

**RELATIONSHIP BETWEEN INFORMATION TECHNOLOGY SKILLS OF
SECRETARIAL TEACHERS IN COLLEGES OF EDUCATION AND THEIR
ABILITY TO UTILIZE THE INTERNET FOR EFFECTIVE LECTURE DELIVERY**

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DECLARATION

I hereby declare that this dissertation, titled: Relationship between Information Technology Skills of Secretarial Teachers in Colleges of Education and their ability to utilize the Internet for Effective Lecture Delivery, has been written by me, and that it is a record of my research work. It has not been presented in any previous application for any degree in any Institution. All the sources of information are duly acknowledged by means of references.

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CERTIFICATION

This dissertation entitled “Relationship between Information Technology Skills of Secretarial Teachers in Colleges of Education and Their ability to Utilize the Internet for Effective Lecture Delivery” by Adeshina, Tunde Joel meets the regulation governing the award of the Degree of PhD Business Education of Ahmadu Bello University, Zaria, and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

This work is dedicated to Pa. Michael and Madam Janet Adeshina.

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ABSTRACT

This study was to establish the relationship between Information Technology (IT) skills of Secretarial Teachers in Nigerian Colleges of Education and their ability to utilize the Internet for Effective Lecture Delivery. Many secretarial teachers possess some degree of IT skills but these skills were not utilized to access information from the Internet, thereby not making them to be current and innovative within the mainstream of classroom teaching and learning. The major objective of the study is to discover how to fill the gap that existed between Information Technology Skills possessed by Secretarial Teachers in Nigerian Colleges of Education and the actual usage of the skills to access Internet for information that will assist them in effective Classroom Delivery. Four Research Questions and four Null Hypotheses were generated for this research study. The research design employed for this research study was the descriptive survey research. The Population for the study was 250 Secretarial Teachers drawn from 58 Accredited Nigerian Colleges of Education. No sampling was done because of the small size of the target population. However, out of the 250 Secretarial Teachers, only 225 Secretarial Teachers responded to the questionnaire that was divided into 4 parts. The questionnaire was used to obtain information on the respondents' Bio-data and computer use background, Teacher Information Technology Skill Acquisition Competence (TITSC), Teacher Information Technology Skills Usage (TITSU), Teacher Information Technology Internet Knowledge (TITIK), and The extent of usage of Internet information to teach the Secretarial courses. Data were analyzed using mean and standard deviation for answering the five research questions, while t-test was used to test for differences, and Pearson Product Moment Correlation Coefficient was used to test for relationships of the null hypotheses at 0.05 level of significance. The results of the study shows lack of basic learning experiences needed to adequately equip the teachers with ability to download and upload quality information and teach students how to do that. Owing to the lack of these IT skills therefore, the teachers were not capable in accessing Internet by using some Information Technology facilities to get vital information for effective classroom delivery. Though there was a significant relationship between Information Technology skills acquisition and classroom delivery. As weak as the relationship was that was discovered in the study, it was only effective on Office Practice, a course out of other courses offered in the Secretarial programme. The study concluded that, anyone that must be a proficient, versatile, current, effective and efficient teacher of office education in any of the Nigerian Colleges of Education, must be computer literate, highly skillful and innovative, and should demonstrate how to utilize and develop Information Technology in order to remain relevant in the modern day world teaching and research. Recommendations included the need for NCCE to integrate the current practices of Information Technology into the curriculum of the NCE secretarial education of the Nigerian Colleges of Education, and the need for an urgent retraining of the Secretarial Teachers in line with current Information Technology operations and societal needs to augment for an up-date of curriculum content.

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ABBREVIATIONS

CAI	Computer Aided Instruction
CBE	Computer Based Education
CMI	Computer Managed Instruction
ICDL	International Computer Development and Learning
ICT	Information and Communication Technology
IT	Information Technology
ISP	Internet Service Provider
NCCE	National Commission for Colleges of Education
NCE	National Certificate in Education
NITDA	National Information Technology Development Agency
PPMCC	Pearson Product Moment Correlation Coefficient
SPSS	Statistical Package for Social Sciences
STITB	Secretarial Teacher Information Technology Behaviour
TITSC	Teacher Information Technology Skill Competence
TITSU	Teacher Information Technology Skills Usage
TITIK	Teacher Information Technology Internet Knowledge
TISC	Teacher Internet Skill Competence
TISU	Teacher Internet Skill Usage
VSAT	Very Small Aperture Terminal

DEFINITION OF TERMS

Old Generation Secretarial Teachers: Secretarial Teachers that were taught with the Pre-2002 National Commission for Colleges of Education (NCCE) Minimum Standards that was not IT inclusive

New Generation Secretarial Teachers: Secretarial Teachers that were trained with the ICT enriched NCCE Minimum Standards of 2002 to Date.

