CHAPTER ONE

INTRODUCTION

Background of the Study

Office is a room, set of rooms, or building where the business of a commercial or industrial organization or of a professional person is conducted. It is a room assigned to a specific person or group of persons in a commercial or industrial organization. It is also a position of duty, trust or authority especially in government, a corporation or a society. An office is a usually a building or portion of a building, where an organization conducts its activities. An organization can have just one office known as home office, or a main office and a variety of field offices or branch offices. Office is that part of a business that handles information. It is the central point of activity, which is dealing with operation, accounting, payroll, billing, among others. It is in the office that series of functions such as personnel, locus of company policy, information hub, image making, clerical covering and a host of others take place. In particular, office functions consists of activities such as word processing, document preparation, and filing, performing simple computations, checking information, inter-office communication and external communication. All of these offices are involved in some ways in the productivity of the organization with the assistance of human capital and office information systems.

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Office information system is a course in tertiary institutions that was specifically designed to prepare students to participate fully in a global developing technological society (NBTE, 1989). Office Information Systems (OISs) is defined as a õdiverse set of technological tools and resources used to communicate, create, disseminate, store and manage information (Tesch, Murph & Crable, 2006). Brain and Stacey (2010), referred to office information systems as office automation systems (OASs) that combine various technologies to reduce the manual labour required in operating an efficient office environment and to increase productivity. Office information systems are technologies that include fax, voice mail, e-mail, scheduling software, word processing, desktop publishing, image processing, records management, and reprographics distribution, among others, which are useful at all levels in an organization. The component of office information systems according to Brain and Stacey (2010) are grouped into electronic publishing systems (EPS), electronic communication system (ECS), electronic collaboration systems (ECS), and image processing systems (IPS).

Electronic Publishing Systems (EPS), are groups of electronic printing and processing machines that are used in printing textbooks, journals, articles, newspaper among others. Brain and Stacey (2010), listed word processing, desktop publishing, copying or/reprographic among others

as the components of electronic publishing Systems. O∅Brien and Marakas (2010), agreed that EPS consists of the listed components and added that word processing packages computerize the creation of editing, revision and printing of documents.

Brain and Stacey (2010), stated that, electronic communication systems (ECSs) are cross functional information systems that enhance communication among the office workers. O∅Leary and O∅Leary,(2010) listed some skills in electronic communication systems as follows; video-conferencing skill, electronic mail skill (e-mail), and voice mail skill, among others. Video-conferencing skill is the use of communication technology to conduct real-time, face-to-face meeting between individuals physically located in different places. Brain and Stacey (2010), emphasized that electronic communication systems make it easy for people to conduct virtual meeting that does not entail physical travelling.

Electronic collaborative systems (ECSs) are office information systems that enable office workers such as manager, secretary, administrators among others, to communicate without necessarily coming together (Thill & Bove∅e2007). Brain and Stacey (2007), stated that electronic collaborative system is a software that allows multiple individuals to edit and make comments on a document without destroying the original content. They also pointed out varieties of skills necessary in the utilization

of electronic collaborative systems to including electronic meeting systems (EMS), electronic work systems (EWSs), teleconferencing, tele-commuting, among others. Brain and Stacey (2010), stated that electronic collaborative system unit makes it easy for individuals to communicate with his office while at home, which is known as telecommuting. Advertizing firms and other organizations need to rout proposals and other important documents to several individuals for comments before preparing the final version through communication technologies.

Oφrien and Marakas (2010), said that image processing systems unit (IPSs) involves capturing and processing image. They also stated that skills necessary for image processing systems involve electronic scanner skill, presentation graphics skill, and multimedia system among others. Image processing systems unit is also known as digital imaging software. The authors stated that image processing systems are often used by business organizations, educational institutions and individual alike to create websites, presentation of graphics, multimedia presentation, animation, and scanner, among others.

The office workers make use of office information systems components to carry out their office activities for faster and better output. Office workers in this study refers to employees who were employed to work in organizations, institutions, either as managers, secretaries,

accountants, clerks, and teachers among others. They may be employed in government offices, military offices, private offices to mention but a few. They are however responsible for productivity of any organization irrespective of where they are working and also specialized in knowledge and skills on work simplification, work measurement, work standards, records management, form design, electronic data processing etc. These office workers such as office assistant, office managers, information manager, and among others are usually graduates of tertiary institutions that offer business education (office option) and they are groomed by office education lecturers.

Office education lecturers in tertiary institutions are part of the business educators that specialize in office education and office functions. They are lecturers of business courses in tertiary institutions who are trained in both subject matter and pedagogy. They possess Bachelor's Degree in Business Education or related discipline as their initial or minimum entry qualification and subsequently Post graduate degree in education (PGDE), Masters Degree and Doctor of Philosophy (Ph.D) in the same discipline. This study, however, consider the working experience of office education lecturers to ascertain their contribution towards acquisition of office information systems skills. It is expected that Office education lecturers should possess the office information systems skills because they participate

in graduating students who may work as information managers, office managers, among others. Therefore, lecturersø skills in office information system skills are very essential towards preparing people who work in the new office technology system.

The choice of office education lecturers is necessitated by the fact that they teach office information systems courses and skills such as advanced word processing, advanced office information management and technology, which enable students to be employable in the world of work. Mayer (1997), defined an office education student as an executive assistant, who possesses a mastery of office skills, demonstrates the ability to assume responsibility with or without supervision, exercises initiative and judgment and make decision within the scope of assigned authority.

Office education however, is a component of business education that provides knowledge and skills that would equip students to become confidential secretaries, business managers, and office educators, among others, to perform efficiently and effectively in the world of work. National Board for Technical Education in Etonyeaku (2010), stated that office education is a course for training and preparing students to participate fully in a changing technological society. In this study, office education is used instead of secretarial education as it is called in other tertiary institutions.

Furthermore, this study considers school location in terms of urban or rural site of school structures. Operationally, the urban schools are characterized with distinct quality of human community by a special way of life which is characteristic of a city. On the other hand, rural environment is traditional and homogenous in terms of socio-economic cultural flux that characterizes the cosmopolitan urban environment. Possessing office information systems skills by office education lecturers may be as a result of the location of the tertiary institution. According to Njoku (1997), some lecturers lack zeal and interest to work in a poor environment. This might make lecturers with some office information systems skills reject posting into certain areas or locations.

An office information system is a course of study involving the development of skills overtime. It is not an end in itself, but lays a foundation for lifelong learning (Newhouse, 2002). The primary responsibility for teaching office information systems skills has been placed in business education programme, which often teaches business related applications such as spreadsheets, word processing, database, electronic voice and voice mail, videotext, image storage and retrieved, facsimile transmission, electronic calendaring and teleconferencing. That is to say that lecturer plays a vital role in helping students of all ages to develop their personal traits. The achievement of the objectives of introducing office

information systems skills (OISs) over the years is still not certain as many of the office education lecturers were not trained in office information systems (Njoku, 2000).

Ugwuanyi (2007), emphasized that office education lecturers should be retrained with office information systems facilities to enable them fit into the technological changing world. The question now is whether they were retrained? If they have retrained, to what extent do they possess the office information systems skills, knowledge and understanding that will enable them equip the students of office education with the manipulative skills of the systems. These skills will enable students of business education to fit in properly into any organization and perform office functions effectively.

In this context, skill, according to Obi (2005), is the ability to use one's knowledge effectively and readily in performing an act or habit in doing a particular thing completely without much supervision. Rogers (2001), defined skills acquisition from the point of the learner, as the process of obtaining knowledge of technical and practical nature from an individual, group or institution that can impart such knowledge. Hull in Obi (2005), asserted that skill is a manual dexterity acquired through repetitive performance of an operation.

Operationally, skill is the ability to do something well, usually gained through training or experience. For an office education lecturer, the

possession of office information systems skills are inevitable for them and impart same to the students by doing the actual practical manipulation of the office information systems.

Skills in office information systems (OISs) refer to those areas in the course that are concerned with the mode of doing things step by step. These steps and experiences proposed to be engaged by various lecturers are very important as they will enable the students to develop adequate manipulative skills for office information systems, and mastering which will consequently help them for better living in the society. Preparing students for employment and beyond in this technological age requires that the lecturers should be current and conversant with new technologies in their field of study (Johnson, Bartholomew and Miller, 2006). The lecturers may have the teaching skills but may not have office information systems skills therefore limiting them in teaching only theory aspect of office information systems.

This present study therefore, considers it necessary to determine the office information systems skills possessed by office education lecturers in tertiary institutions in Northeast States of Nigeria. These will enable the study ascertain whether the objectives of retraining business education lecturers towards acquisition of office information skills has been achieved or not.

Statement of the Problem

Reif and Morse as cited in Onyemelukwe (2011) stated that presently office information system (OISs) is one of the major courses for training office education students to participate fully in the world of work. One of the goals of Nigeria tertiary education is however, the acquisition of both physical and intellectual skills which will enable individuals to be employable and useful members of the society (NPE, 2004). Providing students with office information systems skills is effectively done in the classroom through repetitive demonstration by the lecturers. In so doing, the students get conversant with the skills and would be able to practice them after graduation. Chinasa (2000), acknowledged that skill, knowledge and experience are best acquired through physical practice when the researcher expressed "I forget when I hear, I remember when I see and understand when I doö.

Therefore, office information systems components being computer-based skills were not in place when many of the lecturers teaching office information systems courses were trained (Njoku, 2000). Many of the lecturers have not been retrained in these new skills. Some of them may not have the requisite skill to teach the students. Therefore, they may lack the intellectual capacity to train office education students on the required skills. Investigation has however shown that a few of them received additional

training, but to what extent has the additional training impacted on their teaching efficiency is a question this work intends to find out. Since office information systems components is a new components to the lecturers, they require retraining to be able to teach the course. Findings have shown that some of the tertiary institutions have the office information systems equipments that were not being put to use as a result of lack of skills by the lecturers. This study, therefore, seeks to determine the extent of the office information systems skills possessed by the office education lecturers in tertiary institutions in Northeast State of Nigeria.

Purpose of the Study

The major purpose of this study was to determine the office information systems skills possessed by office education lecturers in tertiary institutions in Northeast states of Nigeria.

Specifically, this study sought to determine:

1. electronic publishing systems skills possessed by office education lecturers in tertiary institutions.

2. electronic communication systems skills possessed by office education lecturers in tertiary institutions.

3. electronic collaborative systems skills possessed by office education lecturers in tertiary institutions.

4.   electronic image processing system skills possessed by office education lecturers in tertiary institution.

Significance of the Study

Those who would benefit from this study include office education lecturers, office information managers, institutions, curriculum developers, general readers interested in office information systems, employers of office education graduates, and researchers who would wish to carry out research on office information systems skills

The findings of this study would be beneficial to holders of Nigeria Certificate in Education (NCE), the Bachelor's Degree holders in Business education, and HND lecturers, as the study would unravel the office information systems skills possessed by office education lecturers.

The findings of the study would provide a guide to tertiary institutions administrators as they will provide office information systems to their schools and as such organize work-shops and seminar to their staff for upgrading of electronic skills. The findings of the study would also help the lecturers to understand the office information systems skills that will make them retain and remain in their job.

Furthermore, curriculum experts and programme developer will benefit from the findings of this study because it will assist the National Board for Technical Education (NABTE), National University Council

(NUC) and other concerned bodies in identifying areas which the current curriculum needs review with the respect to office information systems skills. The findings of the study would make the content of the office information systems comprehensive in order to meet the challenges of electronic offices.

The study would be of immense help to office education lecturers as they will identify office information systems component they possess highly, possessed, average possessed, possessed a little and not possessed, therefore motivating them to engage in retraining programmes.

Furthermore, the findings of this study would be important to employers as they would understand the worth of graduates who specialize in office education. Finally, this study would increase the scope of knowledge and be a reference material to other students and researchers who carry out studies on office information systems skills (OISs).

Research Questions

The following research questions were answered in the study:

1. What are the electronic publishing systems skills possessed by office education lecturers in tertiary institutions?

2. What are the electronic communication systems skills possessed by office education lecturers in tertiary institutions?

3. What are the electronic collaborative system skills possessed by office education lecturers in tertiary institutions?

4. What are the electronic images processing systems skills possessed by office education lecturers in tertiary institutions?

Hypotheses

The following null hypotheses were formulated to guide the study and were tested at 0.05 level of significance.

Ho_1: Location is not a significant source of difference in the mean ratings of office education lecturers in tertiary institutions on electronic publishing systems skills possessed by office education lecturers.

Ho_2: Educational qualification is not a significant source of difference in the mean ratings of office education lecturers in tertiary institutions on electronic communication systems skills possessed by office education lecturers.

Ho_3: Years of experience is not a significant source of difference in the ratings of office education lecturers in tertiary institutions on electronic collaborative system skills possessed by office education lecturers.

Scope of the Study

This study focused on the tertiary institutions in the Northeastern States of Nigeria. The study covered only 14 tertiary institutions that offer office education programme.

CHAPTER TWO

REVIEW OF LITERATURE

The review of relevant litereature to the study was carried out using journals, findings of previous research, internet and textbooks. Such a review would help place this work in the body of knowledge. The review of literature is done under the following sub-headings:

1. **Conceptual Framework**

   - Office

   - Office education

   - Office information systems

   - Electronic publishing systems

   - Electronic communication systems

   - Electronic collaborative systems

   - Electronic image processing systems

2. **Theoretical Framework**

   - Taxonomy of Educational Objectives

   - Theory of Communication and Information

3. **Related Empirical Studies**

4. **Summary of Reviewed Literature**

Office

An office is that part of a business that handles information. It is the central point of activity, which is dealing with operation, accounting, payroll, billing, and among others. It is in the office that series of functions such as personnel, locus of company policy, information hub, an image maker and clerical covering and a host of others take place. In particular, office work consists of activities such as word processing, document preparation, and filing, performing simple computations, checking of information, inter-office communication and external communication. Such process within the office is usually stimulated by the arrival of a request for service such as an order, a bill, a complaint, a message to order more materials (Thomas, 2006). An office is a location, usually a building or portion of a building, where an organization conducts its business. An organization can have just one office, known as home office or a main office and a variety of field offices or branch offices.

