts of flexible teaching and learning need first to consider which aspects of the course or program will become 'flexible' and what that term will come to mean in the development process. Flexibility is generally operational zed as offering choices in the learning environment that allow for the tailoring of the course of study to the learner's individual needs and circumstances.

Choices, in this view, center on such course basics as class times, course content, instructional approach, learning resources, location, technology use, entry/completion dates and communication medium.

Other authors have identified additional methods for increasing the likelihood of student success in accounting courses. Close contact between student and instructor and the establishment of a business atmosphere in the classroom have also been identified as success factors (Smith, 1979 in Umar 2007). Of course, class size is a function of college strategy and administration, but smaller class sizes are desirable.

Following the aforementioned strategy, it would appear that since Principles of Accounting involves a simpler learning objective than that of Intermediate Accounting, a more passive learning environment might be appropriate at the introductory level. While this rationale might seem somewhat logical, the predominance of the literature recommends a more diverse approach to teaching accounting principles (Adler & Milne, 1998 in Harris 2007).

Still others have suggested that the utilization of interdisciplinary courses may result in higher levels of student achievement (Abell, 1999 in Harris 2007). An interdisciplinary course has been defined as a course with a minimum of two instructors from different departments involved in a class where ideas and perspectives are synthesized. Consider, for example, developing a course that is a combination of accounting and communication. It is possible that this approach might result in some

improved or increased level of student interest and participation. This approach might best be left to the upper-level courses and seemingly would not lend itself very well to the Principles of Accounting courses.

Flexible teaching and learning can be approached as incorporating four fundamental aspects (Lundin, 1999 in Umar 2007)). First, flexibility can be provided through a range of teaching and learning strategies such as lectures with tutorials, independent study, discussion/seminar groups, debates, and ICT-based education. Second, flexibility may also be provided by permitting alternative program design by incorporating such notions as modularization of the content and/or courses which would allow learners to devise a sequence that best suits their particular needs and to negotiate assessment strategies that best reflect their learning styles. Third, flexibility can be built into organisational structures and policies through the use of such devices as summer schools block programs, immersion programs, part-time evening programs, distance learning, and mixed mode programs. And finally, the most difficult aspect - and one that is rarely addressed or considered - is the provision of flexibility through the institution's administrative policies and procedures, such as open entry and exit.

Still other writers have surmised that the accounting teaching method required depends on the accounting learning objective trying to be achieved (Bonner, 1999 in Harris 2007). This framework recognizes the need to first establish the learning objective and the material needed to accomplish that objective. Various objectives require various

types of skill sets. It is suggested that learning objectives that require simpler skills can best be achieved with more passive teaching methods while learning objectives that require more complex skills can best be accomplished with methods that require a more active learner orientation. Again, this active learner orientation would include such methods as case studies, group projects and other activities that depend on active participation and greater use of communication skills.

The researcher observed that teaching and learning of principles of accounting can be made more difficult when a teacher fails to recognize that they have a natural tendency to explain concepts in a way that may not match how the students might perceive is the best way to learn. Since most accounting teachers are trained teachers, that tendency can be problematic for students, who naturally, may be less motivated to learn accounting because of fear of figures. The teacher must determine the most effective teaching style can be used to achieve the learning goals. Further, within the framework of style, teachers must determine which teaching methodology, for example, lecture, discussion, case studies, experiential learning, computer/technology aided learning, best helps in achieving the learning outcomes for non-accounting majors. Adaptation could improve students' educational experiences, by the use of language and teaching materials designed to match the students' Meta program preferences.

2.7 Empirical Studies.

Studies of Relationship between Entry Qualification in Mathematics and Students performance in Accounting has received a major focus in terms of research work in recent years by researchers. In the contribution of Indra (2006) on "Further evidence of critical thinking and final examination performance in advanced financial accounting". The aim was to diagnose predictors, other than the overall Grade Point Average (GPA), of the final examination performance in an advanced undergraduate financial accounting course conducted in 2003 and 2004 over three continuous semesters at a metropolitan university in Australia.

This study used a database compiled for the Accounting Theory and Practice course for three continuous semesters, from four semester results for the study, (2003 and 2004 examination results). Standardised regression analysis was applied to the data to determine predictors. The sample size of this study was 1,816, comprising all students enrolled in the course over three consecutive semesters. The predictors were reviewed for multicollinearity to ensure that any two predictors did not reach a high bivariate correlation ($r < .7$). The variance inflation factor (VIF) in the regression model was checked to ensure that it was within acceptable limits ($VIF < 10$), indicating that there were no additional collinearity issues relating to the predictors. The tolerance indicators for each predictor were within acceptable limits (< .1). Using casewise diagnostics, the Mahalanobis

distance value and Cook's distance results, a check was made to ensure that data lay within three standard deviations.

The key findings of this study suggested that final examination performance was determined by multilevel factors. It was therefore plausible that a large part of the overall GPA took the character of final examination attributes, with an emphasis on critical thinking skills. The tutorial assignment test performance that fostered critical thinking skills was the second best predictor. The ethics essay performance, although it attempted to foster critical thinking skills, was one of thirteen topics in the course, and had little impact on final examination performance.

The researcher recommended among others that academics should pay attention to monitoring and providing feedback to students on their in-course performance in tests that examine higher cognitive levels of critical thinking covering a wide range of topics. Providing feedback on a single topic examining critical skills may not be effective as shown with the ethics essay which was a low predictor of final examination performance. Despite that the population of the study was not specified, the researcher did a nice work. The current researcher used the work in literature review and determining statistical tool to be used in his study.

Nashville, Alan and Stephen (2007) conducted a study on “Testing Prerequisites and Student Success in Principles of Finance”. The study sought to determine if a student’s performance in prerequisite classes, as well as their scores on the aforementioned prerequisites test, contributes to their success in the principles of finance course.

This study included students enrolled in six sections of the introductory finance course over a period of two semesters. Students were given approximately two weeks to study for the prerequisites test. Scores were extracted from the test for each of the three subject areas: Mathematics, Economics, and Accounting. These scores and the final semester averages were obtained from the instructor. The remaining prerequisite data were pulled from student transcripts. One hundred and four out of 153 observations were usable.

This study found that Mathematics background positively did only influenced performance in the finance course, but also that this performance was enhanced by the student’s understanding of that prerequisite coursework at the beginning of the semester, at least in the area of accounting. This showed that a student’s knowledge of Accounting at the beginning of the finance course, and not just a previous background in accounting, is important in performing well in finance. The literature of this study contributed to the current work however the researcher did not give recommendation of his findings

Penelope, James and George (2009) conducted a research on The Influence of Mathematics Ability on Performance in Principles of Accounting. The aims of the study were to

- Statistically estimate the *incremental* effect of mathematical ability on performance in principles of accounting, holding constant other important determinants.
- differentiate the effects of various specific types of mathematical ability on success in academic accounting.

The methodology of this research was empirical. At the beginning of the semester, students were given mathematics pre-test. The test items covered certain areas especially relevant to accounting. After the end of the semester, each student's performance on the mathematics pre-test (overall and in each area) was matched with his/her overall performance in the principles of Accounting. Regression analysis of the data indicated that: (1) the positive effect of mathematics skills on accounting performance is strongly significant; (2) controlling for the student's general ability and other key factors bearing on accounting performance, the measured incremental effect of mathematics skill on performance is quite small; (3) in numerical terms, the measured incremental effect of the different branches of mathematics on accounting performance is very similar, albeit there are some slight differences that may be significant.

The major instrument for data collection was mathematics testing, devise. The instrument consisted of 24 items broken down as follows:

• 8 items involving principally arithmetic (AR items);

• 8 items involving principally percentages and proportions (PP items);

• 8 items involving principally algebra (AL items).

The 24 items were also categorized as follows:

• 9 items involving substantial word exposition (WE items);

• 15 items not involving substantial word exposition

The mathematics pre-test instrument was administered unannounced on the first day of class in all sections of Principles of Accounting I and II at a regional Midwestern public university at the beginning of the first semester, 2005. Virtually all students enrolled in the Principles of Accounting sat for the 25 minutes test. Within two weeks of taking the pre-test, each student respondent received a personalized feedback report containing a list of the questions together with the respective correct answers and percentages of respondents answering correctly.

The researcher estimated the incremental effect of Mathematics ability on student performance in Principles of Accounts by means of regressing student performance and the overall effect of Mathematics ability is estimated, and also the effect of math ability in

specific areas of Mathematics such as proportions and percentages. It was found that while each one of the math score variables was highly significant according to the standard t-statistic test, the overall explanatory power of the regression equation, as measured by its R-squared, was not significant increased in a numerical sense by the addition of any one of them to a regression equation that already includes as an explanatory variable Grade Point Average.

