

**INFORMATION COMMUNICATION TECHNOLOGY AND BUSINESS
EDUCATION STUDENTS ACADEMIC PERFORMANCE IN ACCOUNTING
IN NIGERIA FEDERAL UNIVERSITIES**

BY

MAGAJI, ZAKARI BUBA

MAY, 2011

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M.ED/EDUC/02320/2006 – 2007**

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MAY, 2011

DECLARATION

I hereby, declare that this thesis has been written by me. It is an original record of my own research investigation. It has not in any way been presented in any previous application for a higher academic degree. All quotations and sources of information in this work are especially acknowledged by means of references.

MAGAJI, Zakari Buba

Signature/Date

CERTIFICATION

This Thesis titled: ‘Information Communication Technology and Business Education Students Academic Performance in Accounting in Nigeria Federal Universities’. By Magaji, Zakari Buba meets the regulations governing the award of the Degree of Master of Business Education of the Ahmadu Bello University, and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

This research thesis is dedicated to the 'Most High God' whose mercies fail not. The Sovereign God who said to me, stand still and see my salvation. God, whose faithfulness saw me through this huddle in life, the thesis is also dedicated to my late daughter Gloria.

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You shall be like the tree by the river side; you will not wither but will flourish and bear your fruits in the season. I bless you with long life and anything you lay your hands upon shall prosper. Remain Blessed.

ABSTRACT

This study was an assessment of “Information Communication Technology and Business Education Students Academic Performance in Accounting in Nigeria Federal Universities”. The investigation revealed that despite the enormous benefits the use of information and communication technology has brought to bear on education as a means of facilitating teaching and learning, a vast majority of students of Business Education did not employ the use of the Information and Communication Technology to support their learning because they didn’t have the requisite skills to operate these information technology resources. Five research objectives and five research questions were raised to provide a lead to answering the problem envisaged by the investigator. The researcher used the descriptive correlational survey design for the study. The population for the study consisted of 75 lecturers and 286 students of Business Education, giving a total of 361. The same number (361) was adopted as the sample for the study because of the small nature of the population. Descriptive statistics and correlational coefficient were used to analyze data collected for the research and to test the null hypotheses. Five null hypotheses were formulated and tested at 0.05 level of significance. Major findings from the analysis of data collected for the study, were as followings: findings from research question one, revealed Business Education students in Nigeria Federal Universities do not have the requisite skills and proficiency for operating Information and Communication Technology. Findings from the analysis of research question two, revealed that Business Education students spent little time on Information and Communication Technology. Findings from research question three revealed that Business Education students used Information and Communication Technology for purposes other than for academic works. For research question three, findings showed that male students explore Information and Communication Technology resources more than female students, who were less adventurous. Findings from research question four revealed that Business Education students, who employ the use of Information and Communication Technology to support their academic work, perform relatively better than students who do not. Based on the research findings,

the researcher made some recommendations, among which are that, Information and Communication Technology should be integrated into the curriculum of Business Education to enable students develop skills and be computer literate. The federal government should provide computers in all universities and these computers should all be connected to the internet. Business Education students should be encouraged to spend more time exploring Information and Communication Technology resources in order to develop essential skills. The federal government should purchase computers in large number and resale them at highly subsidized rates so that every student can buy and own a computer, as this will help in rapid ICT skill development among students.

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1.4 Definition of Terms

Bandwidth: The term used to describe how much data can be transmitted per second over the Internet.

Computer: Electronic machine which operates under the control of instructions stored in its own memory that can accept data (input), manipulate data According to specified rules (process), produce results (output) and store the results for future use.

Information & Communication Technology: A conglomeration of telecommunications apparatus whose interplay result in effective information flow and management.

Internet: Conglomeration of computers that are connected via telephone Cable and satellite links around the world, including the one on one's desk-top.

Real Time: A forum on the internet which permits one to have real life interaction with organization's boardrooms or educational institutions via web site.

Skypie: Internet facility that enables people to chat verbally or through exchanging of textual messages.

Telecomferencing: Activity where people converse with one another in real time.

LIST OF ABBREVIATIONS

AAA – American Accounting Association

AISI – Africa Information Society Institute

ANOVA – Analysis of Variance

BBS – Bulletin Board System

EDP – Electronic Data Processing

EFT – Electronic Funds Transfer

ICT – Information and Communication Technology

LAN – Local Area Network

MIS – Management Information System

Pc – Personal computer

RINA – Regional Informative Network Africa

RLP – Radio-Learning Project **CHAPTER ONE**

INTRODUCTION

1.1 Background of the Study

A cursory look at the events and activities of the 21st century would reveal that this period had witnessed the emergence of Information and Communication Technology (ICT), which is a conglomeration of telecommunication resources whose interplay results in effective information flow and management. Fundamental to effective flow and management of information, is perhaps the ardent need for all human organizations to build ICT capabilities. The 21st century is essentially characterized by a general stampede of nations toward an intention for Information and Communication Technology (ICT) resource development, and countries are very busy grappling with the imperative of building ICT capabilities. Magaji (2009) observed that, this vision about building ICT capabilities and the initiative taken by nations to heed the call about inculcating ICT norms, is in consonance with the call by United Nations Commission on Science and Technology (UNCST) on Information and Technology (IT) Development in 1995, which observed that, there is sufficient evidence of the potential of ICT, that all governments and other

stakeholders need to build new capabilities for producing, accessing and /or using these technologies. In order to build these capabilities, each country should establish and implement a nation of ICT strategy that is responsive for sustainable development.

It is clear now, that development in Information Technology is revolutionizing social, economic, and education aspect of the developed countries of the world. The same influence is now being spread to developing countries like Nigeria. Despite the digital disparity between the so-called developed nations and their developing counterparts, African countries are seen to be taking giant strides in the direction of development in ICT resources, in an attempt to bridge the deficit gap existing between the two divide. Nigeria is not left behind in this initiative. Information and Communication Technology has brought a phenomenal transformation in educational processes, by exposing teachers and students to information required to optimize teaching and learning in school.

Madison (1982) in Dauda (2008) said that Information Technology (IT) revolution is throwing a major far reaching challenge to education.

Madison further said that, longsighted and percipient observers have already recognized the role of IT in education and training. The role of IT has therefore; become very important especially with regards to the current technological development and the increasing need for up-to-date knowledge and skills in business education.

In addition, Hakridge (1983) noted that Information Technology in its guises may change our lives for the better or for worse within a short time. It is becoming a means of widening and wielding power the new is overtaking the old, providing more powerful ways to store, create, select, process, deliver and display information. Organizations both business and non business, require quality information flow for optimization and efficiency in production and decision making.

Gate (1999) confirmed this statement and asserted “ a flow of digital information changes the way people and organizations work and the way commerce is conducted across boundaries....a corporation can use internet to work seamlessly with professionals such as lawyers, and accountants who remain ‘outside’ the corporate walls as consultants rather than employees.” Again Gates (2003) asserted “Digital technology

can transform your production process and your business processes. It can also free workers from slow inflexible paper processes. Replacing paper process with digital processes liberates knowledge workers to do productive work....now, even before a new employee is hired; he or she embarks on an electronic journey.” DCITA (2004) affirms, “Integrating Information Technology into daily work practices has the potential to help an organization meet its business goals.” Information and Communication Technology has brought a quantum leap in teaching and learning by allowing for easy access, storage, processing, retrieval and information diffusion by users. Information and Communication Technology is an effective tool for supporting both existing and development activities in education, governance, health, agriculture and the environment. The need therefore, for integrating information technology in all the traffic lanes of human endeavor, is a sine-quo-non for all societies.

Today, the growing need for ICT in institutions of higher learning is gaining more impetus, because school administrators have now perceived its importance and are taking far reaching steps to digitalize their learning activities. Many tertiary institutions in Nigeria for instance, have

established digital centers in various faculties, so students can surf the internet for access to information and academic materials from vast libraries across the globe. Students through the use of ICT resources, can receive lectures on-line and from any part of the world via the internet, e-mail and Real Time Case Method (RTCM).

The development in Information and Communication Technology as it is, has now relieved the teacher of his/her position as the single purveyor of knowledge in the traditional classroom. The school is no longer defined in terms of classroom walls, or is defined in terms of location. Learning can now take place anywhere, even in the comfort of our bedrooms. Oladipo (2008), stressed the need for African Universities to digitalize a great deal of their learning materials, students should be able to access learning materials from simple devices as their cell-phones, iPods, and pocket Pcs. It is therefore, based on this background that this study will be conducted to find out the extent to which undergraduate students of Business Education (Accounting option) are familiar with ICT resources and the extent to which they use them in their academic works.

1.2 Statement of the problem

Learning is all about information gathering. This can best be achieved if learners can access, store, process, retrieve and apply this information in the learning process. The ability of Business Education students to manipulate Information and Communication apparatus will aid in tapping from its vast resources, as a result, enhance student's learning activities.

The basic problem of this research is that, Business Education students in Nigeria Federal Universities, especially, those in the Accounting option who are the focus of this study, are not proficient and or conversant with Information and Communication Technology; therefore, do not possess the essential skills to use it in order to take the enormous advantage of its resources. This investigation therefore, is to determine the symbiosis between Information Communication Technology and Business Education student's academic performance in Accounting in Nigeria Federal Universities.

1.3 Objectives of the study

The general objective of the study is to determine the impact of Information Communication Technology and Business Education students Performance in Accounting in Nigeria Federal Universities.

The specific objectives of the study are to:-

- 1 determine the ICT proficiency level of Business Education students (Accounting option).
- 2 assess the extent to which Business Education students (Accounting option) use ICT resources and their impact on learning.
- 3 identify the purpose for which Business Education students (Accounting option) use ICT.
- 4 evaluate the extent to which digital disparity among Business Education students (Accounting option) influences their use of ICT.
- 5 study the impact of ICT on academic performance of Business Education students' (Accounting option) in Accounting.

1.4.1 Research Questions

This research study will provide answers to the following research questions:

1. To what extent are Business Education students' (Accounting option) proficient in the use of ICT resources?
2. How much time do Business Education students (Accounting option) spend on the computer/internet daily?

3. What are the purposes of using ICT resources by students of Business Education (Accounting option)?
4. To what extent does the digital disparity among students of Business Education (Accounting option) affect their ICT use?
5. What is the impact of ICT on Business Education student's (Accounting option) academic performance in Accounting?

1.5 Null Hypotheses

The following null hypotheses (Ho) were formulated in line with the research questions and were tested at 0.05 level of significance.

- H01** *There is no significant relationship between student's academic performance and the level of their proficiency in ICT use.*
- H02** *There is no significant relationship between time spent on the computer/internet by students and their academic performance*
- H03** *There is no significant relationship between student's academic performance and the purposes for which they use ICT resources.*
- H04** *The digital divide among students has no significant impact on the extent to which they use ICT.*

H05 *There is no significant relationship between ICTs use and students' academic performance.*

1.6 Significance Of The Study

This study focused on Information Communication Technology and Business Education Students Academic Performance in Accounting Nigeria Federal Universities. At the end of this research work therefore, the findings will be important to management of Federal Universities in Nigeria, National Universities Commission (NUC) and other stakeholders, on the need to conceptualize, adopt, build up ICT capabilities, implement ICT, and take the advantage of enjoying the great resources of ICT.

Basically, the study intends to find out the level of student's familiarity and proficiency in the use of ICT (computer/internet), the facilities and services provided in the tertiary institutions, and student's preferences in the use of computer and internet. This however, will serve as an eye opener for students on the great advantage of using ICT infrastructures in learning.

The study will essentially be significant, because the result of findings will help supply information for planning ICT resources, such as expanded internet access, training, and utilization of ICT by all stakeholders.

To curriculum planners, the study will provide bases to integrate ICT into the curriculum in all facets of the general educational content, which will be in consonance with the present challenges of globalization.

The study will also contribute to the depth of literature on ICT use among academicians in Nigeria tertiary institutions.

Finally, the study will serve as a reference document that will provide a stepping stone for further studies in the area of ICT use by future researchers

1.7 Basic Assumptions

This research work is conducted based on the following assumptions:

1. ICT resources are available for use by lecturers and students in Nigeria Federal Universities.
2. Lecturers and students are skilled in the use of ICT facilities.
3. Lecturers and students require ICT resources in their research and learning activities.
4. Federal universities in Nigeria have integrated ICT in their curriculum to prepare students for using computer and internet.
5. Lecturers and students have preference of certain internet services.
6. There are factors affecting ICT use in tertiary institutions.

1.8 Delimitation of The Study

This study is delimited to Information and Communication Technology and Business Education Students Academic Performance in Accounting in Nigeria Federal Universities. The focus on ICT for education is due in part to the broad nature of ICT and the variety of purposes for which they can be used. For the purpose of this research work, the study is delimited to all Business Education lecturers and four hundred (400 Business Education level students offering Accounting in Information and Communication in

enhancing their teaching and learning activities in Nigeria Federal Universities. This is for the simple reason that ICT is a new concept and it is the commonest Information Technology apparatus available to students in supporting their studies and research works.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter examined literature relevant to the current study. The chapter is organized under the following sub-headings:

2.1 Conceptual Framework of Information and Communication Technology

2.2 Limitations of Information and Communication Technology in Developing Countries

2.3 Growing Impetus of Information and Communication

Technology as a Transformative Tool for Enhancing Learning

in Business Education

2.4 Trends and Development in Information and Communication Technology in Nigeria

2.5 Functions of Information and Communication Technology

2.6 Different Perspectives of Business Education

2.7 Appraisal of Students' Academic Performance

2.8 Impact of Information and Communication Technology in

Teaching and Learning of Accounting Education

2.9 Empirical Studies

2.10 Summary of Literature Review.

2.1 Conceptual Framework of Information and Communication Technology:

The conceptual framework of information and Communication Technology in which the basic overview of information technology is made is discussed under the following subheadings.

