INFLUENCE OF ENTRY GRADES IN ACCOUNTING AND MATHEMATICS ON STUDENTS' PERFORMANCE IN ACCOUNTING IN COLLEGES OF EDUCATION IN NORTH-EAST, NIGERIA

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October, 2014

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DECLARATION

The research work titled “Influence of Ordinary Level Entry Grades in Principles of Accounting and Mathematics on Students’academic performance in Colleges of Education in North-East Geo-political Zone, Nigeria has been written by Daniel NankumahAbdullahiin the Department of Vocational and Technical Education under the supervision of Prof. M.M. Aliyu and Prof A.A. Udoh. 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.

Daniel NankumahAbdullahi

CERTIFICATION

This Thesis titled Influence of Ordinary Level Entry Grades in Principles of Accounting and Mathematics on Students'academic performance in Colleges of Education in North-East Geo-political Zone,Nigeria*"* written by Daniel NankumahAbdullahimeets 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 Thesis is dedicated to my late parents Mr and MrsNankumahKurkuru**.**

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OPERATIONAL DEFINITION OF TERMS

Academic Performance: Academic achievement grade obtained by a student after examinations at the end of a prescribed course of study or examination

Advanced Financial Accounting: A course of study offered by NCE III Business Education (Accounting) students in Colleges of Education.

Entry Grade: Qualification obtained by students at ordinary level examinations submitted for admission into the NCE Business Education programme and scores obtained in Advanced Financial Accounting at the end of NCE programme.

Principles of Accounting: A course of study offered by students at Senior Secondary School for which they were examined and earned a grade by external examination body.

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Abstract

This research work which is on the influence of students' ordinary level entry grades in Mathematics and Principles of Accounting on Students' Academic Performance in Advanced Financial Accounting was conducted with the main objective of determining the influence of O/L entry grades on business education students' performance at the end of NCE programme. The study was conducted in nine colleges of education out which six colleges were sampled. In order to guide the study, five null hypotheses were formulated and tested at 0.05 level of significance. The study adapted the ex-post facto research design. The population for the study was Six hundred and Fifty students and a sample of two hundred and forty three students was drawn using proportionate sampling procedure. Data analysis was carried with means to answer all the research questions and Simple Logistics Regression was used to test null hypotheses one and two and t-test was used to test null hypotheses three, four and five. The study found out that credit and above entry grades at ordinary level in Mathematics and Principles of Accounting significantly influenced students' academic performance in Advanced Financial Accounting. The study concluded that students with credit and above entry grades in mathematics and principles of accounting at O/L have the potentials of performing better in Advanced Financial Accounting in colleges of education in the North East, Nigeria than their counterparts with pass entry grades. The study made five recommendations among which was that orientation programmes be mounted at secondary schools and colleges of education to enlighten students on the need to develop interest in Mathematics and Principles of Accounting.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Students' academic performances havebeen the focus of all educators, students, parents, governments and the general public. Bernardi and Bean, (2002) point out that employers, parents, and prospective students voice concerns about outcomes of assessment. This issue has received tremendous attention. For higher educational studies the basic knowledge of Mathematical and English is essential to the pursuance of students to finishsecondary school education and pursue the profession he or she wants. Mathematics is part of the core subjects that is being taught as one of the compulsory schools subjects within the Nigeria educational system. Student's background characteristics in terms of entry grades in their major areas of study are essential in higher education. Feed, (2010) suggested that the relationship between entry qualification and student's performance in Accounting is the foundation needed by all students to understand the business cycle in the modern world. It follows that a student entry grade in Principles of Accounting and Mathematics would have impact on the students' academic performance.

People use Accounting ideas when they plan what to do with their money. This is to say that everyone requires basic accounting knowledge. According to Educators have attempted to determine what factors influence and affect students' performance in schools. According to Momoh-Olie, (2008) predictability of academic achievement is a complex task and that the academic achievement of

students is at best situational. Undoubtedly all segments of society have one interest or the other in the outcome of educational products.

Equally important is the increasing interest in studying gender issue as it affects Accounting Education. Okafor, (2011) pointed out that empirical results on students' gender status and academic performance have not been consistent. Several studies revealed that female students performed better than male students. Still others showed no significant differences. Gender studies are gaining popularity across different disciplines and accounting education is not left out, such studieshave implications for future teaching methods, curriculum enrichment, redesign and teachers' teaching strategies. Deepak, Al-Umran, Al-Sheikh,and Al-Rubaish, (2011) observed that there are evidence of male dominance in enrolment proportion, but femalestudents were dominant in performance.

Students' required entry qualifications and grades have been assumed to predict their academic performances in higher institutions of learning - hence the reliance often placed on credit gradesat the ordinary level for higher studies. Student's admission into Nigeria Certificate in Education (NCE) Business Education programmes requires that a student pass English and Mathematicswith at least a pass or credit grade and obtained three credit passes in three Commercial subjects.Colleges of Education are required to organize and run Preliminary Studies in Business Education (Pre-NCE Business) to assist students that have deficiencies in meeting the prescribed entry requirements as specified in the minimum standard for Nigeria Certificate in Education. (NCCE, 2012, Pre-NCE). The emphasis on these levels of passes is based on the notion that such students

will cope with training demands and become efficient and effective business education teachers.

Generally many variables or factors affects the level of student's academic performance in educational institutions and these factors are interrelated such that they affect the academic performances and achievements of learners. The perception has been that the role of secondary education is to lay the foundation for further education.A good foundation may provide a solid ground for the next level. This may reduce problems at subsequent levels.

People at different times have attributed poor academic performance in Secondary School Certificate Examinations to several factors which include - low retention, parental factors, and association with wrong peer groups, low achievement motivation and the likes.Failure in Accounting higher institutionsare attributable to lack of prior exposure to Accounting and poor Mathematical background. Low academicperformances in accounting are sometimes blamedon lecture periods and class sizes.There is also the general feeling among students that Accounting and Mathematics are difficult. Another problem that confronts and affects NCE accounting students isundergraduate direct entry admission requirements which emphasize that holders of the Nigeria Certificate in Education (NCE), obtains at least a Merit and above grades in theirsubject areas to be combined with Education to be eligible for admission into the two-year degree programme in Business Education (JAMB undergraduate Admission 2012/2013).

On the other hand, student teachers who scored high grades in their teaching subjects showed higher ability to be more efficient and effective in

teaching their subjects. Effective teaching is more associated with student's level of mastery of the subject area. This is important because as Vachon, (2002) rightly pointed out competencies involved in teaching relate not only to the resources, skills and attitudes, but also knowledge associated with each subject area. The success of the accounting student with a good grade in Financial Accounting is therefore an indication of competence and his ability to progress or advance both as accounting teacher or professional accountant.

Colleges of Education have the mandate of producing Primary School and Junior Secondary School Teachers. They are charged with the responsibility of producing the Nigeria Certificate in Education (NCE) teachers in all areas for the two levels of Education. (Minimum Standards for Colleges of Education, 2012). There are Nine Colleges of Education offering Business Education programmes in the North Eastern States. Three of these Colleges are Federal Colleges of Education and the remaining six Colleges are run by the State Governments. The training and production of adequate qualified and quality Business Education teachers in the North Eastern States lies in these Colleges of Education.

Student's low academic performances in Advanced Financial Accounting in Colleges of Education have been of concern to the researcher. Entry grades in Mathematics and Principles of Accounting are supposed to correlate with student's academic performance in Advanced Financial Accounting. The question of whether gender influence students' performance in Accounting in College of Education has been another source of concern to the researcher. These variables constituted the background on which this study was conducted.

1.2 Statement of the Problem

The researcher has on several occasions as a teacher of Financial Accounting in Federal College of Education (Tech.) Gombe heard student's complain of difficulties encountered in college Mathematics and Accounting courses which in most cases they attribute to poor performance at Ordinary level Mathematicsand lack of previous studies of Accounting.The researcher also observed that Students' academic performances in Advanced Financial Accounting were low in Colleges of Education in the North East Geo-Political Zone. According to Principe, (2005) this trend have compelled the academia to investigate the reasons for the large number of failures in Accounting courses as well as low academic performance by Accounting students. The high rate of failures in accounting courses is compounded by the fears and misconception among students that accounting is difficult.

The Nigeria Certificate in Education (NCE) Business Education programme entry requirement stipulates that a student should havea minimum of four credits including English and Mathematicsto be achieved at not more than two sittings.(NCCE Minimum Standard for Colleges of Education 2012). Similarly, the Pre-NCE programme requires that candidates should have three credits including the major subjects and two passes at not more than two sittings. Pre-NCE Business candidates must pass Pre-NCE Examination and examination conducted by a prescribed public examination body (NCCE 2012). These prescriptions are based on the notion that students with such entry grades may meet training demands.

Another critical issue that has been of concern to the researcher is the inability of NCE students to advance their academic career owing to low grades in their subject areas fordirect entry undergraduates admission which requires that an NCE graduate obtains a minimum of merit grade for undergraduate admission. It follows therefore that a pass grade in Advanced Financial Accounting which is the accounting student core subject places the student in a difficult position in terms ofhis/her academic advancement. Chukwuma (2012) reported that there has been persistent poor academic performance of students of accounting in business education programmes in the university over the years and that those student teachers who scored higher grades in their teaching subjects show higher ability to be more efficient and effective in teaching their subjects.

Studentswith required entry grades in Mathematics and Accounting at Ordinary Level ought to perform better than what has been observed in recent years in Advanced Financial Accounting in Colleges of Education. This is particularly worrisome, since students admissions are based on the criteria that they will meet up with the rigors of training and perform averagely well, but students'academic performance in Accounting as earlier observed is contraryto this perception.

Consequently, these variables constituted the problems that prompted the researcher to conduct the study on the influence of entry grades in Mathematics and Accounting at the ordinary level on student's academic performance in Advanced Financial Accounting at the end of the NCE III Business Education programme in Colleges of Education in the North Eastern States, Nigeria

1.3. Objectives of the Study

The main objective of this study is to determine the influence of students' O/L entry grades in Mathematics and Principles of Accounting on Business Education Students' performance in Advanced Financial Accounting for the Nigeria Certificate in Education in Colleges of Education in the North East,Nigeria. To guide the study five specific objectives were stated which are to:

(1) determine the influenceof credit and above entry grades in Mathematics at O'L on the academic performance of students in Advanced Financial Accounting in Colleges of Education in North East, Nigeria.

(2) ascertain the influenceof credit and above entry grade in O'L Principles of Accounting on students' academic performance in Advanced Financial Accounting in Colleges of Education in North East, Nigeria.

(3) determine the influenceof pass entry grade in O'L Mathematics and Principles of Accounting on the academic performance of students in Advanced Financial Accounting in Colleges of Education in North East, Nigeria.

(4) assess the influence of O'L entry grade in Mathematics on the academic performance of male and female students in Advanced Financial in Colleges of Education in North East, Nigeria.

(5) assess the influence of O'L entry grade in Principles of Accounting on the academic performance of male and female students in Advanced Financial Accounting in Colleges of Education in North East, Nigeria.

1.4.Research Questions

In line with each specific objective and with focus on Colleges of Education in the North East, Nigeria, the following research questions were raised:

1. To what extent does Credit and above entry grades at O/L in Mathematics influence academic performance of students in Advanced Financial Accounting in Colleges of Education inNorth East, Nigeria?
2. To what extent does Credit and above entry grades at O/L in Principles of Accountinginfluenceacademic performance of students in Advanced Financial Accounting in Colleges of Education in North East, Nigeria?
3. What is the difference in academic performance of students in Advanced Financial Accounting with pass entry grades at O/L in Mathematic and those with pass grades in Principles of Accounting in Colleges of Education in North East, Nigeria?
4. To what extent do O/L entry grades in Mathematics influence the difference in academic performance of male and female students in Advanced Financial Accounting in Colleges of Education in North East, Nigeria?
5. To what extent do O/L entry grades in Principles of Accounting influence the difference in the academic performance of male and female students in Advanced Financial Accounting in Colleges of Education in North East,Nigeria.

1.5 Null Hypotheses

In line with each stated research question, the following null hypotheses were formulated for the study and tested at 0.05 level of significance

(1) There is no significant difference between the influence of credit and above entry grade in Mathematics on the academic performance of students in Advanced Financial Accounting in Colleges of Education in North East, Nigeria?

(2) There is no significant difference between the influence of credit and above entry grade in Principles of Accounting on the academic performance of students in Advanced Financial Accounting in Colleges of Education in North East, Nigeria?

(3) There is no significant difference in academic performance of Students in Advanced Financial Accounting among students with pass entry grades in O'L Mathematics and those with pass grades in O'L Principles of Accounting in Colleges of Education in North East, Nigeria.

(4) There is no significant difference in academic performance of Male Students with pass entry grades in O'L Mathematics and female students in Advanced Financial Accounting in Colleges of Education in North East, Nigeria.

(5) There is no significant difference in academic performance of Male Students with pass entry grades in O'L Principles of Accounting and female students in Advanced Financial Accounting in Colleges of Education in North East, Nigeria.

1.6 Significance of the study

This study will be of benefits to teachers of business education, business students,administrators and admissions officers in college of education, guidance counselors and other researchers in business education prpgrammes.

This study will be of immense benefit to accounting teachers in their efforts to develop strategies and methodologies for teaching Financial Accounting in Colleges of Education. It will also help them in their efforts to advise their students as they act as guidance counselors.