This finding did not imply that Mathematics was unimportant to students' performance in Accounting, but rather that mathematics ability was so highly correlated with other academic ability indicators that disentangling the effect of math ability from the effect of other ability indicators is statistically problematic. Nevertheless, the Pre-test was utilized to conveniently identify at-risk students in principles of accounting courses, especially for those with measured low arithmetical and percentages and proportions skills.

In related study, Lee and Lee (2009) conducted a research work on Mathematics and academic success in three disciplines: engineering, business and the humanities. The study aimed to investigate the association between grades in mathematics courses and the academic performance of students in different disciplines -engineering, business, and the humanities--in which the requirement of mathematical knowledge and skills varies. This paper adopted a causal-comparative method to provide empirical evidence with respect to three null hypotheses proposed. The causal-comparative research design was

adopted for the study. In this study, academic success at college is measured using overall grade point average and major course grade point average, which were dependent variables. On the other hand, an average grade in college mathematics courses is an independent variable.

The sample included students from three different majors engineering, business, and the humanities--at one state university in the South. In order to identify target subjects, we reviewed the course catalog and randomly chose three classes at junior or senior levels in the three academic programs. The researcher visited the classroom at a prescheduled time with fifty copies of our questionnaire and pencils and administered questionnaire to the students who voluntary participation in the survey. The survey questionnaire was distributed to students who agreed to participate in the survey. The classroom survey produced 165 responses from engineering, business, and humanities students. The final sample includes 154 usable responses, having eliminating 11 students who did not complete the survey questionnaire. The sample was divided into three groups of students: engineering (47), business (55), and humanities (52).

The empirical results indicated that a grade in Mathematics courses was a relevant indicator of academic success for students in both engineering and business. The academic success of humanities students in both their major field and their overall college program was not related to their grades in mathematics courses. Thus,

humanities students may not perceive a strong relevance of mathematical skills and knowledge to the successful completion of their college education. To this end the researcher recommended that both students and their academic counselors needed to exercise cooperative efforts to identify fields that were aligned with the students' relative strength in quantitative and qualitative skills. The researcher did a nice work, thought the population for the study was not specified. Despite the lapse in the study, the current research used the work in literature review

Minga (2010) conducted a study on “Demographic Factors, Accounting Grades & Maths Skills: Evidence from a South African University”. This research attempted to examine among others whether in spite of the same lecturer, tutor and other similar environments (like course material, assignment and work environment) demographic factors like colour and gender explain the performance at a second year Accounting course.

Survey design method was adopted for the study, with the population of 273 students in which all of them were served with the questionnaire. A total of 206 copies of the questionnaires were completed and returned. Data were gathered from two sources. First from the University’s records office and secondly from a questionnaire designed for the purpose of this research. All the respondents were taking second year level and above (accounting) courses. They were composed of both genders and colours.

The data were analysed in stages. The preliminary stage was computation of descriptive statistics and correlation co-efficient to test whether the data were sensitive to gender and colour issues. Secondly, the opinions of students in the various years, about the importance they attach to certain preparatory level courses were summarised. The rankings were further tested to check whether there was a consensus among the respondents. Thirdly, correlation and regression analysis were conducted to see whether certain high school and first year courses do explain grades obtained in Accounting 11, Accounting 111 and Management Accounting courses.

The findings of the study revealed among others that there was relationship between certain Mathematical and communication skills and success in University level Accounting courses, and that average matric scores and aptitude test results have been found to be associated with grades obtained in elementary and intermediate level Accounting courses. Among the recommendations made by the researcher were that Universities should set admission criteria for admitting students for accounting education, the researcher added that if students were selected with quantitative backgrounds they will perform better in the class. Thought the study added to literature review of this research work but the researcher did not specify which of the accounting courses the research was conducted.

2.5 Summary of Literature Review

In academics, the basic mathematical knowledge is essential in the pursuance of the students to finish the school and gain the profession he or she wants. It is indispensable to business and accounting education. It is compulsory for students of accounting and business from the diploma program up to the graduate program. The mathematics is part of the core subjects that is being taught within the educational settings. Along with the evolution of technology and globalization, the demand for the higher approach in mathematics became the central issue in all schools. The researcher observed that there are still many important topics about the accounting principles that can be explained mathematically. Our experience indicates that when told that the primary working of accounting is based on mathematics, the student can understand accounting topics more easily, including adjusting entries –whose debits and credits have often become an object of complaint on the part of the students and the crucial problem of closing entries, this tremendous growth of the business world has likewise increased the complexities of accounting and financial reporting can be minimized if students have mathematics and use to solve problem in accounting. Mathematics is crucial not only for success in school, but in being an informed citizen, being productive in one's chosen career, and in personal fulfillment. In today's technology driven society, greater demands have been placed on individuals to interpret and use mathematics to make sense of information and complex situations.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This study is on Relationship between Entry Grades in Mathematics and students performance in Financial Accounting in Federal Colleges of Education in Nigeria. The chapter outlined and specified the precise method and procedure used in conducting the study 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. Validity of Research Instrument

3.4.2. Reliability of the Instrument

3.5. Procedure for Data Collection

3.6. Procedure for Data Analysis

3.1 Research Design

In order to determine the relationship between entry grades in Mathematics and students performance in Financial Accounting in Federal Colleges of Education in Nigeria, a correlation research design was adopted for the study. Abiola (2007) observed that correlational research leads to valid conclusion about the relationship between independent and dependent variables. Abiola stressed that it is useful for cause-and effect-relationships.

The variables considered in the study were Students' Entry Grades in Mathematics represented by "SEGM" and performance Financial in Accounting Diagnostic Assessment represented by "FADA". The test involved problem in Partnership final Account, the choice of this topic was because it is one of the most popular topics in Financial Accounting. It is very wide with technicalities and very common in both internal and external Accounting Examinations.

The teaching lasted for three hours weekly for period of two weeks in each of the selected Institutions. In the first week, the researcher administered 40 minutes objective test as Accounting Pre Diagnostic Test. The test were modified SSCE and NECO (2006 – 2009), objectives Examination, the test covered aspects of their scheme. This decision enabled the researcher to determine the level of students' knowledge on Financial Accounting which served as a basis for the choice of teaching method to be used in the study. Thereafter the researcher taught Partnership Final Accounts without adjustment in the same week and

administered the second Accounting Diagnostic Achievement Test. In the second week the researcher taught Partnership Final Accounts with adjustment and administered the third Accounting Diagnostic Achievement Test. The test items covered areas taught. The researcher strictly followed allocated time in the time table; this decision avoids clashing which might distract student's attention and concentration.

3.2 Population for the Study

The population of the study consisted all N.C.E. III students specializing in Accounting in Federal Colleges of Education in Nigeria in the 2009/2010 session. The population of the study stood at 655 students made up of 410 males and 245 females. The full detail of the population is presented in Table 3.1.

Table 3.1: Population of the Study

Source: Departmental Record of each Institution.

S/No	Geo-political Zone	Status	Locations	States	Students		Total
					M	F	
1	North Central	F.C.E.	Pankshin	Plateau	31	18	49
S/No	Geo-political Zone	Status	Locations	States	Students		Total
		F.C.E.	Kontagora	Niger	34	22	56
		F.C.E.	Okene	Kogi	76	43	119
2	North East	F.C.E	Gombe	Gombe	51	25	76
		F.C.E	Potiskum	Borno	32	24	56
		F.C.E	Yola	Adamawa	25	17	42
3	North West	F.C.E	Zaria	Kaduna	79	42	121
		F.C.E	Kano	Kano	35	19	54
		F.C.E.T	Gusau	Zamfara	33	24	57
		F.C.E	Katsina	Katsina	14	11	25
			T o t a l		**410**	**245**	***655***

3.3 Sample and Sampling Procedure

Sample of the study consisted representatives of N.C.E. III Accounting students in Federal Colleges of Education in Northern States of Nigeria. Krejcie and Morgan (1970) recommended sample size of 242 for population of 655, see Appendix I. In order to enable the researcher get reasonable representation for the study, the population was increased to 270 (41.2%) ocomprising of 176 males and 94 females. The breakdown of the sample is presented in Table 3.2

Table 3.2: Sample for the Study

					M	F	
1	North Central	F.C.E.	Okene	Kogi	65	37	102
2	North East	F.C.E	Gombe	Gombe	44	21	65
3	North West	F.C.E.	Zaria	Kaduna	67	36	103
			T o t a l		**176**	**94**	***270***

To allow for equal opportunity to all Federal Colleges of Education in Nigeria, names of Federal Colleges of Education offering Business Education Programme in each geo-political zone were written separately on plain papers, rolled and placed on table, a student was asked to select one institution from each zone randomly. Three institutions selected formed the sample of the study. This is in line with Abiola (2007) who upheld that sample selection must be carried out in a way to give equal chance to every member of the population.

In order to avoid bias and give equal chance to students' to participate in the study, the researcher used student's performance in the Accounting pre diagnostic test in selecting the respondents. Students with 40 marks and above constituted the sample of the study.