2.1.1 Concept on Information

Information has been variously defined by authors interested in the field of information science. It is an elusive concept and there is a continued debate about its meaning and about its relationship to its correlates such as knowledge, expertise and the learning process. Burch and Starter (1974), in Magaji (2009) defined information as “the increase in knowledge obtained by the recipient by matching proper data elements

to the variables of a problem. It is the aggregation or processing of data to provide knowledge or intelligence or reduce the uncertainty of user. Uwem (1990), defined information as data that have been subjected to some processing functions capable of answering a user's query, be it recorded, summarized or simply collected that would help in decision making. There is complete agreement between Nwosu and Uwen's definition to the extent that, information is a requisite condition for decision making and knowledge acquisition and that knowledge has its bases on information.

Aiyepkun (1991) saw information as follows: Information is used to describe mankind's accumulated knowledge derived from all subjects, in all forms and from all sources that could help its users to reduce their levels of uncertainty. Specifically, information is defined as data which is structured to be of value in planning and decision making, in the execution, monitoring and evaluation of the public and private sector programmes of a nation...."information is some meaningful message transmitted from source to user....." These two definitions are in consonance with the frequently cited definition which is "that which reduces uncertainty" (Arrow 1984 in Feeney, 1994).

According to Kaye (1995), information is raw materials for the mind which uses it to develop skills, knowledge and, ultimately perhaps wisdom. Also Losee (1997) said that information is one or more statement or facts that are received by a human and that have some form of worth to the recipient. In agreement with this definition, Akinde (2000), defined information as an entity that arises from a set of data which has been structured and tailored towards a particular audience, upon which vital decisions may be made. Nwosu (2000), simply put information as “authentic data processed for useful purpose, such as decision making and knowledge acquisition”.

According to Oxford Advance Learners’ Dictionary (2000), information as a noun is “facts told, heard or discovered about somebody or something, knowledge.”

Communication as explained by the Oxford Advanced Learners Dictionary (2001), as a noun is “The action or process of communicating....a thing that is communicated is message...communications is means of communicating, for example, road, railways, telephone lines, between places or radio and television,

satellite and links or network. In other words communication is the exchange of ideas, knowledge, values or skills.

From these definitions above, the researcher view information as the acquisition of ideas, experiences and passing on these ideas and experiences to the next party for understanding and use. Information has meaning only when perceived and interpreted by the human recipient.

2.1.2 Concept of Communication

Communication is essentially an important ingredient which makes possible various links, contacts and interactions among members of various organizations. This is because of its universal nature and multi-disciplinary application, communication has attracted several definitions from writers and experts in various fields of study. Some of these definitions and their various interpretations are as discussed. Armstrong (1977) in Durop (2004) viewed communication as being “concerned with the creation, transmission, interpretation and use of information”. This concept of communication brings out the dynamism in communication. It embodies the sender, message, channel and receiver.

Little (1988) in Durop (2004) perceived communication as “the process by which information is passed between individual and organizations by means of previously agreed symbols”. Newman and Summer (2006) described communication as an exchange of facts, ideas, opinions or emotions by two or more persons. These two views suggested that for communication to take place there must be an identical medium by which the facts, ideas, and opinion are exchanged. Newman and summer (2006) in Nanley (2009) went further to say that the receiver and sender may not agree, but communication has occurred when one at least understands what the other means to convey. This reaffirms transmission of ideas as the core of communication.

Adewusi (1998) added the fifth element which is the most important element of effective communication – the giving or response or feedback to a message. According to him communication is the transferring of a message to another party so that it can be understood and acted upon. Communication, simply put is the transferring of information. People communicate by speaking or writing to each other. Machines communicate by sending information through cables, or by sending signals through the air. Communication system is required in this

modern world to transmit information. A communication system is all the equipment which must be connected together in order to send and receive information. Data communication blends the technologies of computers and communications to provide information processing services throughout office or around the world.

Data communication, often called telecommunications, means transmitting data and information electronically from one point to another using the telephone, radio, and, microwave transmission devices, laser beams, and direct wiring (Dimsdale, 1990).

Computers connected by networks are an example of information and communication system. Modern information and communication technology combines electronics and telecommunications, so that large amount of data can be stored and transmitted. With the aid of internet, literature searching has been converted from a rather tedious task involving sorting through catalogues or printed indexes, to a stimulating, interactive process using an on-line connection to remote databases, often located in computer centers hundreds of thousands of kilometers away.

The internet has made it possible for people all over the world to effectively and inexpensively communicate with each other. Unlike traditional broadcasting media, such as radio and television, the internet is a decentralized system. Ruthwoski (1998) in Akibus, (2002) opined that each connected individual can communicate with anyone else on the internet, can publish ideas, and can sell products with a minimum overhead cost. A general overview of the concept of Information and Communication Technology is discussed as below:

2.1.3 An overview of Information and Communication Technology

The concept, “Information Technology” has been viewed and variously defined by authors, each with his or her perspective as to what this term means. Marshall (1984), was of the opinion that ICT is the coming together of computing and telecommunications for the purpose of handling information.

Chatterton (1992), saw information technology as the application of science to information handling. Information Technology (IT) deals with the technologies which support the activities involved in the creation, storage, manipulation and communication of information, together with

their related methods, management and application, basically, computer, telecommunications and electronic technologies. It is often contrasted with Electronic Data Processing (EDP) with which is still the main use of computer today.

Electronic data processing uses the computer of handle large volume of transaction. The computer is this seen as a back-office machine carrying out clerical-type functions such as accounting payroll and production control. As the computer has historically handled detailed international flows of date, it is usually found at the operational level of an organization. Oketunji, (1999) quoting Marghalana (1989) stated that information technology is a term, which encompasses the notion of the application of technologies to information handling. This includes generation, storage, processing, retrieval and dissemination and so on. Also, the American Library Association (1983), viewed information technology as the application of computers and other technologies to the acquisition, organization, storage, retrieval, dissemination of information.

Evans (1986) stated that information technology is the acquisition, processing, storage and dissemination of vocal, pictorial, textual and

numerical information by a micro-electronic based combination of computing and telecommunication. Information technology promises change in the way we communicate and reach decisions. The application of computer to information handling has contributed as a new tool and a new dimension of complexity through its ability to store and process enormous amounts of data at high speed. Flora (2000) in Magaji (2009) opined that it is an embraced system or technology for processing information in text, data images ad voice form and extends to international telecommunication network. Atueyi (2001), opined that information technology is the host of systems, equipment and materials essentially computer based which is used to achieve the set goals of an organization in relation to the functions of an office. This means that information technology simply is the application of technology to information.

This various perspectives represent different dimensions at which information and communication is considered by different authors. In essence, ICT represented a conglomeration of telecommunications systems, and other technologies used in acquiring, organizing, storing,

retrieving, processing and disseminating information in textual, vocal, and image form.

2.1.4 Basic Innovations in Information Technology

The dynamic nature of technology can be better explained by the rapid changes being experienced with every passing day, this change had resulted in a phenomenal transformation and improvement in the way people and organizations do things. The ever increasing growth in information and communication technology has influenced to a great extent, activities in governance, industry, agriculture, in education and other sectors of human endeavors. It has provided, as a major tool, a means for optimizing production and decision making. In the same way, it has opened the gateway through which teachers and students can learn with much ease and most effectively, by providing access to volumes upon volumes of academic material via the internet and other e-learning infrastructures. Innovation in Information Technology has been variously described as revolutionary by Tietjen, (1987) in Oyedele (2002) and unprecedented Dixon, (1988), some of these innovative technologies are interactive as said by Doswell, (1990), while others are not. These include:

(a) The Internet

The Internet has been described as global collection of many different types of computer network linked together (Awake, 1997). The Internet is a virtual world provided by network of computers with multi-users. It is an international network of computers linking different types of users; academic, industries, government, health institution (hospital), military, individuals, etc. for the purpose of sharing information. The internet is an analogous to the telephone, but while the telephone enables you to talk to someone with a phone anywhere in the world, the internet allows you to locate and retrieve information from other computers linked to the internet as well as send messages electronically to and from other people elsewhere on the internet. Some described it as information super-highway. According to Awake (1977) in Nwosu (1999), “just as a road allows travelling through different areas of the country, so the internet allows information to flow through many different interconnected computer networks. For example, once your PC is connected to the internet, you can send and or receive e-mail message access information on business, science, technology, education, sports,

recreation/entertainment, employment, almanacs, dictionaries, encyclopedias. As you navigate through the internet you will find yourself logged onto different host computer, sometime gaining access to different servers, it can be complicated.

(b) Computer:

Computers are the bedrock of information technology. Long (1991), in Eze (2002), stated that computer is the driving force behind our transition into an information society. Harrison (1977) defined a computer as any device capable of automatically accepting data, applying a sequence of process to the data and supplying the results of these processes. Aromolaran (1993), in Eze (2002), described computer as an electronic machine that stores and processes data or information. From more than two decade, computers were left to computer professionals. Things have changed now. Computer is now an integral part of living experience in virtually any career. Computer has helped us in the emerging information technology. Computer is comprised of two main components the hardware and the software. The hardware is the physical part of a computer that we can touch and feel for example, the

keyboard, the casing, the circuitry, the motherboard, and the software is the suites of programme instruction that make the hardware to function.

(c) (Very Small Aperture Terminal (VSAT):

This is an interactive information technology, which establishes the connection between the teacher and the student in different communities or countries (distant education programme).

(d) The Electronic Organizer:

The electronic organizer previously is just like an address and phone notebook, is a small electronic machine with fax accessories not only for sending and receiving facsimile messages but also for storing great amount of information on addressed, phone numbers, appointments and any information that can be recorded in a dairy.

(e) Voice-Messaging System:

These are computer systems linked to telephone that convert the human voice into digital bits. They combine conventional telephone

answering machine system and e-mail systems, except that only 'voice messages' are sent and received.

(f) Teleconferencing:

Calneck (2003), described teleconferencing as an activity where users converse with others in real time, speaking through their keyboards and hearing through the screen. Depending on the type of software used, group of users from widely dispersed geographical locations, may be linked together. Calneck (2003) explained how it works: Single copies of conversation posting are transmitted between Internet hosts which in turn explode them for delivery to all participants on the local system in the local system in a particular conference- it enables conferences to be conducted using low bandwidth communication services. Puliatti (1989) opined that by typing into and reading from their personal computers, participants avoid the time and expense of travel and the logistic problems of scheduling face-to-face meeting.

(g) The Electronic Mail (E-mail):

The electronic mail (e-mail) is a way of communication person-to-person via computer. Puliatti et.al (1989), explains how it works; "A

message, letter or memo from one person into a computer, sent to another via telephone, and stored until the receiver asks for it. “ In this way, the e-mail is like the surface mail with the computer acting as the post. The e-mail system provides each user with an electronic mailbox from where he can search for his mails using a Personal Computer (PC) and a device called modem.

Puliatti et.al (1989) further stated that, the sender does not need to know where the receiver is currently located. He merely refers the message to the user code address, which the receiver uses to retrieve the message through any computer terminal. Once the modem and software are running, the user calls on a host system through the telephone. There are two types of host systems, interactive and store and forward. In the interactive, the user calls and interacts live with the host system. Prado (1989) explained process, thus;

You tell your software to dial a number; it connects with the remote site sends menus to your screen. You send e-mail by typing the message on line i.e. while connected by modem.

(h) Bulletin Board System:

None-commercial interactive bulletin system (BBS) is run on personal computers in homes or offices. It is a free service to which end user can call using a modem without any prior arrangement. Such information and on-coming conferences, new resources or products, books, journals, or even selected articles could be placed on the electronic notice board. According to Prado (1989) he explained that everyone has access, and can contribute.

(i) Interactive Radio:

The Radio-Learning Project (RLP) introduced by USAID operates like ordinary radio except that it's interactive that is you can communicate with the transmitter. Another variation of the interactive radio is the packet radio. Garriot (1991) stated that the packet radio combines two mature and relatively low cost technologies-two-way radio and personal computer in system that permits the computers to communicate via telephone lines packet radio is easy to use permits the transmission of messages, letters, spreadsheets and reports without the need for manual transcription or intervention.

(j) Video text:

Videotext systems are one-way, non-interactive such as cortex (bbc) and or interactive such as prestel in UK and Yilidan in Canada (Huzan, 1973). An alternative name for interactive videotext system is the view data. Perstel enables users to be equipped with special TV sets or terminals to access information held on the database of the Prestel (GEC 4000) computers. Entry to the prestel system is established by use of ordinary telephone lines. The information providers (Ips). Users can select participation pages by means of a keypad, which has twelve buttons (0-9,*,#). A particular page is accessed either directly by its unique number or by going through a hierarchy of routing pages. Information providers may crate response frames of message to which users can respond.

(k) World Wide Web (www):

World Wide Web is the most exciting new tool for the Internet. It is based on technology called hypermedia. With hypermedia, information in one document can be linked to another, related document. Linked information can consist of not only text and graphics, but audio and video

information as well. Www is an ambition exciting and powerful attempt to link connected information wherever it may be located on the Internet, allowing the user to easily access and retrieve related files. The web also supports storage and retrievals of information, photographic, graphics, sounds, video etc.

(l) Telex:

This is a kind of communication operated by post office. Each subscriber is given a telex code (you will often see it at the top of business letter headings next to the telephone number) and must have a teleprinter, which is a combination of keyboard and printer. There is no screen, so all messages sent or received are printed on a hard copy. The printing taken place simultaneously at the receiving end as the typing takes place.

(m) Facsimile:

Whereas tele is for text transmission only, Facsimile is designed to transmit text, graphics as well as pictures. Facsimile service can utilize either the telephone or the Telex network for the transmission of a faithful copy of an original document. The signal for transmission is generated by automatically scanning the page to be sent. A sending fax-machine first converts the document image into digital signal before transmission over a network, which is then reproduced by a receiving fax-machine. Computer storage is used within the network so that signals can be queued if there is a hold-up in the system.