The study will assist School administrators, admission officers in Colleges of Education in taking decisions on the admission of students into the Accounting programmes by providing the basis for selecting candidates. This help in reducing problems encountered by the accounting teachers in class and thus improve students' academic performances.

The study will be of benefit to business education students. It will help in erasing the notion in the minds of students that Accounting is difficult. The study will assiststudents to understand the relationship between Accounting and Mathematics as well as the notion that previous study of accounting is necessary in Colleges of Education. The result of the study will help in resolving some of the problems among students who tend to fear Mathematics and yet planning for career in Accounting disciplines.

The study will also help to spur future researchers to investigate the causes of low students' academicperformances in accounting and other business related subjects in College of Education as well as other higher institutions of learning.

1.7 Basic Assumptions of the Study

For this study it was assumed that:

(1) entry requirement for admitting student into NCE Business Education programmeadequately predicts students' academic performance.

(2) Accounting Teachers in Colleges are qualified and competent to effectively teach Accounting courses.

(3) passingMathematics and Accounting is part of the entry requirements for admission of students into NCE Business Education Programme.

(4) passing Financial Accounting with high grade enhances the Business Education teacher's competence, development and career advancement.

1.8 Delimitation of the Study:

The study was delimited to NCE IIIAccounting students for 2010/2011 session in nine Colleges of Education offering Business Educationprogrammes in the North East, Nigeria. The choice of this level of students was based on the understanding that these groups of students were admitted with different entry qualifications and with variedordinary level grades in Principles of Accounting and Mathematics. NCE III Business Education (Accounting option) students have offered Financial Accounting courses for three years and have graduated from these institutions with different grades.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter highlights the review of related literature under the following subheadings:

2.1.Theoretical Framework

2.3 Students' Academic Performance in Schools

2.4 Business Education and Development

2.5 Financial Accounting and Mathematics

2.6 Relationship between Accounting and Mathematics

2.7 Factors Affecting Students Academic Performances in Schools

2.8 Review of Empirical Studies

2.9 Summary of Literature Reviewed

2.1. Theoretical Framework

Learning is the act, process, or experience of gaining knowledge or skill.Learning brings together cognitive, emotional, and environmental influences and experiences for acquiring, enhancing, or making changes in one's knowledge, skills, values, and world view **(**Ormrod, 2012). Learning theories are elaborate hypotheses that describe how exactly learning occurs.

Thorndike was the first to develop a theory on learning called connectionism. Thorndike's connectionism theory work was a pioneer in education. The theory draws inferences from actual observations of behavior thereby ruling out the possible roles of mediation and intervening variables (Mukherjee (2002). Thorndike's learning theory mainly deal with three key concept's which emphasis

the law of readiness, the law of exercise and the law of effect. The law of readiness emphasis the preparation of the organism confronted with problems and the law of exercise emphasized the importance of practice or repetitive drill in learning. The law of effect emphasized that those responses followed by reward or satisfaction would be learned and those unsuccessful responses followed by punishment and annoyance would be eliminated from the behavior of repertoire of the organism. According to the connectionism theory to every stimulus there was response and when the particular stimulus is followed by positive effect that particular stimulus would be stamped in, while those followed negative effect are stamped out from the repertoire of the organism (Mukhejere (2002).

This implies that learning is the process of stamping in or out of unsuccessful stimulus responses bonds. Connectionism emphasized the effects of rewards to facilitate learning, and that punishment decreases errors in learning. According to the connectionism theory learning is the stamping in of successful stimulus responses bonds and forgetting or stamping out of unsuccessful stimulus responses. The theory emphasizes the effects of rewards to facilitate learning while punishment decreases errors in learning.This study adapts the constructivist theory of learning propoundedby Piaget in 1896 (Ernest 1917).

Constructivism is a theory of knowledge (epistemology) that argues that humans generate knowledge and meaning from an interaction between their experiences and their ideas. During infancy, it was an interaction between human experiences and their reflexes or behavior-patterns. Jean Piaget called these systems of knowledge *schemata*. Constructivism is an educational theory

developed by Seymour Papert, inspired by constructivist and experiential learning ideas of Piaget (Ernest 1917).

Piaget's theory of constructivist learning has had wide ranging impact on learning theories and teaching methods in education and is an underlying theme of many educational reform movements. Research support for constructivist teaching techniques has been mixed, with some research supporting these techniques and other research contradicting those resultsby John Watson 1878-1959(Kolb, Boyatzis and Mainemelis, 2000). According to Santrock (2004), B,F. Skinner in 1938 further development on Thorndike's theory of learningThe theory postulated that students build their perception on learning materials presented to them and this perception greatly affects their performances and achievement in schools based on their previous experiences and characteristics (Mukherje (2002).

Learners actively take knowledge, connect it to previously assimilated knowledge and make it theirs by constructing their own interpretationCheek, (1992).Constructivist theory of learning is considered appropriate for the study. The study examined students' previous learning experiences in Mathematics and Principles of Accounting at the secondary school level and their academic performance in Advanced Financial Accounting in Colleges of Education.

Kolb, Boyatzis and Mainemelis(2000) identified three main philosophical frameworks under which learning theories fall: behaviorism, cognitivism, and constructivism. Similarly Merriam, (2007) highlighted four approaches or orientations to learning: Behaviourist, Cognitivist, Humanist, and Social/Situational. These approaches involve contrasting ideas as to the purpose

and process of learning and education - and the role that educators may take. Learning includes all knowledge or skill gained through schooling.According to Illeris, (2004) learning is the process that brings together cognitive, emotional environmental influences and experiences for acquiring, enhancing, or making changes in one's knowledge, skills, values, and world view.

The core objective of education and training is focus on knowledge construction. Curriculum instruction ought to emphasize context and promotes skill development. Therefore educational experiences should be geared towards the individual learner and identity focuses on development of the individual as a member of a community or profession. Teaching and learning activities should be constructed with the learner at the centre.

According to OludipeandKpolovie (2010), constructivism is not accepting what you are told but your prior knowledge about what you are taught and your perceptions about it. Active involvement of students is emphasized in constructivism, hence knowledge gained last long in their memory. Learners actively take knowledge, connect it to previously assimilated knowledge and make it theirs by constructing their own interpretation (Cheek, 1992). This implies that teaching and learning should be based on students' prior knowledge rather than assuming students will automatically absorb and believe what they read in the textbooks and told in class.Learning according to constructivist theory is a very personal endeavor by the learner whereby he internalized concepts, rules, and general principles that may be consequently applied in a practical real-world situation.

According to Kolb, Boyatzis and Mainemelis(2000) John Watson 1878-1959 coined the term "behaviorism" which is critical of Wundt's emphasis on internal states. They anchored that first, learning is manifested by a change in behavior, secondly that environment shapes behavior and thirdly, the principles of contiguity - how close in time two events must be for a bond to be formed and reinforced as a means of increasing the likelihood that an event will be repeated are central to explaining the learning process. According to behaviorist theory, learning depends on two conditions: Classical conditioning, where the behavior becomes a reflex response to stimulus as in the case ofPavlov's Dogs and Operant conditioningwhere there is reinforcement of the behavior by a reward or a punishment. Cognitive processes involve changes in the Childs' thinking, intelligence, and language. Cognitive development processes enable a growing child to memorize, solve problems, comes up with creative strategy or speak meaningful connected sentences. In the words of Santrock (2004) behaviorist theory emphasize experience especially reinforcement and punishment as determinants of learning behavior

Cognitive theory was rooted in works of Pavlov in 1906 and Skinner 1938 (Santrock 2004).Cognitive theory is a learning theory that explains human behavior by understanding the thought processes. Cognitive processes involve changes in the Childs' thinking, intelligence, and language. Cognitive development processes enable a growing child to memorize, solve problem, comes up with creative strategy or speak meaningfully connected sentences (Santrock 2004). Fritscher, (2009) rightly stated that two key assumptions underlie the cognitive approach to

learning: the first is that the memory system is an active organized processor of information and secondly that prior knowledge plays an important role in learning. Cognitive theories look beyond behavior to explain brain-based learning. Cognitive theory considers how human memory works to promote learning. The Learning theory is rooted in the work of Ivan Pavlov, who was able to train dogs to salivate at the sound of a bell. Cognitive theory emphasis the construction of knowledge and understanding.

The theory postulates that human beings are logical beings that make the choices that make the most sense to them. Information processingis a commonly used description of the mental process, comparing the human mind to a computer.

Another learning theory is Transformative learning. Transformative learning theory explains the process of constructing and appropriating new and revised interpretations of the meaning of an experience in the world (Illeries, 2004). Transformative learning is the process of effecting change in a frame of reference. These frames of reference define our view of the world and we have a tendency as adults to reject or deem unworthy all ideas that do not fits to our particular values, associations, concepts. Our frames of reference are composed of two dimensions: habits of mind and points of view. Habits of mind, such as ethnocentrism, are more fixed and influence our point of view and the resulting thoughts or feelings associated with them, whereas points of view may change over time as a result of influences such as reflection, appropriation and feedback (Illeries, 2004).

Transformative learners utilize discourse as a means of critical examination and reflection devoted to assessing reasons presented in support of competing

interpretations, by critically examining evidence, arguments, and alternative points of view. Mezirow 1991 in McGonigal(2014) viewed transformation as the process of becoming critically aware of how and why our assumptions have come to constraint the way we perceive, understand and feel about our world, changing these structures, habitual expectation to make possible a new inclusive, discriminating and integrating perspective and finally making choices or otherwise acting upon these understanding. Transformative learning is more commonly related to the process of assimilating learning, the type of learning that take place when students acquire new information that can fit into their pre-existing knowledge structure. Students successfully use this current paradigm to excel in school and understand the world. According to transformative learning theory paradigm shift is the result of several factors or conditions which includes:

(a) An activity or event that exposes the limitation of student current knowledge
(b) Opportunities for students to identify the underlying assumptions in current knowledge,
(c) Critical self-reflection as the student considers where these underlying assumptions came from and how these assumptions influenced or limits understanding
(d) Opportunities to test and applied new knowledge (McGonigal 2014)

Teachers who wish to facilitate transformative learning must therefore create environments that encourages and rewards intellectual openness. This implies that learning should encourage critical reflection, encourage discourse and give students

paradigm to test new perspective and forester intellectual openness.When circumstances permit, transformative learners move toward a frame of reference that is more inclusive, discriminating, self-reflective, and integrative of experience.Transformative learning leads to autonomous and responsible thinking which is essential for full citizenship in democracy and for moral decision making in situations of rapid change. (Illeries, 2004).

Other learning theories are Informal and Post-Modern theories which suggests that education breaks down the learning process, learning authentically and with practicality. The theory posits that learning should take place as a building of concepts toward an overall idea, or the understanding of the overall idea with the details filled in later. (Marzano, 1991). Informal and postmodern learning theory suggests the restructuring of knowledge through the informal curriculum. This promotes the use of prior knowledge to help students gain big ideas and concept understanding. The theory postulated that student should not be told new knowledge; rather student's current knowledge must be challenged. By challenging student's current ideas, students can adjust their ideas to more closely resemble actual theories or concepts.By using this method students gain the big idea taught and are later more willing to learn and keep the specifics of the concept or theory taught. This theory therefore support that teaching concepts and the language of a subject should be split into multiple steps (Brown and Ryoo, 2008).

Learning theories have two crucial values. One is in providing us with vocabulary and a conceptual framework for interpreting the examples of learning that we observe. The other is in suggesting where to look for solutions to practical

problems. The theories do not provide solutions, but they do direct attention to those variables that are crucial in finding solutions.

2.2.Students' Academic Performance in Schools

The term performance is hard to define or categorize, but its broadness is precisely the characteristic that compels certain artists to work within the field. Performance allows for endless possibilities and experimentation and that is why it is not uncommon for performers to show early manifestations of practices. To perform is to produce valued results. A performer can be an individual or a group of people engaging in a collaborative effort. Elger, (2006) suggested that performances depend on six components: context, level of knowledge, levels of skills, levels of identity, personal factors and fixed factors. It is the process of accomplishing an action under particular conditions. For instance, a student's performance in the school will determine his future career.

Performance has two aspects – behavior being the means and its consequence being the end and this as the dual purpose of arranging situations so that individuals can do their best. Its purpose is to achieve specific defined results for people so that they achieve their goals and objectives. It is the process of accomplishing an action and a process that is observed under particular conditions. Aka, (2005) perceived academic performance as the index of general mental abilities which are responses to test of different kinds. A major indicator of effective teaching in educational institutions is high academic performance of the pupils / students. However, effectiveness of a teacher would dictate the realization of the institution's objectives and ultimately the objectives of education. In view of

the investment of government and parents on the education of a child, nothing short of high academic performance is expected from educational institutions.

When students perform better in educational institutions, governments and parents would be encouraged to invest more on education since an investor always want require returns from his / her investment (Ige, 2011). Performance is a journey and not a destination, the location in the journey is defined by the level of achievement and each level is characterize by the effectiveness or quality of performance. The level is measured by improvement in conduct, fastness and thoroughness. In the words ofElger, (2006) it indicate the ability to produce more effective student learning, research and culture, the ability to get higher quality results within a shorter time, deeper skills development and more connection with the discipline and learning varied roles quicker and making meaningful impact.