The computer scientists use a number of different models to describe office activity, such as a set of activities resulting from requests for service, each with a specific precedence. Each activity requires a supporting file system, people executing their procedures, communicating with and referencing a supporting file system, communication media with their corresponding communication, such as filled-form, a phone call, a copy of

an order, or a file system query for organizing and processing information (Cole, 2001). That is to say that an office is an information processing and transformation mechanism. Within the office, people communicate through gestures and informal communications, as well as through more formal channels. Office work have been affected by technological development since the days of industrial revolution, but the idea of an office information systems, is currently changing the traditionally accepted practices of office work.

All of these functions in offices are involved in some ways in the productivity of the organization. As the office environment is rapidly embracing new technologies, office information systems units are rapidly being introduced into the work place, thereby creating chances for new procedure and methods of work in an office organization.

An office can be organized traditionally so that many people would handle the same sheet of paper as it passes through the organization. This has led to fragmentation of responsibilities and lack of ignorance on how the overall system works. However, as the traditional office moves towards office information systems, managers, administrators and other office workers are being required to develop skills and competencies necessary for effective performance in today and tomorrow's office.

An office, however, is a requirement for any productive business organizations, it is the nerve centre of an organization. An office encompasses the official records, documents and the business papers of the organization (Okeke & Osuala, 2006). The authors, stated that office is any room where a particular kind of business transaction and service could be provided, for instance consulting, record keeping, clerical work, among others.

An office can be sited on local, regional or international basis. Office location is the establishment of offices in suitable sites in parts of towns, cities, regions or counties. The office accommodates varieties of office information systems and the human capital who manage and operate the systems. Okeke and Osuala (2006), stated that there are open and closed offices. Open office refers to a building or office where there is one common room demarcation. In an open office workers have freedom of interaction and exchange of working materials and other things. Closed office is a building or office that has demarcation either with door or ply wood. In a closed office, movement is not restricted as it gives room for office workers to move out and come in at any time of working hours. Office also refers to a building, or place where clerical duties are being carried out, for instance the use of internet for busienss contact, commuting among others.

The primary purpose of an office among others, according to Cole (2001), is to collect and process relevant information, data processing, electronic recording, and electronic capturing which are subsequently stored or dispatched to appropriate persons. Already the computer has made a significant contribution to the processing of much of the routine data generated by office staff.

Operationally, office involves building, or internet site which stands as a place of contact and human resources who perform the actual work in the office with office information systems. The imagination of many people has been captured by the concept of the office information systems. These office information systems make the office functions smoother and faster.

Office Education

Office education is a component of business education. Office education is a vocational education programme for office careers and as such equiping office graduates with necessary skills (Osuala 2004). These skills are acquired through a rigorous formal training in an institution of learning leading to employment and advancement in office occupation. Office education serves the dual role of equipping individuals, with the knowledge and skills needed to effectively participate in socio-economic activities. The goal of office education is to produce manpower with the requisite skills,

knowledge, right attitudes for harnessing and operating office automations to save time in order to achieve maximum productivity.

Operationally, office education is a programme of instruction that is concerned with training for the purpose of upskilling, updating, and career development. Office education, like any other form of vocational education, is an occupational programme tailored towards meeting the objectives of vocational business education and office education which include enabling youths to: have the skills and competencies required for the performance of basic business jobs, apply the various business concepts acquired in class in the real life situation, recognize and demonstrate their responsibilities and rights as consumers, acquire, recognize and play their roles as productive participants or members of the society especially in our free enterprise economy, improve personal qualities and attitudes necessary for adjustment to personal and other employment situations, guide individuals for suitable placement in business and office education.

Office Information Systems

Information is data that has been processed into meaningful form, such as news, reports, ideas or anything which can be communicated from one individual to another in different or the same location (Ajayi, 2006). Information can be seen as idea conceived in the human mind. In other words, information systems are systems that store, receive, and transmit data

while the manipulated and processed form of data is called information. Functionally, information is knowledge, instruction, communication, representation, and mental stimulus. Information system is the entire array of mechanical and electronic device, which aids in the storage, retrieval, communication, and management of information. It therefore provides the engine used to devise useful information systems.

A system, on the other hand, is a group of things or parts working together in a regular relation. It is an ordered set of ideas, theories, and principles among others. It is an organized assembly of resources and procedures united and regulated by interaction or interdependence to accomplish a set of specific functions. Brien and Stacey (2007), defines systems as combinations of two or more interrelated equipment, arranged in a functional package to perform an operational function or to satisfy a requirement. In other words, a system is said to be a set of interrelated components, with a clearly defined boundary, working to achieve a common set of objective.

Office information systems (OISs) are the same as office automation systems (OASs). Office information Systems combine various technologies to reduce the manual labour required in operating an efficcient office environment and to increase productivity. Adesina (2002), posited that it is a complex thing today to secure professional jobs without demonstration of

relevant office information systems skills. Koko (2001), also asserted that on no account should staff without an up-to-date knowledge of office information systems skills be allowed to practise on trial and error basis. It is little wonder that employees in industries, ministries, educational institutions among others, without office information systems skills and knowleddge feel scared or threatened by retrenchement or unemployment. Office Information Systems technologies, according to Brain and Stacey (2010), include fax, voice mail, scheduling software, word processing, and desktop publishing, among others.

The backbones of OISs are a network-local Area network (LAN), internet, extranet- that connects everything. All office functions, such as dictation, typing, filing, copying, fax, microfilm, and records managemnt, telephone calls and switchboard operations are canditates for integration to the network (Brain & Stacey 2010). Office Information Systems (OISs) are designed primarily to support data workers. They focus on managing documents, communicating and scheduling. Office Information Systems (OISs) collect, process, store, and transmit information in the form of electrionic office communication (Agomuo, 2005). Agomuo stated that enhancing Office Electronic Systems relies on text processing, telecommunications and other information system technologies for office communications and its prodcutivity. Nwosu, (2000), reported that office

information systems are the merger of technology, paper, procedures and data used in word processing, data processing, telecommunications, reprographics, micrographics and computing. Olson and White (1980), stressed that office information systems involve the use of integrated computer and communications systems to support administrative procedures in an office environment.

OøBrien (2003), stated that Office Information Systems (OISs) represent structured methods of handling business text processing and communications, through an integrated network that may include word processing for generating correspondence, electronic message systems for person-to-person communication, teleconferencing services, facsimile transimission, electronic filing systems, on-line-calender systems, and links to corporate files and outside service. OøBrien (2003), also emphasized that in office information systems, not only will office work be perfomed more efficiently, but the concept of office work itself will not be altered.

The greatest potential of office information system is not expected to be from the improvement of clerical and administrative tasks, but from the ability of managers to gain increased control over their operation. Bair (2008), said that a number of specific office activities could be streamlined through automation even without a major re-organization of office functions. Bair (2008),also noted that activities associated with the preparation of

correspondence addresing, copying, formatting, distributing information, among others can be handled more efficiently especially, if word processing is integrated into communication network.

Garon (2001), reported that office information systems could be designed to either enhance or decrease the perceived status and job satisfaction of employees. Garon further said that the automated systems are themselves basically neutral. Their implementation provides the opportunity to consider perceived status and job satisfaction in the redesign of the tasks they are to support. Agha (1990), asserts that office information systems present a uniform medium in which to represent the objects in an office, thus permitting the automation or partial automation of routine activities and providing the advantage of increased speed communication.

Office Information Systems (OISs) according to Hewitt (2000), could be modelled as encompassing three domains: passive office objective, office procedures and office tasks. Hewitt also explained that office objectives are primitive office elements; examples are documents, files, printers, etc. Hence, office object provide metaphors that may represeent their actual counterparts in the physical office. Office procedures are routine sequences of operations that are used to manipulate office objects. Finally office tasks are goal directed and cannot necessarily be encoded to a precise procedure to be followed (Hewitt, 2000).

Office Information Systems as a course in the tertiary institutions was specifically designed to prepare students to participate fully in a global technological society (NBTE, 1989). Nwosu in Ugwuanyi (2007), stated that the aim of the implementation of office information systems as a course in Nigeria tertiary institutions will only be achieved if the office inforamtion system equipment is available in the tertiary instituions and the teachers retrained to handle the equipment and to avail themselves of any new innovations. Teaching office information systems skills in the tertiary institutions is very important; however there are some factors that might constitute barriers to the effective implementation of OIS. They include: irregular funding for software or skilled staff at its preparatory, inadequate technical backup, in-service training from administrators (bosses), lack of interest in new technologies especially on the part of senior lecturers of business education department, and gross resistance to change on the part of Nigeria lecturers. Since õnoö traveler can be expected to return from a journey he has not been to, no teacher can be expected to effectively lecture what he/she does not know at the mastery level, which means you cannot give what you do not have.

The components of Office Information Systems according to Brain and Stacey (2010), is grouped into four electronic publishing systems, electronic communication systems, electronic collaborative systems, and

image processing systems (IPS). Afolabi, Adedapo & Adeyanju (2005), opined that office information systems skills offer opportunities for students and teachers to gain recognition in offices where they lack office information system personnel.

Electronic publishing systems are groups of electronic printing and processing machines. OØBrien and Maraka (2010), listed word processing, desktop publishing, copying or/reprographics among others as the components of electronic publishing systems. The authors emphasized that word processing packages comprise the creation of editing, revising and printing of document, while the desktop publishing software can be used by end users and organizations to produce their own printed materials. OØLeary and OØLeary (2010), pointed out that the family of electronic publishing systems are inevitable in the present day office organization.

OØBrien and Marakas (2010), stated that electronic communication systems (ECSs) are cross functional information systems that enhance communication among the office workers. The skills in electronic communication systems include videoconferencing, electronic mail (e-mail), and voice mail, among others (OØLeary & OØLeary 2010). Videoconferencing is the use of communication technology to conduct real-time, face-to-face meeting between individuals physically located in different places. Brain and Stacey (2010), emphasized that electronic

communication systems make it easy for people to conduct virtual meeting that doesnøt entail physical travel. They also said that e-mail is the process of exchanging messages between computers over a network, usually through the internet.

Electronic collaboration systems are office information systems that enable office workers such as manager, secretary, administrators, among others to communicate without necessarily coming together one on one (Thill & Boveǿé , 2007). Brain and Stacey (2007), stated that electronic collaboration systems are software that allow multiple individual to edit and make comments in a document without destroying the original content. Deborah and Charles (2007), stated that the systems allow multiple contribution and edition of comments on a document without deleting or destroying the contents. The authors also pointed out varieties of skill necessary in the utilization of electronic collaborative systems including electronic meeting system (EMS), electronic work systems (ECSs) teleconferencing, telecommuting, among others. Brain and Stacey (2007), emphasized that electronic collaboration systems make it easy for an individual to communicate with his/her office while at home, which is known as telecommuting Advertising firms and other organizations need to rout proposals, and other important documents to several individuals for

comments before preparing the final version through communication technologies.

Image processing systems (IPS), according to OøBrien and Marakas (2010) involve capturing and processing images. They also said that skills necessary for image processing systems involve electronic scanner, presentation graphics, and multimedia system, among others. Image processing software is also known as digital imaging software that is used to create or modify images (Brain and Stacey 2007). Image processing systems are commonly distinguished by whether they are primarily oriented towards painting, drawing, or image editing. OøBrien and Marakas (2010) stated that image processing systems are often used by business organizations, educational institutions and individuals alike to create web sites, and for presentation of graphics, multimedia presentation, animation, scanner, among others. Office organizations use image processing software in converting numeric data into graphic display such as line charts, bar graphs, pie charts, among other types of graphics. Image processing systems skill is inevitable in todayøs electronic office.

From all the explanations above, office information systems were considered most appropriate for achieving maximum productivity in todayøs offices. Specifically it is seen useful in office information management and dissemination of information

Electronic Publishing Systems Skills

Electronic publishing system is a group of electronic printing and processing machines such as word processing, desktop publishing, photocopying among other forms of the sub-component of electronic publishing systems (Brain & Stacey, 2010). An electronic publishing system such as word processor saves and stores files. Nkukidem (2000), asserted that electronic publishing systems are special purpose computers designed for and solely devoted to the preparation, storage and printing of documents. Adejumo (2000), stated that word processors is one among the electronic publishing systems which is used to set up and prepare reports, letters, mailing labels, and other materials on a computer using a keyboard and word processing software. In other words, office education lecturers should possess the word processing skills in order to enable them thoroughly train and equip the students with skills and knowledge of the computer technologies.

Thomas (2006), however emphasized that teachers need word processing skills to equip tomorrow's employees with the requisite skills, competence and knowledge to use information communication technology (ICT) within and outside the work environment. In using electronic publishing systems, teachers need to be competent in the use of a variety of software, particularly software that have specific applications in various

disciplines, for instance desktop publishing, photocopying, among others. Brain and Stacey (2010), stated that electronic publishing system skills enable office workers to work through a document and delete, insert and replace text, edit activities and also additional features as creating, formatting, printing and saving of document without much stress.

Similarly, Oliver and Chapman (2006), listed some skills required in electronic publishing systems for organizational productivity as creating a new document, opening an existing document, formatting a document, changing fonts, spelling check, inserting text, inserting page numbers, adding headers or footers, printing, inserting images, creating table, changing margins, changing page set up, using columns and sections and proof reading, setting up styles and using mail merge. Similarly, Ojukwu and Ojukwu cited in Ugwuanyi (2007), outlined some skills necessary in operating some components of electronic publishing systems as knowledge of word processing hardware and software, personnel and procedures, desktop publishing, inserting paper. Therefore electronic publishing systems skills proficiency is not an end in itself, but lays a foundation for lifelong learning. These skills become building blocks with which to meet the challenges of personal and professional life.

To become proficient in electronic publishing, the lecturers of office education must develop the skills overtime, through integrated activities in

all content areas (Yusuf & Onasanya, 2006). Electronic publishing system software core technical capabilities were taken from text editors, used to manipulate programmes code on time sharing computer systems, it also draws on techniques in a number of broader, longer, established fields in which computers were used to store, retrieve, index and format textural information (Ozda, 2007).