3.4. Instrument for Data Collection

The instruments for the study were two. The first instrument was student's entry grades in Mathematics (O level Mathematics results); this document was collected from departmental record office in each Institution. The second instrument was adopted 2007

final year Accounting Diagnostic Examination which was administered to the students in three phases.

The first test was Pre-Diagnostic Test; this test was administered on the first day in the class. The result of the instrument enabled the researcher to determine the students level of understanding of Financial Accounting as well as basis for choice of methodology used in the research work. In the second phase, the researcher administered the second Accounting Diagnostic Test on Partnership final Accounting without adjustments; the test lasted for 35 minutes.

In the final phase, the researcher administered the third Accounting Diagnostic Test in the Partnership final Account with adjustment, the test lasted for one hour. The second and the third Accounting Diagnostic Test were subjected to statistical analyses for answering research questions and test of null hypotheses raised in chapter one. All the selected students attended the lectures and sat for the achievement tests.

To facilitate statistical analysis, the researcher students' entry grades in mathematics and diagnostic test were rated as in Table 3.3

Table 3.3: Rating Scale of Entry Grades and Scores of Diagnostic Test

S/NO	Entry Grades in Mathematics	Points	Scores of Diagnostic Test	Points
1	A1	8	75 – 100	8
2	B2	7	70 – 74	7
3	B3	6	65 – 69	6
4	C4	5	60 – 64	5

5	C5	4	55 – 59	4
6	C6	3	50 – 54	3
7	D7	2	45 – 49	2
8	P8	1	40 – 44	1
9	F9	0	0 – 39	0

3.4.1. Validity of Research Instrument.

Although Accounting Diagnostic Tests were adopted from 2007 final year NCE examination yet to ensure that the test item met the expected standard, consultations were made with two experts in Accounting and two in Research Methodology. They vetted all the Accounting Diagnostic Tests and their marking schemes. Their corrections and suggestions were incorporated into the final copy before they were administered. According to Uzosike (2008) face and content validity of a test instrument of this nature is considered adequate for its validity. Having subjected the designed instrument to face validity, it was therefore considered valid for the study.

3.4.2. Reliability of the Instrument

In order to determine the reliability of the instrument for data collection, the researcher conducted a pilot study using Guttman Split-half method in College of Education Akwanga with 40 students. Scripts collected were tallied and subjected to statistical analysis using the Statistical Package for the Social Sciences (SPSS), using Pearson Product Moment Correlation Coefficient. The result of the test gave reliability co-

efficient of 0.821. In this regard Mukherjee (1980) in Uzosike (2008) observed that the average value of correlation co-efficient must be around 0.80. These reliability co-efficient indicated that the instrument was reliable and internally consistent.

3.5 Procedure for Data Collection.

The researcher obtained letter of introduction from Head of Department of Vocational and Technical Education of Ahmadu Bello University, Zaria for permission to conduct the research which was seen in Appendix II. In the first stage of the study in each institution, the researcher collected students' entry grades in Mathematics (O level results) from the departmental record office. The second stage was to conduct Accounting Pre Diagnostic Test. The scripts were used for sample selection and choice of methodology that was employed in teaching the students. The researcher taught students Partnership final accounts without adjustment and administered the first Diagnostic Assessment Test in the third stage. A copy of the Pre Diagnostic Test and its marking scheme in Appendix III and IV respectively, also the First Accounting Diagnostic Assessment Test and their marking schemes are as seen in Appendix V and VI

The second week was used for teaching students Partnership final Accounts with adjustment and administration of the third Accounting Diagnostic Assessment Test as seen in Appendix VII. The researcher used staff members in the department to assist in

the invigilation and collection of scripts in the entire test conducted. The scripts were marked by the researcher personally using the marking scheme (Appendix VIII). The researcher used two weeks for each geo-political zone and one week for marking and recording. The whole exercises came to an end in 7 weeks.

3.6. Procedure for Data Analysis

The data were analysed in stages, descriptive statistics of frequency counts and percentage (%) were used for computing personal data of respondents. Secondly, frequency, percentage scores, mean scores, range were used for answering research questions. Pearson Product Moment Correlation Co-efficient was used for testing null hypotheses one and two. Wiersonman (1969) in Bude (2007) observed that Person Product Moment Correlation Coefficient is the most sensitive measure of relation between two sets of scores. Linear regression was used to test the extent of relationship between entry grades in mathematics and students performance in null hypothesis three. Spiegel (1972) in Aloysius (1998) highlighted that regression is used to determine or estimate how well a straight line explains the relationship between two or more variables. Finally, Z-test was used to test null hypotheses four and five. Aloysius (1998) in Christin (2008) endorsed that Z-test is a parametric statistical tool used to test hypothesis about the

differences between means of groups when the sample size is equal to or greater than 30. All the null hypotheses were tested at 0.05 level of significance.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

The research work was on relationship between entry grades in mathematics and students performance in financial accounting in Federal Colleges of Education in Nigeria. This chapter gave the report of the research findings based on students SSCE entry grades in Mathematics and their results in the first and second Accounting diagnostic test administered. The researcher used 270 students for the study, they all attended the lectures and sat for the three test but 16 students did not write their serial numbers on the answer sheet which was used for students identification, thus the valid scripts stood at 254 which were subjected to statistical analysis.

The first sets of data were presented in tables of frequencies and percentages as they concern demographic characteristics of the sample. The second set of data dealt with range; percentage scores and mean scores of students in the first and second Accounting diagnostic test which were used for answering research questions. The last sets of data were results of students performance in the first and second Accounting Diagnostic test that were subjected to Statistical Package for Social Sciences was used for test of the five Null hypotheses raised in chapter one.

4.1 Analysis of Demographic Variables of Respondents

Analysis of Demographic variables of respondents was conducted under the sub-headings in the Tables 4.1 to 4.13

Table 4.1: Distribution of Student Respondents by Gender

Sex	Frequency	Percent (%)
Male	167	65.7
Female	87	34.3
Total	***254***	***100***

Table 4.1 showed that 167 (65.7%) that sat for the test were males. The females' were 87 (34.3%), thus male students were more in number.

Table 4.2: Distribution of Students Respondents by Age

Age in Years	Frequency	Percent (%)
15-19	69	27.2
20-25	112	44.1
26-30	42	16.5
31 and above	31	12.2
Total	***254***	***100***

Table 4.2 indicated that the dominant age range of students' respondents was 20 – 25 years. They were 112 representing 44.1%. Next on the hierarchy were those between 15 – 19 years of age. They were 69, representing 27.2%. Forty two respondents representing 16.52% were between 26 - 30 years. Last on the hierarchy were 31 and above years were 31 representing 12.2%. On the whole, those between 20 – 25 years constituted the highest number of the students.

Table 4.3 Distribution of Respondents by Marital Status

Marital status	Frequency	Percent (%)
Married	76	29.9
Single	171	67.3
Separated	7	2.8
Divorce	0	0.00
Widow	0	0.00
Total	***254***	***100***

Table 4.3 showed the analysis of students respondents by their marital status. The results indicated that 171 (67.3%), were single. Seventy six students representing 29.9% were married. Only seven students, representing 2.8% were separated. Divorce

and widow were nil. The summary of the marital status revealed that the greater numbers of students that sat for the test were singles.

Table 4.4: Distribution of Respondents by their Institutions

Academic level	Frequency	Percent (%)
F.C.E. Okene	92	36.2
F.C.E Zaria	99	40.0
F.C.E. Gombe	63	24.8
Total	***254***	***100***

Table 4.4 showed 92 students representing 36.2% were from Federal College of Education Okene. Ninety nine (40.0%) were from Federal College of Education, Zaria. Sixty three (24.8%) students were from Federal College of Education, Gombe.

Answer to Research Questions

Students' scores in the first and second Financial Accounting Diagnostic tests were used for answering research questions. The analysis is presented in Tables 4.5 to 4.9.

Research Question One:

What is the relationship between students' entry grades in mathematics and their ability of solving problems in Financial Accounts within a stipulated time in Federal Colleges of Education in Nigeria?

The researcher used results in Table 4.5 to answer the research question.

Table 4.5 Summary of Results of Research Question One

Entry Grade	Before Time	Exact Time	Not completed	Total Students	Total scores	Average scored
A	21	12	3	36	2488	69.1
B	30	56	12	98	5674	57.9
C	2	41	68	110	5643	51.3
D	0	1	6	7	309	44.1
E	0	1	2	3	117	39.0

Table 4.5 sought to determine relationship between students' entry grades in mathematics and their ability of solving problems in Financial Accounting within the stipulated time. In the analysis, 21 students with "A" in their mathematics finished the test before the stipulated time. 12 students finished at exactly time while 3 students run short of time with average scores of 69.1 percent**.** Thirty students with "B" in their mathematics finished before the time, 56 finished exactly time while 12 students could not meet up with average scores of 57.9 percent. Greater number of students with entry grade of "C" in mathematics could not meet with time, 41 of them finished exactly time and only 2 students were able to finish before the time.