In the words of Asikhia,(2010) poor academic performance is performance that is adjudged by the examinee/testee and some other significant as falling below an expected standard. Masasi (2010) also opined that the perception of students regarding accounting and accountants, as well as the perception of accounting educators and the public potentially influence students' academicperformance and suggested that students' aspirations have significant association with their performances. This suggests that there is a positive correlation between the student's intent and performance in school generally. This is affirmed by Wooten, (1998) who found that student aptitudes and efforts have significant influences on their academic performance in schools.

Students' academic achievement and performance in institutions of learning in Nigeria has been a source of concern to educators, parents, governments and students themselves. Many factors have been identified as possible reasons for the poor performance in schools. Asikhia, (2010) affirmed that there is a general consensus about the fallen standard in education in Nigeria. The detection or identification of the factors that improve or marred students' academic performance in schools at the early stage by educators particularly accounting educators will help to improve or reduce the rate of students' failure thereby increasing their grade performance in Colleges of Education (Gracia and Jenkins, 2001). On the other hand, Obioma and Salau, (2007) found that there is no significant predictive power in the public examinations as basis for predicting students' performance in University education although some variation among these public examinations bodies exist, and therefore concluded that public examinations results poorly predict University achievement. In other words ordinary level entry admission requirement for higher education is not a good predictor of students' academic performance in schools.

On the contrary Masasi, (2010) found that critical thinking, overall Grade Point Average scores in Mathematics and English prior to entry in university and majoring in Accounting were significantly predictors of examinations in Principles of Accounting course.Masasi, (2010)found out that performance in Accounting is not significantly related to previous exposure to high school Accounting Education. This finding is in contrast with the findings of Obioma and Salau (2007) as earlier noted above. The Accounting subject requires accumulation of prior knowledge

and considerable quantitative skills. This suggests that prior exposure to Accounting and Mathematical background imparted on students' performance in College Accounting courses. The influence of Mathematical background on performance in accounting is not quite clear. However Masasi (2010) citedFaley and Gul in 1988 affirming that there are strong relationship between a good background performance in Mathematics and a weaker background performance in Mathematics and performance in college accounting.

Similarly, Momoh-Olle, (2008) in a study of relationship between student entry grades and academic achievement found that there is a statistical significant relationship between students' entry grades and their academic achievements in vocational studies (accounting inclusive). From the foregoing it can be deduced that there is a relationship between students' entry grades in Mathematics and Accounting and academic performance in Financial Accounting. Also there is a relationship between prior knowledge and academic achievement in educational institutions and the fact that background characteristics of students do have direct influence on their academic performances in schools. This suggests that several factors determine academic success. Therefore a combination of factors influences academic performances of student's achievement and grades in College Education.

2.3. Business Education and Development

The term business education has been variously defined by different authorities. The term encompasses two main philosophical meanings – education about business and education for business. Osuala,(2004) saw Business education as a programme of instruction which consists of two parts (1) Office education, a

vocational programme of office careers through initial, refresher and upgrading education and (2) General business education a programme to provide students with information and competences which are needed by all in managing personal business affairs and in using the services of business. Udoh (2010) defined business education as primarily education for skills acquisition. Ibrahim, (2008) considered business education as education that encompasses knowledge, attitudes and skills needed by all citizens in order to effectively manage their personal resources and participate in the economic system.

Business Education refers to all deliberate intent of teachers to inform students about economics and business concepts and skills that will be used in later life. It aims at providing students with economic and business concepts for understanding and analyzing the world in which they live to be able to make intelligent and wise decisions on goods and services both as consumers and producers. (Aliyu,2006). Similarly Njoku (2006)perceived business education as educational programmes that equip an individual with functional and suitable skills. One of the five goals of education in Nigeria is that education shall build a land of full bright opportunities for all citizens, empower people with desirable skills, knowledge and value to perform specific functions so as to become self-reliant.

(a) Help you appreciate the world around you and contribute maximally to the social and economic development of the nation.

(b) Empower you in such a way that you will develop your intellectual capability that would help you to make informed decisions in all sphere of life.

(c) Help you become a judicious spender and develop proper values for the achievement of healthy living and growth of the nation.

(d) Understand the political framework of a nation so that you can contribute to national economyand development of your country(Njoku, 2006).

According to the Minimum Standard for Nigeria Colleges of Education (2012) (the following are the objectives of the Nigeria Certificate in Education Business Education programme:

(a) Produce well qualified and competent NCE graduates in business subjects who will be able to teach in our secondary schools and related educational institutions.

(b) Produce NCE business teachers who will be able to inculcate the vocational aspects of business education into society.

(c) Produce NCE business teachers who will be involved in the much desired revolution of vocational development right from primary and secondary schools.

(d) Equip students with necessary competencies so as to qualify for post NCE programmes in business education.

(e) Equip graduates with skills that will enable them to engage in a life of work and self-employment.

2.4. Financial Accounting and Mathematics

Accounting and Mathematics are closely related subjects. Student's basic knowledge in mathematics is essential for understanding accounting courses. They both deal with numbers and quantities.Nick, (2006) affirmed that one of the basic parallel between accounting and algebra is the balance metaphor. The concept accounting and mathematics is discussed in the following paragraphs:

2.4.1.Accounting

Accounting is an academic discipline made up of branches or subjects. It is concern with people- individuals and corporate bodies and what they do. It records

the activities, operations and actions of these individuals/corporations as they occur on day – to – day basis in financial term or monetary terms. It is concerned with the all processes of classifying/summarizing the recorded data or organizing records into meaningful whole for end-users. It also communicates information after analysis and interpretation for the purpose of decision making. Accounting is the language of business. Success or otherwise of business operations depends to a large extend on proper accounting records.

Financial Accounting is the skill of using bookkeeping records to provide analytical statements for effective control of business, management decisions, interpretation of business operations, comparison of periodical operations and results achieved by business concerns. As a subject it has various areas of study: financial, costing, auditing, taxation, management, budgetary, banking and insurance. Accounting is the system of recording, classifying and summarizing financial information in a way that users of the information can make economic decisions based upon it.

Accounting began as a simple system of clay tokens to keep track of goods and animals, but has developed throughout history into a way of keeping track of complex transactions and other financial information (Alexis, 2012). Accounting information must therefore reflect the true financial position. This requirement is one of the objectives of producing accounting information to the end users.Accountancy has its roots in the earliest history of civilization. With the rise of agriculture and trade, people needed a way to keep track of their goods and of transactions. Around 7500 B.C., Mesopotamians began using clay tokens to

represent goods, such as animals, tools, food items or units of grain. This helped owners keep track of their property. Instead of counting heads of cattle or bushels of grain every time one was consumed or traded, people could simply add or subtract tokens.

Different shapes were used for different goods. Around 4000 B.C., the Sumerians began placing these tokens in sealed clay envelopes. Each token would be stamped into the clay of the outside of the envelope, so the owner would know how many tokens were inside, but the tokens themselves would be kept safe from tampering or loss. This practice of pressing the tokens into the clay may have been the earliest genesis of writing. A few hundred years later, more complex tokens began to be used. These tokens had special markings to denote different units or types of goods. Starting around 3000 B.C., the Chinese developed the abacus, a tool for counting and calculating. (Alexis, 2012)

The adoption of coinage meant that accounting now deal with money rather than actual goods, but single-entry bookkeeping, much like that used in modern check registers, was used to keep track of money exchanged, where it went and who owed what. During and after the Crusades, European trade markets opened up to Middle Eastern trade, and European merchants, especially in Genoa and Venice, became increasingly wealthy. They needed a better way to keep track of large amounts of money and complex transactions give rise to the development of double-entry bookkeeping. Double-entry bookkeeping requires that each transaction is recorded at least twice, as a debit from one account and a credit in another account. In 1494, a Franciscan monk and mathematician named Luca

Pacioli published a mathematic book titled "Summa de arithmetica, geometria, proportione et proportionalita," which contained a description of double-entry accounting. As the book's popularity grew, double-entry accounting began to sweep Europe, as merchants realized what a valuable tool it gave them for keeping track of detailed financial information. For this accomplishment, Luca Pacioli is often called the "Father of Accounting."

Still, at this point in history, accountancy was not yet a specific profession, but rather an extension of the clerical duties of scribes, officials, bankers and merchants. The rise of professional accountancy and the advent of the Industrial Revolution in the late eighteenth and early nineteenth century accelerated developments in accounting as it came into being as a profession. The accounting profession came to realize that the major changes in business and commerce that came along with it in third quarter of the twentieth century led to the need to upgrade book keeping, accounting and accounting reporting requirements. Consequently, we now have the accounting profession itself, an accounting standard setting body and the International Accounting Standards Board. (Duncan, 2002).

The practice of cost accounting became prevalent as business owners and managers sought to understand how best to make their businesses as cost efficient as possible. Josiah Wedgwood, the owner of the famous English pottery factory, was among the first to use cost accounting to understand what his company's money was being spent on and to eliminate unnecessary spending. With the new complexity of accounting and the increasing demand for accurate bookkeeping,

people began to specialize in accountancy, thus becoming the first professional public accountants. The objectives of financial accounting are discussed below.

2.4.2. Objectives of Financial Accounting

Today, accounting is a business unto itself, with thousands of practitioners worldwide and a large number of professional organizations and official guidelines to codify practices and requirements. Particularly in the United States during the Great Depression, demands were made for better standardization of accounting practices and a set code of professional guidelines. Today, the Generally Accepted Accounting Principles (GAAP) set forth the standards by which public accountants must do business. Every country has a similar set of accounting guidelines. Accounting information serves a number of users and each user of accounting information needs some knowledge of accounting to be able to use this information. Duncan, (2002) identified twelve objectives or purpose for accounting which includes the following:

(1) provisionof information useful for making economic decisions.

(2) Provides information to users with limited authority, ability and resources..

(3) provide users with cash flow information for predicting, comparing and evaluating potential cash flows to them in terms of the amount and related uncertainty.

(4) provide users with information for predicting, comparing and evaluating enterprise earnings power.

(5) provision of information for judging management's ability to utilize enterprise resources effectively in achieving the primary enterprise goal.

(6) provision of financial statements for factual interpretation of events.

(7) provision of information on current and historical nature for predicting and evaluating the enterprise.

(8) provision of information on uncompleted transactions:

(9) provision of information on expected earnings which may have significant consequences on the enterprise.

(10) provides data for financial forecasting

(11) provide information for measuring the effectiveness of resource management by Governmental and nonprofit making organizations.

(12) provision of information on the activities of the enterprise that affects the wellbeing of society at large.

Therefore good knowledge of accounting will help the individual to plan, organize and optimize his financial resources just as every individual require a good knowledge of mathematics for everyday life which is also discussed below.

2.4.3 Mathematics

Mathematics knowledge is a requirement in everyday life and everyone needs the knowledge of mathematics (Kajuru, 2009). In academics, the basic mathematical knowledge is essential in the pursuance of the students to complete their studies in school and progress or advanced to the profession that they will aspire in life. Mathematics teaches us how to make sense of the world around us through developing the ability to calculate, to reason and to solve problems. It enables people to understand and appreciate relationships and patterns in both number and space in their everyday lives. Mathematics in its widest significance is the development of all types of formal deductive reasoning (Rusic, 1998). According to Godino, (1996) mathematics is a symbolic language in which problem situations and solutions are expressed in a logically organized conceptual system which is considered as textual reality and component of the global

structure. Mathematics is the science of numbers and there are several different branches of mathematical science including algebra, geometry, and calculus. It is the science of numbers and their operations, interrelations, combinations, generalizations and abstractions and of space configurations and their structure, measurement, transformations, and generalizations. (Bellis, 2012)

Mathematics is a vehicle for training a child to think, reason, analyze, and articulate logically. It is concomitant or related to any subject involving analysis and meaning. Godino, (1996) said through the growing knowledge and understanding of mathematics, people learn to appreciate the contribution made by many cultures to the development and application of mathematics. He further argued that mathematical terms and expressions denote abstract entities whose nature and origin should be researched for elaborating a useful and effective theory for what it is to understand such objects. Mathematics is a mental experience, and connection of internal representations in information networks with the sociocultural approach, that understands the correspondence between personal and institutional meanings. The role of situation-problems and semiotic instruments is also emphasized in both personal and institutional dimensions of understanding processes. According to Rusic, (1998) the subject mathematics broadly includes the following areas; Foundations, Algebra, Geometry, Analysis, Probability and Statistics, Computer Science and Applied Mathematics.

2.4.4. Objectives of Mathematics

According to Rusic, (1998), the objectives of studying Mathematics by all students include the following:

(a) promote enjoyment and enthusiasm for learning through practical activity, exploration and discussion.

(b) promote confidence and competence with numbers and the number system.

(c) to develop the ability to solve problems through decision-making and reasoning in a range of contexts.

(d) practical understanding of the ways in which information is gathered and presented.

(e) explore features of shape and space and develop measuring skills in a range of contexts.

(f) understand the importance of mathematics in everyday life.

In the same vein, Kajuru, (2009) identified four importance of Mathematics one of which is that it is essential for everyday life, essential for understanding concepts like time, distance, weight and temperature, mathematics provides knowledge for precise logic and procedure as well as critical evaluation of result and affording the means for checking the results. Similarly, Idah, (2002) suggested that mathematics knowledge enable students to cope confidently with the mathematics needed in their future studies, workplaces or daily life in a technological and information-rich society, and thus opined that mathematicscurriculum aims at developing in students:

(a) the ability to conceptualize, inquire, reason and communicate mathematically, and to use mathematics to formulate and solve problems in daily life as well as in mathematical contexts;

(b) the ability to manipulate numbers, symbols and other mathematical objects;

(d) the number sense, symbol sense, spatial sense and a sense of measurement as well as the capability in appreciating structures and patterns;

(e) a positive attitude towards mathematics and the capability in appreciating the aesthetic nature and cultural aspect of mathematics.