Babu (2000), asserted that reprographic is one among the electronic publishing systems used to identify the field of information processing system which is concerned with technologies and equipment for the reproduction of document. Babu also stated that reprographic can be considered as a specialized facet of publishing system. That term is usually applied to copying and duplicating equipment which makes paper copies at or near full size. While computer remains the nucleus of office information system, copiers and duplicators are historically the most important category of automated equipment in office application. Hampshire (2001), pointed out that reprographic is that components of electronic publishing systems which is concerned with making use of microforms. Therefore, teachers must have the knowledge and skills to use the new digital tools and resources to help students achieve high academic standards. Osuala (1989), emphasized that the job of any business education lecturer is to prepare students of business education (office) as effective office workers and wise

consumers. Kooganumath and Patel (1999), stated that electronic publishing systems provide effective output for both the active and inactive stage of the document life cycle. Bakrker (1990), highlighted the skills for reprographic system as ability to create photographic reproduction, reduce the size from the original size, refill the ink, adjust the margin among other things

Oliver and Chapman (2006), outlined some important skills accorded to reprographic processing systems as follows: ability to maintain records, prepare and submit clear concise reports both orally and in writing, ability to prepare promotional materials and to successfully market the printing center services both within the office and to outside customers, ability to establish and maintain effective working relationships with departmental officials and other employees. Harson (2000), stated that the skills, knowledge and ability are important in operating the electronic publishing systems. Harson, also stated that the knowledge of printing practices and procedures include graphic arts, phototypesetting, design and layout publications.

Desktop publishing programs is one of the components of electronic publishing systems, according to OøLeary and OøLeary (2011), that allows the user to mix text and graphics to create publications of professional quality and the publishers focus on page design, layout and also provide greater flexibility. OLeary and OLeary (2011), also stated that professional graphic artist use desktop publishing programs to create documents such as

brochures, newsletters, newspapers and textbooks. Desktop publishing programs include Adobe In-Design, Microsoft Publisher, and QuarkXPress. These programs provide the capability to create text and graphics. Brain and Stacey (2007), stated that graphic artists import some elements from other sources, such as word processors, digital cameras, scanners, image editors, illustration programs and image galleries. The image galleries are libraries of electronic images and images are used for wide varieties of applications from illustrating textbooks to providing visual interest to presentations (Brain & Stacey 2007). O¢Leary and OLeary (2011), listed some features of desktop publishing as follows: mix of text with graphics, desktop publishing which allows the user to precisely manage and merge text with graphics, use of files from other programs is not usually efficient to drawing and painting DTP software. As a rule, text is composed on word processor, artwork is created with drawing and painting software, and photograph are input using scanner and then modified and stored using image editing software (Tesch, Murphy and Crable 2006). Not everyone can be successful at desktop publishing, because many complex layouts require experience, skill and knowledge of graphic design. These are more reasons why lecturers of business education should try to possess electronic publishing system skills to transfer it to the business education students.

Hampshire (2001), opined that electronic publishing systems skills made a big impact on the document delivery system. Hampshire also stated that most organizations have some of the electronic publishing systems; such that, equipping office education students with electronic processing skills is very necessary because they will meet some of the machines at their place of work after their graduation and will be a disappointment to their employers if they fail to deliver as expected. This also will be a discredit to the institutions that graduated them.

Hampshire (2001), emphasized that word processing is useful in the following ways: software allows the user to use computer to create, edit, format, print and store text material, and other things. Word processing software allows the users to work through a document, delete, insert, and replace text. The best known word processing program is Microsoft Word, but there are others such as Corel WordPerfect, Apple pages and writer. It also offers such additional features such as creating, formatting, printing and saving

Electronic Communication Systems Skills

Electronic communication Systems (ECS) are cross functional information systems that enhance communication among the office workers (Brain and Stacey 2010). OLeary and OLeary (2011), stated that skills necessary in teaching electronic communication systems include

videoconference, electronic mail (e-mail), voice mail (v-mail), Fax skills etc. Videoconferencing skill is necessary because it is a communication technology used to conduct real time, face to face meeting between officials in the same organization at different organizational locations. Brain and Stacey (2007), emphasized that electronic communication systems skills make it easy for people to conduct vitual meeting that does not involve physical travelling. Videoconference skill enables employees to conduct more than 300 meeting every month at their firms in Cansas City, Missouri headquarters (OøBrien & Marakas, 2011). In other words, it is a more meaningful way to conduct meetings than over the phone. Videoconferencing combines audio communication with live video, allowing team members to see each other, demonstrate products, and transmit other visual information. Bovee and Thill (2010), pointed out that videoconferencing can take place using personal computer (PC) based systems over the world wide web (www) or through dedicated network with specially built up rooms. Bovee and Thill (2010), also stated that electronic communication systems skills are required in almost all moderrn offices.

Videoconferencing is one of the electronic communication systems through which people in different locations can have a meeting and as such see and hear one another by using computers and communications gargets. Brain and Stacey (2010), stated that videoconferencing systems range from

videophones to group conference room with carmeras and multimedia equipment, to desktop systems, with small video cameras, microphones, and speakers. Brain and Stacey also emphasized that there are several ways in which people can conduct virtual meetings that do not entail physical travel, namely: audioconferencing, videoconferencing using closed-cirucit television, videoconferencing using a webcam. videoconferenicng using PC video cameras, videoconferencing using viedophone and web conferencing.

Bovee and Thil (20l0), stated that audioconferencing is simply telephone conferencing, that users don¢t need any special equipment beyond a standard telephone videoconferencing using closed-circuirt. They also stated that videoconferencing using a webcam is a tiny, often eyeball-shaped camera that sits on top of a computer monitor and displays its output on a web page. According to Bovee and Thill, videoconferencing skills are important especially the ones using personal computer (PC) videocameras because they involve people making video telephone calls over the internet, with both parties being able to see each other as they talk. The authors also stated that videoconferencing using videophones don¢t involve the use of a personal computer (PC), although the calls take place on the internet. Web conferencing allows two or more people on a network to share information, collaborating on graphics, slides and spreadsheets while linked by computer and telephone. In other words, videoconferencing skills among the elctronic

communication systems promote interaction and meetings of organizations. These skills should be taught by office education teachers to business education studentw(office education majors.

Electronic mail (e-mail) is one of the electronic communication systems components. Agomuo (2005), defined electronic mail (e-mail) as a form of information interchange in which messages are sent from one personal computer to another. Bansal (2008), stated that e-mail is the electronic equivalent of postal mail and it is one of the most widely used features of the internet. In other words, millions of e-mail messages are sent everyday all over the world. Its skill is essential in office for easy tranfer or exchange of ideas. An e-mail message is sent from one internet based computer to another, until it reaches its address. Deborah and Charles (2007), opined that contacting people through the internet needs skill and knowledge and that an e-mail address consists of username, that is an identifying name, followed by the symbol, the domain name for the computer that will be handling that personøs e-mail called a mail server. For instance vivianpaul11@yahoo.com, emmanuelajesus@hot.com, to mention but a few. Obrien and Maraka (2011), emphasied that most e-mail softeware skill like Miscrosoft Outlook Express, Windows Mail can route messages to multiple end users based on predefined mailing lists and provided password security, automatic messaage forwarding and remote user access.

Bansal (2009), opined that e-mail software may automatically filter and sort incoming messages even news items online, and route them to appropriate user mailboxes and folders. E-mail skills enable individuals to send and receive text messaages between personal computers (PCs) over telecommunications network. That is to say, e-mail skill can include data files, software, and multimedia messages and documents as attachments. Bovee and Thill (2010), highlighted the following as some of the e-mail skills: understanding the general structure of an e-mail address, interpreting features of an inbox (for example Owner, date, subject, size), interpreting features of a new message (for example To, Cc, Subject), interpreting features of a retrieved message (for instance, From, Date sent, Reply), forward, retrieves and replies to an email, forwards an e-mail, and send an attachment with an e-mail

Bensasl (2009), stated that the routing computer (servers) also act as mail boxes and store messages until it is convenent for the person to access them. The e-mail skills enable the office worker to list mail received and sent, read or delete an item from the list of document received, print or save a document as a file, automatically attach signatures at the end of letters, send replies with portions of the original message in reply, forward mail by simply re-addressing it, attach other files to mail and send a document to any number of persons at once (Obrien & Marakas, 2011).

Voice mail is also known as voice message or voice back. It is a computer based- system that allows users and subscribers to exchange personal voice messages, to select and deliver voice informations and to process transaction relating to individuals, organizations, products, services, using an ordinay telephone. Adesina (2002), asserted that voice mail is used more broadly to denote any system for conveying a stored telecommunications voice message, including using an answering machine. Voice mail systems are designed to convey a callers recorded audio message to a recipient and it functions as a remote answering machine (Iyekowa & Obueh 2005). In order words, voice mail is an electronic communication system in which spoken messages are recorded or digitized for later playback to the intended recipient. OøBrien and Marakas (2011), stated that voice mail is a message that a caller leaves when the person called is absent or is taken up with another conversation. They emphasized that voice mail feature acts in a way similar to the old answering machine, but with the main difference that instead of the voice message being stored on your answering machine, it is stored on the service provider server, in a space reserved for the user called a mailbox.

Baran (2009), asserted that voice mail skills allow people to receive and leave messages by executing the appropriate command in the e-mail system. Baran also emphasized that business firms purchased a voice mail

system or rented a voice mail box from a chosen service provider because of its significance in electronic office. O'Brien and Marakas (2011), stated that the benefit of voice mail service is a veritable boom; if you are always or unable to physically answer the call at any point in time, a message can be left so that the purpose of communication is achieved and the follow-up work can continue unhindered. Voice mail skill can be extremely helpful during busy office hours, as you might be stuck in a meeting when an important message is received. The message can be received without inconveniencing or frustrating the caller, saving pervious time for both the caller and called. The main skills necessary in voice mail include recording, storing, playback, and print, among others.

Facsimile, which is also known as "fax," is the transmission of graphic communications from one location to another. A facsimile machine is both a scanner and a recorder. The image to be copied is scanned ("read") at one location, converted to an electronic signal, and sent to a machine at another location where the signal is translated into an image and recorded. Sometimes known as telecopy's, these machines are a form of electronic mail because the machines can be in the same building or in different hemispheres of the world (Brain & Stacey 2007).

Electronic Collaboration Systems Skills

Electronic collaborative systems (ECS) are one of the components of office information systems that enable office workers such as managers, secretaries, administrators, among others to communicate with each other without necessarily coming together one on one (Thill & Bovee 2007). Brain and Stacey (2010), emphasized that electronic collaboration systems is a software that allows multiple individuals to edit and make comments in a document without destroying the original content. In other words, it allows many people contribute their idea without stress. Deborah and Charles (2007), pointed out varieties of skills in electronic systems as: electronic meeting system (EMS), electronic work system (EWS), teleconferencing, and telecommuting, and among others. Brain and Stacey (2010), emphasized that electronic collaborative systems skills make it easy for individuals to communicate with these offices while at home, which is known as telecommuting, advertising firms and other organizations need to rout proposals and other important documents to several individuals for comments before preparing the final version through communication.

Operationally, telecommuting simply means working at home and keeping in touch with others in the workforce using telecommunications. In other words, this skill is necessary to be taught to business education students especially those majoring in office education, because such

information systems are what they will meet in the modern offices because working from home via computer and modem, is a major trend in today's business organizations. Telecommuting skill if acquired, according to Brain and Stacey (2010), can be a cost saver for employers. For instance, some offices used to have surplus office space, maintain more offices for their employees. According to Obrien and Marakas (2010), one researcher in, 2007 recorded that 4.2 million Americans were working exclusively from home, while 20 million were doing it part time.

Telecommuting is the most revolutionary effect of computers and the increased use of the internet and intranets. Therefore, using computers linked to the company's network, employees working at home can transmit their work to the office and get back response from their subordinates. Telecommuting skills involve less travel time and fewer costs resulting in often increased productivity. Telecommuting skills help companies and organizations to save money by allowing them to retain valuable employees during long pregnancy leaves or to tempt experienced employees out of retirement. Companies can also enjoy saving commercial costs, since having fewer employees in the office means that a company can get a smaller and therefore spend less in office workers than before.

Telecommuting skills enable men and women to stay at home with small children as they carry out their official work without stress and is a

tremendous boon for disabled workers. Telecommuting according to Nickels, McHugh, McHugh (1995), is most successful among people who are self-starters, who don¢t have home distractions and whose work doesn¢t require face-to-face interaction with co-workers. Dymock and Hobson (2002), emphasized some benefits of telecommuting as reducing traffic congestions, energy consumption, and air pollution. It increases productivity because telecommuters may experience fewer distractions at home than in the office and can work flexible hours, absenteeism may be reduced, teamwork improved, and the labor pool expanded because hard-to-get employees don¢t have to uproot themselves from where they want to live, costs for office space, parking insurance and other overhead cost are also reduced.

The word 'tele¢ means distance. The word =conference¢ means consultations and discussions. Through teleconferencing two or more locations situated at a distance are connected so that they can hear or both see and hear each other. It allows the distant sites to interact with each other and with the teaching end through phone, fax, and e-mail. The interactions occur in real time. This means that the learners, participants and the resource persons are present at the same time in different locations and are able to communicate with each other. In some situations, questions can be faxed/e-mailed early for response by the resource persons. The communication in

teleconferencing, according to Baker (2000), is both vertical and horizontal, and the emphasis is on interaction at all levels. Meaningful interaction in real time is the strength of teleconferencing, and this sets it apart from other technologies used in education. The one-way limitation of educational broadcasting is overcome through the technology configuration. The functions of teleconferencing in education and training according to Anderson (1999), are impartation of information, building of attitudes, and provision of role models, upgrading skills sharing experiences, facilitating problem solving, offering counseling, and supervising project work, among others.

Teleconference is a telephone meeting among two or more participants involving technologies more sophisticated than a simple two-way phone connection. It can be an audio conference with one or both ends of the conference sharing a speaker's phone. Teleconference allows the distant sites to interact with each other and the teaching end through phone, fax and e-mail. Ojukwu cited in Ugwuanyi (2007), emphasized that telecommunication skills include skill to manage mail services, skill to fax messages, skill to operate the technology facilities, skill to send and receive messages through computer networks, skill to send and receive correspondence by telex, telephone, mobile phone among others. For a business education student to be effective and eligible to the collaboration

system skills the teachers should teach the students with current office technologies. Teleconferencing emerges as an appropriate technology for reaching varied clientele groups in diverse settings. With the advancement in communication technologies and reduction of costs, various organizations are opting for this technology in their education and training programmes.