No student finished before the time among those with "D" and "E" entry grades in Mathematics, one student finished exactly time from the groups while six and two students from the groups could not meet up respectively. This result therefore revealed that most students with higher entry grades in mathematics finished before the time or at exactly time.

Research Question Two:

What is the relationship between students, entry grades in Mathematics and their performance in Financial Accounting in Federal Colleges of Education in Nigeria?

The results in Table 4.6 were used for answering the research question.

Table 4.6 Summary of Results of Research Question Two

Entry Grades	Number Of Students	otal scores of 1st and 2nd Accounting Diagnostic Tests results	Average scores of 1st and 2nd Accounting Diagnostic Tests	Grades of 1st and 2nd Accounting Diagnostic Tests
A	36	4976	69.1	B
B	98	11348	57.9	C
C	110	11286	51.3	C
D	7	618	44.1	E
E	3	312	39.0	F

Table 4.6 determined the relationship between entry grades in mathematics and students performance in Financial Accounting. The analysis showed that students with entry grades of "A" had average scores of 69.1% in Financial Accounting diagnostic test. Next to them were students with "B" with average scores of 57.9%. Students with "C" had average of 51.3%, followed by students with "D" that had 44.1% average. Students with "E" as entry grade in mathematics had the lowest average 39.0%. This results shows that students with higher entry grades in mathematics had a better results in Financial Accounting diagnostics tests.

Research Question Three:

To what degree do students' entry grades in Mathematics influence their performance in Financial Accounts in Federal Colleges of Education in Nigeria?

Table 4.7 was used to determine the degree, to which students entry grades in Mathematics influence their performance in Financial Accounting.

Table 4.7 Summary of Results of Research Question Three

Entry Grades	Number Of Students	Total scores of 1st and 2nd Accounting Diagnostic Tests results	Average scores of 1st and 2nd Accounting Diagnostic Tests	Grades of 1st and 2nd Accounting Diagnostic Tests
A	36	4976	69.1	B
B	98	11348	57.9	C
C	110	11286	51.3	C
D	7	618	44.1	E
E	3	312	39.0	F

Table 4.7 determined the degree to which entry grades in mathematics influences students performance in Financial Accounting. The analysis shows that students with "A" in O'level mathematics had average scores of 69.1% in Financial Accounting diagnostic test. Next to them were students with "B" with average scores of 57.9%. Students with "C" had average of 51.3%, followed by students with "D" that had 44.1% average. Students with "E" as entry grade in mathematics had the lowest average 39.0%. The range scores between those with "A" and students with "E" stood at 30.1%. The analysis therefore revealed that mathematics skills has great influence on student's performance in Financial Accounting.

Research Question Four:

What is the difference that exists between students' performances in the first and the second Accounting Diagnostic Test in Federal Colleges of Education in Nigeria?

To determine he difference that exists between student performances in the first and the second Accounting Diagnostic Test, analysis of Table 4.8 was used

Table 4.8 Summary of Results of Research Question Four

Entry Grades	Number Of Students	Total scores of 1st Accounting Diagnostic Tests Results	Average scores of 1st Accounting Diagnostic Test	Total scores of 2nd Accounting Diagnostic Tests Results	Average scores of 2nd Accounting Diagnostic Test	Difference
A	36	2527	70.2	2449	68.03	1.9
B	98	5566	56.8	5782	59	-2.2
C	110	5621	51.1	5665	51.5	-0.4
D	7	296	42.3	322	46	-3.7
E	3	98	32.7	100	33.3	-0.6

Entry grades	Gender	Number Of Students	Total scores of Male and Female in 1st and 2nd Accounting Diagnostic Tests results	Average scores of 1st and 2nd in Accounting Diagnostic Tests	Differences between male and Female 1st and 2nd Accounting Diagnostic Tests

Table 4.8 determined the differences that exist between students performance in the first and second Financial Accounting Diagnostic test. Students with entry grade of "A" in Mathematics had a slight positive difference of 1.9. Students with "B" had negative difference of 2.2. Negative Difference of 0.4 was scored for students with "C" in their O'level Mathematics. Students with "D" had the difference of -3.7 and finally students with "E" had insignificant difference of -0.6 as their average. Although there was differences on the performance of students in the first and second Financial Accounting Diagnostic Tests, but the differences is not significant.

A	Male Female	23 13	1656 832	72 64	8
B	Male Female	63 35	3843 1831	61 52.3	8.7
C	Male Female	58 52	3190 2453	55 47.2	7.8
D	Male Female	3 4	144 165	48 41.3	6.7
E	Male Female	1 2	42 75	42 37.5	4.5

Research Question Five:

What difference exists between the Male and Female entry grades in Mathematics and their performance in Financial Accounting in Federal Colleges of Education in Nigeria?

To determine the difference that exists between the male and female entry grades in mathematics and their performance in Financial Accounting in Federal Colleges of Education in Nigeria Table 4.9 was used.

Table 4.9 Summary of Results of Research Question Five

Table 4.9 sought to determine the difference that exist between Male and Female entry grades in Mathematics and their performance in Financial Accounting in Federal Colleges of Education in Nigeria. The analysed data revealed that male students with "A" in their O'level mathematics had average positive difference of 8 marks over the female counterparts. Male students with "B" in mathematics as their entry grades had advantage of 8.7 marks over the female students. Male students with "C" in their O'level mathematics had average of 58% against 52% for the female. Average of 48% was accounted for male

students with “D” in their O’level mathematics against 41.3% for the female students. Finally male students with “E” as their entry grades in mathematics scored average of 42% against 37.5% for female students. The summary of the results revealed that in all categories of students with same entry grades, male students perform better.

4.2 Test of Null Hypotheses

In this study, five Null hypotheses were raised in chapter one, aimed at proffering solution to the objectives raised for the study. In the course of test of the Null hypotheses, entry grades in Mathematics and students performance in first and second Accounting diagnostic test were used and subjected to statistical analyses using SPSS and the results were interpreted.

Pearson Product Moment Correlation Coefficient was used to test Null hypotheses one and two. Linear regression analysis was used for test of Null hypothesis three. Finally, the researcher used z-test analysis for test of null hypothesis four and five. In the test of null hypotheses, if r-calculated value is less than or equal to the r-critical at 0.05 level of significance the Null hypothesis will be accepted. This implies there is no significant relation between the two variables. If on the other hand, the r-calculated value is greater than the r-critical value, the Null hypothesis is rejected. This means there is significant

relation between the variables. The summary of the results for test of Null hypotheses were as shown in Table 4.10 – 4.2.1

Research hypothesis One:

There is no significant relation between students' entry grades in mathematics and their ability of solving problems in Financial Accounts within a stipulated time in Federal Colleges of Education in Nigeria

4.2.1 Test of Null Hypothesis One

Table 4.10 Correlation Analysis between Students' Entry Grades and their ability of solving Financial Accounts Problem

Variables	Mean	Std. Deviation	N	Df	r-cal	r-crit	Sig. (2-tailed)
Entry grades in Mathematics	3.09	0.52	254	506	2.09	.195	0.034
Solving in financial accounting question timely	4.90	1.28	254				

The result of the hypothesis one is presented in Table 4.10 The calculated r, 2.09 is greater than critical r, 0.195, this can also be seen in probability value of 0.034 < 0.05. The result therefore shows that there is a significant relationship between entry grades in mathematics and the ability of solving problems in financial accounting on time in Federal Colleges of Education in Nigeria (The Null hypothesis is therefore rejected at 0.05 level of significance.

Null Hypothesis Two:

There is no significant relationship between students' entry grades in mathematics and their performance in financial accounting in Federal College of Education in Nigeria

4.2.2 Test of null hypothesis Two

Table 4.11 Correlation Analysis between Students' Entry Grades and their Performance In Financial Accounts

	Mean	Std. Deviation	N	Df	r-cal	r-crit	Sig. (2-tailed)
Mathematics entry grade	3.83	.512	254	506	3.09	.195	0.036
Performance in Financial accounting	4.18	.921	254				

The result of test of null hypothesis two is presented in Table 4.11, means scores of entry grades in mathematics was 3.83 and performance in financial accounting stood at 4.18 with standard deviation of .512 and .921 respectively. The r-cal was 3.09 greater than r-crit, 0.195, this can also be seen in alpha value the result 0.036 < 0.05 indicates that there is a significant relationship between students entry grades in mathematics and performance in financial accounting in Federal College of Education in Nigeria. The null hypothesis is therefore rejected at 0.05 level of significance.

4.2.3 Test of Null Hypothesis Three

Research Hypothesis 3:

There is no significant relationship that exists between students' entry grades in mathematics and the extent of their performance in Financial Accounting in Federal Colleges of Education in of Nigeria.