2. 5. Accounting and Mathematics

Studies on the relationship between Accounting and Mathematics have revealed that there is positive relationship between Mathematics and Accounting. Commenting on the relationship between Mathematics and Accounting Feed, (2010)stated that the most common factor lies in the function of auditing wherein the management of the profits and losses is important in the industry and thus postulated that application of Mathematics in Accounting lies in formulation of the decisions for the inevitable results. Feed, (2010) furtherhighlighted that calculation and compound interest in bookkeeping is a basic knowledge and the theory of algebra is very essential in accounting studies. Gracia and Jekins, (2001) found that students with prior accounting knowledge and mathematics perform better statistically in computational and quantitative courses.

Accounting deals with the recording and reporting of financial transactions, including the origination of the transaction, its recognition, processing, and summarization in the financial statements. While mathematics is the science of pattern, it seeks out patterns whether found in numbers, space, science, computers, imaginary abstractions, or elsewhere (Rowena, 2008). There are strong parallels between accounting and two important areas of mathematics - the elementary algebra and the calculus reflect the origins of algebra in accounting and origins of some of the basic concepts behind the calculus in accounting. According to Nick,

(2006) one ofthe basic parallel between accounting and algebra is the balance metaphor.According to Higgins, (2009) mathematics and accounting go hand in hand, though not as intertwined as people may believe.

The purpose of having a strong mathematical background is to increase an accountant's cognitive ability. Many different accounting activities require the use of mathematics or mathematical principles. Understanding that mathematic abilities are necessary can help individuals prepare for his/her business process. Higgins, (2009) specifically identified the following as the relationship between mathematics and accounting:

(a) Calculations

Accounting activities are full of basic and advanced calculations. These are often necessary to understand what information needs to go into a company's general ledger. Many calculations require basic mathematic principles. Other times, however, many complex issues may require the use of multiple calculations. It is important to have basic math and algebra skills to complete these tasks and report accurate financial information.

(b) Word Problems

Word problems represent another important mathematical concept in accounting. Accountants may need to read and decipher a situation for financial purposes. Information gleaned from the problem or situation then translates into financial data. Accountants must have the ability to read and comb through many types of reports in order to fully understand and develop information from this information. Reading skills are necessary in addition to mathematical ability.

(c) **Time Value Concepts**

One set of complex problems often seen in accounting is time value of money problems. These tasks require an accountant to estimate future financial returns, often derived from cost savings or additional income. Accountants must discount these future dollar amounts back to a present value. This involves the use of different mathematical abilities, as multiple data are in these problems.

2. 6. Factors Affecting Students'Academic Performance inSchools.

Many factors affect the process of teaching and learning in schools as well as performance of the teacher, learner and the school. Momoh-Olle, (2008) identified four factors that contributed to students' academic achievement among which include are:

(a) Student factors (attitudes, individual differences, physical health, readiness and expectation.

(b) Teacher/Instructional/Curriculum factors (teacher attitude to students, types of classroom control, curriculum content, teacher adequacy in professional qualification and preparation, instructional contents and presentation, use of relevant teaching aids.

(c) Home, cultural and parental factors in which the motivational factors of the home background has been found to influence the learner's academic achievement more importantly than the fixed material and economic conditions of the home.

(d) Institutional factors (type of school, population, control, discipline, personnel interactions, admission and examination or evaluation policies.

Harb and El-Shaarawi, (2006) conducted a study on the effects of previous GPA, class attendance, and financial status on students' performance found that previous GPA and motivation affect positively the current GPA of students.

Similarly, Asikhia (2010) also identified four factors as causes of students' poor academic performance which are:

(a) Causation resident in the child such as basic cognitive skills, physical and health factors, psycho-emotional factors, lack of interest in school programme.

(b) Causation resident in a family such as cognitive stimulation/basic nutrition during the first two years, type of discipline at home, lack of role model and finance.

(c) Causation resident in the school such as school location and physical building, interpersonal relationship among the school personnel.

(d) Causation resident in the society such as instability of educational policy; under-funding of educational sector, leadership, job losses.

This suggests that students' academic performance and achievement in schools depends on the learner him/herself, the teacher, the family, school, government policy and social disposition of the society. However, Massasi, (2010) pointed out that Grade in mathematics had insignificant positive association with student performance.In the views of Harb and El-Shaarawi, (2006)students' performance or achievement can have cultural difference between varying societies at different location in the world. Also commenting on students' factors contributing to failure among college students,Lawi (2009) listed the following as possible reasons:

(i) Party too much
(ii) Poor time planning
(iii) Don't do the work
(iv) Give up because it is too hard
(v) Do not go to class/lazy.

From the foregoing it noted that most of the causes of failure among students are akin to the student themselves rather than factors outside the learners. Harb and El-Shaarawi (2006) also stated that there are negative effects on students' grades among which are related to missing many classes and this has significant effect on their grades.

The NCE Business Education programmerequires the following as minimum entry requirements for admission of students into the NCE Business which are hoped if acquired by a student could enable him to cope with training demands of the programme:SSSC, WAEC, GCE O level or NECO, NABTEB and other related qualifications withminimum of four (4) credits including Mathematics and English language, to be achieved at a maximum of two sittings.

(a)

(1) Economics
(2) Principles of Accounting/Bookkeeping
(3) Bus. Methods, Introduction to Business, Management/Office Practice Secretarial Duties.
(4) Shorthand
(5) Typewriting
(6) Commerce

(b) A 'credit' in English or Mathematics.

Successful candidate in the Pre-NCE final examinations who also take and succeed in a selection examination organize by an accredited body may be qualified for admission. These minimum requirements are aim at meeting the academic standards and training rigors required for succeeding in the NCE Business Education programme.

(c) WAEC Commercial or National Secretarial Examinations or National Business and Technical Examination Board (NABTEB) or NECO or TC II or RSA

stage II certificates with passes at not than two sittings in five subjects as listed above (NCCE 2012)

2.7. Empirical Studies

Studies on the Influence and Relationship of students' O/L entry grades in Accounting and Mathematics and performance or academic achievement have received wide attention. Udoh, (2002) conducted a study on 'Effects of Lecture Period and Automotive Device on the Performance of Low Achievers in Introductory Accounting in Ahmadu Bello University Campuses. The purpose of the study was to find out whether morning and or afternoon lecture periods as well as use of automotive device were more conducive for teaching and learning of Accounts to low Achievers. Six objectives were stated for the study among which were to determine the relationship between performance in Introductory Accounting essay test by two groups of low Achievers exposed to two teaching periods. Six research questions were raised for the study as well as six null hypotheses were tested.

The pre-test-post-test control design was used to conduct the study on 200 level Business Education Students at Ahmadu Bello University campus and Federal College of Education Kano campus. The population of the study was 220 undergraduate students and a sample of 80 students was drawn. Simple Random Sampling was used to draw the sample. The instrument for data collection was pre- and post-treatments tests on both the control and experimental groups. Data analysis was carried out with frequency counts; mean and percentages and Pearson Product Moment Correlation and t-test were used to test the null hypotheses 3,4,

and 5, while z-test was used to test relationship of the mean scores of the two groups all at 0.05 level of significance.

The study made six findings among which was that morning and afternoon groups of low achievers performed relatively equal in Introductory Accounting using objective test and that morning and afternoon groups of low achievers performance in Introductory Accounting essay test was not significantly different either. The study concluded that the performance of low achievers in Introductory Accounting did not depend on the lecture period (morning and afternoon). The study made five recommendations among which was that teachers should explore other areas or factors affecting teaching and learning of Introductory Accounting and apply series of teaching methods to make room for fast and slow learners in teaching accounting.

The current study is similar to the reviewed study. The current study focus on factors affecting student's performance in Accounting which was also the purpose of the previous study. The previous study used means, and t-test to answer research questions and test some of the null hypothesis. The current study also used the means and t-test. However the current study differs with the previous study in the area of study. The current study was conducted in Colleges of Education, the previous study was conducted in University Campuses. The previous study used the pre-post-test control design to conduct the study; the current study used development studies design. The previous study used z-test statistics to test null hypotheses; the current study used simple logistic regression statistics to test null hypotheses.

This study provided empirical evidence to the researcher on the insignificance of timing of lecture period whether morning or afternoon on students learning. The need for teachers to explore other avenues to improve the performance of low achievers was also made clear in the study. The previous study investigated on lecture periods and essay and objective test among high and low achievers in Introductory Accounting, it did not consider students' entry qualification into the university. The current study hopes to study entry qualification in Mathematics and Principles of Accounting in Colleges of Education and it impact on students' performance in Advanced Financial Accounting.

Obioma and Salau(2007) conducted a study on the 'Predictive validity of public examinations: A case study of Nigeria. The study determined the extent to which public examinations predict university students' academic achievement in Nigeria. The study raised three research questions. One Null Hypothesis was tested in the study. The Hypothesis was: The regression coefficients associated with the prediction of students' academic achievement in university degree examinations based on their performance in public examinations will not be statistically significant. The t-test and analysis of variance statistics were used to analyze the data.

Students' entry qualifications and post – university matriculation examinations (UME) were used as predictors of students' academic achievement in the first and final years' cumulative credit grade point average (CCGPA) were used as the criterion. The result of the study revealed that UME did not predict students'

academic achievement. It identified WASSCE at one sitting as the best predictor of students' academic achievement among the five public examinations bodies used for admitting students into the Nigeria Universities. The study concluded that admissions criteria should exhibit content and face validity. The study made four recommendations one of which was that public examinations bodies should improve on the quality and administration of examinations.

The current study is similar with the previous study as both investigated on previous knowledge as a predictor of present performance. Documentary data were used in the previous study and the current study also used documentary data as primary sources for data collection. The previous study is different with the current study in the area of coverage. The previousstudy coveredNigeria Universities, while the current study coveredColleges of Education in the North Eastern States. Secondly, the previous study used the t-test statistics to test the null hypothesis while the current study in addition used Simple Logistic Regression to test the stated null hypotheses.

The previous study studied the Predictive validity of public examinations and it effect on students' performance in Financial Accounting in Universities while the current study investigated the impart of background performance in Mathematics and Principles of Accounting and it impart on students' academic performance in Advanced Financial Accounting in Colleges of Education in North East Geo-Political Zone, Nigeria. The study provides valuable knowledge of the inability of public examinations bodies to predict future performances of students in higher institutions of learning and the extent to which teachers should place

reliance on entry grades on public examinations in planning their teaching strategies in class and acting as guidance counselors to students. This study provided the researcher with empirical evidence on the inability of public examination bodies at the ordinary level to predict student's academic performance in higher institutions of learning.

Momoh-Olle (2008) investigated the Correlation between Students' Entry Grades and their Academic Achievement inKwara State College of Education, Ilorin. The entry grades andacademic achievement of two hundred and two (202) Nigerian Certificate of Education (NCE)Graduates were selected by stratified random sampling technique out offour hundred and thirty seven (437) that actually graduated. The purpose of the study was to determine the relationship between students' entry grades and academic achievement at the Kwara State College of Education, Ilorin. The study tested two null hypotheses which were: (a) there is no statistically significant relationship between student entry grades (X) and the students' overall college academic achievement in:

1. two major subjects (Y);

2. theoretical courses in Education (Y);

3. Teaching Practice (Y2);

4. Vocational Studies courses (Business Studies, Secretarial Studies, Woodwork and Metalwork.
(YR) and other areas.

(b) There is no statistically significant difference in the College Academic Achievement of students with different levels or strengths of entry grades.

Data wereanalyzed with Pearson's Product Moment Correlation Coefficient formeasuring relationship and chi-square statistics was used to test for significant difference inrelevant distributions. The study concluded that entry grades of a student could, generally, not predict his/her academicachievement at the College.The study concluded that students' academic achievement at the College largely depended on previous experiences which influenced their learning at the College.There was however a statistically significant relationship between students entrygrades and their academic achievement in (i) Education theory (ii) the language andvocational studies. There was also no statistically significant difference in college academic achievement of students with different strength or qualities of entry grades.

The study made four recommendations among which were that for sound predictive validity of previous qualification in higher institutions appropriate authorities and bodies should evolve examination and admission criteria which will consistently predict student future academic achievement such as the construction of standardized tests and adequate improvement in supply of instructional materials to schools to enhance students' performances.

This study is similar to the current study as both seek to correlate entry grades of NCE students and their academic achievement at the end of the NCE programme.The previous study differs with the current study. The current study determined the influence of entry grades in Mathematics and Principles Accounting and Performance in Advanced Financial Accounting as against nine subjects that were investigated by the previous study. This is considered too large to be cover

adequately in one College of Education. Also, the previous study used Pearson Product Moment Correlation Coefficient and chi-square statistics for testing relationship between entry grades and performance at the end of the programme, while the current study used the t-test and Simple Logistics Regression statistics to test the null hypotheses. The previous study was conducted in one College of Education, while the current study was conducted in six Colleges of Education.