Dymock and Hobson (2002), emphasized that the benefit of teleconferencing are many, just as they are with web conferencing which includes: helping business organization to save money on travelling expenses and at the same time increasing the productivity of business by providing companies with the ability to communicate via telecommunication methods, allowing business organizations to hold meetings over long distances, conducting business briefings, employee training sessions, workshops, seminars, lectures and many more among participant who might otherwise be difficult to gather together in one place at the same time. Information exchange is made easier and faster during business meetings between offices, employees or from one business location to another, it comes in many varieties so that one can choose best that can meet need of the users to communicate through instant messaging systems and privately designed chat rooms during discussions, meetings, planning of projects, among others.

Electronic Image Processing Systems Skills

An image is an array of picture elements. Image can be defined as a two-dimensional signal that is analog or digital that contain intensity (grays cable) or color information arranged along an x and y spatial axis. Image processing system is a technique in which the data from an image are digitized and various mathematical operations applied to the data, generally with a digital computer, one can create an enhanced image that is more useful or pleasing to a human observer or to perform the interpretation tasks usually by human (Bovee & Thill 2010). Image processing involves processing or altering an existing image in a desired manner. This is much easier today than five years back. The Internet and other sources provide countless images in standard formats. An image consists of a two-dimensional array of numbers. The color or gray shade displayed for a given picture element (pixel) depends on the number stored in the array for that pixel.

OøBrien (2003) stated some of the image processing systems skills as follows; using freehand drawing tools-pencil, straight and curved lines, using shape tools/objects, using paintbrush, paint box/fill with color, spray can/airbrush, eraser. Using text tool, Selects objects with selection tool. Brain and Stancy (2010), explained that image processing systems skills enable the office workers especially those in image designing to capture and

process images in different portraits. Dymock and Hobson (2002), also outlined some important skills needed in image processing systems unit as skill to delete selected objects, crops selected objects, copies/duplicates graphic elements, and using line properties such as thickness/color. Using Flips, rotates objects, layers objects moves front/back to mention but a few are also some image processing skills. On the other hand multi-media system is the field concerned with the computer, controlled integration of text, graphics, drawings, still and moving images (video), animation, audio and any other media where every type of information can be represented, stored, transmitted and processed digitally (Stevenson, 2000).

The most complex type of image is color (Brain and Stancy, 2010). Color images are similar to gray scale except that there are three bands, or channels, corresponding to the colors red, green, and blue. Thus, each pixel has three values associated with it. According to Brain and Stancy (2010), there are three main color, red, green and blue. A color scanner uses red, green, and blue alters to produce those values. Images are available via the internet, scanners, and digital cameras. Any picture shown on the internet can be downloaded by pressing the right mouse button when the pointer is on the image. Digital cameras have come out of the research lab and into consumer electronics. These cameras store images directly to floppy disk. Viewing and printing images like photographs is easier today than ever in

the past. Discretion is the better part of valor, so I opted out of writing, viewing and printing programs for the Windows environment.

The fundamentals of Image processing include transformations such as gray scale and negative conversion, filtering, enhancement, histogram equalization, histogram matching, and thresh folding. These and additional operations can be performed in Image lab, having in most cases a rich set of parameters for customization.

The following image processing commands are provided: Basic operations (resize, magnify, rotate, and translate), color handling (negative, gray scale, color enhancement, color reassignment, color model), Histogram techniques (image histogram, histogram equalization, and histogram matching),

Image processing system skills enable office administrators, managers, secretaries among others to create a simple slide, show text images, inserts slides, choose appropriate slide design and layout, add sounds, create a master slide template, understand that a presentation is clear, concise and logical, understands navigation buttons/hyperlink, recognize elements of a multi-media presentation, among others (Sage & Unser, 2003). To provide relevant job skills to office education students, it is necessary for educators to seek the valuable skills from business and industry so that their graduates will not be boarden to the nation due to lack

of employment as a result of not acquiring irrelevant job skills. The teacher stands as a model for problem solving, therefore they should demonstrate their thought and response to students mistakes.

Theoretical Framework

- ## Taxonomy of Educational Objectives by Bloom (1956)

Hanley (2007) in an online article asserted that technology in education is a sophisticated, dynamic and an evolving discipline which understanding all its facets takes time, effort and reflection. Hanley continues that going back to the fundamentals of education, when we talk about learning, we can say that we're discussing ways to acquire new skills, knowledge or expertise in some shape or form. The researcher was looking at the skills possessed by individual lecturers on office information systems.

Bloom (1956) developed means of evaluating a learner's current knowledge or skill assets, and creating content accordingly to enhance and develop their current cognitive abilities. This Bloom theory is known as the taxonomy of educational objectives. Bloom identified three domains of the objectives which are cognitive: mental skills (knowledge), affective: growth in feelings or emotional areas (attitude) and psychomotor: manual or physical skills (skills). The psychomotor domain of educational objectives proposed by Bloom becomes the theoretical framework of this work.

Classification of Psychomotor Domain

Several approaches to the classification of psychomotor domain exist, Garba, (1994). However, there appear to be a general consensus or point of focus, which appears to be more acceptable among most of the psychomotor theorists. The psychomotor domain was first developed by Gildferd (Okoro, 1991). Since then, several other models have been developed and published. From the available literature on skill development, almost every writer dealing with this psychomotor has proffered some kind of classification model or the other, ranging from nominal categories of taxonomy. It is worth noting here that, despite the numerous models in this domain, each one was developed for a particular discipline of study or subject area, as such can only serve for learning experience in that particular discipline.

Padelford (1983), observed that with few notable exceptions, little effort has been made to develop a model of psychomotor domain which is applicable to all disciplines. Similary, Turto (1984), also indicated that the preparation of psychomotor component varies widely from subject to subject thus a particular model may not be applicable to the psychomotor components, which are only identifiable in such specific learning activities. Perhaps, the inability to develop, an interdisciplinary psychomotor model have been caused by the difficulty of representing the psychomotor domain concepts from the practice of developing the composite skills (Bukar, 1994).

Skills acquisition and development are learning activities that involve not only psychomotor domain but also the cognitive, affective and the perceptual domain. It will appear naïve and inconsequential if a model fails to address these factors of skill development in office education component of business education.

Some of the general classifications of models of the psychomotor domain that have been proposed are: Simpsons model, Seymourøs model, Fits and posersø model, Cattyøs model, , Harrows model, and Ezewu model.

These models are based on the learning sequence typically required for acquiring a skill and those which have been hierarchically arranged on a continuum of psychomotor.

Crafty (1973) suggested four categories made up of:

(i)   simple movement (ii) compound tasks (iii) complex movement and (iv)   skills families. These categories according to Igbo (1997) are comparable to Seymours classification. They are related to the complexity of the tasks rather than to the process involved in learning each task. This model however, is broad and emphasizes the development of skills from simple to complex ones, in which case is considered suitable for use in the skills acquisition.

Fitts and Posner (1966), recognize only two major categories of physical skills. They include: (1) language and (2) Perceptual motor skills.

The perceptual motor skill was further divided into (i) gross bodily skills (ii) manipulative skills and (iii) perceptual skills.

The three classes of Fitts and Posner are interrelated. For example, a student must perceive and have control on some office information system machines before he can use it and bodily skills are necessary if manipulative skills are to be used. This classification has some relationship to this study because the task and skills developed ranges from gross bodily movement to fine coordinated perceptual abilities. This classification however, has its limitations in applying to this study, because it does not present the levels in a hierarchical order.

Harrows (1972) taxonomy of psychomotor domains recognizes six categories levels of the objectives. Each category is further sub-divided into sub-levels but the researcher will not explain them vividly because the model is wide and have no indebt relation with this study These are: (1) Reflex movements:- the reflex movement are involuntary. They may be referred to as instinctive or natural, or innate movements which are performed at birth (2) Basic fundamental movement: these are described by Harrow (1972) as inherent movement patterns that form the basis for specialized complex skill movement (3). Perceptual abilities: these related to the ability of individuals to perceive and distinguish things though the senses. (4). Physical abilities: physical ability embraces endurance, strength,

flexibility and agility.   These categories embodied the essential elements necessary for the development of psychomotor skills.   (5). skilled movement: such movements involve combination of various types of physical abilities needed in making or creating things. The tasks performed in the skilled movements are based on the basic fundamental movements are adopted and refined to achieve proficiency, for instance, skilled movement in setting up and operating machines successfully. (6) non- discursive communication: this is the highest level of psychomotor behavior in Harrows classification.   At this level, the behaviours are known as movement communication. Such behaviors are both innate and learnt. This model did not have good relationship with the study because the steps involve.

Ezewu (1985) developed the taxonomy of psycho-productive domain for use purposely in the field of vocational and technical education. The domain is categorized into three levels:

Levels   **Direction**

1.   Low level   understanding of terminology, scope of job or task,

                              Job specification, instruments and materials.

2.   Middle level   Task Identification; identifies of tasks in a job

                              and breaks jobs into tasks, take element

                              specification, identification task elements,

breaking task into element, and selecting

appropriate materials and instruments

3.   High level   Execution: willingness to execute, handle

instrument and materials, proper execution with

required speed, execution according to

specifications, co-operate with others,

perseverance

The psychomotor productive domain model would be suitable for evaluation purposes in vocational business education.   Ezewu rightly observed that the nature of vocational business education which involves instruction in both theory and practice has many components, these components, (theories) serves as the basis for the learning of the practical. Thus in Ezewus model, the theory is placed at lower level whereas the practical is placed at the higher level of the understanding of the subject. Again, in business education behavioural changes are so patterned into sequential or logical order that, before the learner gets the understanding of the higher level operations he must have learnt the basic steps or the elementary principles. This model encompasses all the taxonomies and hence involves the three aspects of skills. The model has taken care of the observation made by Padelford ((1983), that skill acquisition and development are learning activities that involve not just the psychomotor but

the affective and cognitive domain as well. Ezewu model has been considered (Garba, 1993), as a panacea in the effort to provide a means of evaluating the psychomotor outcome among students in vocational and technical education (business education). This is to say that, its applicability and usability can only be determined through practice by curriculum planners and teachers in the related fields. Ezewus model has been tried by Garba (1994), in developing evaluation instrument for practical project in technical education and according to him has been found worthwhile.

Theory indicates that learning cannot occur in the absence of information and learning may be hindered if too much information is presented to the learner. However there is a limit to the amount of information that is interpretable to the learner, which is assumed to be governed by the individuals skill level. Furthermore depending on the skill level of the individual, an increase in task difficulty would be associated with decreased performance expectations, but there would also be an increase in the amount of available information (Guadagnoli & Lee, 2004). This model related to this present study because learning starts from simple to complex and as such continues to develop.

Simpson (1972) developed seven steps model of Psychomotor which emphasizes that skill learning is demonstrated by physical skills: coordination, dexterity, manipulation, grace, strength, speed; actions which

demonstrate the fine motor skills such as use of precision instruments or tools, or actions which evidence gross motor skills such as the use of the fingers or hands in performance. These steps are given detail discussion and examples because this study is built on the model. These include:

Perception: The ability to use sensory cues to guide motor activity. This ranges from sensory stimulation, through cue selection, to translation, chooses, describes, detects, differentiates, distinguishes, identifies, isolates, relates, selects, separates. Listening to the sounds made by guitar strings before turning them. Recognizing sound that indicate malfunctioning equipment.

Set: Readiness to act. It includes mental, physical, and emotional sets. These three sets are dispositions that predetermine a person's response to different situations (sometimes called mindsets), begins, displays, explains, moves, proceeds, reacts, responds, snows, starts, volunteers. This has to do with knowing how to use a computer mouse. Having instruments ready to play and watching conductor at start of a musical performance. At this stage the learner is showing eagerness to assemble electronic components to complete a task. Knows and acts upon a sequence of steps in a manufacturing process. Recognize one's abilities and limitations.

Guided response: At early stages in learning a complex skill includes imitation, trials and error. At this step, the learners need supervision to

complete any task if adequacy performance is to be achieved through practicing.

Mechanism: This is the intermediate stage in learning a complex skill. Learned responses have become habitual and the movements can be performed with some confidence and proficiency. Assembles, builds, calibrates, constructs, dismantles, displays, dissects, fastens, fixes, grinds, heats, manipulates, measures, mends, mixes, organize, and sketches. For example use a personal computer and as such repair when a need arises.

Complex or overt response: Is the skillful performance of motor acts that involve complex movement patterns. Proficiency is indicated by a quick, accurate, and highly coordinated performance, requiring a minimum of energy. This category includes performing without hesitation, and automatic performance. For example, players often utter sounds of satisfaction or expletives as soon as they hit a tennis ball or throw a football, because they can tell by the feel of the act what the result will produce. Assembles, builds, calibrates, constructs, dismantles, displays, dissects, fastens, fixes, grinds, heats, manipulates, measures, mends, mixes, and organizes, sketches. Dismantling and re-assembling various components of office information systems quickly with no errors, displays competence while manipulating the office gadgets

Adaptation: At this level, skills are well developed and the individual can modify movement patterns to fit special requirements, adapts, alters, changes, rearranges, reorganizes, revises, varies. Using skills developed learning how to operate an electric typewriter to operate a word processor, responds effectively to unexpected experiences, modifies instructions to meet the needs of the learners and perform a task with a machine that it was not originally intended to do.

Origination: Creating new movement patterns to fit a particular situation or specific problem. Learning outcomes emphasize creativity based upon highly developed skills. For example, arranges, combines, composes, constructs, creates, designs, originates. Designing more efficient ways to perform an assembly line task, constructs a new theory. Develop new and comprehensive training program, creates new gymnastic routine. This theory relate to this research study because the most notable thing that happens when people go into practice is that, they demonstrate increased proficiency in performance and skill. A skill can be conceptualized or it can be viewed as a level of performance proficiency that distinguishes a higher-skilled performer from a lower-skilled performer (Schmidta, 2004).

As a learner acquires a skill, changes may be observed that reflect strategies that an individual uses to achieve specific movement outcomes. A learner may show a change in the spatial orientation of his or her body and

body limbs as well as exhibit a change in the timing and sequencing of movements. Motor-skill acquisition follows a pattern in which learning acuminates in practice. Changes in performance that accompany practice are usually much greater and more rapid at first and systematically become smaller as practice continues.

This theory related to this research work because in teaching and learning a skill course, teacher has to follow well organize sequence which enable the learner to imitate the teacher as he does the practical teaching. In the other hand the learner continues to practice the taught skills until he masters it and at same time take tasks without supervision by the teacher.