Table 4.12 Regression Analysis between the Extent Entry Grades in Mathematics Influence Performance in Financial Accounts

Variables	Mean	Std. Dev	N	Std. Error	Error of Estimate	Beta	z-value	R	R square	Adjusted R square	Sig. (2-tailed)
Performance in Financial Accounting	9.56	.019	254	5.18	4.5	.88	1.85	0.88	0.774	0.768	.000
Entry grade in Mathematics	.89	.016	254	.08							

Table 4.12 present the result of regression analysis used for measuring the extent to which entry grades in mathematics influence the performance of student in financial accounting. The analysis present Beta value of 0.88, z-value of 1.88, adjusted R square stood at .0768; R was .88 with R-Square of extent of the relation of .774. This result shows 77.4% of estimation efficient of the model. The probability, Sig. (2-tailed) = 0.000, shows that Entry grade in mathematics significantly influence student performance in Financial account at 0.05 level of significance.

4.2.4 Test of Null Hypothesis Four

Research Hypothesis 4:

There is no significant difference between students' performance in the first and second diagnostic tests in Federal College of Education in Nigeria

Table 4.13: Z-test analysis of first and second diagnostic test of the respondents

Variables	Mean	Std. Deviation	N	Df	z-test	z-crit	Sig. (2-tailed)
1st Accounting Diagnostic Test	3.50	.64	254	506	.149	.195	.14
2nd Accounting Diagnostic Test	3.99	.45	254				

Z-test analysis was used for test of differences that exist between student's performances in the first and second accounting diagnostic test. The result presented in Table 4.13 revealed mean scores of 3.50 and 3.99 for 1st and 2nd accounting diagnostic test and standard deviation of .64 and .45 respectively. The z-test stood at .149 lest that z-crit value of .195. The probability value stood at 0.137 > 0.05 at 0.05 level of significance. Therefore, the hypothesis, which states that "there is no significant difference between first and second diagnostics tests of respondents in the Nigeria's Federal Colleges of Education", is accepted

4.2.5 Test of Null Hypothesis Five

Research Hypothesis 5:

There is no significant difference between male and female students' entry grades in Mathematics in Federal College of Education in Nigeria

Table 4.14: Z-Test Analysis of Male and Female Entry Grades in Mathematics and their performance in Financial Accounts

Z-score difference between male and female entry grades in mathematics and their performance in financial accounting in Federal Colleges of Education in Nigeria	Gender	N	Df	Mean	Std. Dev	Std. Error Mean	z-test	z-crit	Sig. (2-tailed)
	Male	334	506	4.06	1.01	.077	.215	.195	.000
	Female	174		3.05	.99	.057			

Z-test analysis was used for test of differences that exist between male and female entry grades in mathematics and their performance in financial accounting. The result is presented in Table 4.9. The mean scores of the male stood at 4.06 and that of female was 3.05 with standard deviation of 1.01 and .99 respectively. Z-cal was .215 greater that z-crit of .196. The probability value stood at .000 < 0.05. Therefore the hypothesis which states that there is no significant difference between male and female students' entry grades in mathematics in Federal College of Education in Nigeria was therefore rejected at 0.05 level significance.

4.3 Discussion of Findings

This research work was on relationship between entry grades in Mathematics and students performance in Financial Accounting in Federal Colleges of Education in Nigeria. Discussion of the findings of the research work is as follows:-

Research question one and null hypothesis one identified that there is relationship between students' entry grades in Mathematics and their ability of solving problems in Financial Accounts within a stipulated time in Federal Colleges of Education in Nigeria. This therefore means that a student with higher entry grades in mathematics has the tendency of solving Financial Accounting faster. Thus the null hypothesis of no significant relation between students' entry grades in mathematics and their ability of solving problems in accounts of accounting within a stipulated time in Federal Colleges of Education in Nigeria was rejected at 0.05 level of significant. This finding agreed with Adelman (1999) who conducted a national longitudinal study from 1980 to 1993 and indicated that knowledge and skills of mathematics contributed to the successful completion of a college degree. In particular, finishing intensive high school mathematics courses was noted as the most important factor for degree educational task on time and better.

Guest (2003), endorsed that the relational level of cognitive complexity of mathematics that is achieved could facilitate student's performance in accounting courses thereafter, helping them to integrate relevant points into a coherent structure. This finding also agreed with Budi (2007) who observed that the importance of mathematical

knowledge and skills cannot be overemphasized for success in Financial of accounting; he observed that students with skills and knowledge in mathematics may have the potentials of coping with accounting problems. He stressed that mathematics skill facilitate students knowledge and skills in accounting.

The findings of Research question two revealed that there is relationship between students, entry grades in Mathematics and their Performance in Financial Accounting in Federal Colleges of Education in Nigeria. On this ground the null hypothesis one was rejected at 0.05 level of significance. This therefore means that students with higher entry grades in mathematics performed better in financial account diagnostic test.

The research work agreed with Gist (1990) who assumed that students not equipped with strong background in mathematics will not choose accounting as a major, and thus a majority of non-observed that accounting majors may need remedial work in the area of mathematics. Kealey et al. (2005) found that critical thinking skills, overall GPA, aptitude (i.e., ACT scores) in mathematics and English prior to entering university, and majoring in accounting were significant predictors of examination performance in a Financial of Accounting course. Bilyaminu (2007) opined that arithmetic skills are important for students to understand accounting systems and financial statement analysis. He stressed that academic and professional success in accounting will be facilitated by a high level of mathematical skill. This also agreed with Lee and Lee (2009) that a grade in

mathematics course a relevant indicator of academic success for students in both engineering and business.

To determine the degree to which students' entry grades in Mathematics influences their performance in Financial Accounts in research question three and null hypothesis three linear regression analyses was used. The result presented in Table 4. 7 revealed R-Square of degree of the influence of .774. This result shows 77.4% of estimation efficient of the model. This therefore means that mathematics skills have 77.4% degree of influence on students' performance in financial accounting. Along the same line as the Willingham (1985), Young and Barrett (1992),Cabrera,Nora and Castaneda (1993),Mouw and Kkanna (1993), Eimers and Pike (1997) and Noble *et al*. (1999) provide evidence that intellectual variables can be useful predictors of overall academic success for college students. The intellectual variables include entry grades and entry scores. Guest and Vecchio (2003) observed that the extent to which entry grades influence students performance in tertiary institution depend on how closely the skills are related. He stressed that when fundamental concepts, methods of analysis, skills of solving and ways of understanding are common to all of the topics, it is believed there could be significant relationship between students performance.

Brookshire and Palocsay (2005) and Smith and Schumacher (2006) both studies the effect of entry grades on students performance, percentile rank in high school graduating class, scores on college mathematics placement exams, grades in specific

general education courses, and college grade point averages on the success of students in an introductory management science course and in an actuarial studies programme, respectively.

In the test of research question four and null hypothesis four which determined the difference that exists between student performances in the first and the second Accounting Diagnostic Tests in Federal Colleges of Education in Nigeria. The finding revealed that there is no difference that exists between students performance in the first ad second accounting diagnostic tests in Federal Colleges of Education in Nigeria. Therefore, the hypothesis, which states that "there is no significant difference between first and second diagnostics tests of respondents in the Nigeria's Federal Colleges of Education", is accepted

To determine the difference that exists between male and female students' entry grades in mathematics in Federal College of Education in Nigeria in research question five and null hypothesis five, Z-test analysis was used, and the results are presented in Table 9. This analysis revealed the probability value of .000 < 0.05. Therefore the hypothesis which states that there is no significant difference between male and female students' entry grades in mathematics in Federal College of Education in Nigeria was therefore rejected at 0.05 level of significance.

This study has also confirmed the views of (Skaalvik 1990), who observed that by the end of high schools boys perform better than girls in mathematics. In a study of Harrison and Rainer (1992) the findings showed gender difference in levels of self-efficacy expectations with regard to computing and accounting. Other related studies on the same area include Mone (1994), the study found that boys had higher mathematics self-concept and self-perceived mathematics skill than girls. Hugh (2000) who observed that, women received lower ratings from their teammates and gave lower ratings to their teammates than did men, but the differences was not statistically significant. Hyde, Fennema and Lamon (2001) discovered that in secondary school and college, boys out-performed girls in the area of problem solving and Baker (2006) further noted that gender is "moderately associated" with attained academic rank.

CHAPTER FIVE

SUMMARY CONCLUSION AND RECOMMENDATIONS

The chapter presents the summary, conclusion and recommendations of research work on relationship between entry grades in mathematics and students' performance in Financial Accounting in Federal Colleges of Education in Northern States of Nigeria, based on results of investigation the researcher proffers recommendations.