(n) Electronic Funds Transfer (EFT):

EFT can broadly be described as data collection and telecommunication techniques that electronically transfer information about the movement of funds between accounts managed by financial institutions. EFT is an on-line computerized banking service known as automated clearing house and telephone bill-paying information directly in electronic form to a bank's computer through telephone. A customer through the combined use of plastic cards activates them with a magnetic strip-bearing machine, readable account information and a special secret

number (termed a Pin or personal identification number) known only by the customer.

2.1.5 New Trends in Information Communication Technology(s) (ICTs)

Information and Communication Technology is an umbrella term that includes all technologies for the manipulation and communication of information. The term is sometimes used in preference to Information Technology (IT), particularly in two communities: education and government ^[1]. Although, in the common usage it is often assumed that ICT is synonymous with IT; ICT in fact encompasses any medium to record information (magnetic disk/tape, optical disks (CD/DVD), flash memory etc. and arguably also paper records); technology for broadcasting information - radio, television; and technology for communicating through voice and sound or images - microphone, camera, loudspeaker, telephone to cellular phones.

It includes the wide variety of computing hardware (PCs, servers, mainframes, networked storage), the rapidly developing personal hardware market comprising mobile phones, personal devices, MP3 players, and much more; the full gamut of [application software](#) from the

smallest home-developed spreadsheet to the largest enterprise packages and online software services; and the hardware and software needed to operate networks for transmission of information, again ranging from a home network to the largest global private networks operated by major commercial enterprises and, of course, the Internet. Thus, "ICT" makes more explicit that technologies such as broadcasting and wireless mobile telecommunications are included. It should be noted that "ICT" by this English definition is different in nuance and scope than under "ICT" in Japanese, which is more technical and narrow in scope. ICT capabilities vary widely from the sophistication of major western economies to lesser provision in the developing world. But the latter are catching up fast, often leapfrogging older generations of technology and developing new solutions that match their specific needs.

(a) Personal Computer (PC) – BASE ICT

A Personal Computer (PC) connected to the Internet has become a vital tool for communicating, during the past few decades since its proliferation among the masses. However, while this mode of ICT has achieved much, it has its limitations in the context of the world at large.

2.1.6 Achievements of the Personal Computer (PC) – Based ICT

(i) The Internet - The Internet has opened up many opportunities, from finding out information, conducting communications globally, e.g. through e-mail, voice mail, e-commerce or generally just having fun through on line chats or instant messaging. One often wonders: How did people manage before the time of the Internet? How much harder was it for people to communicate and find out information they need, quickly and easily? A PC connected to the Internet whether through a dial up connection, broadband or Wi-Fi has indeed made it a facile act for many peoples.

(ii) Teaching - PC--Internet based ICT is currently used within the English school curriculum. This kind of ICT (amongst others) is now seen as a core subject that is taught in some primary and secondary schools. The major advantage to this development is ICT has become a transferable subject. Computers or interactive whiteboards are now used across most school subjects as well as innovative schools using more technology like PDA's,

Mobile (cell) phones and some games consoles. The interaction created by the use of this ICT makes lessons much more effective and allow children to learn in a way that they enjoy.^[21] Recent initiatives such as the One Laptop Per Child program are contributing to this development.

(iii) Communications - Apart from Internet a PC allows communication of information through Compact Discs, pen drives, printers, whether laser or inkjet, flash memory cards and exchange of information within a local network through **LAN**. As communications scholars Gasher and Lorimer (2004) articulated that we depend on technology for our communications with others-whether they are just a house or two away or halfway around the world. In the second half of the twentieth century it became almost impossible to live without a television in our homes, much less without a telephone, and now we can hardly live without personal computers through which we gain Internet access and send and receive e-mail. The reality of new communications technology is that anyone is able to get in touch with anyone else, anywhere, at any time, for very little money-at least in the developed world. (Gasher and Lorimer, Communications Technology and Society: Theory and Practice) Work related aspects as well as benefiting school students to gather information for assignments,

PC based ICT is often used in other jobs such as in the police, within libraries, in offices or even shops. It has also emerged as a source of employment in many emerging economies through Business process outsourcing or Knowledge process outsourcing from companies in the developed world. People now have the chance to conduct remote logon, in which they can access their work computers (For example in an office) from home. This has opened up many more opportunities for those that struggle to find time to leave their house to go to work, so they can now just work from home.

2.2 Limitations of Information and Communication Technologies in developing Countries.

Previous information communication technologies have penetrated deep into the society and hence are often very cost effective; teachers in developing countries often use no more than a blackboard and chalk to pass on information about any subject to the students. Printed papers in the form of books, magazines or newspapers have become a part of daily routine of any educated citizen, as are broadcast media such as radio and television. The photocopy machine is widely used by students to access information from books they cannot afford to buy. The cost of a PC

connected to the Internet is often prohibitive in developing countries. Power needs, physical space and connectivity issues are also factors that add to the challenge of getting these technologies to take root in developing countries. Limitations of PC-Internet based ICT are:

- **Bandwidth** - The time taken to access a particular piece of information on the Internet depends on the [bandwidth](#) available to the user at that time. Often, it takes several minutes, using an economical connection, to download a piece of information. Thus a user may have to spend substantial time before he/she finds the information he/she seeks. From <http://www.google.com-1.html>
- **Language** - At present most of the information available on the Internet is in English, a limiting factor at the very least.
- **Text/voice** - Most information on the Internet requires action by the user as opposed to the passive nature of television and radio. As most of the Internet's information is textual, the user must be able to read it. Even more passive forms of Internet information such as video-sharing Websites require action (and reading) by the viewer for navigation.

- **Disruptive software** - Internet users are often susceptible to [computer viruses](#). Commercial anti-virus software is often prohibitively priced. [Thin client](#) technology is a small, but growing alternative.
- **Participation** - Social networks and increased user-managed information stores have emerged in the early part of this century. Increased interaction between the content (whether it be delivered via Internet, television or radio) is leading to an information revolution.
- **Security** - Internet safety is an issue that impacts every online user from small children to international corporations. When ABC went into public service broadcasting online in the early 1990's, the safety of their users was its top priority. The internet is an equalizer in that every user is vulnerable and in a sense, all at the same level. The emergence of [weblogs](#), [Internet forums](#) and [wikis](#) is often grouped under the new technology umbrella term [Web 2.0](#), and has helped to usher in a greater level of global participation.

Information and Communication Technology can fully be revolutionized if there shall be innovations that would take care of

delivery of local content in local languages and dialects that are considered to be popular media of communication in developing nations.

This can be achieved through edit development.

ICT can become a revolutionary vehicle in developing countries, provided technological innovations emerge on the following lines. Local content in local languages the need of the hour is to enable the intelligentsia to develop information sources that are exclusively for fulfilling the needs of local communities. The content on the Internet that can fulfill these conditions is minuscule at present. Conditions have to emerge in which people are enthused to contribute towards the development of information databases that is exclusively disseminated through local networks, in languages/dialects that are popular in the region. The various modes of ICT may need to be integrated with one another, so that a meaningful volume of information can be generated in the minimum possible time. It is important to consider the future trend of Information and Communication Technology to see what blessing it offers.

Considering the future trend of this technology, there are predictions that ICT may not survive in its present form for long. Sooner than later developing countries would get over the PC mania prevalent now in the developed world, unless there is a remarkable change in the economy of owning a PC <http://www.google.com>. Any technology that requires the masses to own a PC, in its present form, to access information is unlikely to be successful in the foreseeable future. Possibilities appear to exist, however, in the mobile phone technology, which is fast becoming very affordable by the masses, is voice based and can be integrated with the Information Technology at the server end of a computer network. For example, in the field of education people can ask questions through a mobile phone, a database of answers to such questions can be generated using the technologies used currently in Wikipedia and call centers and the text in these databases could be converted into voice, by developing text to voice technologies in the various Indian languages.

The person seeking information can be informed when the answer is available and better answers sought based on his/her feedback. The

emerging [3G](#) and [4G](#) mobile phone technologies can indeed facilitate such developments. An alternative technology could be to integrate the mobile phone with the television screen, so that visual information can be viewed easily. Similarly, there is a possibility for developing interactive radio, on the lines of [interactive TV](#). Information processing has gone through many phases of change. Before the industrial revolution, not much attention was paid to the way people worked. In the office of pre-industrial revolution, all records were hand written. (Harding, 1990). The typewriter was not better than the handwritten document in terms of speed.

In fact, it was much faster to handwrite documents than to use the typewriter of early invention. According to Harding, the need for industries to produce more increased the improvement on the crude typewriting and this led to the production of improved typewriters in commercial quantity. In the same period (1870s), the telephone was invented by Alexander Bell to enhance communication. In 1920, the electric typewriter was introduced. The introduction of these machines marked the beginning of office automation (Dajura and Anthony 1988) in (Akhere, 2002). The word processor came on stream in the 1970s. These

changes developed and improvement had been on and more is expected in the new millennium.

Between 1900 and 1950, technology advanced to a more sophisticated level through progressive application of a series of innovations in method, machinery and communications “By 1950, (Finn, 2002), aided by the acceleration of two world wars; industrial technology grew and developed, eventually transformed American society, philosophy and art”. However, during this same period, technology still has not been exploited to great degree for educational purpose. Finn (2002) further noted that, technology only washed lightly upon the shores of instruction. In this time span when high speed printing techniques, radio, sound motion pictures, television and other pieces of communication technology were invented, developed and exploited....education failed to apply these devices in quantity to the instructional process, and of course, failed to develop the appropriate technological systems necessary for this application.

There were always rumblings to be sure, as evidenced by the statement attributed to Edison (1916) that the motion picture would

replace the teacher. However, looked at from the vantage point of 1960, laboratories, project methods, libraries and minute arrangements for audio-visual materials – the provision to 1950 – constituted what was still a pre-industrial technology for instruction. During the 1950s, the reluctance towards incorporating technology into education in the advanced countries began to change. Improvements in hardware and refinements in accompanying software were being made. Finn (2002) noted that in the year 1955, American education was given, thus: A sharp push into mass production technology. The time was ripe, there was shortage of teachers' education and educationists were under fire from all sides, neo-technocracy was turning its attention to education, the race with Russia was underway, the natives were restless indeed.

The Commission on Information Technology also recognized that developing technologies could do much to assist in the solution of a number of educational problems such as changes in job requirement, increased rate of school dropouts, movement towards integrating schools racially, attention to the long – neglected needs of the gifted, the retarded, and the educationally disadvantaged learners. With the advancement of Information Technology in Education, much of the

thinking regarding school administration and teaching has changed. In some instances, it has become an integral part of the instructional process. It has further caused new concepts to develop in the logistics of instruction. Such concepts have required new and different staff and a changing role for the teacher and administrator (Finn, 1993). The goal is to create learning environments, which are flexible, dynamic, and capable of responding to a wide variety of individual needs and learning styles through the use of media, personnel, and actual experience.

Understanding Information technology also means understanding the erratic nature of change. There are no more forceful changes than the changes technology can make in our occupations. This generation wants to be educated for job, but educating learners for job is a difficult assignment because many jobs become obsolete in a short time, and others emerge. We can predict to some extent, however, the likely changes and we can prepare learners with a few transferable skills which will be used to become more and more flexible as one supplements and modifies these skills which one took from high school for the ever-changing job requirements within clusters jobs. The innovations in

technology, as witnessed in the 20th and 21st century, brought about enormous improvement in the information science.

It is a conglomeration of telecommunication infrastructure whose interplay results in providing basic transformation in business, governance, education, agriculture, health and the overall enhancement of economic development of all societies. The National Policy on Information Technology (2001), sees IT as the bedrock for national survival and development in a rapidly changing global environment and defines it in two ways. In the first definition, the term IT means computers, ancillary equipment, software and firmware (hardware) and similar procedures, services (including support services) and related resources. In the second definition, the term IT includes any equipment or interconnected system or sub-system of equipment that is used in the automatic acquisition, interchange, transmission or reception of data or information. According to Lucas (1997), IT refers to all forms of technology applied to processing, storing and transmitting information in electronic form. The physical equipment used for this purpose includes; computers, communication equipment and even electronic pocket organizers.

Information Technology has also been defined by Lucy (1987), as the acquisition, processing, storage and dissemination of vocal, pictorial, textual and numeric information by a micro-electronic based combination of computing and telecommunications. But Ononogbo (1990) noted that it is now a revolution which has penetrated almost all fields of human activity, thus, transforming our economic and social life. However, Atueyi (1955), opined that information technology concept refers to the host of systems, equipment and materials essentially computer – based, which is used to achieve the set goals of an organization in relation to the functions of an office. From these observations, technological trends have changed the way business organizations operated. Adeletan (1988) opined that the success of the office workers in today's business world depends on knowledge of computer technology. Adeletan further said that many businesses rely on teleconferences as a convenient way to hold meetings while the computer is used as an important tool in direct mail selling as a result of its easier, cheaper and more effective application.

2.3 Growing Impetus of Information and Communication Technology as a Tool for Enhancing Learning in Business Education: The future Trend

Developments in information and communication technologies have brought remarkable transformation and improvement in educational processes, making learning individualized and allowing the learner learn at his or her pace. The array of e-learning apparatus at the disposal of Business Education students in the accounting education option, stand to equip the students with the required information to enhance their learning. The future trend is that the crave for integrating ICT in the curriculum of business education will create increased interest of students toward developing ICT skills in order to enjoy the enormous resources of technology. In the 21st century, I foresee that Business Education students in Nigeria universities like their counterparts in the developed world will make the use of ICT a way of life.

2.4. Trends and Development of Information and Communication Technology in Nigeria.

Information and Communication Technology in the 21st century had provided a sound bases for transforming human activities, and it has no doubt revolutionallize education in no l small measure, being one of the

major building blocks of society. The National Policy on Information Technology (2001) viewed ICT as the bedrock for national survival and development in a rapidly changing global environment, it sees in two perspectives:

- That the term Information and Communication Technology (ICT) means computer auxiliary equipment, software and hardware and similar procedures, services (including support services).
- That the term Information and Communication Technology (ICT) includes any equipment or interconnected system or sub system of equipment that is used in the automatic acquisition, storage, manipulation, management, movement, control, display, switching , interchanging. Transmission or reception of data or information.