- **Theory of Communication and Information**

Saussure and Peirce, (1946) and Shannon and Weaver (1956) respectively, developed the theory of communication and information. Although semantics still exists as a field of linguistics today, many other approaches to human communication have been developed after Saussure and Peirce. Systems theory was one field of study that played a significant role in the development of communication theory. Up until the time that Bertalanffy, Wiener and others developed systems and cybernetics theories, much of the focus in human communication studies had been on language, linguistics and semantics. With the advent of these new systems viewpoints however, communication systems were re-considered in a new light as

integrated systems. Significantly, human communication was no longer dealt with as entirely separate and distinct from other communicative processes. Systems theory treated human communication in the same manner as all other communicative processes, be engineering systems (such as telephone systems), physical communication phenomena (such as light or energy transfer processes), living biological systems, or entire social systems (Bertalanffy, 1968). These new systems theories made little distinction between the precise communication processes that were involved in these different kinds of system, rather they looked at the overlying principles of communicative transfer and the influence of communicative relationships within systems. Bertalanffy argued that communication often concerns the flow of information within a system. He suggested that in many cases, although not always, the flow of information relates also to a flow of energy (Bertalanffy 1968). Bertalanffy also maintained that communication can be treated like any other system, containing features such as feedback processes and other aspects of control theory.

Simple communicative feedback scheme (after Bertalanffy, 1968), Wiener, one of the founding fathers of the field of Cybernetics, also regarded feedback processes as highly significant in communicative systems. Like Bertalanffy, Wiener argued that the fundamental principles of communication are the same regardless of whether one is dealing with man-

made machines and systems, or living organic beings; indeed he argued that human society itself is bound together by the same kinds of communicative principles as any other system (Wiener, 1948). Weiner maintained that communication is one of the principle means by which systems are coupled to their external environments; and if a system communicates with its external environment, this is one of the features which identifies it as an open system, rather than closed.

Office information systems are used to pass information from one person to another or from one person to groups of persons. Which in another way involve communication and feedback from the receiver through the use of electronic communication systems and other components of office information systems mentioned in the previous page with its sub-heading such as e-mail, fax, and teleconferencing, among others.

In 1949, Shannon and Weaver, inspired by developments in systems theory and cybernetics, introduced a new communicative model that they called õinformation theoryö (Shannon and Weaver, 1949). In information theory, information is viewed as a measure of the entropy or uncertainty in a system. In the information theory model of communication, a source produces a message, this message is passed along a channel, to a receiver that interprets the message. The channel has bandwidth that affects the level of information that can be transmitted; bandwidth is a measure of

communicative capacity. For example, in modern terms, if we connect to the Internet via a modem, its bandwidth affects how fast we can download data.

A channeløs bandwidth may also be limited by the form of the communication. For example, when speaking on a telephone, the channel is limited to audio data only. Virtual information is much communicated. Wiener (1948) points out that the effectiveness of communication in such a model is dependent on quality of channel. A high quality channel transmits only the information that the sender communicates, whereas a poor quality channel may be contaminated by extraneous information, or what Wiener referred to as background noise (Wiener, 1948).

In the information theory model, meaning is in the message; this message transmits from point to point in a linear fashion, self-regulated via feedback loops between source and receiver. This concept of meaning was taken to an extreme level of analysis by Osgood, who developed a mathematical model for finding where meaning is located. Osgood created the concept of õsemantic spacesö, which are effectively cognitive locations of meaning, and analyzed the relationships between these spaces through a process of õfactor analysisö (Osgood, 1957). Shannon and Weaverøs information theory has a significant influence on the development of communication theory. There are however a number of drawbacks to this model. Significantly, the information theory model disregards the influence

of contexts and environments on communication. It assumes that all communications travel from point to point, either from one source to one receiver or from many sources to many receivers. Rather than being viewed as contextual influences, extraneous information is considered to be noise, which the receiver must filter out in order to discern the meaning of the message. Essentially, Shannon and Weaver's information theory reflects a cybernetic view of communication that is entirely focused on õnodesö (speakers and hearers), which are connected only to each other and not with their contexts.

Atlan argues that unlike in the engineering systems that Shannon and Weaver were originally working with, where they considered noise to be extraneous information that must be filtered out, in biological contexts the redundant information that creates noise is an essential feature. According to Atlan, in a biological system noise is an indication of background complexity, from which emergent features may arise. The background complexity essentially comprises redundant information, but without this redundancy in the system, the mutations which lead to evolution could not occur. Atlan has therefore adapted Shannon and Weaver's original model so that some aspects of a natural system's context have been accounted for. Atlan's model also subtly shifts the location of meaning in communication. In Shannon and Weaver's original model, meaning was in the message

alone. By contrast, as Atlan explains, in his model, meaning is õnever intrinsic to the message; the meaning is in the relationship of the message to some reference point outside of the information borne by the messageö. In other words, meaning arises not only from the information in the message itself, but also form the process of its transmission and the context in which the message is interpreted. This transmission of information or message is more effective and faster with the use of office information systems components, therefore the theories related to this study in the sense that office information systems are channels through which communication are transmitted from sender to the receiver.

Related Empirical Studies

Obi and Akarahu (2010), carried out a study to determine Information and Communication Technology (ICT) Skills required by Teachers of Business Education to effect teaching of marketing in colleges of education in South Eastern Nigeria. To achieve the objective, three null hypotheses were formulated and tested at 0.05 level of significance. The study adopted survey research design that made use of a 27 item structured questionnaire developed from the literature reviewed for the study. The population for the study consisted of 89 teachers of business education drawn from seven Federal and State Colleges of Education, in South Eastern Nigeria. The structured questionnaires were first validated by three experts. Cronbach

Alpha method was used to determine the reliability of the items and a coefficient of 0.85 was obtained. The questionnaire was administered on 89 respondents by the researcher and well trained research assistants. All the copies of the questionnaire were retrieved and analyzed using the mean. t-test was used to test the hypothesis. The findings of the study revealed that, 20 ICT skills were required for effective teaching of marketing in colleges of education in the South East. The study created a gap by focusing only on Information and Communication Technology (ICT) Skills required by Teachers of Business Education to effect teaching of marketing in colleges of education in South Eastern Nigeria. The present study will fill the gap by including office information systems skills possessed by office education lecturers in tertiary institutions in Northeast State of Nigeria that offer office education programme. This present study related to Obi and´Akarahuǿs study in the instrument for data collection. Also, the study used survey research design. Therefore, will be of good use to the present study.

In another study conducted by Eze (2010), on the level of information communication and technology skills possessed by office technology and management teachers for effective service delivery in the Polytechnics. The study was carried out in ten Polytechnics in six states of the Middle Belt. The population comprised 100 lecturers of office technology and management in the polytechnics from the Zone. The entire population õnö

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was studied. The study adopted a simple survey research design. A structured questionnaire was the main instrument for data collection. The questionnaire was administered to 100 respondents by the research assistants who were inducted to assist. All the copies of the questionnaire were retrieved and analyzed using mean and standard deviation. The finding of the study revealed that office technology and management teachers possess moderate skills in word/data processing skills and low skills in both internet technology and power point skills. This study relates to the present study because the study emphasized on assessment of the level of office communication and technology skills possessed by office technology and management teachers. It also adopted the same methodology used in this present study.

Effiong (2010), carried a study on business centre, he seek to determine the basic information processing skills needed by business center operators for efficient and satisfactory service delivery to their customers. The design of the study was a survey design. The population of this study consisted of 72 respondents made up of 48 computer operators and 24 managers of 24 identified registered business area of Kano State. Three research questions were used to analyze the data collected. It was found that all the basic skills in system operation, human relations, and communication were needed by the business centre operator to render effective and

satisfactory service to his customers. The study relates to the present study because the study emphasized on basic information system skills which are the skills the present study is trying to determine the office information systems skill office education lecturers possessed.   The study also used survey research design.

Eze (2007) conducted a study titled õInformation processing Skills Required by Lecturers in Secretarial studies department of Middle Belt states Polytechnicsö.   The purpose the study was to determine the office information processing skills required by teachers of secretarial studies in polytechnics in middle belt states. The population for the study comprised 94 lecturers. The study was a survey research. The mean was used to analyze the findings. The study revealed that lecturers of secretarial studies very much require the skills in word processing, data processing, computer skills, micrographic skills, reprographic skills and electronic office communication skills as being much required. The study concludes that lecturers of secretarial studies department in polytechnics ought to possess information processing skills in the area of word processing, data processing, computer, micrographic, reprographic and office communication. The researcher recommends among others that lecturers of secretarial studies department in middle belt states polytechnics should constantly update their skills in area of information processing through in-

service training, workshops, seminars, conferences and personal study in order to g skills to enable them impart the appropriate information processing skills to secretarial students. The study created a gap by focusing only on information skills required by lecturers in secretarial studies department of Middle-Belt States polytechnics. The present study will fill the gap by including office information systems skills possessed by office education lecturers in tertiary institutions in Northeast State of Nigeria that offer office education programme. The study is related to the present study in the sense that it emphasized the information skills and also adopts the survey research sign which is one of the focus point in this study.

Etonyeaku (2010) carried out a study on office operational skills perceived as necessary for office information systems by secretaries in University of Nigeria, Nsukka. The population of the study comprised of 110 secretaries in University of Nigeria. The entire population was studied. The study adopted a survey research design. A structured questionnaire was the main instrument for data collection. The questionnaire was administered to 110 respondents with the assistance of three trained research assistants. Three days after distribution, the 110 copies were returned, and analyzed using the Mean $(\bar{x})$ and standard deviation. t-test was used to test the hypotheses. Cronbach alpha method was used to determine the reliability of the items and a coefficient alpha with a value of 0.84 was obtained. The

findings reveal that the secretaries possess moderate operational skills in word and data processing, while high level of operation skills in reprographic system. This study relates to the present study in that the study emphasized on office operational skills necessary for office information systems. The secretaries are the product of office education. Therefore the office information system skills acquired depends on the teachers skills.

Summary of Reviewed Literature

In the course of reviewing the literature, the researcher was able to examine what office, office education, office information systems are and also examine the component of office information systems and the skills accorded to each of them. The skills include creating, editing, formatting, storing, and retrieving of text. Others include Send information message using e-mail, emphasize text by the use of underscore, bold and italics, set margins, move and insert text, copy text, insert page numbers among others.

The theories reviewed includes; taxonomy of education domain, the theory of communication and information system. Each of these theories explained the components of office information systems skills and its advantages to the office productivity. Furthermore, the theories also confirmed that information system units are electronic transmission technologies which enhance communication in any modern office. The theoretical review equally explained the classification psychomotor theory

which emphasized on three domain of educational objective with reference to Ezewu's model three step models and Simpson seven step model of psychomotor domain of objective.

It was also justified in the review of related literature that lecturers of office education in tertiary institution in Northeast State of Nigeria should possess highly electronic publishing systems skills, electronic communication systems skills, electronic collaborative systems skills and electronic image processing systems skills if they must teach office information systems courses. A good lecturer must not only teach theory aspect of OISs but also teach manipulative skills aspect of the machine.

Five empirical studies related to this study under investigation were reviewed which are Information and Communication Technology (ICT) Skills required by Teachers of Business Education to effect teaching of marketing in colleges of education in South Eastern Nigeria, Level of information communication and technology skills possessed by office technology and management teachers for effective service delivery in the Polytechnics, Basic information processing skills needed by business center operators for efficient and satisfactory service delivery to their customers, Information processing Skills Required by Lecturers in Secretarial studies department of Middle Belt States Polytechnics, and Office operational skills perceived as necessary for office information systems by secretaries in

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University of Nigeria, Nsukka. Considering the studies, it is evident that gap was created because none relates to the office information systems skills possessed by office education lecturers. The present study therefore seeks to fill this gap by determining the office information systems skills possessed by office education lecturers in tertiary institutions in Northeast State of Nigeria.

CHAPTER THREE

RESEARCH METHODOLOGY

This chapter presents the methodology that was used for this study. Specifically, it describes in some details the research design, area of study, population of the study, sample and sampling technique, instrument for data collection, validity of instrument, reliability of the instrument, method of data collection, administration of instrument and method of data analysis.

Research Design

The study adopted survey research design. Osuala (2004), stated that survey design is concerned with the collection of data for the purpose of describing and interpreting existing conditions on practice, beliefs, attitude, opinion etc. Thus, survey design is most appropriate for this study because it sought the opinion of business education lecturers on the office information systems skills possessed by office education lecturers in tertiary institutions in Northeastern states of Nigeria.

Area of the Study

This study was conducted in tertiary institutions in the Northeastern states of Nigeria comprise of Adamawa state, Bauchi state, Bornu state, Gombe state, Taraba state and Yobe state. All the Federal and State Tertiary Institutions offering business education were considered for the study. The tertiary institutions are Buchi State College of Education Azari,

Federal Polytechnics Bauchi, Federal College of education (Technical) Gombe, Federal College of education (Technical) Potiskum, Federal University of Technology Yola, Federal Polytechnic Mubi, Federal College of Education Yola, Federal Polytechnic Suntai, Taraba State Polytechnic Bali, Taraba State College of Education Zing, Kashim Ibrahim College of Education Maiduguri, Borno State College of Education Bama, General Mutala Polytechnic, Maidugri, and University of Maiduguri.

Population for the Study

The population for the study comprised all the 136 business education lecturers in the tertiary institutions in Northeastern states of Nigeria that offer business education. The entire population was studied as it is too small to be sampled (see Appendex B).

Instrument for data collection

A structured questionnaire on office information systems skills possessed by office education lecturers (OISPOEL) was developed by the researcher from the literature reviewed in this study and was utilized for collecting data for the study. The instruments were designed on a five point-rating scale weighted as follows: Highly possessed (HP=5), possessed (P=4), Average Possessed (AP=3), Possessed a little (PAL=2), Not possessed (NP=1). The instrument consisted of   Section A and B. Section A contained demographic information of the respondents, while Section B

sought information on office information systems skills possessed by office education lecturers in tertiary institutions. Section B had have four clusters; cluster 1 had contain items 1-14 and sought to determine the office information system skills possessed by office education lecturer in electronic publishing systems. Cluster 2 contained items 15-24 and sought to determine the office information system skills possessed by office education lecturer in electronic communication systems. Items 25-32 contained in cluster 3 which sought to determine the office information systems skills possessed by office education lecturer in electronic collaborative systems. Items 33-49 contained in cluster 4 which sought to determine the office information systems skills possessed by office education lecturer in electronic image processing systems.