5.1 Summary

The study was carried out to determine the relationship between entry grades in Mathematics and students performance in Financial Accounting in Federal Colleges of Education in Northern States of Nigeria. In order to achieve the aim of the study, five research questions and five null hypotheses were raised in line with the specific objectives. Two hundred and seventy accounting students (270) were used for the research. 16 students did not properly fill their personal data therefore it become difficult for research to identify them. Thus 254 answers scripts were subjected to statistical analyses. The Bio-data of the respondents were presented using simple frequencies, percentage scores, range scores and mean scores were used to answer five research questions and Null hypotheses one and two were tested using Pearson Product Moment Correlation Coefficient. Null hypothesis three was tested using linear regression and Z-test

analysis was used in test of null hypotheses four and five. All hypotheses were tested at 5% level of significance. The major findings of the study are as stated in 5.1

Table 4.6 and 4.11 reported the results **of** students' performance which was used for answering research two and Pearson Product Moment Correlation test which was used to test Null Hypothesis two. The results were used to determine the relationship between students' entry grades in mathematics and their performance in financial accounting in Federal College of Education in Nigeria, the finding of the research work revealed that there was relationship between students entry grades in mathematics and their performance in Financial Accounting, this is also seen in the test of Null hypothesis which revealed the alpha value result of 0.036 < 0.05. This result indicated that there is a significant relationship between students' entry grades in mathematics and performance in Financial Accounting in Federal College of Education in Nigeria. The null hypothesis was therefore rejected.

Table 4.7 and 4.12 showed the result of research question three and a linear regression test that was employed to determine the degree to which students' entry grades in Mathematics influences their performance in Financial Accounts in Federal Colleges of Education in Nigeria. According to the findings of this study, students' higher mathematics skills had a significantly higher increase in their efficacy ratings than those with lower entry grades in mathematics

Table 4.8 and 4.13 highlighted the significant difference in the Z-test scores on the difference that exists between student performances in the first and the second Accounting Diagnostic Test in Federal Colleges of Education in Nigeria. The result showed that there is insignificant difference in the performance of students in the first and second Financial Accounting Diagnostic Tests. In the test of Null hypothesis, the Z-test scores of 1.49 was less than z-crit value of .195. The probability value stood at 0.137 > 0.05 at 0.05 level of significance. Therefore, the Null hypothesis, which states that "there is no significant difference between first and second diagnostics tests of respondents in the Nigeria's Federal Colleges of Education", was accepted

To determine the difference that exists between male and female students' entry grades in mathematics in Federal College of Education in Nigeria in research question five the difference in the performance of the male and female scores was used and Z-test analysis was used for testing null hypothesis five, the results are presented in Table 4. 9 and 4.14. This analysis revealed the probability value of .000 < 0.05. Therefore the Null hypothesis which stated that there is no significant difference between male and female students' entry grades in mathematics in Federal College of Education in Nigeria was therefore rejected.

5.2 Conclusion

The study revealed there is a significant relationship between entry grades in mathematics and ability of solving problems in financial accounts within a stipulated time in Federal College of Education in Nigeria; it therefore follows that those students with weak entry grades in mathematics will not be fast in solving accounting problems. The researcher therefore concluded that academic and professional success in accounting will be facilitated by a high level of mathematical skill; this could be due to the fact that students with higher entry grades in mathematics are more comfortable with numbers.

According to the findings of this study in research question one and Null hypothesis one, the study revealed that there is significant relationship between students' entry grades in mathematics and their performance in financial accounting in Federal College of Education in Nigeria. The researcher therefore concluded that students with higher entry grades in mathematics have the tendency of performing better in Financial Accounting.

In the test of null hypothesis three the result revealed that mathematics skills have 77.4% influences on students' performance in financial accounting. This therefore means that when students have higher entry grades in mathematics, there is tendency that they will do better in financial accounting course, the relational level of cognitive complexity that was achieved in mathematics could facilitate their learning in financial accounting

thereafter, helping them to integrate relevant skills into a coherent structure in financial accounting. Null hypothesis four revealed that there is no significant difference that exists between students' first and second accounting diagnostic tests conducted in the research, it therefore follows that performance of students in the two accounting diagnostic tests were consistent. This may be due to the fact that although the students learn under the same environment, same teacher and same teaching method but the influence of entry grades in mathematics is still influential in determining student's performance in financial accounting.

In the test of null hypothesis five, Z-test analysis was used, and the results are presented in Table 9 revealed that significant difference exist between male and female students' entry grades in mathematics in Federal College of Education in Nigeria was therefore the null hypothesis was rejected. The researcher therefore concluded that despite the same entry grades in mathematics, male students perform better in financial accounting.

5.3 Recommendations

In order to improve students' performance in financial accounting in Colleges of Education in Nigeria, the following recommendations were provided:-

1. Orientation programs should be mounted by the schools authority to enlighten the secondary school students on the need to develop interest in mathematics, because it will provide them with the necessary knowledge, skills and abilities that will enable them to cope up with further educational challenges
2. Admissions policy developed by schools and colleges or their agencies regarding entrance to a business education program must base on merits for the purpose of predicting a student's success in a given programme.
3. A credit in mathematics should be the minimum grade for admitting students to Business Education programme, this should also include students that will be admitted through Pre-NCE
4. Accounting teachers should organize weekly tutorial, assignment and tests continuously. This will orient students to think critically at a higher cognitive skill level in their secondary schools.
5. Accounting teachers should explore strategies of encouraging female students in particular by providing prizes, rewards and motivational statements that will increase their interests and active learning habits in Financial Accounting
6. Department of Business Education should use Accounting Diagnostic Assessment Test (ADAT) to identify students at risk before selecting area of specialization.
7. Accounting lecturers in Colleges of Education should organize supplementary instruction for those who are identified as having problem in Financial Accounting.

This may improve the potential for success of students who are motivated but simply lack the necessary study skills.

5.4 Limitations of the Study

The researcher met two main limitations in this study. These were:-

1. ability to have direct access to students was not possible.
2. some students deliberately refused to write their identification numbers, this made it impossible for the researcher to have complete data in the analyses.

5.5 Suggestions for further Study

The researcher suggested that further study be considered in the following areas:-

1. The relationship between environmental factors and students performance in financial accounting in Federal Colleges of Education in Nigeria.
2. The relationship between entry grades in English language and students performance in financial accounting in Federal Colleges of Education in Nigeria.

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APPENDIX I

Table for Determining Sample Size from a Given Population

Krejcie and Morgan (1970) Determining Sample Size for Research Activities, Educational and Psychological measurement

APPENDIX II

LETTER OF INTRODUCTION FROM THE HEAD OF DEPARTMENT APPENDIX III:

The first Pre-Accounting Diagnostic Test

You are required to answer ALL following questions by ticking the appropriate answer among the options provided

Time Allowed 40 minutes

Name……..

Research Number……

School…….

Gender……..

1. Liquid capital in a business means: -

(a) All the current assets of a given balance sheet
(b) All assets are convertible into cash
(c) All assets that are moveable
(d) That portion of the assets that could be turned into liquid

2. Which of these documents will be used to record entry on the credit side of bank column cash book?

(a) cheque counterfoil
(b) duplicate copy of a bank teller
(c) a cheque leaflet
(d) a bank pass book

3. A business is said to be SOLVENT when: -

(a) total current asserts ate less than current liabilities

(b) total assets are less than current liabilities

(c) total current assets are equal to current liabilities

(d) total debts are less that total assets

(e) it can pay all its creditors

4. Which of the following is a liability?

(a) A credit balance in the bank account of the business as show n in the cash book.

(b) Rent received due but unpaid

(c) Wages paid in advance

(d) Closing stock of the business

5. The number of times a firm sells and replenishes its average stock in a given period is known as:-

(a) rate of turnover

(b) stock turn

(c) total average stock

(d) turnover

6 Returns inward were understated. The effect is that: -

(a) Amount of sales was understated

(b) Amount of sales returns was understated

(c) Amount of goods available for sales was understated

(d) Amount of purchases returns was understated

(e) Amount of purchases returns was understated

7. Income received in advance is shown in the balance sheet as: -

(a) Current assets

(b) Current liabilities

(c) Intangible assets

(d) Tangible assets

8. The drawings accounts of a sole trader are transferred to the: -

(a) Credit side of the trading account

(b) Capital account

(c) Credit side of profit and loss account

(d)` Current liabilities in the balance sheet

9. Which of the following may not cause depreciation?

(i) Wear and tear (ii) Obsolesce and passage of time (iii) Fluctuation of price

(a)` ii only

(b) iii only

(c) i only

(d) ii and iii only

10. The amount carried in the balance sheet is classified as: -

(a) Current liabilities

(b) Investment

(c) Current assets

(d) Fictitious assets

11. when provision is made for doubtful debts, the accounting entries are:- DEBIT

(a) Profit and loss accounts and credit sales account

(b) Trading account and credit debtors account

(c) Profit and loss account and credit debtors' account

(d) Profit and loss account and credit provision for bad debt

(12) A business transaction

(a) May affect two separate accounts.

(b) Cannot affect two separate accounts.

(c) Will always affect two separate accounts.

(d) Will affect the same account twice.