In assessing the trends in ICT, Adewoyin (1991) observed that the use of information technology evolved gradually from the use of visual aids date back to ancient time to introduction of mechanical gadgets like the projector, radio, films, television, computer, teaching machine, satellite , Internet and the E-mail.

John Guttenberg in the year AD 1450 invented a printing press, whereby, creating an important landmark in revolutionallizing information and communication. This major invention gave rise to the age of books with the introduction of the Holy Bible in 1456, which resulted in increased awareness about recorded information. Date back to pre-colonial era, the early missionaries in Nigeria employed some form of information technology in their operations through the use of visual apparatus such as films, slides, charts, models and mock-ups, maps and audiotapes. The awareness created by these missionaries on the importance of information technology brought about the emergence of the first radio station in Lagos whereby accelerating the pace of information dissemination with particular reference to the area of educational broadcasting.

In Lagos the first Instructional Materials Production centre was opened in the year 1947 and by 1994 Nigeria developed the spirit for imbibing the culture of Information Technology and the first major stride toward the introduction of the Internet in Nigeria was taken through UNESCO Sponsored Regional Informative Network for Africa (RINA) project. In the bid to become connected to the global world, a workshop on electronic

network was held at the Obafemi Awolowo University in Ile-Ife which marked the threshold of Internet connectivity in Nigeria. A communication outfit Gray Nig. Ltd. Spearheaded the campaign for internet connectivity when it used 64 kbps dedicated circuit. This was announced in February, 1998 by the ISP Nigeria online. March 1998 marked the emergence of another micro computer system, using 128KB dedicated satellite based circuit. Following Nigeria's phenomenal growth in information technology earned her a place as a member of Africa Information Society Institute (AISI) formed in 1996, largely the make African information technology come of age.

Information and Communication Technology revolution is spreading across the globe, bringing enormous transformation in the way things are done. This basic transformation is affecting positively the socio-cultural, economic and political life of all societies not to mention education. The development and the influence of Information and Communication in education should be expected since educational sector normally set the pace for any form of innovation and change,(Raymond, 2006). The emerging trends in the information technology are felt more in our institutions of learning with particular reference to the universities

and the polytechnics owing the need to become information and communication technology compliant in line with the technology tide sweeping across all nations. The National University Commission as a matter of deliberate policy emphasized the need for all Nigerian universities to build ICT capabilities through their Management Information System (MIS).

2.5 Functions of Information Technology

Information technology like any other areas of study could not be left without specific roles or functions especially in the areas of technology. Osuala (1993) summarized such functions to include the following:

- Information technology enables us to select the actual information we require at any time from different sources after which we can select quickly from very large collections.
- Information technology enables us to increase the capacity, flexibility and efficiency of channels for collection information.
- Information technology enables us to transform collected and selected information. This means that the information collected

needs re-arrangement and re-ordering for presentation in different ways. There are three major areas of information technology which include; computer, electronics, and communication.

2.6 Different Perspectives of Business Education

Business Education is an important component of the Vocational and Technical Education which is essentially aimed at providing the beneficiary with basic skills, competence, experiences and attitudes necessary for the world of work and/ or preparing the individual to take a career in teaching of business subjects. Many scholars of business education have seen the programme in different light and the author of this write up has given an account of the various contributions made by other authors interested in field of education. Osuala (1993), remarked that it is an embedment of vocational knowledge and skill needed for entry-level employment and advancement in a broad range of business careers. Hence Osuala (1993), opined that it is a training system that encourage the beneficiary to acquire skills that fit into the world of work. In addition, he stated that 'Business Education' encompasses knowledge, attitudes and skills needed by all citizens in order to effectively manage

their personal business. According to Nanassy (1997), business education is that aspect of the total educational programme that provides the knowledge, skills, understanding and attitudes needed to perform in the business world as a producer and or consumer of goods and services which business offers. This means that business education exposes learner to the acquisition of skills on trade, transaction with other people in the society.

Business education which is an aspect of vocational education has been defined as an art of knowledge full of skills in different areas that could help individual create a resourceful job (Aliyu 2006). This perspective in consonance with one of the goals of vocational and technical education as spelt out by the National Policy on Education (1985), which stated as one of the objectives of vocational and technical education the acquisition of appropriate skills, abilities and competences by the individual to live and contribute substantially to the development of society. Eni (1987), said business elucidation represents a broad and diverse discipline that is included in all types of educational delivery system; elementary, secondary and post secondary.

Business education can begin at any level and can be continued throughout the lifespan of an individual. Ulinfun (1982) saw Business Education as education for business skills, which are required for use in business offices and clerical occupation and policy analysis. The author further stressed that business education is intended to train teachers who will in turn, inform students about economics and business concepts and skills that might be used later in life. It is meant to equip the youth with certain business concepts as a vehicle for better understanding and analysis of the world in which he lives.

2.7 Appraisal of Students Academic Performance

Education involves the imparting of knowledge, experiences and basic skills by one person to another with the view to bringing a lasting change in behaviour and attitude of the individual to whom such knowledge, experiences, and skills are imparted. Measuring or appraising of the learner's performance against certain predetermined standards or benchmarks, is important to both the teacher and the learner. To the teacher, such evaluations would help to measure the extent to which the learner is coping with a particular subject content to which the learner is

exposed or to find out whether the student is developing appropriate skills that may signify goal attainment in a specialized area. To the learner, it is through evaluation that the student gets to know whether or not performance is measuring up to the set benchmark, if not then calls for the need to be serious. Examination and other forms of assessments are the common instruments or parameters which the teacher uses to achieve this purpose. The learner is exposed to learning experiences (stimuli) and after a certain period, he is tested or appraised on the bases of what was taught, and the ability to pass the test or examination by scoring high marks, is an indication that learning had actually taken place. All over the world examination, assignments, projects, are adopted and used in schools, apprenticeship, industry, etc. as the basic parameter for measuring learner's performance during the course of pursuing an academic programme or apprenticeship training.

2.8 Impact of Information Technology in Teaching and Learning of Accounting Education.

Information and Communication Technologies have brought enormous transformation in all spheres of human endeavors including

education. Basically, they have influenced in no small measure the way people do things. Old methods of doing things are now being replaced or overtaken by completely new ways of doing them, due to increased innovations taking place in our world of rapid technological change. According to Kotler and Armstrong (2001) the technological environment is perhaps the most dramatic force now shaping our destiny. Technology has released such wonders as antibiotics, organ transplant, notebook computers, and the Internet. It also has released such horrors as nuclear missiles, chemical weapons, and assault rifles. It has released such mixed blessings as the automobile, television, and credit cards. The attitude of people toward technology depends on whether they are more impressed with its wonders or its blunders.

Going by this assessment of technology, one perhaps, would rather count on the blessings of technology than its blunders, because of its far reaching impact in all the traffic lanes of human endeavors. According to Asaolu (2000), Financial Accounting is the process of recording, classifying, selecting, measuring, interpreting, summarizing and reporting financial data of an organization to the users for objective assessment and decision making. Accounting to the American Accounting Association

(AAA),” is the process of identifying, measuring and communicating economic information. Osuwa (2002) saw accounting education as aspects of business education that provides an individual with skills and knowledge in accounting and computing occupation and data processing for gainful employment in self, public and private sector.

James (2003) in consonant with the above definition, observed that operational accounting systems emphasize legal and historical record – keeping and the production of accurate financial statements, these system include transaction processing system such as order processing, inventory control, accounts receivable, accounts payable, payroll and general ledger systems. James further stressed that, management accounting systems focus on the planning and control of business operations with emphasize on cost accounting reports, the development of financial budgets and projected financial statements, and analytical reports comparing actual to forecasted performance are all packaged in information technology.

The Accounting data are processed into accounting information through the use of accounting principles and conventions. The

accounting principles are known as “generally accepted accounting principles.” They are the basic fundamentals which guide accountants in recording, appreciating and assessing accounting information as well as the preparation and interpretation of financial statements. The accounting information system is proven, time honored, and its format is universally understood. Books of Accounts prepared by accountants in one part of the world are easily understood by their counterparts in other parts of the world because the information system is based on principles that are widely accepted and globally used.

The importance of Information Technology on accounting education cannot be over emphasized; Osuwa (2002) asserted that information technology is very vital in the study of accounting education. Osuwa stressed that most of the courses offered in accounting and business activities cannot be transacted well if sufficient information technologies are not being used; he opined that accounting students should get equipped and adapted with information technology gadgets from secondary schools to tertiary institutions. In line with this opinion, Oyedele (2002) assessed that the impact of computer technology to education in general, Business Education and Accounting in particular,

and asserted that teachers of accounting in most of our schools are trained with the responsibility for helping to meet the needs brought about by technological change and progress and the changing meaning of work in our future society.

Adeleye (2002) further opined that, this change will internally affect the curriculum and course content of business education and the accounting education in future. In his contribution on the issue of the impact of information and communication technology in teaching and learning, Okafor (2003) opined that using technology effectively in the classroom is a means of transforming the classroom teaching and learning. He said it has made it possible for the classroom to be student centered with teachers' as coaches and guides. This has a direct bearing with Patric (2002) in Nanley (2009) who observed that computers will make individualized learning to be the order of the day, as fast learners will proceed to the next stage of the syllabus and even complete their curriculum far ahead of the slow learners.

Bearing the same mind Ngozi (2002) observed that, with the use of information technology in teaching and learning, business teachers' can

effectively give their own rate and at their own time and the rate of accuracy with which the students learns will determine whether the student should proceed to the next step, to review the bid or go back to the study of the earlier instruction. The impact of information technologies on teaching and learning of accounting is immeasurable. Ngozi (2001) said that benefits of information technologies are numerous but few are enumerated. Ngozi enumerated these gains as follows:

(a) Programme Instruction

This is a designed instruction arranged in sequence, which is to help students attain specific objectives. Through the use of information technologies, accounting teachers' can effectively give their own rate and at their own time. The rate of accuracy with which the student learns will determine whether the student should proceed to the next step to review the bit.

(b) Distance Learning

Apart from the regular school programme, workers can read and do their studying while they are working at different locations as their jobs require through the use of the internet; distant learning facilitates learning, by providing learning situations which are outside the classroom wall to the advantage of the end user. Institutions in different parts of the country can be connected to it.

(c) Administrative work

Information technology and administration, accounting education teachers are administrators. Administrators need to collect information and disseminate information. The efficient way of doing this is through information technology – computer network. Internet connectivity – through internet, accounting education teacher will be able to get information from other areas of achievement of business education objectives.

(d) Research Work:

We are in the information age, a successful integration of computers; telecommunication and knowledge industry had led to global electronic resources sharing mechanism referred to as computer

networks. Many libraries are automated or computerized. Accounting educators are to have knowledge of computer to be able to retrieve information from other libraries that are located at different places.

(e) Recording of Tests and Examination Results:

As many people are now going into education, the computation of examination results then becomes complex. Test scores and results are very sensitive issues that require efficient, accurate and secured handling.

2.9 Empirical Studies

For the purpose of this study the researcher will review the works of the following researchers:

A research finding by Ford and Miller (1996) revealed that women are likely to report significantly greater levels of disorientation and disenchantment in relation to internet compared to males. The researcher did a study titled Gender Effect on the use of Computer and the Internet, where the researcher used college students to find out if there is a disparity between gender in the use of ICT. The researcher conducted a survey research to find out the opinion of students divided along gender line on exploring the computer and internet resources.

Findings showed that girls unlike boys reported greater disorientation in relation to the use of internet. The researcher tested two hypotheses using the Pearson Product Moment Correlation to test the strength of association between the variables in the research work.

This research work is very much in line with the present work, in that both researches are undertaken to examine the impact of ICT on students learning and academic performance of students. On Null hypotheses testing, both researchers had a trade-off when they used the same statistical tools to test the Null hypotheses. More so, Shashaani (1997), in his research study, examined some males and females about their interest in internet use. The researcher raised four research objectives and four research questions. Four null hypotheses (Ho) were established and tested at 0.05 level of significance. The statistical tools used in testing the four null hypotheses were Analysis of Variance (ANOVA) and the Pearson Correlation Coefficient. The researcher discovered that there was a significant disparity on the interest level between the two groups. Male respondents showed to be more interested and enthusiastic in internet services and use than the females. Similarly, results about the internet and computer usage between males

and females were revealed. Although, women and men showed little difference in general attitudes toward internet there were many differences toward internet searching and usage.

Another survey conducted by Schumache and Moraha-Martin (2001), on gender effect on the use of ICT among undergraduates' students, argued that females were less experienced with ICTs and more likely than males to have negative attitudes toward computers. Boys by their natural disposition could be adventurous than girls even in the use of ICT. The researcher to a large extent did not state how these attitudes were measured and what measuring instrument was used.

Furthermore, male students' preferred to study courses that require computer use more than female students and showed interest in programming and game playing. They were also more experienced at ICT use than girls, apart from e-mails where no significant differences were reported.

Dorup (2004) conducted a research titled "role of ICTs in students' learning" using medical students in Denmark. The researcher adopted the survey research method. The population for this research study consisted

of 2986 medical students with a sample size of 1493 representing 50%. Multiple regressions statistics were used for data analysis. Some of the findings of this research were that the majority of medical students in Denmark had access to computers at home as well as use e-mail and internet regularly. Only a few students preferred not to use computers at home. Finally, the researcher revealed that students believed the use of ICT cannot replace the traditional teaching and learning activities but can be easily used as supplement.

This current study is in line with the previous study, in that both researchers are interested in assessing the impact of information and communication on students learning. The two studies have their focus on university undergraduates. In addition to that, both researchers used the appropriate research tools that are peculiar with the kind of research undertaken.

Usman (2005) undertook a research study on the impact of Information and Communication Technology in the teaching/learning of accounting in tertiary institutions in Kaduna State. This research effort covered all institutions of higher learning offering accounting in Kaduna

State. The researcher came up with a research population consisting of 160 teachers and students. The sample of this study consisted of 118 randomly selected. The instrument for data collection was a structured questionnaire. The researcher analyzed the data collected using tables and percentages. The following findings were made:

- That computer technology has reduced the teachers' and students' paper and administrative work, those teachers and students were getting use to computer information system.