Validation of the Instrument

The instrument was face validated by three experts, one from Measurement and evaluation and two from Business Education Unit of Vocational Teacher Education, all from University of Nigeria, Nsukka. The Validates were expected to check the items for clarity, relevance, correctness and appropriateness of the identified skills. After the necessary corrections, their suggestions and recommendations were taken into consideration in the final draft of the instrument (see Appendix C for their comment).

Reliability of the Instrument

The face validated Office Information Systems Skills Possessed by Office Education Lecturers (OISPOEL) was subjected to trial testing. A total of twenty (20) lecturers in College of Education (Technical) Umunze and Nwafor-Erizu College of Education Nsugbe, Anambra state were used. The scores obtained on the administration of the instrument were recorded. Cronbach-alpha was used to determine the reliability coefficient of the instrument. An overall internal consistency reliability of 0.89 was obtained. For the cluster reliability ranging from 1-4, the internal consistency reliability was 0.82, 0.82, 0.82 and 0.85 respectively.

Method of Data Collection

The instrument for data collection was administered to the respondents by the researcher with the help of four research assistants. The research assistants were trained on how to administer and retrieve the instruments from the respondents with courtesy. The researcher covered respondents in tertiary institutions in Adamawa state, Taraba state and Borono state, while the research assistants covered respondents in tertiary institutions under study in Gombe state, Yobe state and Bauchi state. The instruments were retrieved on the same day.

Method of Data Analysis

The arithmetic mean ($\bar{x}$) and standard deviation statistic was used for answering the research questions. SPSS was used to calculate the mean ($\bar{x}$), and standard deviation, in the study, real limit of number was used for interpreting the result, they were Highly possessed (4.50-5.00), possessed (3.50-4.99) Average possessed (2.50-3.49) Possessed a little (1.50-2.49) Not possessed (0.50-1.49).

t test was used to test (Ho$_1$) at 0.05 level of significance, because it is a parametric statistical used to test about the difference between means of groups when the same sizes are small (Uzoagulu, 2011). The Null Hypothesis will be accepted if t-calculated value is less than the t-critical.

One-way analysis of variance (ANOVA) was used to test the null hypotheses 2 and 3 at .05 level of significance and appropriate degree of freedom with the use of SPSS. This is because One-way analysis of variance (ANOVA) is suitable when samples or groups are more than two. The null hypothesis of no significant difference was accepted for any item whose f-calculated value is equal to or less than the f-ratio value and rejected for any item whose f-calculated value is greater than the f-ratio.

CHAPTER FOUR

PRESENTATION OF RESULT AND ANALYSIS OF DATA

This chapter deals with the presentation and analysis of the data collected from the respondents. The data are presented in table and analyzed according to the items and clusters of components of office information systems skills possessed by office education lecturers.

Research Question 1

What are the electronic publishing systems skills possessed by office education lecturers in tertiary institutions?

To answer this research question, a list 14 possible listening skills (1-14) was provided in section B of the questionnaire. The respondents were required to rate in the five-point scale, the extent to which the skills are possessed by office education lecturers in tertiary institutions. Respondent's responses are presented in the Table 1 below.

Table 1

Mean responses of Office Education Lecturers in Tertiary Institutions on Electronic Publishing Systems Skills they Possess

S/N	Items	$\overline{X}$	SD	Remark
	Electronic Publishing Systems Skills			
1.	Set margins and tabs	4.00	0.19	Possessed
2.	Move and insert text	3.99	0.21	Possessed
3.	To emphasize text by the use of underscore, bold and italics	3.99	0.30	Possessed
4.	Copy text	4.82	0.49	Highly possessed
5.	Edit and format text	4.82	0.45	Highly possessed
6	Insert page number	3.46	0.89	Possessed
7.	Sort text	3.69	0.77	Possessed
8.	Create tables	3.99	0.75	Possessed
9.	Enter data in cells	3.90	0.36	Possessed
10.	Edit data cells	3.83	0.39	Possessed
11.	Use upper case	3.82	0.38	Possessed
12.	Use sub-script	3.67	0.50	Possessed
13.	Use header/footer, end/foot note	3.95	0.39	Possessed
14	Save and print text	3.68	0.73	Possessed
	Grand Mean	**3.97**	**0.39**	**Possessed**

The results presented in Table 1 shows that out of the 14 listed electronic publishing systems skills, 12 skills are rated possessed which had recorded means that ranged from 3.99-4.00, which falls within the real limit of 3.50 ó 4.49, indicating possessed of the electronic skills, the skills include: set margins and tabs (4.00), Move and insert text (3.99), To emphasize text by the use of underscore, bold and italics (3.99), Insert page

number (3.46), Sort text (3.69), Create tables (3.99), Enter data in cells (3.90), Edit data cells (3.83), Use upper case (3.82), Use sub-script (3.67), Use header/footer, end/foot note (3.95), Save and print text (3.68), while 4 skills were rated highly possessed, they include Copy text (4.82), and Edit and format text (4.82) which fall within the real limit of 4.50 -5.00. The highest mean rating is setting of margins and tabs (4.00), the lowest item rating is inserting page numbers (3.46). Also the analysis shows that a grand mean score in the cluster 1 is 3.97 and this implies possessed of electronic publishing systems skill.

Research Question 2

What are the Electronic Communication Systems Skills possessed by Office Education Lecturers in Tertiary Institutions?

Table 2 contains data that answer this question. This is presented as follows:

Table 2

Mean Responses of Office Education Lecturers in Tertiary Institutions on Electronic Communication Systems Skills they Possess

S/N	Items	$\overline{X}$	SD	Remark
	Electronic Communication System Skills			
15.	Send information message using e-mail	2.65	0.79	Average Possessed
16.	Communicate using teleconference facilities	2.56	0.88	Average Possessed
17	Forward the voice conversation message using e-mail	3.31	0.87	Average Possessed
18	Record voice conversation	2.55	0.85	Average Possessed
19.	Exchange electronic message across computer	2.46	0.80	Possessed a Little
20.	Download messages to the user's personal computer (PC)	3.86	0.63	Possessed
21	Attach files	3.58	0.83	Possessed
22.	Chat and discuss in group via internet	3.71	0.77	Possessed
23.	Click on the window start button to display	4.45	0.94	possessed
24	Hibernate for easy opening of the window	4.14	0.80	possessed
	Grand Mean	**3.33**	**0.73**	**Average Possessed**

The data present in Table 2 shows that out of the 10 listed electronic communication systems skills, 4 skills had recorded means that ranged from 2.55 -3.31, which falls within the real limit of 2.50 ó 3.3.49, indicating average possessed, the electronic communication systems skills include: Send information message using e-mail (2.65), Communicate using teleconference facilities (2.56), Forward the voice conversation message using e-mail (3.31) and Record voice conversation (2.55) while 1 skill was rated possessed a little namely: Exchange electronic message across computers (2.46), which falls within the real limit of 1.50-2.49. The Table further shows that 5 skills out of 10 listed electronic communication systems

skills had recorded means that ranged from 3.71 - 4.45, which falls within the real limit of 3.50 ó 4.49, indicating possessed, the skills includes: Download messages to the userøs personal computer (PC) (3.86), Attach files (3.58), and Chat and discuss in group via internet (3.71), click on the window start button to display (4.45), and hibernate for easy opening of the window (4.14). The highest mean rating in this cluster is item number 23 (4.45) and the item statement is clicking on the window start button to display the start menu. Conversely, the lowest mean rating in this cluster is item 19 (2.46) and the item statement is exchanging electronic message across computer. The grand mean score in this cluster is 3.33 and this indicates average possession of electronic communication systems skills.

Research Question 3

What are the electronic collaborative systems skills possessed by office education lecturers in tertiary institutions?

On Electronic collaborative systems skill possessed by office education lecturers, a list of possible skills (25-32) was provided. This is presented thus:

Table 3

Mean responses of Office Education Lecturers in Tertiary Institutions on Electronic Collaborative Systems Skills they Possesses

S/N	Items	$\overline{X}$	SD	Remark
	Electronic Collaborative Systems Skills			
25.	Proof read text	4.07	0.82	Possessed
26	Use various printer designs, copy rates and print densities	3.94	0.79	Possessed
27	Access virtual briefcase	1.35	0.70	Not Possessed
28	Use thesaurus to search	2.80	0.65	Average Possessed
29	Surf the internet	3.82	0.97	Possessed
30	Store information in files	3.64	0.74	Possessed
31	Use projector scheduling	4.00	0.63	Possessed
32	Edith an existing statement	3.66	0.74	Possessed
	Grand Mean	**3.41**	**0.48**	**Average Possessed**

The data presented in Table 3 shows that out of 8 listed electronic collaborative systems skills 6 had recorded means that ranged from 3.64 - 4.07, which falls within the real limit of 3.50-4.49 indicating average possessed of electronic collaborative systems skills, the skills include: Proof read text (4.07), Use various printer designs, copy rates and print densities (3.94), Surf the internet (3.82), Store information in files (3.64), Use projector scheduling (4.00),and Edith an existing statement (3.66), while 1 skill item Access virtual briefcase (1.35), falls within the real limit of 0.50 - 1.49 indicating not possessed. The Table further shows that item statement of use thesaurus to search (2.80), had means rating that ranged from 2.50 ó 3.49 indicating average possessed. The highest mean rating is (4.07) which is proof read text, the lowest mean rating in this cluster is (1.35) which is accessing virtual briefcase. The grand mean score in cluster 3 is 3.33 and this indicates averagely possessed of electronic collaborative systems skills.

Research Question 4

What are the electronic images processing systems skills possessed by office education lecturer in tertiary institutions?

On the electronic image processing systems skills possessed, a list of 17 possible skills (33-49) were provided. Table 4 contains the data on the electronic image processing systems skills possessed by office education lecturers in tertiary institutions.

Table 4

Mean responses of Office Education Lecturers in Tertiary Institutions on Electronic Image Systems Skills they Possesses

S/N	Items	$\overline{X}$	SD	Remark
	Electronic image Processing Systems Skills			
33.	Crop image	1.30	0.59	Not possessed
34.	Pick the picture from net and display on the clip board	1.37	0.69	Not possessed
35.	Create visual presentations	1.33	0.62	Not possessed
36	Click on the diagram to text	1.26	0.56	Not possessed
37	Compress an image to reduce the file size	1.59	1.00	Not possessed
38	Use overhead transparencies	2.50	0.77	Not possessed
39	Use slide show	2.15	0.61	Possessed a little
40	Use charts, text and draw objects	1,21	0.44	Not possessed
41	Format images	1.04	0.21	Not possessed
42	Share documents between the two plat forms	1.02	0.19	Not possessed
43	Use reference software	1.07	0.28	Not possessed
44.	Draw using key command	1.47	0.54	Not possessed
45.	Locate the insertion point	1.26	0.44	Not possessed
46.	Use multimedia to capture images	1.22	0.41	Not possessed
47	Change background	1.38	0.49	Not possessed
48	Present animation	1.55	0.51	Possessed a little
49	Modify text box	1.89	2.88	Possessed a little
	Grand Mean	**1.45**	**0.18**	**Not Possessed**

The data presented in Table 4 shows that out of 17 listed electronic image processing systems skills 13 skills had recorded means scores that ranged from 1.02 ó 1.89, which falls within the real limit of 0.50- 1.49, indicating that lecturers did not possessed electronic image processing systems skills, the skills include: Crop image (1.30), Pick the picture from net and display on the clip board(1.33), Click on the diagram to text (1.26),

compress an image to reduce the file size (1.59), Use charts, text and draw objects (1.21), Format images(1.04), Share documents between the two plat forms (1.02), Use reference software (1.07), Draw using key command (1.47), Locate the insertion point (1.26), Use multimedia to capture images (1.22), and Change background (1.38), while 3 skills out of 17 listed electronic image processing systems skills 3 skills were recorded means that ranged from 1.55 - 2.15, which falls within the real limit of 1.50 - 2.49 indicating that lecturers possessed a little skills on electronic images processing systems skills, which include: rated items (Use slide show (2.15), Present animation (1.55), Modify text box (1.89). The Table further shows that item statement of use overhead transparencies (2.50) had recorded mean that range from 2.50, which falls within the real limit of 2.50 ó 3.49 indicating average possession of the skill which is the use of overhead transparencies. The highest mean rating is (2.15) which is the use of slide show, the lowest mean rating in this cluster is item 42 (1.02) which is sharing documents between the two plat form. The total mean score in cluster 4 is 1.45, which implies not possessed.

The Testing of Hypotheses

The three hypotheses for the study were tested using t-test and One-way Analysis of variance (ANOVA) statistic respectively. The testing is

done in all the components of office information systems, this include: electronic publishing systems skills, electronic communication systems, electronic collaborative systems skills, and electronic image processing systems skills. The summary of the results are presented as follows:

Hypothesis 1

Ho_1:   Location is not a significant source of difference in the mean ratings of office education lecturers in tertiary institutions on electronic publishing systems skills they possessed.

To test this hypothesis, data collected on the 49 listed components of office information systems skills were classified into responses for lecturers in Urban and Rural tertiary institutions. The mean responses of the two categories of lecturers were calculated from which the t-ratio was calculated. Table 5 shows the summary of results according to the location.

Table 5

Result of test for t-test of responses of Office Education Lecturers in Tertiary Institution on electronic publishing systems skills they possessed based on the location of the institutions.

The hypothesis is accepted if t-critical is greater than the t-calculated, while rejected if the t-calculated is greater than the t-critical.

Locations

Urban Tertiary Institution (UTI)		Rural Tertiary institution (RTI)		t-cal	t-critical	Decision
$\overline{X}$	S.D	$\overline{X}$	S.D			
2.90	1.22	2.84	1.22	0.25	1.96	NS

Therefore the result in the table 5 shows that calculated value is 0.25, t- critical 1.96. Therefore the null hypothesis should be accepted indicating no significant difference on responses of office education lecturers in tertiary institution on electronic publishing systems skills they possessed based on their location.

Hypothesis 2

Ho$_2$: Educational qualification is not a significant source of difference in the mean ratings of office education lecturers in tertiary institutions on electronic communication systems skills they possessed.