Information: This is data that are processed to be useful to provide answers to who, what, where and when

Communication: is the activity of conveying meaningful information, which requires a sender, a message and an intended recipient; and which must solicit a response.

Information Technology: refers to the gathering, processing and disseminating of processed data using a combination of computer and telecommunications.

Communication Technology: It is the sending and receiving of information through the use of computers, G.S.M., Radio, tele-conferencing, Internet etc

Information and Communication Technology: It is an umbrella term that includes any communication device or application (encompassing : television, radio, cellular phones and computer) used to handle information and which aids communication. ICT is used as its acronym, and it covers any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form

Information Technology Skills: Refers to the ability to acquire functional knowledge of Word Processing and apply them to use e-mail, spreadsheets, data base, internet, navigating a computer file system and install software.

Communication Skills: Ability to combine all the activities of gathering data, processing data and conveying meaningful information which solicits a response

Internet: Is a collection of computer networks that operate based on common standards and enable the computers and the programmes they run to communicate directly.

Secretarial Education: it is an integral part of Education which trains her recipients to acquire practical skills, knowledge and attitudes needed to enter into, and to advance in secretarial teaching occupation or to be self reliant.

Secretarial Studies: It is the aspect of education that equips the recipient with skills, knowledge and attitudes that will enable the recipients to work in an office.

Secretarial Teacher: A person that has been trained and certified to train the recipients of secretarial education or secretarial studies. He imparts them with skills, knowledge and attitudes that are needed to work in the office.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The Internet has its origin in the United States of America in the late 1960s when the U.S Department of Defense initiated a project to link their several computing networks around the country. Their objective was to organize a network that could withstand some partial destruction from bomb and other disasters. The linking of these networks took a web-like structure with each computer being able to send data to other computers through many alternative routes (Peter, 2010). It has revolutionized the way in which people communicate with each other. Users can search for information about any topic using the Internet. Today, the internet has become an important part of our day to day life.

The Internet is used in diverse fields, such as business, entertainment, education, communication, medicine, defence, engineering and sports (Okebukola, 2008). Information plays a key role in the formation and structure of societies, no matter how small. Therefore, with the introduction of computers and communications with their management to yield information Technology, resulting into their remarkable capabilities of storing, processing and transmitting information, there was bound to be profound societal impacts. Information Technology has the world's largest broad band which embraces all networks has changed the face of the world we live in. Information Technology enables people to communicate with family, friends and colleagues around the world instantaneously, gain access to global libraries, information resources, and numerous opportunities, hence Information Technology must have brought improvement in the Nigerian educational sector (Adeshina, 2007).

Information Technology has been recognized by the Federal Government of Nigeria as a veritable tool towards sustainable development and global competitiveness. The Federal Government of Nigeria began the implementation of the Information Technology policy in April 2001 after the Federal Executive Council approved it by establishing the National Information Technology Development Agency (NITDA), as the implementing body (Emadoye, 2002). The Policy empowered NITDA to enter into strategic alliances and joint ventures and to collaborate with the private sector to realize the specifics of the country's vision of "making Nigeria an IT capable country in Africa and a key player in the information society by the year 2005 through using IT as an engine for sustainable development and global competitiveness" (FGN, 2001).

Information Technology has had more impact on administrative service and the private sector as they are used for admissions, registrations, fee payment, purchasing than on the fundamentals of classroom teaching and learning. In view of this fact, the Information Technology is yet to revolutionize the classroom. According to Gambari and Okoli (2007), it is changing the learning experiences of students by relaxing time and space constraints as well as providing easier access to information on-line, journals and e-books. The Nigerian Colleges of Education in Nigeria have been established to provide professionally qualified non-graduate teachers who will teach in the primary and secondary schools of Nigeria. The Certificate awarded is Nigeria Certificate in Education (NCE) in various disciplines which cut across Social Sciences, Languages, Sciences, Vocational and Technical Education.

Secretarial Education is one of such courses taught within the domains of the Vocational and Technical Education, particularly in the Business Education programme. It is an option that attempts to impart practical and applied skills as well as the basic scientific

technologies so that the recipients can enter into secretarial occupation and advance in it. Toward satisfying this definition therefore, secretarial/office education incorporates the following courses – Typing, Shorthand, Business Communication, office practice, secretarial duties office management, computer appreciation and application, word processing, principles of Management, Entrepreneurship, and Methods of teaching business subject. These are vocational skills to equip students with and to make them competent in an Information Technology related world of work (Federal College of Education, Zaria Student's Handbook, 2009).