This study further confirmed the inability of public examinations to predict students' performance in higher institutions of learning. The study also provided evidence that a significant relationship exist between previous knowledge and achievement in vocational subjects. The previous study was conducted in one College of Education which is considered inadequate to capture the peculiar characteristics of the students, and it did not consider the influence of students' entry grades in Mathematics. The current study enlarges the scope of the study to six Colleges of Education as well as covered entry grades at ordinary level in Mathematics.

Asikhia, (2010) conducted a study on Students and Teachers' Perception of poor Academic Performance in Ogun State Secondary Schools (Nigeria): Implications for Counseling for National Development,' The objective of the study was to determine if there is a significant difference between methods of teaching and academic qualification of teachers, students' academic performance, students' environment and poor academic performance. The study raised six research questions among which were: What is the students' perception of the influence of teachers' methods of teaching and learning materials on students' poor academic

performance and what is the perception of teachers on students' poor academic performance and teachers' qualification?

The survey design was used for the study. The Chi-square statistic was used to test for significantdifference at 0.05. The study found that there was no significant relationship on perception of teachers on students' poor academic performance and teachers' qualification as well as students' perception on their teachers' qualification. However, the study found out that there is a significant difference on the perception of teachers on the influence of teachers' method of teaching and teachers' methods on students' poor academic performance. On the fourth research question, the study also found out that there was no significance influence on students' perception of the teachers' method of teaching and learning on students' academic achievement. The study also found out that teachers' perception on students' environment and poor performance is not significant. On the sixth research question which was on students' perception on students' environment and their poor academic performance, the study found that there was a significant influence on students' perceived environment and their poor academic performance.

The study made four recommendations for improving poor academic performance among students which include relationship networking with good interpersonal relationship among teachers and students and improve good academic environment.

The current studyis similar with the previous study. Both seek to investigate factors affecting students' academic performance in Schools. However, the current

study differs with the previous study as the reviewed study was conducted in Ogun State Secondary Schools, while the current study was conducted in Colleges of Education in the North East Geo-Political Zone, Nigeria. The study used the Survey Research Design,and the chi-square statistics to test null hypothesis, while the current study used development studies research design.The t-test and Simple Logistics Regression statistics were used to test the null hypotheses. The previous study did not investigate O'L entry grades of students' performances in Accounting and Mathematics which the current study investigated. The study provided insight for factors affecting students' performance in schools as perceived by teachers and students.

Jubril, (2010) also conducted a study on "Relationship between Entry Grades in Mathematics and Students Performance in Financial Accounting in Federal Colleges of Education in Nigeria. The objective of this study was to determine relationship between entry grades in Mathematics and students performance in Financial Accounting in Federal Colleges of Education in Nigeria. The study raised five research questions and five null hypotheses were tested.

The correlation research design was used for the study. The data were analyzed using descriptive statistic of frequency counts and percentages. Pearson Product Moment Correlation Co-efficient was used for testing null hypotheses one and two, while linear regression was used to t- test the extent of relationship between entry grades and performance for null hypothesis three. The z-test was used to test hypotheses four and five. All null hypotheses were tested at 0.05 level of significance. The study rejected hypotheses one, two, three and five, and

confirmed null hypothesis four. The study concluded that there was a significant relationship between entry grades in Mathematics and ability of solving problems in Financial Accounting. Eighteen recommendations were made among which were that a minimum of credit grade in Mathematic should be emphasis for admission into the NCE Business Education programme and that instruction and teaching of Financial Accounting in Colleges of Education should be more student centred.

The current study is similar toprevious study as both involve studying factors affecting students' academic performances in Financial Accounting in Colleges of Education in Nigeria. The previous study used Pearson Product Moment Correlation Coefficient (r) and z-test statistics to test null hypotheses of no significant relationship between entry grades in Mathematics and performances in Financial Accounting while the current study usedt-test and Simple Logistics Regression statistics. The reviewed study covered only Federal College of Education while the current study covered both Federal and State Colleges of Education. The current study in addition to Mathematics investigated students' ordinary level entry grades in Principles of Accounting.This study provided evidence for significant relationship between students' previous performance in Mathematics and performance in Financial Accounting in Colleges of Education.

Okafor, (2011) conducted a study on Academic Performance of Male versus Female AccountingUndergraduate Students: Evidence from Nigeria. The objective of the study was to contribute to the gender discourse in Accounting by showing evidence from a developing country. The Research subjects for this

research were first year male and female accounting undergraduate students of the University of Benin, Nigeria, who sat for Introductory Financial Accounting courses namely, Introduction to Financial Accounting I & II in 2004/2005 to 2007/2008 Academic Session.Means andt-test statistical were used to answer the research question and null hypothesis respectively.One Null Hypothesis was stated for the study:There is no significance difference between male and female students' academic performance in accounting.Data analysis revealed that there is no significant difference between the performancesof male and female students in all Introductory Financial Accounting.The study concluded that there were no significant differences in academic performance in Accountingbetween male and female undergraduate students. It recommended that females should be encouraged to enroll on accountingprogrammes, and gender neutrality should be incorporated as a part of taught ethics in accounting so as to surge females' academic and accounting job performances especially in settings where females are culturally undermined by males.

Thecurrent studyis similar with the previous study. Both seek to study the influence of gender on students' academic performance in Accounting. The previous study used means and t-test to analyzed and test for level of significance difference which the current also intends to use in addition to using simple logistic regression analysis to answer research questions and test the null hypotheses,

The current study differed from the previous study in geographical location and area of study. The previous study was conducted in One University, while the current study was conducted in six Colleges of Education in the North East,

Nigeria. The current study investigated the influence of entry grades at ordinary level in Mathematics and Accounting on Students' academic performance in Advanced Financial Accounting against the study of students' academic performance in two semester examinations in accounting that were investigated in the previous study. Similarly the previous study studied influence of semester examination on Male and Female student's academic performance in Accounting, while the current study in addition to that investigated the influence of entry grades in Mathematics on student's academic performance in Advanced Financial Accounting in Colleges of Education.

A study of this nature in one institution of learning is considered inadequate to capture the characteristics and peculiarities of the students.

Secondly, the previous study did not cover entry qualification in mathematics or accounting, which this study has covered.

The reviewed literature revealed that several factors affected students' academic performance in Accounting. However, there is no consensus as to the precise factors that influence and affect students' academic performance in Advanced Financial Accounting in Colleges of Education. The studies reviewed were conducted in different locations that have different social and cultural background from the area of the current study. This study seeks therefore to contribute to this educational discourse and fill some of the gaps identified in the review which include studying students O'L entry grade in Mathematics and Principles of Accounting on students'academic performance in Advanced Financial Accounting in Colleges of Education. In addition this study assessed gender status

andO'L entry grades in Mathematics and Principles of Accounting onstudents'academic performance in Advanced Financial Accounting in Colleges of Education in the North East, Nigeria.

2.8. Summary of Literature Reviewed

The literature reviewed discussed the Theoretical Framework on the study. Five Theories of learning were reviewed which includes constructivism, behaviorisms, cognitive, transformative, and informal and postmodern theories. Literature review showed that instruction should emphasize context and promotes skill development. Learner's perceptions were enhanced when learning experiences are connected with what they know with the present and are of relevance to their lives. The study adapted the constructivism theory of learning.

Relevant review of the concept performance was carried out and discussed. The review suggested that a number of factors influenced and or affected students' academic performances in schools. It also showed that students' academic performance have been low in recent years.

The concept of Business Education was reviewed. The philosophy and objective of Business Education were identified as well as the objectives of Business Education for NCE Businessprogrammes highlighted. The review also discussed the concept of Accounting and Mathematics as well as factors affecting Business Education students' performance in schools. The basic entry requirements for Admission into the NCE Business Education programme were highlighted in the review.Six empirical studies were carried out.

From the empirical studies reviewed, the researcher observed that none of them stressed on how pass and failure O'L entry grade in Mathematics and Principles of Accounting influenced students' academic performance in Advanced Financial Accounting in colleges of education. The researcher considered this a major gap which this studyhas closed.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This chapter specifically outlined the methods and procedures that were used for conducting the research study. The chapter is organized under the following sub-headings:-

3.1. Research Design

3.2.Population for the Study

3.3. Sample Size and Sampling Procedure

3.4. 1 Instrument for Data Collection

3.4.2 Validity of Research Instrument

3.4.3. Reliability of Research Instrument

3.5. Procedure for Data Collection

3.6. Procedure for Data Analysis

3.1. Research Design

The Research Design for this study is Ex-post facto. Ex-post facto is a scientific method which consists of summary descriptions of single variables **(**Tyson, 2009).According to James, (1997) ex-post facto studies are concerned with the existing status and interrelationships of phenomena and changes that take place as a function of time. According to Kerlinger (1975) ex-post factodesign is valid whereby the researcher cannot manipulate the independent variables because their manifestation has already occurred. The choice of this design is informed by the fact thatthis studytested for relationship between entry grades in Mathematics and

Principles of Accounting and Students' academic performance in Advanced Financial Accounting.

Ex-post facto research design is considered appropriate and valid method for the study because the data generated for the study lend itself tointerpretations about the degree to whichentry grades at O'L in Mathematics and Principles of Accounting influenced students' academic performance in Advanced Financial Accounting. (Price, 2008 and Leslie, 2006).This agrees with the views of Shane, (2010) and Jong, (1999) who opined that such studies attempt to capture attitudes or patterns of past behavior and help researchers to carry out descriptive studies by measuring the degree of relationship between two or more variables for purposes of describing and comparing such variables.

3.2. Population for the Study

The Population of the study comprised all NCE III graduates of Business Education (Accounting Option) in Colleges of Education in the North East Geo-Political Zone, Nigeria for 2010/2011 session. The study was conducted in all the nine Colleges of Education offering Business Education in the North East Geo-Political Zone, Nigeria.

The Target population of NCE III students for the 2010 – 2011 academic sessions in the nine Colleges is Six hundred and Fifty (650) students as shown in table 3.1:

Table 3.1. Population for the Study

S/No.	Name of Institution	Student Population
1.	Federal College Education (Tech) PotiskumYobe State	126
2.	Federal College of Education (Tech) Gombe, Gombe State	62
3.	College of Education, Hong, Adamawa State.	64
4	Federal College of Education Yola Adamawa State	50
5.	College of Education Azare, Bauchi State	75
6.	College of Education Zing, Taraba State	113
7.	College of Education Gashua, Yobe State	66
8.	Kashim Ibrahim College of Education, Maiduguri, Borno State	48
9.	Umar Ibrahim Elkanemi College of Education, Science and Technology, Bama, Borno State.	46
	Students total	650

Source: Academic Records from the School of Business Education in the Colleges 2012.

3.3. Sample Size and Sampling Procedure

The sample population was drawn from six Colleges of Education.These Colleges include – Federal College of Education (Tech) Potiskum, Federal College of Education (Tech) Gombe, Kashim Ibrahim College of Education, Maiduguri, College of Education Azare, Federal College of Education Yola, College of Education Zing. There are six states in the North East, Nigeria.Random sampling technique was used to draw the sample in a state that has more than one College of

Education. This technique is employed to give every College in the state equal chance and opportunity to be sampled.

The procedure for drawing the sample was to stratifyall Colleges in each State in one stratumin a state that have more than one college of education and writing the names of the colleges on a sheet of paper.The names of colleges written on the paper were folded and mixed in a container. A secondary school student was asked to draw one paper and the name of the College drawn listed in the sample.

Students were stratified into three groups namely:

(a) Students who scored Credit and above grades in Mathematics and students that scored pass or failgrades at O'Lin Mathematics.
(b) Students who scored Credit and above grades in Accounting and students that scored pass grades at O'L Principles of Accounting
(c) Male and female students who scored Credit and above entry grades in Mathematics and Accounting at ordinary level and those with pass or fail grades.

From the list of students' results, the researcher wrote the numbers of students from number one to ten on the first page on small pieces of papers. These papers were squeezed. The research assistant was asked to pick one paper. The number picked by the researchassistant was used as pointto start the sampling. From each of the stratum Thirtyseven point four percent (37.4%) was selected for the study. This agrees with Krejcie and Morgan (1970) (see appendix II) that for a population of Six Hundred and fifty the sample size should be Two Hundred and Forty three (243) students. Two Hundred and forty three(243) students were drawn from the six Colleges using proportionate sampling procedure. This was repeated

for each stratum. A proportionate number of students from each College based on their sex status were sampled as indicated in table 3.2.

Table 3.2 Sample Size for the Study

S/No.	Name of Institution	Sample Size
1.	Federal College Education (Tech) PotiskumYobe State	64
2.	Kashim Ibrahim College of Education, Maiduguri, Borno State	25
3.	Federal College of Education (Tech) Gombe, Gombe State	32
4.	College of Education Azare, Bauchi State	38
5.	Federal College of Education Yola Adamawa State	26
6.	College of Education Zing, Taraba State	58
	Total Sample Size	**243**

3. 4. Instrument for Data Collection

The instrument for data collection for this study was documented records. Documentary sources are records relating to individuals or groups of individuals that have been generated in the course of their daily lives. According to Payne and Payne (2004) documented records are relevant primary sources for retrieving data for the purpose of analysis.Documented records involve the use of texts and documents as primary source materials: government publications, newspapers, certificates, census publications, novels, film and video, paintings, personal photographs, diaries and innumerable other written, visual and pictorial sources in paper, electronic, or other hard copy form (Scott 2006). Social scientists have been using documentary records in recent years(Hongxing, 2006).