That computer technology in teaching and learning of accounting has increased students interest in learning, making learning of accounting more individualized and students keyboarding interest have been improved upon.

- There are physical/observable changes in terms of increasing in number of computers. Computer laboratories, electricity and generation plants to supplement the erratic power supply from National Electric Power Authority (NEPA).
- That construction of more computer laboratories has resulted in the downward review of computer prices.

In-service in accounting training will further increase the impact of computer technology in teaching and learning of accounting in Kaduna. Stated

This study thought conducted on Information and Communication Technology and its impact on teaching and learning did not use the right statistical parameter for analysis. The use of percentages would not yield the desired result that is expected of a modern research.

Sadiku (2006) in his research study “information technology and its implication on Accounting Education at NCE Level case of Federal College of Education, Zaria”, the researcher raised the following objectives:-

* Identify the extent to which information technology can be applicable in teaching and learning of accounting.

- determine the barrier to the use of information and communication technology in teaching and learning of accounting.
- determine the roles of government and private organizations in the application of information technology in the teaching and learning of accounting.

- examine the level of awareness of information and communication technology in teaching and learning of accounting.

Survey research was used as the research design. The population for this study consisted of 444 students of Business Education. The sample size for the research consisted of 183 students randomly selected. The instrument used for data collection was the structured questionnaire designed by the researcher. The data collected for the research were analyzed using percentages. As a result of analyzing the data collected for the study, the researcher came up with the following findings:

- That the inability of educational planners to integrate and implement ICT in the curriculum of business education posed a serious problem that need to be addressed if the business education objective of providing basic skills and competences would be achieved.
- That the establishment of digital laboratories in Colleges of Education along with the training of instructors to use these ICT resources are sure tools for improving teaching and learning in accounting.
- The researcher discovered that the erratic nature of electricity supply does a major hindrance in successfully implementing ICT in our institutions.

- That there was less emphasis on organizing conferences, seminars, and workshops on the significance of ICT to Accounting Education. In addition to that, non availability of software packages for accounting computation was another major predicament in ICT implementation in colleges of education.
- The current study “information and communication technology and its application in accounting education in colleges of education” is in line with the previous study, undertaken to examine the impact of ICT on the academic performance of Business Education students in Accounting. Other areas of similarity with the past work are that, both works adopted the survey research as their research design and the two works are directed to educational institutions. One major area of dissimilarity between the two research studies is that for serious academic researches, higher statistical tools or parameters should be used than the use of simple percentages to analyze statistical data. The current study intends to use statistical tools such as the Analysis of Variance (ANOVA), the two-tailed t-test and the Pearson Product moment correlations to analyze data collected.

Another research that was conducted by Siritonathaworn et.al (2006) to examined the e-learning technology implementation of the University of Thailand. The researcher used survey method for his study. Four research objective and four research questions were raised for the study. According to the findings, the students were used to instruction in the structured format due to traditional norms of education. The key issue for the universities was to persuade students and instructors to use ICT effectively and motivate them to integrate them to the learning and teaching procedures respectively. Like the situation in Nigeria, where the concept of ICT is still in its infancy, the current research is going in the same bearing with the former, since both researches are directed toward examining the influence of ICT on student's academic performance.

Flora and Tsu-Tan (2006) in their research "The correlates of the digital divide and their impact on college students learning" raised five research objectives and four research questions. The study was aimed at examining the relationships between the following variables; computer/internet use, computer knowledge and computer ownership in relation to the academic performance of college students'. The survey investigated 3083 first year college students of 1247 year universities in

Taiwan. A total of 2719 of them the completed questionnaires resulting in response rate of 88.2%. The researchers employed the use of Multiple regressions and generalized ordered logit that is, a partial proportional odds model as the research tools to test the Null hypotheses raised for the study.

The main findings were (1) Undergraduates used computers not only for fulfilling their academic requirements and searching for information, but also for entertainment. On average, undergraduates spent about 19 hours per week using computers, of which 5 hours were academic-related. (2) Most undergraduates performed at the middle average level in terms of computer knowledge. (3) No significant differences among correlates in relating to demographic and socio-economic family background were found in predicting the various purposes in using computers. (4) Female students whose fathers and/or whose mothers were from minorities, whose fathers were blue-collar workers or unemployed, who studied in the fields of the humanities and social sciences, and who entered private universities, were at a disadvantage in terms of computer skills and knowledge. However, female students whose mothers were less educated and those who

enrolled in private universities were more focused as computer users in terms of allocating time to academic-related work. (5) Computer knowledge and devotion to using computers for academic-related work have a moderate effect on college student learning, while the various other uses of computers didn't. Of the different kinds of computer knowledge, was the knowledge of software that helped students to learn the most.

This current work is also in line with the previous study in that, the previous study, tried to examine the level of familiarity of business education students in Accounting, with ICT, what students do with ICT, the digital divide among students and its effect on ICTs use, and the impact of ICT on student's academic performance. The current study tend to be at variance with finding number 4, if managements of tertiary institutions will provide or build ICT capabilities in schools, students whose parents are from the minority or whose parents are in blue-collar jobs or unemployed and students who study humanities cannot be at a disadvantage. The current researcher agrees with finding number 5 in the previous work, that computer knowledge and devotion to using

computers for academic-related work have a moderate effect on college student learning, while the various other uses of computer do not.

Valasidou and Bousiou-Makridou (2007) conducted a survey research on “The Impact of ICT in Education: The case of University of Macedonia, Greece. The research had four objective and four research questions. The work was set to determine whether students use ICT to support their studies, the student’s attitude toward IT, the impact of gender on the use of ICT and to find out if student’s performance is affected by their ICT usage. The researchers formulated four research hypotheses which were tested using multiple regressions and the generalized ordered logit. Major findings in this research work were follows:

- That majority of students the university of Macedonia used ICT to support their studies.
- That the students showed positive attitude toward ICT.
- That gender to a large extent influence students use of ICT.
- That ICT impact so much on the overall performance of students.

The researcher agrees with the previous researcher's findings, that Information and Communication Technology when employed to support academic activities enhances student performance.

Magaji (2009) conducted an empirical study titled "The study of relationship between ICT use and student academic performance." The researcher conducted an experimental study involving 20 undergraduate students of Business Education in Accounting option at the Ahmadu Bello University, Zaria. The researcher divided these students into two groups; the experimental and control group, and a final test was administered after the experiment to elicit information for the research. Two Null hypotheses were raised and tested, using the Two-tailed t-test at 0.05 level of significance. The following findings were made:-

- That students of Business Education were not so familiar with ICT.
- That student did not use the internet for educational purpose all the time.
- That there was gender disparity in the use of ICT among Business Education undergraduates' students in the accounting option,

because male students were found to use the computer and internet more than female students.

- That employment of ICT by students in their studies impact so much on their academic performance.

This current study is similar to the previous study in that, both researches have their focus on examining the impact of ICT on student's academic performance. The only area of dissimilarity is that the two researchers adopted different research methods, while the previous study was an experimental research; the current study is a survey research. These research works indicate that the strength of association among variables is high in both researches, meaning that there is greater degree of correlation between the variables.

2.10 Summary of Literature Review

With reference to the literature reviewed on the impact of information and communication technology on the academic performance of Business Education students in the Accounting option, it was observed that the emergence of ICTs and, the phenomenal transformation it brought to bear on students learning process has the

tendency of improving the performance of Business Education students in Accounting Education vis-à-vis other subject areas. The research started this chapter with a general overview of Information and Communication Technology, where the conceptual frame work of information and communication technology was discussed. This includes discussions on the concept of information, the concept of communication, an overview of information and communication technology, the basic innovations in information and communication technology, new trends in information and communication technology. Literature patterning trends and development of ICT in Nigeria, functions of ICT and impact of ICT on the academic performance of students were also reviewed and discussed.

This chapter also reviewed and discussed Business Education, taking into account the perspective of different authors about the programme. Under the sub-heading appraisal of academic performance, examination, test, projects etc. were projected as being fundamental instruments used by the school to measure the degree to which students are coping with educational contents and standard established by the school which a learner must attain. The impact of information and communication technology on teaching and learning of Accounting

Education was highlighted, which forms the bases for undertaking this research work. This is followed by an empirical study, where the researcher reviewed the works of other researchers' which are considered as being closely related with the current study.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This chapter presents the methodology and procedure that was adopted in collecting and analyzing the data for this study. This was done or treated under the following sub-headings:

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

3.1 Research Design

For the purpose of this research work “Information Communication Technology and Business Education Student’s Academic Performance in

Accounting in Nigeria Federal Universities.”, a descriptive correlational survey design was used for the study, as it was the appropriate research technique to employ for a study of this nature. This is because the researcher was interested in the accurate assessment of the characteristic of the whole population. According to Osuala (2005), survey research studies both large and small populations by selecting and studying samples chosen from the populations to discover the relative incidence, distribution, and interrelations of sociological and psychological variables. The survey research would enable the researcher to draw from the population, a sample that would be a representative of the entire population and provide a basis for generalization. The research was conducted to seek the opinion of undergraduate students’ on the use of ICT resources, how proficient they are with ICT, how often they have access to the computer and the internet, the digital divide among undergraduate students’ in terms of gender, access and its effect on their use of ICT, and impact of ICT on academic performance of students of Business Education.

3.2 Population for the study

The population for the study comprised all Lecturers and 400 level (Accounting option) students of Business Education in Nigeria Federal Universities from the Business Education section. The population of students stood at 286 while that of lecturers was 75, giving a total population of 361. This population was drawn from seven Nigeria Federal Universities across the nation; since they were the only Federal Universities that run Business Education programme. The population of the study is presented in table 3.1

Table 3.1 Population for the Study.

S/No	INSTITUTIONS	LECTURERS		STUDENTS		Total
		M	F	Males	Females	
1	Ahmadu Bello University, Zaria	6	1	18	13	40
2	University of Nigeria, Nsuka	8	6	32	18	64
3	University of Benin, Benin City	7	5	27	19	58
4	University of Calabar	8	5	33	18	64
5	River State Univ. of Sci. and Tech. Port Harcourt	8	4	21	20	51
6	Federal University of Technology, Yola.	6	3	15	18	42
7	Federal University of Technology, Bauchi.	6	2	19	15	42
Total		49	26	165	121	361

3.3 Sample size and Sampling Technique

The sample for this research work comprised 75 lecturers and 286 undergraduate students' of Business Education in the Accounting option in seven Federal Universities. Krejcie and Morgan (1970) recommended a sample size of 186 for a population of 361 representing 51.5 percent. However, the researcher decided to take the whole population as the sample of the study, because this size is within management level due to its small size. Best (1981) in Harnett and Murphy (2007) opined that, whenever the population for the study is not fairly large, the entire number could be used. Therefore, there was no sample for the study.

3.4 Instrument of Data Collection

The instrument for data collection used in this study, was structured questionnaire designed by the researcher. The questionnaire consisted of two parts or sections. 'Section A' was concerned with the demographic variables (personal data) of respondents such as age, sex, marital status, qualification, and others, while 'Section B' was a structured

questionnaire formulated based of the five research questions stated in chapter one. This section focused on finding out the extent to which undergraduate students' of Business Education are proficient in using ICT resources, the extent to which they use ICT (computer/internet), the correlates of digital divide/disparity among students and their influence on ICT usage, and the influence of ICT in enhancing the academic performance of students. The researcher used the four (4) point Likert's rating instrument for easy elicitation of respondent's opinions and subsequent analyzing of statistical data. This is presented in Table 3.3.

Table 3.3 Linkert four Scale rating system.

Likert scale	Rating points
Strongly agree (S.A)	4
Agree (A)	3
Disagree (D)	2
Strongly disagree (SD)	1

The breakdown of questionnaire items to answer research questions one to five is presented below.

S/NO	Research Question	Item
1	To what extent are Business Education students' (Accounting option) proficient in the use of ICT resources?	1 – 6
2	How much time do Business Education students (Accounting option) spend on the computer/Internet daily?	7 – 13
3	For what purpose do students of Business Education (Accounting option) use ICT?	14 – 20
4	To what extent does the digital divide among students of Business Education (Accounting option) affect their ICT use?	21 – 24
5	What are the impacts of ICT on students of Business Education (Accounting option) academic performance in Accounting?	25– 33

3.4.1 Validity of the Instrument

The face validity of the questionnaire items was determined by expert opinions comprising of specialists in research methodology, the researcher's supervisors, experts in test and measurement and other professionals, both within and outside of the Department of Vocational and Technical Education, Ahmadu Bello University, Zaria. Their criticisms

and comments helped a great deal to improve the structure of the item and its format. According to Anastasia, in Uzosike (2008), face validity of a survey instrument of this nature is considered adequate for its validity. Having subjected the instrument to face validity, it is therefore; appropriate to consider it valid enough for this research work because it is expected that the instrument will measure what it is expected to measure.

3.4.2 Pilot Study

In order to test the reliability of the instrument, the researcher conducted a pilot study and to this effect, administered sixty (60) questionnaire to thirty undergraduate Accounting students of Ado Bayero University, Kano. The purpose was to test the suitability and reliability of the instrument for the study and also to determine the ease with which the instrument could be administered. The researcher used the split half technique, implying that two tests were conducted using the same instrument. In the first test, thirty questionnaire were distributed and thirty during the second test. The responses elicited from respondents were collected and subjected to statistical analysis. The Statistical Packages for the Social Sciences (SPSS) were used for this purpose. At the

end of the exercise, it was discovered that the instrument measured what it was intended to measure.

3.4.3 Reliability of the Instrument

The data collected from the pilot study were subjected to a reliability test using the Statistical Package for Social Sciences (SPSS). The results of the tests gave a reliability coefficient of 0.8611. This showed that the instrument is reliable and internally consistent and could be used for this study. According to Anastasia (1998) in Uzosike (2008), a reliability coefficient of this magnitude (0.8611) implies that the instrument is internally consistent and valid for this study and studies of this nature.