Secretarial Education was designed as a programme in Business Education for Students to opt for by the National Commission for Colleges of Education (NCCE) in 1985 and placed emphasis on Typewriting, Shorthand and Office related disciplines. With the introduction of Information Technology in 2001, Secretarial Education was repositioned. The 2002 review of the Nigerian Certificate of Education (NCE) minimum standards incorporated some major elements of Information Technology into the teaching of secretarial education. Such courses included Computer Appreciation, Information Technology, and Word Processing. The course descriptions include the acquisition of skills on Computer hardware and software, Computer Techniques, Programming Languages, Information Technology Concepts, Word Processing, Electronic Data Application Systems and Electronic Communication systems (NCCE, 2002).

With this document put in place for implementation in the Nigerian Colleges of Education, acquisition of IT competencies and ability to utilize such competencies became imperative. Therefore, if secretarial teachers are to graduate students that would be relevant in the secretarial world of work, they must possess and utilize these skills effectively.

Although provisions have been made for teachers to acquire Information Technology skills, so as to qualify to teach in the entire Business Education Programme, Computer Literacy is a requirement. However, it is not clear whether all the secretarial teachers have the Information Technology skills, hence the need to assess the level of their IT skills and to see how much of it they have been able to use it to access information from the Internet for effective teaching delivery and production of IT compliant products.

It is important to note that there has to be a relationship between the skill possessions by these Secretarial Teachers and ability to use for teaching delivery, before there can be a drive towards having an improved teaching pedagogy. The use of IT to teach certainly has an advantage over the traditional method of depending on outdated books to teach. The more the IT skills possessed by Secretarial Teachers, the more the ability to seek for more detailed up-to-date and relevant information that will promote effective teaching delivery and vice versa.

This study, therefore, aims at establishing a relationship between Information Technology Skills of Secretarial Teachers in Nigerian Colleges of Education and their ability to utilize the Internet in teaching the students, with a view to improve classroom teaching.

1.2 Statement of the Problem

Information and Communication Technology has become a global phenomenon. As important as this is, the secretarial education teachers have acquired Information Technology skills, but have not been able to use such skills in accessing information from the Internet for effective teaching in their classrooms. The effect of the inability of Secretarial Teachers to provide for their students recent and varied internet resources and the capacity of the

Secretarial Teachers as those charged with the responsibility of transmitting quality knowledge to students require investigation.

Secretarial teachers should be able to build their Information Technology capacity and be effective. ICDL Africa (2009) admitted that the majority of the teachers and students in Nigeria remained largely unexposed to the new technology up till today and there is a lack of well defined programme for Information Technology development or upgrading. More importantly there is a lack of widely accepted standards by which skills and qualifications in the new and rapidly changing field of Information Technology can be measured. Liverpool (2002) also agreed by observing that Information Technology invasion into the educational system particularly in Africa has been particularly slow. Liverpool (2002) also posited that, Information Technology represents an opportunity to those who can respond to the new paradigm and a threat to those who cannot. Suffice it to say that, a teacher without Information Technology skills and the ability to use it may not be relevant in the modern teaching industry.

The net effect of not using the Internet to teach secretarial studies, as observed in this study is that, the quality of output of secretarial education teachers will be of low standard and this has implications for the secretarial profession and national development. The quality of the secretarial education graduates would be low, because of inability of the secretarial teachers to use the internet facilities hence, affecting secretarial profession, as employers would have no confidence in these types of graduates. They would be seen as incompetent hence the job opportunities would be lost, which ultimately would make Nigeria as a nation to suffer. Afemikhe (2004) stated that good teachers would beget good students from which

the system can get a replenishment of its teaching stock. In the same vein, poor teachers will beget poor students and resultant effect will be poorer future teachers.

Teachers can only pass on skills and ideas to the learners if they acquire the relevant job experience of their trade, and they are at the centre of transmitting such knowledge and strive for developments in their disciplines. Olakulehin (2007) expressed an unfortunate situation in Nigeria where most teachers had minimal or no skills in Information Technology, hence this generation cannot survive the challenges postulated by the contemporary social realities with this level of ignorance, technophobia and Information paranoia of the teaching force. Effective utilization of Information Technology skills by the Secretarial Teachers secures relevant information that would broaden the horizon of students and enlarge the frontiers of knowledge. It also enables the products enter into the electronic secretarial profession and advance in it with little or no supervision, and ultimately get them to compete well with their contemporaries globally.