The entry certificates screened and used for admitting students into the NCE Business Educationprogramme by each College in respect of the sample students and the final academic results in Advanced Financial Accounting for each

of the sample students were collected from the institutions for the purpose of retrieving the primary data for the study.

The ordinary level entry grades in Mathematics and Accounting presented by each student and the grade obtained in Advanced Financial Accounting were obtained from the Academic and Examination Office of each College of Education from School of Business Education for the purpose of this study. The following data in respect of each student was obtained personally by the researcher:

(a) Ordinary level grade in Mathematics.
(b) Ordinary level grade in Accounting.
(c) Gender Status of each student.
(d) Eachstudent's Grades in Advanced Financial Accounting.

3.4.2. Validity of the Instrument

For every scientific inquiry the instrument for data collection must be valid and reliable. One of the waysof ensuring high quality datacollection is by improving the quality of the measuring instrument which is determined by the instrument's validity.In orderto ensure that data collected for this study were valid the researcher visited each College of Education obtained and recorded the required information from students' files and examinations results. This agreed with the viewsof Hongxing (2006) and Monageng, (2006) who suggested that where documentary sources are used as primary sources of data collection, it is important that the researcher evaluates the documents and ensures the documents are authentic and a true representation of what they represent.The researcher ensured that the documents consulted were genuine and of integrity. For this reason no pilot study was conducted for the study.

Whilst there are some valid concerns about the statistical validity of documentary records as primary sources for data collection, but as long as these limitations are understood by the researcher, this type of study is an invaluable scientific tool (Trochim, 2006).

3.4.3. Reliability of Instrument

All Colleges of Education are required by law to keep records of their students in respect of their bio-data and academic performances and these records are properly kept and represent the true records of the students. The researcher ensured that data collectedwerecredible, reliable and that subjects were correctly identified. This is in accordance with the views of Scott (1990) that reliabilityconcerns the internal validity, in which the goal is to demonstrate that the inquiry was conducted in such a manner as to ensure that the subjects are accurately identified and described.

3.5. Procedure for Data Collection

The researcher collected a letter of Introduction from the Department of Vocational and Technical Education, Ahmadu Bello University (See appendix I) and visited each College of Education between May and July 2013 to request and take records from the following documents:

(a) Records fromstudents files for students' entry grades and gender status.

(b) Examination results in respect of the sampled student, in each College of Education to retrieve students' scores in Advanced Financial Accounting for the 2010/2011 NCE III Accounting students.

3.6. Procedure for Data Analysis.

Mean performance of students for both the entry grades at ordinary level in Mathematics, Principles of Accounting and grades obtained in Advanced Financial Accounting were computedto answer the research questions. Simple Logistics Regression statistics was used to test null hypotheses one and two and t-test statistics tool was used to testnull hypotheses three, four and five. The null hypotheses were tested at 0.05 level of significance among the students' entry grades in Mathematics and Principles of Accounting and academic performance in Advanced Financial Accounting in Colleges of Education in the North East Geo-Political Zone, Nigeria. This agrees with the view of Anthony, (2006) who suggested that the Simple Logistic Regression should be used if there is one independent variable and one dependent variable that is categorical. The t-test has proved to be one of the most effective methods of comparing two group means (Nworgu, (2001).

Student entry grades were graded on afive-point scale (see Appendix III) for scoring students entry grades in Mathematics and Principles of Accounting at ordinary level and students' final academic performances in Advanced Financial Accounting for purposes of data analysis generated for the study.

All null hypotheses were tested at 0.05 level of significance (P = 0.05). In the test of null hypotheses, when the calculated value of any tested null hypothesis is less than or equal to the critical value, the Null hypothesis was accepted. On the other hand if the calculated value is greater than the critical value, the Null hypothesis was rejected.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

This chapter presents the results of the data collection. The presentation was under done under the following headings:

4.1.Demographic Data

4.2. Answering the Research Questions

4.3. Testing the Null Hypotheses

4.4. Discussion of findings

4.5 Summary of findings

4.1 Demographic Data

The analysis of students bio-data are as presented in tables 4.1.-4.3. Distribution of students by gender is as presented in Table 4.1

Table 4:1 Distribution of respondents by gender

Gender	Frequency	Percent
Male	168	69
Female	75	31
Total	243	100

Source: Field work 2013

Table 4:1 above indicated that 168or (69%) students were males while 75 or (31%) were females. This implies that male students were more in number.

Table 4.2Distribution of students by their entry grades in Mathematics

Entry grades in Principles of Mathematics	Male Students	Female Students	Total	Percent
B3	0	1	1	0.2
C4	20	1	21	8.7
C5	27	14	41	16.9
C6	28	23	51	21.1
D7	31	17	48	19.8
E8	44	15	59	24.3
F9	18	4	22	9.0
Total	168	75	243	100

Source: Field work 2013

Table 4:2 above showed the distribution of students based on their entry grades in mathematics. The analysis showed that only one student had B3 grade (0.2%) in mathematics. Students with C4 grades in mathematics were 21 representing 8.7% while 41 or (16.9%) students had C5. Students with C6 were 51 representing 21.1%. 48 students representing 18.8% entered the institutions with D7 grades in Mathematics, while 59 (24.4%) had E8 grades and 22 representing 9% had F9 grades.

Table 4.3: **Distribution of Students by their Entry Grades in Principles of Accounting**

Entry grades in Principles Of Accounting	Males	Females	Total Students	Percent
B2	1	2	3	2.4
B3	4	4	8	6.5
C4	10	3	13	10.6
C5	18	3	21	17.1
C6	24	10	34	27.6
D7	14	5	19	15.4
E8	10	9	19	15.4
F9	4	2	6	4.8
Total	85	38	123	100

Source: Field work 2013

Table 4.3 above shows the summary of the students' entry grades in Principles of Accounting indicating that three students representing 2.4% had B2 grades. Students with B3 grades were 8 (6.5%). 13 students representing 10.6% entered the institution with C4 in Principles of Accounting. Those with C5 grades were 21 (17.1%). 34 students had C6 grades representing 27.6%. D7 and E8 had 19 students each representing 15.5%, while 6 students had F9 grades representing 4.9%.

4.2 Answering the Research Questions

Research Question One: To what extent does Credit and above entry grades in Mathematics influence academic performance of students in Advanced Financial Accounting in Colleges of Education in North East Geo-Political Zone, Nigeria?

The analysis of the data is as presented on table 4.4

Table 4.4: Analysis of Students' Entry Grades in Mathematics and Performance in Advanced Financial Accounting

O/L Entry Grades in Mathematics			Performance in Adv. Fin. Accounting		
S/No	Entry Grade	Number of Students	Total students' scores	Average Student score	Average Grade
1.	B3	B31	78	78	A
2.	C4	21	1386	66	B
3.	C5	41	2296	56	C
4.	C4	51	2958	58	C
5.	D7	48	2592	54	C
6.	E8	59	3029	51	C
7.	F9	22	861	39	F

Field work 2013

Table 4.4 showed that only one student entered the institutions with B3 entry grade in Mathematics had a mark of 78 which is graded "A" in Advanced Financial Accounting. 21 students with C4entry grades in Mathematics at O/L had a mean score of 66 (B) in Advanced Financial Accounting. Students with C5 and C6entry grades had mean score of 56 (C) and 58 (C) respectively. 48 students that entered with D7entry grades had mean score of 54 (C) in Advanced Financial Accounting. 59 students with E8entry grades in Mathematics at O/L had mean score of 51 which is graded "C". Students with F9 entry grades in Mathematics had a mean score of 39 graded (F)

Research Question Two: To what extent does Credit and above entry grades in Principles of Accounting at O/L influence academic performance of students in Advanced Financial Accounting in Colleges of Education inNorth East Geo-Political Zone, Nigeria?

The calculation of the data is presented in table 4.5

Table 4.5: Analysis of Students Entry Grades in Principles of Accounting and Performance inAdvanced Financial Accounting

O/L Entry Grades in Principles of Accounts			Performance in Financial Accounting		
S/No	Entry Grade	Number of Students	Total Students' scores	Average score	Average Grade
1.	B2	3	199	66	B
2.	B3	8	578	72	A
3.	C4	13	771	59	C
4.	C5	20	1253	63	B
5.	C6	34	1887	56	C
6.	D7	19	1004	52	C
7.	E8	19	889	48	D
8.	F9	21	781	37	F
9.	Without Accounting	119	6323	53	C

Source: Field work 2013

Result of data used to determine influence of entry grades in Principles of Accounting on students' performance in Advance Financial Accounting showed that 3 students with B2entry grades in their O/L Principles of Accounting had mean score of 66 (B). 8 students with B3entry grades had mean score of 72 which is graded "A". 20 students with C4entry grades in their O/L Principles of Accounting had mean score of 59 (C). Students with C5 and C6 in their O/L Principles of Accounting had mean score of 63 and 56 which are grade "B and C" respectively. Students with D7 and E8 entry grades had mean score 52 (C) and48 (D) respectively. Students with F9 entry grades had mean of 37 (F), while those who did not offer Principles of Accounting at O/L had mean of 53 which is graded (C).

Research Question Three: What is the difference in academic performance of students in Advanced Financial Accounting with pass entry grades in Mathematic at O/L and those with pass entry grades in Principles of Accounting in Colleges of Education in North Eastern States, Nigeria?

The calculation of the data is presented in table 4.6

Table 4.6: Analysis of difference in academic performance of students in Advanced Financial Accounting with pass grades in Mathematic and those with pass in Principles of Accounting

	Students with passentry grades in their O/L Principles of Accounting					Students with passentry grades in their O/L Mathematics			
S/N	No.ofStds	Entry Grade	Total scores	Mean	Grade	No of students	Total scores	Mean	Grade
1.	19	D7	988	52	C	48	2592	54	C
2.	19	E8	912	48	D	59	3009	51	C
	38		1900	50	C	107	5601	52	C

Source:Field work 2013

From Table 4.6. 19 students who had D7 entry grades in O/L Principles of Accounting had mean score of 52 which is "C"grade in Advanced Financial Accounting, on the other hand, those who had D7entry grades in their O/L Mathematics scored 54 (C). 19 students that had "E8"entry grades in O/L Principles of Accounting scored 48 (D), while those that had equivalent entry grades in their O/L Mathematics that had mean score of 51 (C).

Research Question Four: To what extent do O/L entry grades in Mathematics influence the performance of male and female students in Advanced Financial Accounting in Colleges of Education in the North East Geo-Political Zone, Nigeria?

The calculation of the data is presented in table 4.7

Table 4.7: **Analysis of difference in academic performance of students in Advanced Financial Accounting with pass grades in Mathematic based on Gender**

Influence of Entry grades in Mathematics on performance of male students in Advanced financial Accounting						Influence of Entry grades in Mathematics on Performance of female students in Advanced financial Accounting		
S/N	No of Stds	Maths Grade	Performance in Advanced Accounting	Mean	Grade	Maths Grades	No of Stds	Performance. in Advanced Accounting
1.	-	B3	-	-	-	B3	1	78
2.	20	C4	1320	66	B	C4	1	72
3.	27	C5	1512	56	C	C5	14	812
4.	28	C6	1652	59	C	C6	23	1242
5.	31	D7	1726	56	C	D7	17	850
6.	44	E8	2288	52	C	E8	15	720
7.	17	F9	629	37	F	F9	4	160
	Total	168	9185	55	C		75	3934

Source: Source: Field Work 2013

Analysis of data used to answered research question four showed that no male student had B3 in O/L mathematics and only one female student had the grade and she scored 78 in Advanced Financial Accounting. Male students with C4entry grades had the mean score of 66 which is graded "B" against their female counterparts that had mean score of 72 graded "A", male students with C5entry grades had the mean score of 56, while 14 female students that had the same entry grade scored 58. Average mean score of 59 is accounted for male students with C6 entry grades, while their female counterparts had 54 in Advanced Financial Accounting. Male students that enter the institutions with D7 grades had mean score of 56 against female students with mean score of 50 in Advance financial Accounting. A Mean score of 44 and 52 in Advanced Financial Accounting were accounted for male students and female students that had E8entry grades in their O/L mathematics respectively. Male students that entered with F9 grades in their O/L mathematics had mean score of 37 in Advanced Financial Accounting, while their female counterparts had mean score of 40 in Advance financial Accounting.

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Research Question Five: To what extent do O/L entry grades in Principles of Accounting influence the difference between the performance of male and female students in Advanced Financial Accounting in Colleges of Education in the North East Geo-Political Zone, Nigeria?

The calculation of the data is presented in table 4.8

Table 4.8: **Analysis of difference in academic performance of students in Advanced Financial Accounting with pass in Principles of Accounting based on Gender**

Influence of Entry grades in Principles of Accounting on performance of male students in Advanced financial Accounting						Influence of Entry grades in Mathematics on performance of female students in Advanced financial Accounting				
S/N	No.of Students Male	Principles of Accts. Grades	Perf. in Advanced Accounting Male students	Score	Grade	No.of Students Female	Maths Grade	Perf.in Advanced Accounting	Mean Score	Average Grade
1.	1	B2	76	76	A	2	B2	124	62	B
2.	4	B3	264	66	B	4	B3	316	79	A
3.	10	C4	610	61	B	3	C4	162	54	C
4.	18	C5	1098	61	B	3	C5	198	66	B
5.	24	C6	1440	60	B	10	C6	550	55	C
6.	14	D7	742	53	C	5	D7	270	54	C
7.	10	E8	490	49	D	9	E8	405	45	D
8.	4	F9	156	39	F	2	F9	108	54	C
	Total	84	4876	58	C		35	2133	61	B

Source: Field Work 2013

The analysis of data used to answer research question five showed that male students with B2 entry grades in Principles of Accounting had mean score of 76 while their female counterparts scored 62 which are graded“A” and “B”grade respectively. Mean score of 66 (B) was recorded for male students with B3entry grades while their female counterparts scored 79 (A). Average score of 61 and 54 were recorded for male and female students that entered the institutions with C4entry grades in their O/L Accounting which is “B” and “C” grade respectively. Male students with C5entry grades in their O/L Principles of Accounting had mean score of 61 (B) while 54 (C) was recorded for theirfemale counterparts.