3.5 Procedure for Data Collection

The researcher sought the opinions of Business Education Lecturers and undergraduate students of Business Education in the Accounting option in seven Nigeria Federal Universities, on “Information Communication Technology and Business Education Students Academic Performance in Accounting in Nigeria Federal Universities”. In order to achieve this, the researcher used six research assistants, one from each of the seven universities earmarked for this study. The six research

assistants were lecturers teaching research methods in their respective universities. With the help of these lecturers (research assistants), the researcher administered the questionnaire to individual respondents. The respondents were allowed an interval of three days after which completed questionnaire were collected; this is in the case of universities the researcher intends to visit. The administration of the instrument was achieved in two universities the researcher could not visit, through the use of the e-mail and skype.

3.6 Procedure for Data Analysis

The data collected as a result of the five (5) research questions raised, were analyzed using the Statistical Package for Social Sciences (SPSS). Descriptive statistics was used to achieve objectives 1, 2, 3 while correlation coefficient was used to achieve objectives 4 and 5 and to test the Null hypotheses. Statistical parameters such as frequency, tables, percentages, means, and standard deviation were used for data analysis. The researcher adopted 'strongly agree' and 'agree' as agree whereas, 'disagree' and strongly 'disagree' as 'disagree'. The statistical tool the researcher used in testing the Null hypotheses was the Pearson Product

Moment Correlation. The five (5) Null hypotheses were tested at 0.05 level of significance. At this same level of significance (0.05), a Null hypothesis was rejected or not rejected.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

The research was on “Information Communication Technology and Business Education Student’s Academic Performance in Accounting in Nigeria Federal Universities”. Chapter four gave the report of the findings of the research based on information collected from respondents.

Frequencies and percentage were used for the analyses of the first sets of data concerned with the personal data of the respondents, which were summarized in table 4.1.1 to 4.1.7. Section “B” of the questionnaire was meant to answer research questions and test the null hypotheses, each of the objectives and null hypotheses were addressed by presenting the relevant items which provided valid solution to the research questions in the chapter.

In analyzing the data, the two groups of respondents were treated separately, but the results obtained were added together in answering the research questions and test of Null hypotheses. In this research work, strongly agreed and agreed were classified as agree and disagreed and strongly disagreed were classified as disagreed. This was done in order to

allow for good analysis of items, better judgment and conclusion. The results of this research work were based on four-Likert scale rating as shown in subsequent paragraphs.

The researcher distributed 361 copies of questionnaire to both staff and students, 268 copies were retrieved but only 257 were properly filled and were subjected to statistical analyses.

4.1 Analysis of Data on Demographic Variables of Respondents

Analysis of personal data of respondents was conducted under the sub-headings in the Tables 4.1 to 4.7. Table 4.1.1 showed the summary of distribution of respondents according to gender.

Table 4.1.1 Distribution of Respondents by Gender

GENDER	FREQUENCY	PERCENT
Male	165	64.2
Female	92	35.8
Total	257	100.0

The respondents were analyzed by their gender. The result as indicated in Table 4.1 showed that 165 (64.2%) were males. 92 (35.8%) were females.

Table 4.2 showed the summary of distribution of respondents according to age group.

Table 4.1.2: Distribution of Respondents by Age Group

Age in years	Frequency	Percent
11 - 20	61	23.7
21- 30	79	30.7
31 - 40	58	22.6
41 – 50	22	8.6
51 – 60	26	10.1
61 years and above	11	4.3
Total	257	100.0

The ages of the respondents were grouped into ranges of 11 – 20 years, 21– 30, 31 – 40 years, 41 – 50 years, 51 – 60 years and 61 and above years. The data in Table 4.2 revealed that 61 (23.7%) of the respondents ranged between 11 – 20 years. 21 – 30 years were 79 in number, representing 27.6%. Those, whose age ranged between 31 – 40 years, were next on the table with 58 respondents representing 22.6%.

Respondents between age ranges of 51 – 60 were 26 in number representing 10.1%. Those respondents age ranged 61 and above were 11 in number, representing 4.3%. The analysis revealed that most of the respondents were predominantly in their middle ages of 21 – 30 years.

On marital status of the respondents, a summary of the distribution of respondents by marital status is presented in table 4.1.3

Table 4.1.3: Distribution of Respondents by Marital Status

Marital status	Frequency	Percent
Married	72	28.0
Single	143	55.6
Separated	3	1.2
Divorced	29	11.3
Widow	10	3.9
Total	257	100.0

The analysis of the respondents by their marital status in Table 4.3 showed that 72 of the respondents, representing 28.0% were married. 143 of them, representing 55.6%, were singles. Separated were 3, representing 1.2%. Next on the hierarchy, were widowed with 29 respondents, representing 11.3%. Divorced were 10 in number representing 3.9%.

The study looked into the areas of specialization of students who represented the target audience of this research work. Table 4.1.4 presents a summary of the break down of respondents according to their areas of specialization.

Table 4.1.4: Distribution of Respondents by Specialization

Specialization	Frequency	Percent
Accounting Education	212	82.5
Distributive Education	20	7.8
Secretarial Education	18	7.0
None of the above	7	2.7
Total	257	100.0

Table 4.4 showed that most respondents 212 (82.5%) specialized in accounting. Next in the hierarchy was distributive education 7.8% (20). Secretarial education had 18 respondents representing 7.0%. 7 respondents representing 2.7% indicated none of the above specializations.

The researcher sought to find out the highest educational qualification of lecturers earmarked for the research. Table 4.1.5 presents a break down of lecturers according to their highest educational qualification.

Table 4.1.5: Distribution of Lecturers by Higher Educational Qualification

QUALIFICATION	FREQUENCY	PERCENT
B.Ed	7	12.5
MBA	18	32.1
M.Ed	21	37.5
Ph.D	10	17.9
Total	56	100.0

Table 4.1.5 showed the distribution of lecturers by their highest educational qualification. Lecturers who had B.Ed were 7 representing 12.5%. MBA holders were 18 representing 32.1%. This was followed by M.Ed holders who were 21 (37.5%) of the respondents. Respondents with PhD were 10 representing 17.9%.

Table 4.1.6 presents a summary of distribution of lecturers according to their years of working experience.

Table 4.1.6: Distribution of Lecturers by Years of Experience

Experience in Years	Frequency	Percent (%)
1-5	7	12.5
6-10	12	21.4
11-15	18	32.2
16-20	11	19.6
21 and above	8	14.3
Total	56	100.0

Table 4.6 showed that 7 of the respondents representing 12.5% had 1 – 5 years’ working experience. Those with 6 – 10 years of experience were 12, representing 21.4%. 18 respondents had 11 – 15 years of experience, representing 32.1%. 11 respondents, representing 19.6% had working experience of between 16-20 years. Only eight respondents, representing 14.3 had working of 21 years and above.

Table 4.1.7 Distribution of Lecturers by Ranks

Rank	Frequency	Percent
Graduate assistant	7	12.5
Assistant Lecturer	11	19.6
Lecturer II	13	23.2
Lecturer I	13	23.2
Senior Lecturer	6	10.7
Reader	4	7.2
Professor	2	3.6
Total	56	100.0

Table 4.7 showed that Graduate Assistants were 7 in number representing 12.5%. 11 respondents were Assistant Lecturers who

represent (19.6%). 13 representing 23.2% were Lecturer 11 and Lecturer 1 respectively. Senior Lecturers Readers were 4 representing 7.1% and the least in the list were Professors with 2 representing 3.6% of the respondents.

4.2 Analyses of Respondents Answers to Research Questions

Data collected from respondents in response to the five research questions of the study were as analyzed in Table 4.8 to 4.12 In the course of the analyses, opinions of both lecturers and students were categorized into two groups agreed and disagreed in order to facilitate better understanding and clear interpretation of data. 4 Likert scale was used for all the computations.

Research Question One: To what extent are Business Education students (Accounting option) proficient in the use of Information and Communication Technology resources?

Questionnaire items one to six in appendix iii was used to answer research question one. The summary of the responses is as shown in Table 4.2.1

Table 4.2.1 Summary of Answers on relationship between Business Education students and their proficiency in ICT skills.

<i>Q.I</i>	<i>S.A</i>	<i>A</i>	<i>D</i>	<i>S.D</i>	<i>T.A</i>	<i>T.D</i>	<i>TR</i>	<i>% A</i>	<i>%D</i>
1	116	117	208	85	233	293	526	44.3	55.7
2	124	84	214	91	208	305	513	40.5	59.5
3	172	63	188	99	235	287	522	45.0	55.0
4	32	75	452	109	107	561	668	16.0	84.0
5	84	144	156	110	228	266	494	46.2	53.8
6	4	135	350	36	139	386	525	26.5	73.5
Total					1150	2098	3248	218.5	381.5

Q. I = Questionnaire item; S. Agree = strongly agreed; S.D= Strongly Disagreed; T.A = Total Agreed .D=Total Disagree, T.R = Total Responses% A = Percentage Agreed; % D= Percentage Disagreed

Table 4.8 is the summary of scores by respondents on the extent to which Business Education students in Nigeria Federal Universities are proficient in the use of ICT resources. Questionnaire item one sought to

assess whether Business Education students in Accounting option were proficient in the use of ICT infrastructures.

Strongly agreed scored 116. Agree had 117 scores. Disagreed had 208 and strongly disagreed scored 85 points. Total agreed regarding questionnaire one was 233, representing 44.3% of respondents, as against 293, representing 55.7% of the respondents for disagreed.

Questionnaire item two sought to determine whether students have access to books, journals and other publications on ICTs in the department. Strongly agreed had 124 points. Agreed had 84 points respectively. Disagreed had 214. Strongly disagreed had 91 respectively. Total agreed stood at 208, representing 40.5%, against 305 representing 59.5%

Item three of the questionnaire sought to know whether typewriters are being replaced by computer in the typing pool because they are being considered outdated. Strongly agreed scored 172. Agreed had 63 points. On the other hand disagreed scored 188 points, and strongly disagreed got 99 scores. Total agreed scored 235 representing 45% against 287 responses representing 55% respectively.

Item four sought to find out if institutions have established digital laboratory in all faculties. Strongly agreed scored 32 points. Agreed had 75 points. Disagreed scored 452, while strongly disagreed accounted for 109 respectively. On the whole agreed scored 107 representing 16% while disagreed accounted 56 representing 84%. Strongly agreed was scored by 84 respondents who opined that students are not proficient in ICT skill as such don't have a way with accounting hardware and software. Agreed accounted for 144, against 156 for disagreed and 110 for strongly disagreed. Total agreed had 228 scores; representing 46.2% of the total responses as against 266 scores for disagree representing 53.8% of the scores.

Item six of the questionnaire sought to find out if student's awareness level of ICT resources is very high. 4 scores strongly agreed and 135 agreed with the statement representing 26.5%, on the other hand disagreed scored 350 and strongly disagreed accounted for 36 representing 73.5%

The overall scores for agreed was 1150 representing 35.4% against 2098 representing 64.5% for disagreed. This implies that most Business

Educations students in Nigeria Federal University, (Accounting option) are not proficient in the use of Information and Communication Technology resources

Research Question Two: *How much time do Business Education students (accounting option) in Nigeria Federal Universities spend on the Computer/Internet daily?*

To enable the researcher answer this question, questionnaire item 7 to 13 in appendix iii were used. The summary of the responses is shown in table 4.2.2

Table 4.2.2: Summary of Results on Time Business Education Students Spent on the Computer

<i>Q.I</i>	<i>S.A</i>	<i>A</i>	<i>D</i>	<i>S.D</i>	<i>T.A</i>	<i>T.D</i>	<i>TR</i>	<i>%A</i>	<i>iD</i>
7	12	123	284	71	135	355	490	27.6	72.4
8	0	12	366	70	12	436	448	2.7	97.3
9	56	81	194	119	193	313	506	39.1	61.9
10	40	60	250	82	100	332	432	22.1	77.9
11	80	90	208	103	170	312	482	35.3	64.7
12	320	213	114	49	533	163	696	23.4	76.6

13	80	180	208	73	260	281	541	48.1	51.9
Total					1403	2192	3595	198.3	502.7

Questionnaire item eight, sought to find out respondents' opinion on whether Accounting Education students have access to the computer/internet at home and school. Strongly agreed was scored 12, while agreed was scored 123. Disagreed had for 284. Strongly disagreed got 71. On the whole agreed account for 135 scores, representing 27.6 against 355 representing 72.4% for disagreed.

I spend an average of 3 – 4 hours on the computer/internet daily. Strongly agreed had 56 scores. Agreed had 81 scores, against 194 for disagreed while 119 strongly disagreed. However, 193 of responses are representing 39.1% for agreed against 313 scores, representing 60.9% for disagree.

Questionnaire item 10, sought to determine whether Accounting Education students spend an average of 5 – 6 hours on computer/internet facilities daily. Strongly agreed had 40 scores, agreed had 60 points against 250 scores for disagreed and 102 points for strongly disagreed.

Total agreed in this questionnaire item was 100 scores; representing 22.1% of the respondents on the other hand disagreed accounted for 352 representing 77.9%.

Questionnaire item 11 was to determine whether students had access to computer daily. Strongly agreed had 80 points. Agreed scored 90. Disagreed had 208, while strongly disagreed scored 103 points. On the whole agreed account for 170 scores representing 35.3%, against 312, representing 64.7% of the scores for disagreed.

Questionnaire item 12 sought to determine whether power fluctuation affects student's interest on use of computer. Strongly agreed 320 points, agreed scored 213 points. Disagreed had 114 points and strongly agreed had 49 points. The summary of the results revealed 533 points for agreed representing 76.6% and disagreed had 163 (23.4%) points.

Questionnaire item 13 sought to determine whether lack of skills affects students on the use of computer. Strongly agreed had 80 points. Agreed had 180 points against 208 for disagreed and 73 for strongly disagreed. The summary indicated 260 points representing 48.1% agreed

that lack of skills affects student's interest on computer against 281 scores representing 51.9% that had divergent opinion.