(13) Which of the following entries is correct when goods are bought on credit?

a) the sales account is debited and purchase account credited

b) the purchase account is debited and the debtors account credited

c) the purchase account is debited and the customer's account credited

d) the debtors' account is debited and purchase account credited

(14) The Main purpose of the subsidiary books of accounts is to:-

(a) Given a back-up service to the ledger.

(b) Provide additional information about individual transaction.

(c) Acts as a memo of information not recovered elsewhere.

(d) Group together and summarize information for feeding into the trial.

(15) The accounting concept which explains that revenue of the business is considered earned on the day when goods are transported to the customer in exchange for a valuable is:-

(a) money as a common denominator

(b) cost concept

(c) dual concept

(d) realization concept

(16) Furniture worth N6, 000 was returned to the supplier. What were the effects on the account of the business?

(a) Assets decrease while liabilities increase

(b) Assets and liabilities both increase

(c) No effect at all

(d) Both assets and liabilities decrease

(17) Which of the following is a 'contra' entry?

(a) lodgement of cheque in the bank account

(b) withdrawals of cash from bank for private purposes

(c) lodgement of cash in hand into the bank account.

(d) Cash sales paid into bank.

(18) trade discount received is recorded only in the:-

(a) Cash book

(b) Ledger

(c) Trial balance

(d) Bought journal

(19) Remi settled her account by cheque for N900 and was allowed a cash discount of N40.00. The accounting entries for this discount will be: -

(a) Debited to Remi's account and credited to discount account

(b) Debited to Remi's account and debited to discount account

(c) Credited to Remi's account and credited to discount account.

(d) Credited to Remi's account and debited to discount account.

(20) Which of the below statements is not correct?

(a) Provision for bad debt is deducted from debtors' total in the balance sheet

(b) An increase in provision for bad debt appears on the debit side of the profit and loss account.

(c) The bad debt account is closed to the debit side of the profit and loss account.

(d) Bad debt is a deduction form debtors after making provision for bad and doubtful debt

(21) Which of the following sections of the partnership Act will apply when there was no written agreement?

(a) Section 44 of the 1890 Partnership Act.

(b) Section 12 of the 1890 Partnership Act.

(c) Section 20 of the 1890 Partnership Act

(d) Section 24 of the 1890 Partnership Act.

(22) Carriage on sales is charged to the:-

(a) credit side of the profit and loss account

(b) credit side of trading account

(c) debit side of the profit and loss account

(d) debits side of profit and loss appropriation account

.

(23) Carriage outwards in accounting term for account spent on:-

(a) goods sold

(b) excess stock

(c) goods for production

(d) goods purchased

(24) Capital is the :-

(a) money owned by the business to others

(b) liability of the business to its proprietor

(c) money owed to the business by others

(d) total of the long term liabilities

(25) Payment of salaries to partners is:-

(a) a charge to profit and loss account

(b) a charge to profit and trading accounts

(c) an appropriation of interest on capital

(d) an appropriation of divisible profit

(26) Cash book could be best defined as:-

(a) the main of principal book account

(b) subsidiary book

(c) a subsidiary book for ledger entry only

(d) a subsidiary book and a ledger for cash accounts

(27) The accounting equation states that:-

(a) C + L

(b) A + L

(c) A + C

(d) L - C

(28) Which of theses is NOT a balance sheet item?

(a) Provision for depreciation of fixed assets

(b) Provision for discounts

(c) Outstanding expenses

(d) Bad debts recovered

(29) Uncredited cheques appear on the

(a) debit side of the bank statement and not on the credit side of cash book

(b) credit side of the bank statement and not the debit side of cash book

(c) debit side of cash book and not on the credit side of bank statement

(d) debit side of cash book and not on the credit side of bank statement

(30) Which of this statement is correct about favourable balance in the Receipt and Payment?

(a) it increases current liabilities in the balance sheet

(b) it decreases current liabilities in the balance sheet

(c) it increase current assets in the balance sheet

(d) it decreases current assets in the balance sheet

(31) Direct payment into bank account of a customer will appear on the:-

(a) debit side of bank statement and not on the credit side of the cash book

(b) credit side of the bank statement and not on the debit side of the cash book

(c) debit side of the cash book and not on the credit side of the bank statement

(d) credit side of the cash book and not on the debit side of the bank statement

(32) The account of rent received showed a CREDIT balance at the end of the year. This means that-

(a) The rent was received in advance during the current year

(b) The rent received was outstanding during the year

(c) The rent was outstanding since the previous year

(d) The rent was prepaid since the previous year

(33) Which of these is/are not correct entry/ries on the CREDIT side of a partner's current account?

(a) interest on partner's capital account

(b) interest on unfavorable current account balance

© interest on partner's drawings

(d) b and c above

(34) A trial balance is NOT regarded as an account because it:-

(a) it does not have a date column

(b) it does not have up to eight columns as a ledger

© it is a summary of balances in the ledger at a given time

(d) it does not have debit and credit entries

(35) Which of theses errors will be disclosed by the trial balance?

(a) errors of omission

(b) errors of commission

© errors of original entry

(d) none of the above

(36) Which of the following is not regarded as specialized book of account?

(a) bought journal

(b) sales journal

© proper journal

(d) returns Journal

(37) Double entry principles states that:-

(a) each transaction having a debit entry must have a corresponding debit entry in another account

(b) for every debit entry, credit entry must be recorded twice

© each transaction with a debit entry must have a corresponding credit entry

(d) for every credit entry, debit entry must be recorded twice

(38) Purchases in Accounting refer to goods bought for:-

(a) a final usage

(b) repairs

© resale

(d) office use

(39) The balance from the cash book should not be posted to the ledger because:-

(a) the account has been balanced for the month concerned

(b) the account has been closed for the period stated

© cash book is one of the subsidiary books of accounts

(d) cash book also performs the function of a ledger

(40) Purchases account contains:-

(a) entries of goods sold on credit only

(b) entries of goods bought on credit only

© entries of credit purchases only

(d) entries of cash and credit purchases

APPENDIX IV

First Accounting Diagnostic Test Marking Scheme

Each Question is 2.5 marks

1	A	21	D
2	A	22	C
3	A	23	A
4	A	24	B
5	A	25	D
6	B	26	D
7	B	27	A
8	B	28	D
9	C	29	D
10	D	30	C
11	C	31	B
12	C	32	A
13	D	33	D
14	A	34	C
15	D	35	D
16	D	36	C
17	C	37	B
18	D	38	D
19	D	39	D
20	D	40	D

[2.5 x 40 = 100]

APPENDIX V

Second Accounting Diagnostic Test on Partnership final Accounts without Adjustments.

Name……Research Number……

School……Gender……..

Comprehensive Partnership Trading, Profit and Loss Account and Balance Sheet without adjustments

A. Ibrahim and J. Haruna are partners in the firm of Ibrahim and Co. The following Trial Balance is extracted from their books on September, 1992.

	DR	CR
Capital account:		
A. Ibrahim		1,500.00
J. Haruna		1,000.00
Drawings account:		
A. Ibrahim	360.00	
J. Haruna	240.00	
Buildings	1,200	
Fixtures & Fittings	140.00	
Motor Vehicles	760.00	739.00
Stock – 1st October, 1991	875.00	
Sundry debtors/creditors	622.00	5,272.00
Purchases/sales	3,501.00	102.00
Returns	221.00	
Postage and stationery	89.00	
Motor Vehicles expenditure	96.00	
Wages & salaries	326.00	
Rent & Rates	124.00	
Received	232.00	105.00
Carriage Outwards	79.00	
Cash in hand	25.00	
Cash at bank	320.00	

	8,964.00	**8,964.00**

You are required to prepare Trading, Profit and Loss Account for the year ended 30th September, 1992 and a Balance Sheet as at that date taking into consideration the following:-

(a) Stock at 30th September, 1992 was valued at N987.00

(b) Share Profits and Losses equally

APPENDIX VI

Marking Scheme of First Diagnostic Test on Partnership Final Account without adjustment

A. Ibrahim & Co. Trading, Profit and Loss account for the year ended 30th September, 1992 (2)

		₦/K	₦/K
Opening stock	(2)875.0	Sales	(2)5,272.00
Add: Purchase	(2)3,501.00	Less returns (in)	(2)102.00
	(2)4,376.00	Cost of sales	(2)5,170.00
Less returns (out)	(2)221.00		
	(2)**4,155.00**		
Less closing stock	(2)987.00		
Cost of good sold	(2)3,168.00		
Gross Profit c/d	(3)2,002.00		
	(2)**5,170.00**		(2)**5,170.00**
Discount allowed	(2)105.00	Goss Profit b/d	(1)2,002.00
Postage and stationary	(2)89.00	Discount received	(2)232.00
Motor vehicles exp.	(2)96.00		
Wages and salaries	(2)326.00		
Rent and Rates	(2)124.00		
Carriage outwards	(2)79.00		
Net profit c/d	(3)1,415.00		
	(2)**2,234.00**		(2)**2,234.00**