Mean score of 60 and 55 that belongs to grade “B” and “C” were recorded for male and female students with C6 ordinary level entry grades. Male students with D7entry grades in their O/L Principles of Accounting had mean score of 53 (C) while their female counterparts had a mean score 54 (C). The group of students with E8 entry grades in their O/L Principles of Accounting scored “D” in Advance Financial accounting with means score of 49 and 45 respectively. Male students with F9 grades in their O/L Principles of Accounting had mean score of 39 (F) in Advance Financial Accounting and their female counterparts had 54 (C).

4.3 Testing the Null Hypotheses

Null Hypothesis One: There is no significant difference between the influence of credit and above entry grade in Mathematics on the academic performance of students in Advanced Financial Accounting in Colleges of Education in North East Geo-Political, Nigeria?

The data collected were calculated and the result of the calculation is as presented in table 4.9

Table 4.9: **Regression Analysis of influence of Credit and above Entry Grades in Mathematics on Students Performance in Advanced Financial Accounting**

Model	B	Std. Error	T	Sig.	R-Cal	R-Crit	R	R^2	Adjusted R^2
Credit Entry in Mathematics (Constant)	3.380	.124	27.282	.000	0.179	0.088	.292[a]	.078	.069
Performance in Advance Accounting	.049	.033	1.449	.150					

Source: Field work 2013

Analysis of data used to test null hypothesis one showed that the calculated R calculated value of 0.179, greater than the R critical value of 0.088. The calculated R-value (0.179) is significant. The value of Beta, (constant) is 3.380, indicating that the regression equation needs to be adjusted by the value in order to get regression equation relating to Credit Entry in Mathematics (CEM) with Performance in Advance Accounting (PAA). The R^2 value is .078 indicating that 7.8% of the variance in the PAA is determined by CEM. The analysis showed that CEM has significant influence on students' PAA.

Null Hypothesis Two: There is no significant difference between the influence of credit and above entry grade in Mathematics on the academic performance of students in Advanced Financial Accounting in Colleges of Education in North East Geo-Political Zone, Nigeria.

The data collected were calculated and the result of the calculation is as

presented in table 4.10

Table 4.10: **Regression Analysis of influence of Credit and above Entry Grades in Accounting on Students Performance in Advance Financial Accounting**

Model	B	Std. Error	T	Sig.	R-Cal	R-Crit	R	R^2	Adjusted R^2
Credit Entry in Accounting (Constant)	3.192	.219	14.568	.000	0.220	0.088	.276[a]	.076	.064
Performance in Advance Accounting	0.139	.056	2.501	.015					

Source: Field work 2013

Test of null hypothesis two revealed that R calculated value of 0.220, which is greater than the R critical value of 0.088. The calculated R-value (0.220) is significant. The value of Beta, (constant) stood at 3.192, indicating that the regression equation needs to be adjusted by the value in order to get regression equation relating to Credit Entry in Principles of Accounting (CEPA) with Performance in Advance Accounting (PAA). The R^2 value is .076 indicating that 7.6% of the variance in the PAA is determined by CEPA. The analysis showed that CEPA has significant influence on students' PAA.

Null Hypothesis Three There is no significant difference in the academic performance of students with O/L pass entry grades in Mathematics and those with

O/L pass entry grades in Principles of Accounting in Advanced Financial Accounting in Colleges of Education in North East Geo-Political Zone, Nigeria.

The data collected were calculated and the result of the calculation is as

presented in table 4.11

Table 4.11: **Test of difference between students with O/L pass in Mathematics and those with pass in Principles of Accounting in Advance Financial Accounting**

Group	N	Mean	Std. Deviation	Std. Error Mean	t-cal	t-crit	df	Sig. (2-tailed)
Pass NAG	125	1.22	.706	.063	1.46	1.96	168	.730
Pass AG	45	1.27	.720	.107				

Source: Field work 2013

Result of t-test analysis used to determine the difference in the null hypothesis three showed the mean score of 1.22 and standard deviation of 0.706 for students with pass entry grades in mathematics. Those with pass entry grades in Principles of Accounting have mean of 1.27 with standard deviation of .702. The t-cal was 1.46<1.96 t-critical.

Null Hypothesis Four: There is no significant difference between the influence of male students with pass entry grades in O/L mathematics and their female counterparts in Advanced Financial in Colleges of Education in North East Geo-Political Zone, Nigeria.

The data collected were calculated and the result of the calculation is

presented in table 4.12

Table 4.12: **Test of Gender difference in performance of students in Advance Financial Accounting that had O/L pass grades in Mathematics.**

Group	N	Mean	Std. Deviation	Std. Error Mean	t-cal	t-crit	Df	Sig. (2-tailed)
Male	167	2.31	1.434	.111	1.039	1.96	250	.003

students				
Female students	85	2.87	1.316	.143

Source: Field work 2013

T-test analysis was used to determine the difference in the null hypothesis four revealed mean score of 2.31 and standard deviation of 1.434 for male students. Female students have mean score of 2.87 with standard deviation of 1.316. The t-cal value stood at 1.039 found to be less that critical value of 1.96. Hence, the null hypothesis which states that, no significant difference exist in the academic performance of male students with pass grades in O/L mathematics and their female counterparts in Advanced Financial in Colleges of Education in North East Geo-Political Zone, Nigeria is accepted.

Null Hypothesis Five: There is no significant difference between the influence of male students with pass entry grades in O/L Principles of Accounting and their female counterparts in Advanced Financial Accounting in Colleges of Education in North East Geo-Political Zone, Nigeria.

The data collected were calculated and the result of the calculation is

presented in table 4.13

Table 4.13: **Test of Gender difference in performance of students in Advance Financial Accounting that have O/L pass grades in Principles of Accounting**.

Group	N	Mean	Std. Deviation	Std. Error Mean	t-cal	t-crit	df	Sig. (2-tailed)
MFAG	75	2.28	1.760	.203	1.060	1.96	111	.291

FFAG	38	2.63	1.460	.237

Source: Field Work

Result of data used to test null hypothesis five revealed mean score of 2.28 and standard deviation of 1.760 for male students. Female students had mean score of 2.63 with standard deviation of 1.460. The t-cal value was 1.060<1.96 t-crit. Based on the analysis, the null hypothesis which states that, no significant difference exist in the academic performance of male students with pass in O/L Principles of Accounting and their female counterparts in Advanced Financial in Colleges of Education in North East Geo-Political Zone, Nigeria is accepted.

4.4 Discussion of the Findings

The data analysis used to answer research question one and test of null hypothesis one revealed that entry grades in Mathematics has significant influence on student's academic performance in Advanced Financial Accounting. The outcome of this study agrees with the findings of Gist, Goedde and Ward, (1996) who reported that Mathematic results were significantly related with students' performance in Principle of Accounting. This relationship helps Accounting students to integrate relevant points into a coherent structure. It is important to stress that Mathematics skill facilitates students' knowledge and skills in Advanced Financial Accounting.

Analysis of data to research question and Test of null hypothesis two showed that students' grade in Principles of Accounting at O/L contributed significantly on academic performance of students in Advanced Financial Accounting. This finding further confirmed the findings of Gist et al (1996)who postulated that accounting students who performed well tend to have strong Mathematical skills. Eskew and Robert, (1988)

maintained that previous exposure to accounting by way of college preparatory high school bookkeeping or accounting courses had significant influence in their future performances.

The study further revealed that there is no significant difference in the academic performance of students with O/L passentry grades in Mathematics and those with O/L pass entry grades in Principles of Accounting in Advanced Financial in Colleges of Education in North EastGeo-Political Zone, Nigeria. This is contrary to Rowland's (1988) findings that students who had previous exposure to Accounting performed better than their counter-parts in first year Accounting course. Collier and McGowan (1989) reported that students who did well in Accounting understand "number concepts. They stated that minimum competency in arithmetic and algebra is necessary, but not sufficient conditions for success in accounting programmes. Collier and McGowan, (1989) reported an association between Mathematic grades and scores in Intermediate Accounting.

Analysis of data used to answer research question four and test of null hypothesis four revealed that significant difference between male students with passentry grades in O/L mathematics and their female counterparts in Advanced Financial Accounting in Colleges of Education in North EastGeo-Political Zone, Nigeria. The outcome of the study is contrary with the views of Hyde, Fennemaand Lamon (1990) who found out that in Secondary School and College, boys out-performed girls in the area of problem solving.Jubril (2010) posited that entry grades in Mathematics contributed significantly on the difference that exist between male and female students' in Financial Accounting at Federal Colleges of Education in Nigeria. However, the test of null hypothesis suggested that there were no significant difference among male and female students academic performance in Advanced Financial Accounting with pass O/L entry grades.

The analysis of data collected for research question five showed that there wasno significant difference between male students with passes in O/L Principles of Accounting and their female counterparts in Advanced Financial Accounting in Colleges of Education in North EastGeo-Political Zone, Nigeria. The study disagree with the study of Eskew and Faley (1988); Bouillon, Doran and Smith (1990); Doran, Bouillon and Smith (1991); Danko, Duke and Franz (1992); Norton and Reding (1992); Jones and Fields (2001). These authors' statistical documents showed that weaker and more problematic relationships have been found between performances in Accounting. The authors stressed that, normally female students do better than male students in Accounting.

4.5. Summary of Major Findings

The study found out that:

1. Students' academic performance in Advanced Financial Accounting based on their entry grades in Mathematics showed progressive differences in their mean score. Hence the null hypothesis of no significant difference is rejectedas 0.179>0.088.

2. Based on the analysis, the performance of students in Advanced Financial Accounting was reflected by their entry grades in O/L Principles of Accounting. Hence the null hypothesis of no significant difference is rejected as the calculated of 0.220>0.088 critical value.

3The also found out that students with pass entry grades at O/L Principles of Accounting had mean score of 50 which is "C" grade and those who had pass in their O/L Mathematics had mean score of 52 which is"C" grade. Hence the null hypothesiswhich states that there is no significant difference in the performance of students with O/L passentry grades in Mathematics and those with O/L passentry grades in Principles of Accounting in Advanced Financial in Colleges of Education in North East, Nigeria is accepted. The calculated value of 1.46<1.96 t–critical value.

4. The study also revealed that male and femalestudents score the same grade "C". The null hypothesis of no significant difference in academic performance among male and female students in Advanced Financial Accounting was also retained as t-cal of 1.039<1.96 t-critical value.

5 The study found outthose male students that offered Principles of Accounting at O/L scored "C" grade while their female counterparts scored "B" grade suggesting that the female scored a higher grade. However the test of null hypothesis revealed that there is no significant difference in their academic performance. The t-calculated of 1.060<1.96 t-critical value. Hence the study retained the null hypothesis of no significant difference in academic performance among male and female students in Advanced Financial Accounting in Colleges of Education in North East, Nigeria.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter presents the summary, conclusion and recommendations based on results of findings.

5.1 Summary

The research work was conducted on the influence of entry grades in Mathematics and Principles of Accounting at the ordinary level on student's academic performance in Financial Accounting in Colleges of Education in the North East, Nigeria. In order to achieve the objective of the study, five specific objectives were raised and in line with each statedspecific objective, five research questions and five null hypotheses were formulated. The researcher adopted development studies design for the study. The population of the study was 650 Business Education students who offered Advanced Financial Accounting

in Colleges of Education in North East Nigeria. The summary of the findings are listed as follows:

1. The study also found outthat those studentswith credit and above entry grades at ordinary level in Principles of Accountingperformed significantly better in Advanced Financial Accounting in Colleges of Education in North East, Nigeria.
2. The study also showed that there were no significant difference in students' academic performance in Advanced Financial Accounting among students with pass entry grades at O'L in Mathematics and those with pass entry grades in Principles of Accounting in Colleges of Education in the North East, Nigeria.
3. The study showed no significant difference in Academic Performance in Advanced Financial Accounting among male students with pass entry grades in Mathematics at ordinary and their female counterparts in Colleges of Education in the North East, Nigeria.
4. The study also showedthat there was no significant difference in Academic Performance in Advanced Financial Accounting among male students with passes entry grades in Principles of Accounting at ordinary and their female counterparts in Colleges of Education in the North East, Nigeria.

5.3. Conclusion

Based on the findings of the study the following conclusion could be drawn from the study. Students with credit and above entry grades at 0'L in Mathematics and Principles of Accountinghave the potentials of performing better in Advanced Financial Accounting in Colleges of Education in the North East Nigeria than those with pass entry grades.Gender difference is not an index to determine difference in the performance of

students' in Advanced Financial Accounting if they have the same skills in Mathematics and Principles of Accounting at O/L, and are exposed to the same learning environment.