On the whole, 2524 (64.3%) 1403 (35.7%) agreed that Business Education students (Accounting option) spend little time on computer/internet daily against 1403 (35.7%) who disagreed with the statement. This therefore, revealed that Accounting Education students spend little time on computer/internet daily.

Research Question Three: What are the purposes of using Information and Communication Technology resources by Students' of Business Education (Accounting option) in Nigeria Federal Universities?

To enable the researcher answer research question 3, questionnaire items 14 to 20 in appendix iii were used. The summary of responses is as shown in Table 4.2.3.

Table 4.2.3: Summary of Results on the purposes of using ICT in Accounting Education.

<i>Q.I</i>	<i>S.A</i>	<i>A</i>	<i>D</i>	<i>S.D</i>	<i>T.A</i>	<i>T.D</i>	<i>TR</i>	<i>% A</i>	<i>%D</i>
14	304	183	104	68	487	172	659	26.1	73.9
15	272	213	114	67	485	181	666	27.2	72.8
16	236	222	162	43	458	205	663	30.9	69.1
17	228	243	76	81	471	157	628	25.0	75.0
18	196	264	90	75	460	165	625	26.4	73.6
19	240	234	108	65	474	173	647	26.7	73.3
20	284	192	74	85	476	159	635	25.0	75.0
Total					3311	1212	4523	1873	512.7

On the question whether Accounting Education staff and students use ICTs for educational purposes only as stated in questionnaire item 14, the following responses were collected, 304 points for strongly agreed, 183 scores for agreed. Disagreed scored 104 points and strongly disagreed scored 68 points. Total agreed on item 14 stood at 487 points representing 73.9% and disagreed accounted for 172 (26.1%) points.

Questionnaire item 15 sought to find out whether students use internet and computer for sending e-mails. Strongly agreed was scored 272. Agreed had 213 scores. Disagreed had 114. Strongly disagreed scored 67 respectively. Most (487 representing 72.8%) of the respondents agreed that students use internet and computer for sending e-mails, against 181 representing 27.2% for disagreed.

Item 16 sought to determine whether students use computer for playing games only. Strongly agreed had 162. Agreed scored 43, representing 30.9% on the other hand disagreed had 236 and strongly disagreed scored 222 representing 69.1%

Item 17 of the questionnaire sought to determine that only few students of Business Education in the Accounting option use ICT to support their learning. Strongly agreed had 228 points. Agreed account for 243. Disagreed had 76 points and strongly agreed scored 81. On the whole those who agreed that only few students of Business Education in the Accounting option use ICT to support their learning got 471 responses, representing 75.0%, and disagreed had 157 points representing 25.0%

Item 18 on the questionnaire opined that students in Accounting Education browse the internet to chat with friends and make new friends. Agreed accounted for 460 points representing and disagreed had 165 points representing 26.4%.

Item 19 of the questionnaire sought to determine whether students use internet websites to access boardroom chats which helps them to understand difficult concepts taught in the traditional classroom. Strongly agreed got 65 and agreed scored 108 points representing 26.7% on the other hand disagreed accounted for 234 and strongly disagreed had 240 points representing 73.3%.

Item 20 states that students use ICT to access learning materials from the other Universities. Respondents scored 284 for strongly agreed and 192 for agreed representing 75% on the other hand disagreed scored 74 points and strongly disagreed had 85 points representing 25% of the total scores.

The summary results of the questionnaire items 14 - 20 which were used to determine whether Business Education Students in accounting option uses Information and Communication Technology resources for

their education research and other things. Those that agreed with the statement accounted for 3311 points representing 73.2% and those with divergent opinion scored 1212 representing 26.8%

Research Question Four: *To what extent does the digital divide among students of Business Education (Accounting option) in Nigeria Federal Universities affects their ICT use?*

To enable the researcher answer research question 4, questionnaire items 21 to 24 in appendix iii were used. The summary of responses is as shown in Table 4.2.4.

Table 4.2.4: Summary of Results on the extent to which the digital divide affect the ICT

Q.I	S.A	A	D	S.D	T.A	T.D	TR	% A	%D
21	292	195	136	51	487	187	674	27.7	72.3
22	272	219	102	65	491	167	658	25.3	74.7
23	268	198	118	65	466	183	649	28.2	71.8
24	312	207	108	56	519	164	683	24.0	76.0
Total					1963	701	2664	105	2948

Questionnaire 21 sought to determine whether Female students in accounting education have ICT phobia than their male counterparts. Strongly agreed accounted for 292 points and agreed had 195 points representing 72.3% on the other hand disagreed had 136 points and strongly disagreed scored 51 points accounted for 27.7% of the total scores.

Question item 22 sought to determine if female students show greater disorientation and disenchantment towards ICT than male students. Agreed scored 491(74.7%) against 167 points representing 25.3% of the total scores.

Questionnaire item 23 states that there is a significant disparity in ICT use between male and female students in Federal Universities in Nigeria. Respondents scored 268 for strongly agreed and 198 for agreed representing 71.8% on the other hand those with divergent opinion scored 118 and 65 for strongly agreed and agreed respectively which accounted for 28.2% of the responses.

Questionnaire item 24 seeks to find out whether male students are more adventurous than female students in terms of ICT exploration and uses.

Strongly agreed and agreed accounted for 519 (76.0%) against 164 (24.0%) for disagreed.

The summary of questionnaire items 21 to 24 sought to determine the correlate of digital divide among Business Education students and the effect of gender on the use of ICT. The summary of the result revealed that 1963 representing 73.7% agreed that gender disparity influences the manipulative skills of students on the use of ICT against 701 for disagreed representing 26.3% of the responses.

Research Question Five: *What is the impact of Information and Communication Technology on academic performance of Business Education student's (Accounting option) in Federal Universities in Nigeria?*

To enable the researcher answer research question five, questionnaire items 25 to 33 in appendix iii were used. The summary of the responses is shown in Table 4.2.5.

Table 4.2.5: Summary of Answers on the impact of ICT on Performance accounting Education Students

Q.I	S.A	A	D	S.D	T.A	T.D	TR	% A	%D
25	252	243	108	59	495	167	662	25.2	74.8
26	200	147	218	51	347	269	616	43.7	56.3
27	280	174	152	53	424	205	629	32.6	61.4
28	236	234	98	71	470	169	639	26.4	72.6
29	288	207	132	50	495	182	677	26.9	73.1
30	244	231	118	60	475	178	653	27.3	62.7
31	312	201	106	59	513	165	678	24.3	65.7
32	332	237	78	58	569	146	715	20.4	79.6
33	244	69	98	74	313	172	485	35.5	64.5
Total					4,101	1,653	5,754	262	611

Questionnaire item 25 sought to determine whether students have positive attitude in the use of ICT. Strongly agreed accounted for 252 scores and agreed had 243 points representing 74.8% against disagreed with 108 and strongly disagreed with 59 points representing 25.2% of the total scores.

The researcher sought to find out whether accounting education students had access to accounting software and hardware in item 26. The responses are 200 points for strongly agreed and 147 for agreed representing 56.3% against 218 and 51 points for disagreed and strongly disagreed respectively representing 43.7% of the scores.

Questionnaire item 27 stated that ICT enhance teaching and learning. Responses to this item accounted for 280 for strongly agreed and 174 for agreed representing 61.4% on the other hand disagreed and strongly disagreed accounted for 152 and 53 points representing 32.6% of the total score.

Questionnaire item 28 sought to find out if integrating ICT in learning would enhance students performance in accounting, strongly agreed scored 236 and agreed had 234 points representing 73.6%. Those with contrary opinion about this statement had disagreed score 98 and strongly disagreed 71 representing 26.4%.

Respondents who agreed that accounting education students are now better informed in the field through the use of ICT in questionnaire item 29 recorded 288 and 207 points representing 73.1% for strongly

agreed and agreed respectively against 132 and 50 points representing 26.9%

The researcher determined to find out whether the use of ICT by accounting education students has positive impact on their academic performance. Those that agreed that ICT had positive impact on accounting education students accounted for 244 and 231 scores representing 62.7% against 118 and 60 scores representing 37.3% for those with divergent opinion.

Item 31 of the questionnaire sought to determine whether ICT provides students with educational information. Respondents scored 312 and 201 for strongly agreed and agreed representing 65.7% against 106 and 59 scores for disagreed and strongly disagreed respectively.

The research sought to determine whether lecturers and students in accounting education who employ the use of ICT in their teaching and learning activities perform better in retrospect. Those who agreed with the statement accounted for 332 and 237 points for strongly agreed and agreed representing 79.6% against 78 and 58 scores for disagreed and strongly disagreed representing 20.4% of the total scores.

Questionnaire item 33 sought to determine whether the use of ICT individualizes learning and enhance student's performance. The respondents who strongly agreed with the statement scored 244 and those who merely agreed had 69 accounting for 64.5% against 98 for agreed and 74 for strongly disagreed representing 35.5% of the total score.

The overall scores of questionnaire item 25 – 33 sought to determine whether Information Communication Technology had impact on academic performance of Business Education student's (Accounting option) in Federal Universities in Nigeria. Those who agreed that ICT has impact on academic performance of business education student's in Federal Universities in Nigeria accounted for 12,830 scores representing 63.4% against the 7,421 scores representing 26.6% for those with divergent opinion. The summary of the findings therefore, means that ICT has a positive impact on the performance of Accounting Education students in Federal Universities in Nigeria.

4.3 Testing of Null Hypotheses

The five Null hypotheses raised by the researcher were meant to help in the achievement of the research objectives and to help measure the strength of association between variables considered in the study. Testing of the Null hypotheses in which data representing the opinion of student and lecturers were put together in order to facilitate better understanding and interpretation of the findings.

The use of Pearson Product Moment Correlation Coefficient statistics was employed to test the five Null hypotheses formulated in the study. The decision as to the use of this statistical method for Null hypotheses testing in this study became feasible because this statistical tool provides an index of measurement of the degree or extent to which variables are related (Francis, 2003). In support, Wiersma (1969) observed that it is the most sensitive measure of relationship between two variables. Adeboye (2001) opined that if the sample size is very large ($n > 30$). Pearson and Spearman Correlation Coefficient were the best statistics to be used. In that r -critical value was 1.95. If the r -calculated value is less than or equal to the r -critical, it implies that the Null hypothesis will be accepted, meaning that there is no significant relationship between the variables. Inversely, if the r -calculated value is

greater than the r-critical value, the Null hypothesis is rejected. By implication, it means there is no significant relation between the variables or phenomenon. The summary of results for the test of Null hypotheses is as shown in Table 4.18 – 4.23.

Null hypothesis 1: There is no significant relationship between student’s academic performance and the level of their proficiency in ICT skills.

Table 4.3.1 presents a summary of results to testing Null hypothesis (H0) 1

Table 4.3.1: Test of relationship between student’s familiarity with ICTs and Academic performance.

Variables	Mean	S.D	N	Df	r-cal	r-crit	Sig.(2-tailed)
Student’s proficiency In ICT	13.97	3.89	257	512	.098	.135	.225
Academic Performance	15.04	4.71	257				

The outcome of the test of Null hypothesis one, indicated that 'student's lack of basic proficiencies in ICT skills had a mean of 13.97 and a standard deviation of 3.89, while academic performance had a mean of 15.04 and a standard deviation of 4.71. The r -calculated is .098 less than r -critical which is .135. The Probability value is greater than the alpha value, hence, ($P > 0.05$). In this computation, r -cal. is less than r -crit., implying that the Null hypothesis is accepted.

Null hypothesis 2: There is no significant relationship between time spent on the computer/internet by students and their academic performance.

Table 4.3.2: presents a summary of results to testing Null hypothesis (H_0) 2

Table4.3.2: Test of relationship between amounts of time spent on the computer and the internet and students academic performance.

Variables	Mean	S. D	N	Df	r-cal	r-crit	Sig.(2tailed)
<i>Amount of time spent on computer.</i>	18.17	3.09	257				
				512	.238	.195	.000
<i>Student's academic performance</i>	14.24	2.91	257				

The test of Null hypothesis two revealed that the amount of time student's spent on the computer/internet had a mean of 18.17 and standard deviation of 3.09 while student's academic performance had a mean of 14.24 and standard deviation 2.91. The r-calculated .238 is greater than r-critical .195. Since r-cal. is greater than r-crit. the Null hypothesis is therefore rejected.

Null hypothesis 3: There is no significant relationship between student's academic performance and the purposes for which they use ICT resources.

Table 4.3.3 presents a summary of results to testing of Null hypothesis H03.

Table 4.3.3: Test of relationship between academic performance and purpose for which students use ICT.

Variables	Mean	S. D	N	Df	r-cal	r-crit	Sig.(2tailed)
<i>Purposes of using ICTs</i>	17.67	3.46	257				
				512	.150	.085	.000
<i>Academic Performance</i>	12.17	2.33	257				

From the above calculation, the result of testing null hypothesis three revealed that, the purpose of using ICTs had the mean of 17.67 and a standard deviation of 3.46 while academic performance had a mean of 12.17 and standard deviation 2.33. The computation showed that r-calculated was .150 greater than r-critical 0.85. The probability value was less than the alpha value ($P > 0.05$). This result implied that there is significant relationship between the purposes for which Business Education students in the Accounting option use ICTs and students' academic performance at 0.05 level of significance. Since r-cal is greater than r-crit the Null hypothesis is therefore rejected.

Null hypothesis 4: The digital divide among students has no significant impact on the extent to which they use ICT.

Table 4.3.4 presents the summary of results of testing Null H04.

Table 4.3.4: Test of relationship between digital divide and use of ICT.