Profit and Loss Appropriate Account

	₦/K		**₦/K**
Share of profit			
A. Ibrahim ($^1/_2$)	(2)707.50	Net Profit b/d	1,415.00
J. Haruna ($^1/_2$)	(2)707.50		
	(2)**1,145.00**		(2)**1,145.00**

IBRAHIM & HARUNA(2) Balance Sheet as at 30th September, 1992			
	₦/K		₦/K
Capital Account (1)		**Fixed Assets:** (1)	
A. Ibrahim	(2)1,500.00	Buildings	(2)1,200.00
J. Haruna	(2)1,000.00	Fixtures	(2)140.00
		Motor Vehicle	(2)760.00
	(2)**2,500.00**		(2)**2,100.00**
Current Accounts: (1)		**Current assets:** (1)	
A. Ibrahim	(2)347.50	Sundry Debtors	(2)622.00
J. Haruna	(2)467.50	Cash in Hand	(2)25.00
Current Liabilities:			
Sundry Creditors	(2)739.00	Stock at close	(2)978.00
	(2)**4,054.00**		(2)**4,054.00**

[100 Marks]

You are required to prepare Trading, Profit and Loss Account for the year ended 30th September, 1992 and a Balance Sheet as at that date taking into consideration the following:-

(a) Stock at 30th September, 1992 was valued at N987.00

(b) Share Profits and Losses equally

APPENDIX VI

Marking Scheme of First Diagnostic Test on Partnership Final Account without adjustment

A. Ibrahim & Co. Trading, Profit and Loss account for the year ended 30th September, 1992

		₦/K	₦/K	
Opening stock	875.0	Sales	5,272.00	**Profit and Loss Appropriate Account**
Add: Purchase	3,501.00	Less returns (in)	102.00	
	4,376.00	Cost of sales	5,170.00	
Less returns (out)	221.00			
	4,155.00			
Less closing stock	987.00			
Cost of good sold	3,168.00			
Gross Profit c/d	2,002.00			
	5,170.00			
	₦/K		**₦/K**	
Discount allowed	105.00	Goss Profit b/d	2,002.00	
Postage and stationary	89.00	Discount received	232.00	
Motor vehicles exp.	96.00	Net Profit b/d	1,415.00	
Wages and salaries	326.00			
Rent and Rates	124.00			
Carriage outwards	79.00			
Net profit c/d	1,415.00			
	2,234.00		**2,234.00**	
Share of profit				
A. Ibrahim (1/2)	707.50			
J. Haruna (1/2)	707.50			
	1,145.00		**1,145.00**	

IBRAHIM & HARUNA
Balance Sheet as at 30th September, 1992

	₦/K		₦/K
Capital Account		**Fixed Assets:**	
A. Ibrahim	1,500.00	Buildings	1,200.00
J. Haruna	1,000.00	Fixtures	140.00
		Motor Vehicle	760.00
	2,500.00		**2,100.00**
Current Accounts:		**Current assets:**	
A. Ibrahim	347.50	Sundry Debtors	622.00
J. Haruna	467.50	Cash in Hand	25.00
Current Liabilities:			
Sundry Creditors	739.00	Stock at close	978.00
	4,054.00		**4,054.00**

APPENDIX VII

Second Accounting Diagnostic Test on Partnership final Accounting with Adjustment

Instruction: From the following information, you are required to prepared Partnership Final Accounts and Balance sheet.

Time Allowed: 1hours

You are required to the write the following information on your answer sheet

Name……..

School……..

Registration Number…….

Gender……

Trading, Profit and Loss Account with Adjustments

Dike, Azuka and Ogugua carry on business in partnership and share profits and losses in the ratio of 5:2:1 respectively.

The Trial balance extracted from the books as at 31st December 2009

	₦ / K	₦ / K
Capital Accounts:		
Dike		4,100.00
Azuka		1,500.00
Ogugua		800.00
Current Accounts:		
Dike		410.00
Azuka		315.00
Ogugua	30.00	
Freehold land and building	7,000.00	
Individual trade expenses	140.00	
Loan Account – Dike		3,800.00
Machinery and plant as cost	8,100.00	
Office salaries	210.00	
Purchases	17,250.00	

Professional charges	20.00	
Provision for depreciation on plant and machinery – 1/01/20….		3,250.00
Provision for doubtful debts – 01/01/20….		200.00
Rates, telephone and insurance	220.00	
Sales		27,170.00
Sundry debtors	6,340.00	
Bank overdraft		3,140.00
Bank charges	330.00	
Sundry creditors		3,005.00
Stock on hand – 01/01/20….	3,960.00	
Wages	4,090.00	
TOTAL	**47,690.00**	**47,690.00**

Included in the item 'Machinery and Plant' are payments duly made on the prescribed dates, under a hire purchase argument entered into on 31st August 20…. From which the following information is obtained:

Cash price on machine N200.00

Deposit N 20.00

Interest N 90.00

Payment by 12 equal installments commencing from September 20…. Interest is apportioned equally over the period of repayment (i.e. 12 months).

The following additional information is relevant:

1. Debts totaling N47.00 for which provision was made on 1st January 20…. were to be written off and those which were considered to be doubtful on 31st December 20….amounted to N225.00.
2. N84.00 was owed on 31st December 20…. for professional charges.
3. N13.00 was owed in respect of telephone charges and the annual premium (N25.00) due in the previous financial year as regards comprehensive insurance has been paid on 10th January 20….
4. Ogugua is to receive credit for salary N310.00.
5. The loan from Dike was paid into partnership bank account on 1st January 20….
6. Provision for depreciation of plant and machinery should be at the rate of 10% on cost.
7. Stock on hand was valued at N4,150.00.

You are required to prepare Trading, Profit and Loss Account for the year ended 31st December 20…. and a Balance as at that date.

Appendix VIII

Second Accounting Diagnostic Test MARKING SCHEME

Dike, Azuka and Ogugua

Trading and Profit and Loss Account for the Year Ended 31st December 20….

	Mks	₦ / K		Mks	₦ / K
Stock at 1/1/20….	(2)	3960.00	Sales	(2)	27,170.00
Purchases	(2)	17,250.00			
		21,210.00			
Less closing stock	(2)	4,150.00			
Cost of sales	(2)	17,060.00			
Gross profit c/d	(2)	10,110.00			
		27,170.00			27,170.00
			Gross profit b/d	(2)	10,110.00
Wages	(2)	4,090.00			
Office salaries	(2)	210.00			
Trade expenses	(2)	140.00			
Rate, telephone & insurance	(2)	194.00			
Bank charges	(2)	330.00			
Professional charges	(2)	104.00			
Provision for doubtful debts	(2)	72.00			
Hire purchase charges	(2)	30.00			
Loan interest at 5% p.a.	(2)	95.00			
Depreciation of machinery & plant at 10% on cost	(2)	855.00			
Net profit c/d	(2)	3,990.00			

		10,110.00			10,110.00
			Net profit b/d	(2)	3,990.00
Current Account:					
Ogugua's salary (N310)	(2)	310.00			
Share of profit:					
Dike ($\frac{5}{8} x N3680$)	(2)	2,300.00			
Azuka ($\frac{2}{8} x N3680$)	(2)	920.00			
Ogugua ($\frac{1}{8} x N3680$)	(2)	460.00			
		3,990.00			3,990.00

Balance Sheet as at 31st December 20….

	Mks		₦ / K		Mks		₦ / K
Capital Accounts:				Fixed Assets:			
Dike	(2)	4,100.00		Freehold Land at cost	(2)		7,000.00
Azuka	(2)	1,500.00		Machinery plant at cost	(2)	8,550.00	
Ogugua	(2)	800.00	6,400.00	Less accumulated dep.	(2)	4,105.00	4,445.00
				Current Assets:			
Current Accounts:				Stock	(2)		4,150.00
Dike	(2)	2,710.00		Sundry debtors	(2)	6,340.00	
Azuka	(2)	1,235.00		Less provision		272.00	6068.00
Ogugua	(2)	740.00	4,685.00	Prepaid insurance	(2)		37.00

Dike's loan a/c	(2)	3,800.00		
Add accrued interest	(2)	95.00	3,895.00	
Current Liabilities:				
Sundry creditors	(2)	3,005.00		
Account charges	(2)	97.00		
Liability under high purchase agreement	(2)	480.00		
Bank overdraft	(2)	3,140.00	6,722.00	
			21,702.00	21,702.00

WORKING

1. Hire Purchase Account

	Mks		N / K
Cash price of plant	1		800.00
1/3 of hire purchase charges	1		30.00
Less payments made:			
Deposit	1	80.00	
Installment (4 x 67.5)	1	270.00	350.00
	1		480.00

2. Depreciation

	Mks	N / K

Plant per trial balance	1	8,100.00
Less hire purchase payment	1	350.00
	1	7,750.00
Add cash price of new plant	1	800.00
	1	8,550.00

[Total 100 marks]