To test this hypothesis, data collected on the 49 listed components of office information systems skills were classified into responses for lecturers with Higher National Diploma (HND), Post Graduate Diploma in Education (PGDE), First Degree (B. ed), Masters in Education (MED), Doctor of Philosophy (Ph.D). The mean responses of five categories of lecturers were calculated from which the T-ratio was calculated. Table 6 shows the summary of results according to the lecturers.

Table 6

Result of test of ANOVA for responses of Office Education Lecturers in Tertiary Institution on the Electronic Communication Systems Skills they Possessed based on their Qualification

The hypothesis is accepted if F-critical is greater than the F-calculated and rejected if the F-calculated is greater than The F-critical.

Qualifications

Source of Variance	Sum of Squares	Df	Mean	f-Cal	f-Tab	Remark
Between Groups	1.394	5	0.279	0.179	3.02	NS
Within Groups	4.16.372	267	1.559			
Total	**417.766**	**272**				

Therefore, the results on hypothesis 2 on table above, shows that F-critical is 3.02 at degree of freedom (df) of 135 and at 0.05 level of significance is greater than the F-cal of 0.179, the null hypothesis (H_{o2}) is therefore accepted. This revealed that qualification was not significance (NS) difference in the mean ratings of responses of the office education lecturers on electronic communication systems skills they possessed.

Hypothesis 3

Ho_3: Years of experience is not a significant source of difference in the mean ratings of office education lecturers in tertiary institutions on electronic collaborative systems skills they possessed.

To test this hypothesis, data collected on the 49 listed components of office information systems skills were classified into responses for lecturers with Experience 1-10 years, 11- 20 years, 21 ó 30 years, 31 ó 40 years. The mean responses of four categories of lecturers based on their experiences were calculated from which the T-ratio was calculated. Table 7 shows the summary of results according to the lecturers.

Table 7

Result of test of ANOVA for responses of Office Education Lecturers in Tertiary Institution on the Electronic Collaborative Systems skills they Possess based on their Experiences

The hypothesis is accepted if f-critical is greater than the f-calculated and rejected if the f-calculated is greater than the f-critical.

Years of Experience

Source of Variance	Sum of Squares	Df	Mean	f-Cal	f-Tab	Remark
Between Groups	0.109	4	0.027	0.018	3.02	NS
Within Groups	358.934	240	1.496			
Total	**359.044**	**244**				

Therefore, the results on hypothesis 3 on table above, shows that F ó critical is 3.02 at degree of freedom (df) of 135 and at 0.05 level of significance is greater than the F ócalculated of 0.018, the null hypothesis is

therefore accepted. This revealed that experience was not significance (NS) source of difference in the mean ratings of responses of office education lecturers on electronic collaborative systems skills they possessed.

Findings of the Study

1. The findings regarding the electronic publishing systems skills as presented in Table 1 shows that office education lecturers rated possessed on 12 electronic publishing systems skills out of the 14 skills used to answer research question 1 namely, set margins and tabs, move and insert text, to emphasize text by the use of underscore, bold and italics, insert page numbers, sort text, create tables, enter data in cells, edit data cells ,use upper case, use sub-script, use header/footer, end/foot note and save and print text. The respondents rated highly possessed in 2 electronic publishing systems skills namely: copy text, edit and format text. A grand mean of 3.97 was obtained and this fall within mean of 3.50 ó 4.49, which is possessed according to the scale used for the study.

2. The findings regarding the electronic communication systems skills possessed by office education lecturers in tertiary institutions as presented in Table 2 shows that four skills were average Possessed namely: send information message using e-mail, communicate using teleconference facilities, forward the voice conversation message

using e-mail, and record voice conversation, while five skills were rated possessed namely, download messages to the user's personal computer (PC)), attach files, chat and discuss in group via interne, click on the window start button to display, and hibernate for easy opening of the window), while one item possessed a little (exchange electronic message across computer. A grand mean of 3.33 was obtained in this cluster and this fall within mean of 2.50 -3.49, which is average possessed according to the scale used.

3. The findings regarding the electronic collaborative systems skills possessed by office education lecturers in tertiary institutions as presented in Table 3 shows that lecturers were rated possessed on six skills namely: proof read text, use various printer designs, copy rates and print densities, surf the internet, store information in files, use of projector in scheduling, and edit an existing statement. Not possessed was rated in one variable item No 27 Accessing virtual briefcase. And grand mean of 3.41 was obtained in this cluster and this fall within mean of 2.50 ó 3.49 which implies average possessed of the skills according to the scale used.

4. The findings regarding the electronic image processing systems skills possessed by office education lecturers in tertiary institutions; as presented in Table 4, shows that lecturers did not possess any skill on

the following electronic image processing systems skills: crop image, pick the picture from net and display on the clip board, create visual presentations, click on the diagram, compress an image to reduce the file size, use charts, text and draw objects, format images, share documents between the two plat forms, use reference software, draw using key command, locate the insertion point, use multimedia to capture images and change background, while possessed a little were rated in the following electronic image processing systems skills use slide show, present animation and modify text box, while average possessed was rated in the use of overhead transparencies. And grand mean of 1.45 was obtained in this cluster and this fall within mean of 0.50 -1.49 which indicates that office education lecturers did not possesses electronic image processing systems skills.

5. Findings on Hypothesis 1; revealed that location is not significant difference in the mean ratings of lecturers of office education lecturers in teaching electronic publishing systems in tertiary institutions.

6. Finding pertaining to Hypothesis 2; revealed that educational qualification is not a significant source of difference in the mean rating of lecturers of office education lecturers in teaching electronic communication systems in tertiary institutions.

7.	The findings on Hypothesis 3 revealed that years of experience is not a significant source of difference in the ratings of office education lecturers on office information systems skills they possess

Discussion of the Findings

The discussion of this research findings were based on the research questions answered in this study as well as the related literature reviewed. It also covers the results of the three hypotheses tested. These are discussed as follows.

The analysis of the findings regarding the electronic publishing systems skills possessed by office education lecturers in teaching in tertiary institution, as presented in Table 1 showed that office education lecturers rated possessed in twelve electronic publishing systems skills listed and highly possessed in two skills listed. A grand mean of 3.97 was also obtained.   This signifies that the lecturer's possession of electronic publishing system skill is not highly rated, therefore the lecturers should retrained for adequate acquisition of the skills. Thomas (2006), emphasized that teachers need word processing skills to equip tomorrow's employees with the requisite skills, competence and knowledge to use information communication technology (ICT) within and outside the work environment. In using electronic publishing systems, teachers need to be competent in the use of a variety of software, particularly software that have specific

applications in various disciplines, for instance desktop publishing, photocopying, among others.

The analysis of the findings regarding the electronic communication systems skills possessed by office education lecturers in teaching in tertiary institutions, as presented in table 2 shows that five electronic communication systems skills are possessed, four (4) skills were rated average possessed, while one (1) skill was rated possessed a little by the lecturers. A grand mean of 3.33 was also obtained, indicating average possessed. This signifies that the lecturers still need more training on the electronic communication systems skills. OøBrien and Marakas (2010), stated that electronic communication systems (ECSs) are cross functional information systems that enhance communication among the office workers, of which the lecturers skills possessions will enable them to impart needed electronic communication systems skill into the students. Possession of average skills by office education lecturers as revealed in this study fall short of standard. This is because vocational teachers are expected to possess highly skills and knowledge in their vocational areas. One of the principles of vocational education according to Osuala (2004), is that vocational education will be effective in proportion as the instructor has had successful experience in the manipulation of skills, and processes he undertakes to teach.

The analysis of the finding regarding the electronic collaborative systems skills possessed by office education lecturers in tertiary institutions showed that lecturers possessed highly on (6) listed skills , Not possessed was rated in (1) skill (Accessing virtual briefcase), and average possessed was rated in the use of thesaurus to search. A grand mean of 3.41 was obtained, indicating average possessed. The lecturers were not rated highly in this cluster, which signifies that the lecturers are still lacking behind on electronic collaborative systems skills, therefore should be groomed and retrained on the electronic collaborative systems skills because according to Brain and Stacey (2010), electronic collaborative system skills enable office workers to work through a document and delete, insert and replace text, edit activities and also additional features as creating, formatting, printing and saving of document without much stress.

The analysis in table 4 regarding the electronic image processing systems skills possessed by office education lecturers in tertiary institutions shows that lecturers did not possess any skill on 12 electronic image processing systems skills out of 17 skills listed in cluster 4, but possessed little in (3) skills, and rated possessed in (1) skill. The grand mean 1.45 was obtained in this cluster. This signifies that lecturers of office education in tertiary institution did not possess any skills on electronic image processing systems which may be as a result of irregular funding for software or skilled

staff at its preparatory, inadequate technical backup, in-service training from administrators (bosses), lack of interest in new technologies especially on the part of senior lecturers of business education department, and gross resistance to change on the part of Nigeria lecturers as opined by (Njoku 2000). Therefore Ugwuanyi (2007), opined that office education lecturers should be retrained in office information systems especial in image processing system to enable them to fit into the technological changing world.

Ho_1:   Location is not a significant source of difference in the mean ratings of office education lecturers in tertiary institutions on electronic publishing systems skills they possessed.

The finding of the study shows that the hypothesis was upheld in all variables tested. This implies that difference in location of the respondents do not make a significant difference on electronic publishing systems skills possessed by office education lecturers in tertiary institutions. The lecturers need to have the skills in order to impart same successfully to the students.

Ho_2:   Educational qualification is not a significant source of difference in the mean ratings of office education lecturers in tertiary institutions on electronic communication systems skills they possessed.

After the analysis, the testing of the hypothesis shows that null hypothesis was upheld in the entire variable tested. This finding shows that difference in educational qualification of the respondents do not make a significance difference in the electronic communication systems skills possessed by office education lecturer in tertiary institutions. The lecturers need the electronic communication systems skills to operate in technological world of work, and as such coach the students to be employable as well.

Ho$_3$: Years of experience is not a significant source of difference in the mean ratings of office education lecturers in tertiary institutions on electronic communication systems skills they possessed.

After the analysis, the testing of the hypothesis shows that the null hypothesis was upheld in all the variables tested. This finding shows that difference in years of teaching experience of the respondents do not make a significant difference on electronic collaborative systems skills they possessed.

The result of this study succeeded in determining that office education lecturers average possessed electronic publishing systems skills, electronic communication systems skills, electronic collaborative systems skills and possessed no skills at all in electronic image processing systems skills.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents a summary of problem statement, the procedures used in the study and draw conclusions based on the findings of the study, it also presents the implications of the study and recommendations.

Restatement of the Problem

Reif and Morse as was cited by Onyemelukwe (2011) stated that presently office information system (OISs) is one of the major courses for training office education students to participate fully in the work of world. One of the goals of Nigeria tertiary education is however, the acquisition of both physical and intellectual skills which will enable individuals to be employable and useful members of the society (NPE, 2004). As a business educator (office major), providing students with office information systems skills are much obtainable through demonstration of the actual skills in the classroom. This singular act will help students to be conversant with the office information systems skills they will meet after their graduation if the lecturers possess the skills. Chinasa (2000), acknowledged that skill, knowledge and experience are best acquired through physical practice when the researcher expressed that *"I forget when I hear, I remember when I see and understand when I do"*.

Therefore, office information systems components being computer based that needs specialize skills and were not in place when many of the lecturers teaching office education were trained (Njoku, 2000). It seems therefore; that many lecturers who have teaching skills may not possess the specialized skills for teaching the components of office information systems. It also seems that some of the tertiary institutions have the office information systems facilities that are not being put to use, which may be as a result of the lecturers not possessing adequate specialized skills of office information systems and may need to be retrained. This study, therefore, seeks to determine the Office Information Systems Skills possessed by office education lecturers in tertiary institutions in Northeast states of Nigeria.

Against this background this project study was conceived to provide answers to the office information systems skills possessed by office education lecturers in tertiary institutions. To achieve this purpose, the following specific purposes were pursued:

1. Electronic publishing systems skills possessed by office education lecturers in tertiary institutions.

2. Electronic communication systems skills possessed by office education lecturers in tertiary institutions.

3. Electronic collaborative systems skills possessed by office education lecturers in tertiary institutions.

4. Electronic image processing system skills possessed by office education lecturers in tertiary institution.

Summary of Procedures Used

Survey research design was considered appropriate for this study. To guide the collection of data for the study, four research questions and three null hypotheses were formulated. Literature was reviewed to provide a conceptual framework for the study.

The area covered in this study includes 14 tertiary institutions in the Northeast State of Nigeria. The institutions studied include: Federal College of Education (FCE) Technical Gombe, Federal College of Education (FCE) Technical Yobe, Federal university of Technology (FUT) Yola, Federal College of Education (FCE) Yola, Federal Polytechnic Mubi, College of Education Zing, Polytechnic Suntai, Federal Polytechnic Bali, University of Maidugeri, General Mutala Polytechnic Maidugeri, College of Education Bama, General Mutala Polytechnic Maidugeri,

The population for the study consisted of 136 lecturers of office education in the 14 tertiary institutions. The entire population was studied as it was too small to be sampled.

The researcher used structured questionnaire for data collection. The questionnaire developed for the study was subjected to a test of internal consistency. Cronbach Alpha co-efficient was used to establish the

consistency of the instrument. Secondly, the instrument was pilot-tested on 20 lecturers drawn from the business education department in Federal College of Education (technical) and Nsugbe College of education, Anambra State. The results indicated that the items in the questionnaire were understood by the respondents, using the SPSS to determine the internal consistency of the instrument, an overall reliable of 0.89 was obtained.

Instruments were administered to 136 office education lecturers in tertiary institutions in Northeast State of Nigeria that offer business education with help of four research assistants. The questionnaire consists of two sections. Section õAö relates to the general information of the respondents while section õBö consists of fourty-nine (49) structured questionnaire on a 5 point rating scale. The answers to the research questions was based on the interpretation of the mean ratings follows: Highly possessed (4.50-5.00), possessed (3.50 - 4.99) Average possessed (2.50 - 3.49) Possessed a little (1.50 - 2.49) Not possessed (0.50 - 1.49). The t-test was used to test null hypothesis 1 and analysis of variance (ANOVA) were used to test the null hypotheses 2 and 3 at 0.05 level of no significant difference on components of office information systems skills possessed by the lecturers in tertiary institutions. The three null hypotheses show no significance difference. Findings were drawn from the analysis and based on the findings, conclusion and recommendation were made.