Variables	Mean	S. D	N	Df	r-cal	r-crit	Sig. (2-tailed)
<i>Digital divide</i>	15.15	1.39	257				
				512	.127	.095	.000
<i>ICTs use</i>	21.63	2.45	257				

The result of testing Null hypothesis four revealed that digital divide had a mean of 15.15 and a standard deviation of 1.39 while ICT use had a mean of 21.63 and standard deviation 2.45. The r-calculated was .127 and r-critical was .095. The probability value is shown to be less than the alpha value ($0.000 < 0.05$). This meant that the digital divide among students affect their use of ICT. Since r-cal. Is greater than r-crit. The Null hypothesis is therefore rejected.

Null hypothesis 5: There is no significant relationship between ICT use and students' academic performance.

Summary of results of test of Null hypothesis (H0) 5 is presented in Table 4.3.5.

Table 4.3.5: Test of relationship between the use of ICTs in supporting learning and student’s academic performance.

Variables	Mean	S. D	N	Df	r-ca	r-crit	Sig. (tailed)
Use of ICT in supporting learning.	12.6	1.59	257				
Student academic performance.	17.5	2.81	257	512	.196	.13	.000

The results of the test of Null hypothesis five revealed that, The Use of ICT in Supporting Learning had a mean of 12.56 and standard deviation 1.59 while Student’s Academic Performance had a mean of 17.55 and standard deviation 2.81. The r-calculated is .196, and r-critical 173. Probability value is less than the alpha value at 0.05. Since r-cal.196 is greater than r-crit.173, the Null hypothesis is therefore, rejected. The implication is that there is significant relationship between the use of ICT to support student’s learning and student’s academic performance.

4.4 Discussion of Major Findings

This research was undertaken on Information Communication Technology and Business Education Student’s Academic Performance in

Accounting in Nigeria Federal Universities. To realize this purpose, the researcher raised five specific objectives, research questions and five Null hypotheses. Simple frequencies and percentages were employed in the presentation of personal data and in answering the research questions. Pearson Product Moment Correlation was used to test the five Null hypotheses at 0.05 level of significance, a level at which the Null hypotheses can be rejected or accepted. The major findings of this investigation were presented as follows:

With reference to research question one and Null hypothesis 1, findings revealed that most Business Education students' in the Accounting option were not proficient in the use of Information and Communication Technology (ICT) resources, simply meaning that they have seen the computer physically but only a few of them could operate or had a way with it. Business Education programme being a functional area should integrate Information and Communication Technology in its curriculum, so that students should not only see and touch the computer but should be able to operate it effectively to explore its vast resources to their advantage. Alavi (1994) observed that the integration of the computer into the learning experience will enhance learning and increase the student's ability to apply knowledge and skills to future problem solving

situations. ICT-based assessments are beginning to provide complex performance tasks with which students can use various ICT tools and collaborative environments to find or create the appropriate knowledge and apply it to solve their problems (Education Testing Service, 2002; International Society for Technology in Education, 1998; OCED & Statistics Canada, 2000; Quellmalz & Kozma, 2003).

For research question two and Null hypothesis (H0)², findings revealed that despite the enormous benefits accruing from implementing Information and Communication Technology, a vast majority of Business Education students spent little or no time to explore the computer/internet, reason being that they lack the requisite skills to operate the computer and the internet. The few among them who had the requisite skills, spent more hours on the computer and internet to gather information and to do their academic activities. Information and Communication Technology supports and facilitates student's learning and create knowledge. In support of this assertion, Brown and Campione (1994); Scardamalia and Bereiter (1994), Paul (2002), were of the opinion that ICT can be used to support the process of knowledge creation in which students and teachers set their own goals, plan their learning activities, build on each others ideas to create new knowledge, and monitor their current levels of understanding in

preparation for life long learning and participation in the information society.

Findings from research question three and the test of Null hypothesis (H0) 3, revealed that students employed Information and Communication Technology resources into other uses apart from their educational activities. For those of them who used ICT to support their learning activities, findings showed that this had impacted positively on their academic work.

With reference to Findings on research question four and the test of Null hypothesis (H0) 4, revealed that there was digital disparity between male and female students on the issue of exploring the computer internet. The research findings showed that male students unlike their female counterparts were adventurous, always trying to discover learning and developing skills in manipulating the computer and the internet. Female students on the other hand, showed greater disorientation and disenchantment in using the computer and the internet.

The analysis of research question five and the test of Null hypothesis (H0) 5, showed that students who employed the use of ICT to support their learning were found to perform relatively better than their counterparts who did not use ICT resources to support their studies.

CHAPTER FIVE

SUMMARY CONCLUSION AND RECOMMENDATIONS

This chapter deals mainly with the summary of the research study, major findings, conclusions reached by the researcher and recommendations drawn based on the results of the investigation carried out, with the view to proffer solution to the educational problem envisaged by the researcher.

5.1 Summary

The focus of the study was Information Communication Technology and Business Education Student's Academic Performance in Accounting in Nigeria Federal Universities.

Five research objectives were raised and to realize these objectives, the researcher raised five research questions and tested five Null hypotheses at 0.05 level of significance. The descriptive correlational survey design was used for the study. The population of the study was 361. The same number (361) was adopted to be the sample size. Data collected were analyzed using Pearson Product Moment Correlation statistics in order to achieve the five objectives raised by the researcher.

The research findings revealed that:

Business Education students in Accounting option were not proficient in the use of Information and Communication Technology. They lacked the requisite skills for exploring ICT resources.

Business Education students' do not spend much time on the computer and the internet.

Business Education students' in Accounting option used Information and Communication Technology for purposes other than for academic activities.

The digital disparity between Business Educations students' in Accounting option had so much effect on the way students' master Information and Communication Technology skills.

The use of Information and Communication Technology (computer/internet) impact positively on Business Education student's academic performance.

5.2 Conclusion

Findings from the research provided the bases for the researcher to draw the following conclusions:

Findings from research question one and the test of null hypothesis one, revealed that Business Education students in the Accounting option in Nigeria Federal Universities, did not possess the requisite skills to explore Information and Communication Technology resources to their advantage. This implies that, students' inability to apply the great resources of Information and Communication Technology in learning will to a large extent have negative impact on student's academic achievements. Academic success is dependent on student's ability to gather the right information at the right time. Information and Communication Technology facilitates learning by helping students' to access information, store, process, apply and disseminate it. Lack of information will drastically affect student's academic performance.

Findings from research question two and test of null hypothesis two, revealed that Business Education students' did not spend more time on the computer and internet. Spending less time on the computer and

internet will affect student's level of skill development. The more time a student spent on the computer, the more skills the student is bound to acquire, because practice makes perfect.

Findings from research three and null hypothesis three showed that, students used the computer and internet for other purposes rather than for academic activities. Some used the computer for games and others for making friend and other purposes. This also means that student's skills development in Information and Communication Technology will be affected negatively, this in turn will affect their academic performances.

For research question four and test of null hypothesis four, findings made known that male students explore Information and Communication Technology resources more than the female students because the former were more adventurous than the later. This scenario will present a situation that makes room for male students' superiority over female students, in terms of overall academic performance.

Outcomes of research question five and test of null hypothesis five were indicative of the fact that, applying Information and Communication

Technology in learning, enhances Business Education student's academic performance.

5.3 Recommendations

Based on the major findings of this investigation, the researcher hereby, makes the following recommendations:

1. The National Universities Commission (NUC) should recognize the imperative for integrating computer education in the curriculum of Business Education, so as to help develop in students' functional skills in line with the labour market demand.
2. Student's interest should be aroused in the use of ICT and they should be encouraged to spend more time on the computer and internet. To achieve this, ICT should be made a core course and students should regularly be given practical assignments to do.
3. The federal government and school administrators should create awareness on the need for students to employ information technology more in their learning than other purposes.

4. The federal government should encourage reforms in education that will ensure the integration of information technology into the curriculum of Business Education.
5. The digital disparity existing between males and females students should be bridged by encouraging female students to develop more interest in using the computer and the internet more often.
6. The federal government should equip universities with computers that are well connected to the internet to enable students' access information that would help boost their learning activities.

5.4 Limitations of the Study

The major constraint of this research study was the inability of the researcher to exert some degree of control over the respondents and their choice of responses. Respondents were observed to exhibit some measure of inconsistencies in their responses and what partially was responsible for this disposition, may be attributed to the fact that some respondents were reluctant to make known some of their personal experiences as such they chose to reserve them.

Another limitation is distance, the researcher had to travel from one geo-political zone to another to access the respondents, and this meant that a lot of money was involved. There was also the risk of travelling from one extreme end of the country to the other.

5.4 Suggestions for further study

The researcher suggested that further investigation be carried out in the following areas not covered by this study as follows:

1. Further research study should be carried out on students of other programmes in Nigeria federal universities in order to test the

efficacy of information and communication technology as a tool for enhancing students learning and academic performance.

2. Similar studies should also be carried out in other tertiary institutions such as the Polytechnics and Colleges of Education.

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Appendix I

Nigeria Federal Universities Earmarked for the Study

- i. Ahmadu Bello University, Zaria
- ii. University of Nigeria, Nsukka
- iii. University of Calabar
- iv. University of Benin, Benin City
- v. Federal University of Technology, Bauchi
- vi. Federal University of Technology, Yola
- vii. River State University of Science and Technology, Port Harcourt

Appendix II

LETTER OF INTRODUCTION

Depart. of Voc.. and Tech.
Education
Faculty of Education
Ahmadu Bello University, Zaria

February, 2010.

Dear Respondent,

The researcher is a post-graduate student of the above-named University who is conducting a research on the topic “Information Communication Technology and Business Education Students Academic Performance in Accounting in Nigeria Federal Universities”. I however, wish to solicit your support by providing answers to this questionnaire items. This will help in no small measure in making available the needed information for this study.

The information you are going to provide shall be used for the purpose of this research work only, be rest assured that the information you provided would be treated with utmost confidentiality.

Thank you very much for your kind co-operation.

Yours sincerely,

Zakari Buba Magaji

Appendix III
QUESTIONNAIRE

Staff Personal Data

Gender

- (a) Male ()
- (b) Female ()

Age

- (a) 30 – 40 ()
- (b) 41 – 50 ()
- (c) 51 – 60 ()
- (d) 61 and above ()

Marital Status

(a) Married ()

(b) Single ()

(C) Divorce ()

(d) Widow/Widower ()

Present Rank

(a) Graduate Assistant ()

(b) Assistant Lecturer ()

(c) Lecturer 11 ()

(d) Lecturer 1

(e) Senior Lecturer ()

Highest Educational Qualification

- (a) HND ()
- (b) B.ED ()
- (c) M.ED ()
- (d) MBA ()
- (d) PhD ()

Area of Specialization

- (a) Accounting Education ()
- (b) Marketing Education ()
- (c) Secretarial Education ()
- (d) None of the above ()
- (e) Others (specify) ()

Number of Years of Experience

(a) 0 - 5 ()

(b) 6 - 10 ()

(c) 11 - 15 ()

(d) 16 - 20 ()

(e) 21 - 25 ()

(f) 25 - 30 ()

(g) 31 and above ()

QUESTIONNAIRE FOR STUDENTS

SECTION A

Student's Person Data

Please, answer any of these questions by ticking (✓) the one appropriate to you.

Gender

(a) Male ()

(b) Female ()

Age

(a) 20 - 25 years ()

(b) 26 - 30 years ()

(c) 31 - 35 years ()

(d) 36 - 40 years ()

(e) 41 years and above.

Marital Status

(a) Married ()

(b) Single ()

(c) Divorced ()

(c) Widowed ()

Area of Specialization

(a) Accounting Education ()

(b) Marketing Education ()

(c) Secretarial Education ()

(d) None of the above.

()

SECTION B

You are required to tick (✓) in response to these questionnaire items the column most appropriate to you using the following keys:

Strongly Agreed (SA)

Agreed (A)

Disagreed (D)

Strongly Disagreed (SD)

S/N		SA	A	D	SD
1	Business Education students in the accounting option have greater awareness of ICT infrastructure.				
2	Students have access to books, journals and other publications on ICTs in the Department.				
3	Typewriters are now being replaced by computer in the typing pool because they are being considered outdated.				
4	The University has established a digital (virtual) laboratory in all her Faculties.				
5	Students are familiar with accounting hardware and software.				

6	Student's awareness level of ICTs resources is very high.				
7	The computers in the Department of Vocational and Technical Education are connected to the Internet.				
8	The students of Business of Education in the Accounting option have access to the computer/internet at home and at school.				
9	I spend an average of 3 - 4 hours on the computer/internet.				
10	I spend an average of 5 - 6 hours on the internet every day.				
11	I don't have time to spend on the computer/internet at all.				
12	Students of Business Education in Accounting Education have the requisite skills in ICT.				
13	I don't use the computer because I don't have the requisite skills to operate it.				
14	Students and Lecturers use ICTs for educational purposes only.				
15	Students use the e-mail for sending correspondences to friends.				
16	Students use the computer for playing games most of the				

	time.				
17	Only a few students of Business Education in the Accounting option use ICTs to support their learning activities.				
18	Students in Accounting Education browse the internet to chat with friends and for making new friends.				
19	Students use the internet website to access boardroom chats which helps them in understanding difficult concepts taught in the traditional classroom,				
20	Students use ICTs to access learning materials from other universities.				
21	Female students in Accounting Education have ICT phobia than their male counterparts.				
22	Girls show greater disorientation and disenchantment towards ICTs than boys.				
23	There is a significant disparity in ICT use between male and female students in the Accounting option.				
24	Boys are more adventurous than girls in terms of ICT exploration and use.				
25	Students have positive attitude in the use of ICT.				

26	Accounting Education students have access to Accounting software and hardware.				
27	ICT enhances students learning.				
28	Integrating ICTs in learning enhances student's performance in accounting.				
29	Accounting education students are now better informed in Accounting through the use of ICTs.				
30	The use of ICTs by Accounting Education students has positive impact on their academic performance.				
31	ICTs provide students access to a reservoir of information that can help enhance their academic performance.				
32	Lecturers and students who employ the use of ICT in their teaching and learning activities now perform better in retrospect than before.				
33	Now that the use of ICTs has individualized learning, the performance level of Accounting Education students is very high.				