5.4. Recommendations

Based on the conclusion of the study, the following recommendations were postulated:-

1. Orientation programs should be mounted at secondary school level to enlighten students on the need to develop interest in Mathematics. This will help students to develop interest in Mathematics so as to improve their future academic performance in Accounting.
2. Students who have career interest in Accounting Education should be encouraged to study Principles of Accounting at the Secondary School Level. This will help students' understanding and improve performance in Advanced Financial Accounting in Colleges of Education in North East Geo-Political Zone, Nigeria..
3. Teachers handling Mathematics and Principles of Accounting at secondary schools and Colleges should be skillful to stimulate, encourage and facilitate students understanding of Mathematics and Principles of Accounting at the secondary school and higher institutions. This will help to improve academic performance of students with deficiencies in Mathematics and Principles of Accounting at ordinary level.
4. Credit in Mathematics and Principles of Accounting at O/L should continue to be emphasized and applied as basic Admission entry requirementfor Accounting students in Colleges of Education in irrespective of gender difference. This should also include students that will be admitted through Pre-NCEprogramme.

5. Accounting teachers in Colleges of Education should explore teaching strategies that will encouragestudents' interests and learning habits in Accounting. This will help students who do not have ordinary level back ground in Principles of Accounting and improve their academic performance in the course.

5.4 Suggestions for Further Study

An experimental study is recommended to determine cause of low students' academic performance in Advanced Financial Accounting under control conditions.This will help to reduce the effect of the intervening variables in differences in school environments and teachers' factors which may have affected students' academic performance in Colleges of Education that were studied.

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APPENDIX

Appendix I: Letter of Introduction of the researcher to Colleges of Education

Appendix II

Table IVfor Determining Sample Size from a Given Population

N	S	N	S	N	S
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	**650***	**242***	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—**N**is population size.
Sis sample size.
*Population and Sample size for the study.
Source: Krejcie and Morgan (1970)

Appendix III

Table V. Students grading in Colleges of Education and Ordinary level Examinations

NCE Grades	Scores	Points	O'level Grades	Points
A	70 – above	5.0	A1, A2, A3	5.0
B	60 – 69	4.0	C4, C5	4.0
C	50 – 59	3.0	C6	3.0
D	45 – 49	2.0	D7	2.0
E	40 – 44	1.0	P8	1.0
F	0 – 39	0.0	F9	0.0

FCE(T) Gombe Students Hand Book/
WAEC/NECO/NABTEB/TC.II examination grades and points

APENDIX IV

DETAILS OF DATA USED FOR ANALYSIS

S/No	College	Sex	Mathematics		Principles of Accounting		Adv. Fin. Accounting	
			Grade	Points	Grade	Points	Scores	Points
1	Zing	F	8	1	-	-	57	3
2	"	"	9	0	-	-	41	1
3	"	"	6	3	7	2	72	5
4	"	"	7	2	8	1	48	2
5	"	"	5	4	-	-	50	3
6	"	"	6	3	-	-	40	1
7	"	"	8	1	-	-	40	1
8	"	"	8	1	6	3	50	3
9	"	"	8	1	7	2	46	2
10	"	"	9	0	-	-	42	1
11	"	"	8	1	7	2	46	2
12	"	"	7	2	8	1	42	1
13	"		8	1	-	-	40	1
14	"	"	7	2	8	1	50	3
15	"	M	6	3	6	3	50	3
16	"	"	7	2	-	-	43	1
17	"	"	8	1	-		40	1
18	"	"	4	4	6	3	72	5
19	"	"	5	4	-	-	45	2
20	"	"	7	2	-	-	48	2
21	"	"	5	4	-	-	59	3
22	"	"	6	3	-	-	52	3
23	"	"	4	4	6	3	53	3
24	"	"	7	2	7	2	52	3
25	"	"	8	1	6	3	66	4
26	"	"	7	2	4	4	76	5
27	"	"	4	4	-	-	41	1
28	"	"	7	2	-	-	40	1
29	"	"	6	3	4	4	65	4
30	"	'	5	4	6	3	71	5
31	"	"	7	2	-	-	57	3
32	"	'	7	2	-	-	64	4
33	"	'	7	2	-	-	40	1
34	"	"	8	1	-	-	41	1
35	"	"	9	0	-	-	47	2
36	"	"	8	1	7	2	41	1
37	"	"	8	1	-	-	31	0
38	"	"	7	2	-	-	42	1
39	"	"	8	1	-	-	25	0

40	“	“	7	2	-	-	40	1
41	Zing	Male	6	3	7	2	51	3
42	“	“	6	3	4	4	72	5
43	“	“	6	3	6	3	50	3
44	“	“	7	2	-	-	43	1
45	“	“	8	1	-	-	40	1
46	“	“	4	4	6	3	72	5
47	“	“	5	4	-	-	45	2
48	“	“	7	2	-	-	48	2
49	“	“	5	4	-	-	59	3
50	“	“	6	3	-	-	52	3
51	“	“	4	4	6	3	53	3
52	“	“	7	2	7	2	52	3
53	“	“	8	1	6	3	66	4
54	“	“	7	2	4	4	76	5
55	“	“	4	4	-	-	41	1
56	Yola	F	6	3	6	3	41	1
57	“	“	7	2	6	3	52	3
58	“	“	3	5	8	1	78	5
59	“	“	5	4	5	4	51	3
60	“	“	6	3	9	0	70	5
61	“	“	7	2	-	-	65	4
62	“	“	5	4	-	-	51	3
63	“	“	5	4	2	5	50	3
64	“	“	5	4	-	-	73	5
65	“	“	5	4	4	4	50	3
66	“	M	9	0	8	1	51	3
67	“	“	7	2	7	2	74	5
68	“	“	8	1	3	5	47	2
69	“	“	8	1	6	3	55	5
70	“	“	9	0	8	1	48	2
71	“	“	6	3	5	4	60	4
72	“	‘	8	1	9	0	25	0
73	“	“	8	1	-	-	50	3
74	“	“	5	4	-	-	48	2
75	“	“	5	4	-	-	47	2
76	“	“	6	3	-	-	57	3
77	“	“	6	3	6	3	68	4
78	“	“	4	4	-	-	55	3
79	“	“	8	1	8	1	49	2
80	“	“	5	3	-	-	50	3
81	“	“	8	1	7	2	54	3
82	Bauchi	F	7	2	4	3	50	3

83	“	“	8	1	-	-	30	0
84	“	“	5	4	6	3	60	4
85	Bauchi	“	7	2	-	-	35	0
86	“	“	6	3	6	3	58	3
87	“	“	7	2	-	-	28	0
88	“	“	8	1	-	-	22	0
89	“	“	7	2	8	1	35	0
90	“	“	6	3	3	5	81	5
91	“	“	6	3	-	-	51	3
92	“	“	7	2	-	-	26	0
93	“	“	8	1	-	-	36	0
94	“	M	8	1	-	-	24	0
95	“	“	8	1	5	4	85	5
96	“	“	7	2	-	-	47	2
97	“	“	7	2	8	1	78	5
98	“	“	9	0	8	1	44	1
99	“	“	8	1	-	-	30	0
100	“	“	6	3	5	4	48	2
101	“	“	7	2	-	-	31	0
102	“	“	8	1	8	1	33	0
103	“	“	9	0	-	-	33	0
104	“	“	8	1	5	4	73	5
105	“	“	8	1	-	-	48	2
106	“	“	6	3	6	3	85	5
107	“	“	5	4	-	-	40	1
108	“	“	4	4	5	4	64	4
109	“	“	6	3	6	3	70	5
110	“	“	6	3	-	-	32	0
111	“	“	5	4	4	4	50	3
112	“	“	7	2	-	-	48	2
113	“	“	5	4	6	3	73	5
114	“	“	7	2	8	1	55	3
115	“	“	9	0	-	-	33	0
116	“	“	8	1	-	-	36	0
117	“	“	4	4	5	4	76	5
118	“	“	7	2	-	-	42	1
119	“	“	9	0	-	-	35	0
120	Gombe	F	8	1	-	-	58	3
121	“	“	6	3	-	-	40	1
122	“	“	5	4	-	-	45	2
123	“	“	6	3	8	1	30	0
124	“	“	9	3	6	3	40	1
125	“	“	6	3	-	-	40	1

126	“	“	8	3	-	-	49	2
127	“	“	6	3	-	-	66	4
128	“	“	6	3	-	-	40	1
129	“	“	8	1	-	-	48	2
130	“	“	6	3	7	2	43	1
131	“	“	7	2	-	-	48	2
132	Gombe	Female	6	3	-	-	40	1
133	“	“	6	3	-	-	45	2
134	“	M	9	0	-	-	43	1
135	“	“	6	3	5	4	40	1
136	“	“	5	4	7	2	46	2
137	“	“	6	3	-	-	48	2
138	“	“	8	1	-	-	40	1
139	“	“	9	0	-	-	45	2
140	“	“	6	3	5	4	40	1
141	“	“	5	4	7	2	46	2
142	“	“	8	1	-	-	48	2
143	“	“	8	1	-	-	40	1
144	“	“	8	1	7	2	40	1
145	“	“	8	1	8	1	42	1
146	“	“	5	4	4	4	40	1
147	“	“	5	4	6	3	42	1
148	“	“	8	1	-	-	42	1
149	“	“	6	3	6	3	65	4
150	“	“	6	3	-	-	49	2
151	Yobe	Female	6	3	5	4	73	5
152	“	“	5	4	7	2	64	4
153	“	“	4	4	3	5	72	5
154	“	“	5	4	4	4	63	4
155	‘	“	7	2	8	1	42	1
156	“	“	6	3	2	5	73	5
157	“	“	7	2	8	1	41	1
158	“	“	5	4	5	4	73	5
159	“	“	5	4	6	3	63	4
160	“	“	9	0	9	0	37	0
161	“	“	5	4	6	3	63	4
162	“	“	6	3	-	-	71	5
163	“	Male	5	4	7	2	64	4
164	“	“	4	4	3	5	72	5
165	“	“	5	4	4	4	63	4
166	“	“	9	0	-	-	31	0
167	“	“	8	1	-	-	63	4
168	“	“	7	2	5	4	62	4

169	“	“	8	1	-	-	51	3
170	“	“	6	3	-	-	76	5
171	“	“	7	2	6	3	27	0
172	“	“	6	3	5	4	62	4
173	“	“	9	0	9	0	46	2
174	“	“	4	4	6	4	73	5
175	“	“	7	2	-	-	46	2
176	“	“	6	3	5	4	69	4
177	Yobe	Male	8	1	6	3	47	2
178	“	“	8	1	-	-	41	1
179	“	“	5	4	-	-	69	4
180	“	“	4	4	5	4	52	3
181	“	‘	6	3	6	3	64	4
182	“	“	4	4	6	3	73	5
183	“	“	9	0	-	-	42	1
184	“	“	7	2	-	-	40	1
185	“	“	4	4	-	-	78	5
186	“	“	8	1	-	-	53	3
187	“	“	4	4	-	-	72	5
188		“	8	1	-	-	43	1
189	“	“	8	1	8	1	46	2
190	“	“	8	1	-	-	47	2
191	“	“	7	2	-	-	46	2
192	“	“	9	0	9	0	40	1
193	“	“	4	4	-	-	73	5
194	“	“	4	4	-	-	76	5
195	“	“	5	4	-	-	72	5
196	“	“	9	1	-	-	44	1
197	“	“	6	3	2	5	76	5
198	“	“	5	4	7	2	64	4
199	“	“	4	4	3	5	72	5
200	“	“	5	4	4	4	63	4
201	“	“	9	0	-	-	31	0
202	“	“	8	1	-	-	63	4
203	“	“	7	2	5	4	62	4
204	“	“	8	1	-	-	51	3
205	“	“	6	3	-	-	76	5
206	“	“	7	2	6	3	27	0
207	“	“	6	3	5	4	62	4
208	“	“	9	0	9	0	46	2
209	“	“	4	4	6	3	73	5
220	“	“	7	2	-	-	46	2
211	“	“	8	1	-	-	63	4

212	“	“	7	2	5	4	62	4
213	“	“	6	3	5	4	77	5
214	Borno	F	8	1	-	-	30	0
215	“	F	5	4	6	3	60	4
216	“	F	7	2	-	-	35	0
217	“	F	6	3	6	3	58	3
218	“	F	7	2	-	-	28	0
219	“	F	8	1	-	-	22	0
220	“	F	7	2	8	1	35	0
221	“	F	6	3	3	5	81	5
222	“	F	6	3	-	-	51	3
223	“	F	7	2	-	-	26	0
224	“	F	8	1	-	-	36	0
225	“	F	6	3	3	5	81	5
226	“	F	6	3	-	-	51	3
227	“	M	9	0	-	-	45	2
228	“	M	6	3	35	0	40	1
229	“	“	5	4	7	2	46	2
230	“	“	8	1	-	-	48	2
231	“	“	8	1	-	-	40	1
232	“	“	8	1	7	2	40	1
233	“	“	8	1	8	1	42	1
234	“	“	5	4	4	4	40	1
235	“	“	5	4	6	3	42	1
236	“	“	5	4	-	-	63	4
237	“	“	8	1	-	-	51	3
238	“	“	5	4	7	2	64	4
239	“	“	4	4	3	5	72	5
240	“	“	5	4	4	4	63	4
241	“	“	9	0	-	-	31	0
242	“	“	8	8	-	-	63	4
243	“	“	7	2	5	4	62	4