Summary of Findings

The findings of this study are summarized as follows:

1. Office education lecturers were rated average possessed on the electronic publishing systems skills in lecturing office education in tertiary institutions. Highly possessed rating in one component of office information systems indicates that the lecturers have the skills of word processing, data processing, and micrographic but still it will not be out of place if the lectures were trained to possesses very highly in the electronic publishing systems because the future of any nation in terms of technology is in the hands of their teachers. Not using the facilities in the school may be as result of poor funding, poor motivation of lecturers, unavailable of infrastructures to accommodate this systems etc

2. It was found that Office Education Lecturers possessed highly on the electronic communication systems skills in lecturing office education in tertiary institutions. The sub-component of electronic communication systems includes videoconference, electronic mail (e-mail), voice mail (v-mail), Fax skill. The findings also indicate that the lecturers still need skill in electronic mail.

3. It was found that Office Education Lecturers possessed highly in electronic collaborative systems skills which is a moderate skill

possession expected from the lecturers in office information systems skills.

4. Office education lecturers do not possess either very highly or highly in any of the variables tested in electronic image processing systems. This is against the principles vocational business education which states that vocational education will be effective in proportion as the lecturer has had successful experience in the application of skills and knowledge to the procedure to undertakes to teach.

5. The result of (Ho_1) shows that location is not significant sources of difference in the mean ratings of lecturers of office education in teaching electronic publishing systems in tertiary institutions. This implies that the difference in the location where the lecturer is, do not influence the components of office information systems skills they possessed in teaching electronic publishing systems.

6. There is result of (Ho_2) shows that educational qualification is not a significant source of difference in the mean rating of lecturers of office education lecturers in teaching electronic communication systems in tertiary institutions. There was no significant difference in the items considered. This implies that the difference in the teaching experience of office education lecturers do not influence the components of office information systems skills they possessed.

7. The finding on (Ho$_3$) shows that year of experience is not a significant source of difference in the ratings of office education lecturers on electronic collaborative systems skills they possessed. This implies that the differences in the educational qualification of office education lecturers do not affect the office information systems they possessed.

Implication of the Finding

The following implications are drawn from the finding of this study:

1. The lecturers when exposed to the sub-components of electronic publishing systems would improve in the skill possessions of the systems and as such their teaching skill will be more practical rather than theory.

2. When the lecturers are improved, their students will benefit as the lecturers will equip them with necessary skills to be employable in technological society.

3. When the students graduate, they would become office information expect.

Limitations of the Study

The following limitations may affect the generalization of the study:

1. The study only covers lecturers of business education that lecturers office information courses in tertiary institutions in Northeast State of

Nigeria that offer business education. Therefore the findings of this study may not be generalized on the entire country.

2.   The instrument sought the opinions of the respondents, but did not involve other instrument such as interview. This may pose a limitation to the study.

3.   The researcher's ability of research methodology and techniques may also affect the generalization of the findings. Other experienced researchers may adopt different approach to the study thereby obtaining results that may be of general acceptance.

Conclusions

The purpose of the study was to determine the office information systems skills possessed by office education lecturers in tertiary institutions in Northeast State of Nigeria. Data were collected, analyzed and interpreted. It was found that the office education lecturers averagely possessed electronic publishing systems skills, electronic communication systems skills, and electronic collaborative systems skills and possessed no skills at all in electronic image processing systems skills listed. Therefore, it was concluded that there are skills gap in office education lecturer's possession of office information systems skills required for effective teaching and learning.

Based on the findings of this study, it is concluded that office education lecturers in Northeast states of Nigeria need improvement in office information systems for effective teaching of office information systems components. This is necessary in order to teach the students of office education who will be office technologist, office managers, office assistant, office education lecturers, and among others.

Recommendations

Based on the findings made and conclusions drawn from the study, the following recommendations are made:

1. Tertiary institutions should be equipped with recent office information systems to enable the lectures acquire the skills at the maximum level.

2. Office education lecturers need to improve their skills in electronic image processing systems. Not possessed was rated on this component of office information systems, therefore tertiary institutions should embark on lecturers self development programme such as workshops and in-service training.

3. Since years of experience and qualification does not significantly affect the office information systems skills possessed by office education lecturers in tertiary institutions, the workshops and re-training programme should involve all lecturers irrespective of their experience and qualification.

4. Years of experience should not be the major basis for the employment of office education lecturer into business education programme. Since difference in years of teaching experience of office education lecturers do not significantly influence their office information systems skills.

5. Office education lecturers avail themselves to acquire very highly skills on office information systems components for effective teaching of office information systems skills. The lecturers should not only buy their personal computer but also try to use them and also ask questions where they find difficult.

Suggestions for Further Studies

The following suggestions have been made for further studies:

1. This study should be replicated in other geographical areas in the country and should cover a wider study area and sample.

2. Research should be conducted on assessment of office education students on office information systems they possess.

3. Research should be conducted on graduate of office education on their job performance in operating office information systems.

4. Research should be conducted on quality utilization of office information systems in teaching of business education courses with reference to office in education tertiary institutions.

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APPENDIX A

Table 1: Population Distribution of Business Education Lecturers in List of Higher Learning in Northeastern State of Nigeria

State and Institution	Lecturers	Total
Bauchi		
College of Education Azari	10	
Federal Polytechnic Bauchi	11	22
Gombe		
Federal College of Education (FCE) Technical	10	10
Yobe		
Federal college of Education (FCE) Technical	8	8
Adamawa		
Federal University of Technology FUT, Yola	4	
Federal college of Education (FCE) Yola	11	33
Federal Polytechnic Mubi	18	
Taraba		
College of Education Zing	10	
Polytechnic Suntai	8	27
Federal Polytechnic Bali	9	
Bornu		
University of Maiduguri	11	
Kashiri Ibrahim college of Education	9	36
College of education Bama	7	
General Mutala Polytechnic Maiduguri	8	
Grand total		136

Source: Departmental Academic Staff List of the various Institutions under Study

APPENDIX B

Department of Vocational Teacher Education
Faculty of Education
University of Nigeria, Nsukka
Enugu State

Dear Respondent,

I am a post graduate student of the Department of Vocational Teacher Education in the above mentioned University. I am carrying out a research on office information systems skills possessed by office education lecturer in tertiary institutions in Adamawa State. This is in partial fulfillment for the award of a Master's degree in Business Education.

You are kindly requested to complete the attached questionnaire to the best of your knowledge and ability as the information is sought purely for academic purposes. Any information supplied by you would be treated with the strictest confidence.

Thanks and God bless you.

Yours faithfully,

Paul-Mgbeafulike Vivian Stella
PG/M.Ed/10/52682

APPENDIX C

SECTION 'A'   GENERAL INFORMATION

Please, you are requested to supply all relevant information to items below:

1.   Location of my school: Urban area ☐   Rural area ☐

1.   Educational Qualification, please check (ç)

   a. HND   ☐

   b. PGDTE   ☐

   c. First degree   ☐

   d. Masters degree   ☐

   e. Doctorate degree ☐

2.   Years of experience. Please check ☐ where years of experience fall within the list below.

   a.   1- 10 Years   ☐

   b.   11- 20 Years ☐

   c.   21- 30 Years ☐

   d.   31-40 Years   ☐

Section 'B' Office Information Systems Skills

Please check (ç) at the level of office information systems skills possessed in teaching. Office Information systems in tertiary institutions, using the response options:

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Highly Possessed   (HP)

Averagely Possessed   (AP)

Possessed   (P)

Possessed a Little   (PAL)

Not Possessed   (NP)

S/NO	ITEMS	HP	AP	P	PAL	NP
Cluster 1	**Electronic Publishing System Skills Possessed by Office Education Lecturers**					
1.	Set margins and tabs					
2	Move and insert text					
3.	Emphasize text by the use of underscore, bold and italics					
4.	Copy text					
5.	Edit and format text					
6.	Insert page numbers					
7.	Sort text					
8.	Create tables					
9.	Enter data in cells					
10.	Edit data cells					
11	Use upper case					

12.	Use sub-script					
13.	Use header/footer, end/foot note					
14	Save and print text					
Cluster 2.	**Electronic Communication System Skills Possessed by Office Education Lecturers**					
15.	Send information message using e-mail					
16.	Communicate using teleconference facilities					
17.	Forward the voice conversation message using e-mail					
18.	Record voice conversation					
19	Exchange electronic message across computers					
20.	Download messages to the user's personal computer (PC)					
21.	Attach files					
22.	Chat and discuss in group via internet					
23	Click on the window start button to display the start menu					
24.	Hibernate for easy opening of the window					
Cluster 3.	**Electronic collaborative system skills possessed by office education lecturers**					
25.	Proof read text					
26.	Various printer designs, copy rates and print densities					

27.	Access virtual briefcase					
28.	Use thesaurus to search					
29	Surf the internet					
30	Store information in files					
31.	Use projector scheduling					
32.	Edit an existing statement					
Cluster 4.	**Electronic image Processing Systems skills possessed by Office Education Lecturers**					
33.	Crop image					
34.	Pick the picture from net and display on the clip board					
35.	Create visual presentations					
36.	Click on the diagram to text					
37.	Compress an image to reduce the file size					
38.	Use overhead transparencies					
39.	Use slide show					
40.	Use charts, text and draw objects					
41.	Format images					
42.	Share documents between the two plat					

	forms					
43.	Use reference software					
44.	Draw using key command					
45.	Locate the insertion point					
46.	Use multimedia to capture images					
47.	Change background					
48.	Present animation					
49.	Modify text box					

APPENDIX D

Department of Vocational Teacher Education
(Business Education)
University of Nigeria, Nsukka

April 24, 2012

_____

_____

_____

Dear Sir/Madam,

REQUEST FOR VALIDATION OF A RESEARCH INSTRUMENT

I am a postgraduate student of the above Department carrying out a study on Office Information Systems Skills Possessed by Office Education Lecturers in Tertiary Institutions in Northeast States of Nigeria.

Attached here are drafts of the instrument. Please vet the instrument for content, clarity and suitability for use in collecting data for the study. Specifically, you are requested to:

1.   Reward/delete/add items as appropriate
2.   Make general comment or suggestion for improving the instrument toward meeting the purpose of the study.

Thank you for your assistance.

Yours faithfully

Paul- Mgbeafulike Vivian Stella
PG/M.Ed/10/52682

Validateøs Name   _____
Signature   _____
Comments   _____

OFFICE INFORMATION SYSTEMS SKILLS POSSESSED BY OFFICE EDUCATION LECTURERS IN TERTIARY INSTITUTIONS IN NORTHEAST STATES OF NIGERIA

BY

PAUL- MGBEAFULIKE VIVIAN STELLA
PG/M.Ed/10/52682

DEPARTMENT OF VOCATIONAL TEACHER EDUCATION
(BUSINESS EDUCATION)
UNIVERSITY OF NIGERIA, NSUKKA

JULY, 2012

TITLE PAGE

OFFICE INFORMATION SYSTEMS SKILLS POSSESSED BY OFFICE EDUCATION LECTURERS IN TERTIARY INSTITUTIONS IN NORTHEAST STATES OF NIGERIA

BY

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PG/M.Ed/10/52682

A PROJECT REPORT PRESENTED TO THE DEPARTMEN T OF VOCATIONAL TEACHER EDUCATION, UNIVERSITY OF NIGERIA, NSUKKA, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR AWARD OF MASTERS DEGREE IN BUSINESS EDUCATION UNIVERSITY OF NIGERIA, NSUKKA

JULY, 2012

APPROVAL PAGE

This thesis has been approved for the Department of Vocational Teacher Education, University of Nigeria, Nsukka.

By

……………………….....
Prof. C.A. Obi
(Supervisor)

…………………………
Prof. C.A. Obi
(Head of Department)

…………………………….
(External Examiner)

………………………..
Internal Examiner

……………………………
Prof. I.C.S Ifelunni
(Dean of Education)

CERTIFICATION

Paul-Mgbeafulike, Vivian Stella, a postgraduate student in the Department of Vocational Teacher Education with Registration Number, PG/MED/10/52682, has satisfactorily completed the requirement for course and research work for the degree of Masters in Business education.

The work embodied in this thesis is original and has not been submitted in part or full for any other degree of this or any other university.

í í í í í í í í í í í .
Paul-Mgbeafulike Vivian .S
(Researcher)

í í í í í í í í
Prof. C.A. Obi
(Project Supervisor)

DEDICATION

This work is dedicated to my unique husband Mr. Paul-Mgbeafulike Benjamin.

ACKNOWLEDGEMENTS

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Abstract

The major purpose of this study was to determine the office information systems skills possessed by office education lecturers in Northeast States of Nigeria. To achieve the purpose, four research questions were developed and answered, while three null hypotheses were formulated and tested at 0.05 level of significance. The population for the study consisted of 136 office education lecturers drawn from tertiary institutions that offer business education in Northeast States of Nigeria. The entire population was surveyed. The study adopted a survey research design that made use of a 49-item structured questionnaire developed from the literature reviewed for the study. The structured questionnaire was face validated by three experts. Cronbach Alpha method was used to determine the reliability of the items and a coefficient of 0.89 was obtained. The questionnaire was administered on 136 respondents by the researcher and four trained research assistants. All the copies of the questionnaire were retrieved and analyzed using the mean and standard deviation, while real limit of class boundary of Highly possessed (4.50-5.00), possessed (3.50 - 4.99) Average possessed (2.50 - 3.49) Possessed a little (1.50 - 2.49) Not possessed (0.50 - 1.49) was used to interpret the result. t-test was used to test the hypothesis 1, while analysis of variance (ANOVA) was used to test hypotheses 2 and 3. The findings of the study revealed that office education lecturers in tertiary institutions did not possess highly in any of the four clusters of office information systems components, the lecturers possess no skill in electronic image processing systems. One of the disclosures of the null hypotheses shows that location is not a significant source of difference in the mean ratings of office education lecturers on electronic publishing systems skills they possessed. The study also revealed that educational qualification is not a significant source of difference in the mean rating of lecturers of office education lecturers in teaching electronic communication systems in tertiary institutions. It was therefore recommended among others that Office Education Lecturers should avail themselves to acquire very highly skills on office information systems components such as electronic publishing system, electronic communication systems, electronic collaborative systems and electronic image processing systems for effective teaching of office information systems skills. Also, it was recommended that the lecturers should be retrained through in-service, on the-job training, workshop and seminar.