1.3 Objective of the Study

The major objective of the study was to find out the relationship between Information Technology Skills of Secretarial Teachers in Nigerian Colleges of Education and their ability to utilize the Internet in teaching the students, with a view to improve upon the pedagogy of teaching. The specific objectives were to:

1. determine the difference between male and female secretarial teachers in the use of Information Technology skills to access information from the internet for classroom delivery.

2. establish the difference between the old generation and new generation secretarial teachers in using Information Technology skills to access information from the internet for classroom delivery.
3. establish the relationship between the Information Technology skills acquired by Secretarial Teachers and their utilization of Internet for effective teaching.
4. assess the relationship between the utilization of Internet based information by Secretarial Teachers in the Nigerian Colleges of Education and the effectiveness of their lesson delivery.

1.4 Research Questions

The following research questions were answered in this study:

1. What is the difference between male and female secretarial teachers in the use of Information Technology skills to access information from the internet for classroom delivery?
2. What is the difference between the old and new generation secretarial teachers in using Information Technology skills to access information from the internet for classroom delivery?
3. What Is the relationship between the Information Technology skills acquired by the Secretarial Teachers and their utilization of Internet for effective teaching?
4. To what extent is the relationship between the utilization of Internet based Information obtained by Secretarial Teachers in the Nigerian Colleges of Education, and the effectiveness of their lesson delivery?

1.5 Research Hypotheses

The following null hypotheses were tested at 0.01 level of significance:

1. There is no significant difference between male and female secretarial teachers in the use of Information Technology skills to access information from the internet for classroom delivery..
2. There is no significant difference between old and new generation secretarial teachers in using Information Technology skills to access information from the internet for classroom delivery.
3. There is no significant relationship between the Information Technology skills acquired by secretarial teachers and their utilization of internet for effective teaching.
4. There is no significant relationship between the utilization of internet based information by secretarial teachers in the Colleges of Education in Nigeria and the effectiveness of their lesson delivery.

1.6 Significance of the Study

This study will be significant in a number of ways. One of such is despite numerous studies conducted on Information Technology, the importance, the globalized impact in Nigeria Colleges of Education, to the best of the researcher's knowledge, no such study has been undertaken.

The Study will highlight the relationship between Information Technology Skills of Secretarial Teachers in Colleges of Education and their ability to utilize the Internet in Nigeria, and to what extent they have utilized information derived there from to enhance their teaching/learning processes.

The study will provide knowledge of important automation that can help access information on the Internet. Also, the Secretarial Teachers' Information Technology skills will be boosted and there will be appropriate utilization of information. It will also provide other Business Education Teachers in other disciplines (such as Accounting and Distributive options), with an insight on how to meet the Information needs of students of Business Education in this Information age, so that they can compete favourably and globally within the secretarial world of work.

With the changes in the societal needs, such as internet replacing chalkboard, the world of work becoming paperless – that is, E-Office, and every transaction now is being carried out on the Internet for example, E-mail, E-Banking, E-Commerce, and Teleconferencing to mention a few.; this study will help to support other studies in repositioning Secretarial Education programme in the Colleges of Education in Nigeria, so that these changes can be well articulated in the learning experiences to be given to NCE graduates.

This study will assist the teaching profession as the teachers will find the work of teaching interesting and easier. The result of this study will help to motivate secretarial teachers to seek current information for teaching and for research, which will consequently checkmate on professional obsolescence. There will be a creation of diversified and broadened horizon that would help secretarial teachers to appreciate the need to equip students with vital, relevant and up-to-date information, in order to make them compete favourably with their counterparts globally. It would enable secretarial teachers to aspire to be current and their students to also be current on issues and trends of office practices and principles globally. This study will help to arouse the interests of the Nigerian Colleges of Education to become proactive – as they would be expected to organize workshops, seminars

and conferences to train and retrain all their teachers on the usage of internet for teaching. The Nigerian Government and other stakeholders would, by the result of this study, see the benefit of Information Technology application to teaching and learning in Nigerian Colleges of Education, and they would come to the aid of such institutions that cannot afford some of the capital intensive Information Technology gadgets, possibly through Education Trust Fund (ETF) intervention and donations as the case may be. The ETF would appreciate the need to improve upon her collaboration with NCCE for IT capacity building of Secretarial Teachers. The Nigerian society will benefit from this study as the result will bring about improved service delivery of the secretarial teachers as they begin to appreciate the need to use the IT skills they have possessed they will supply to the citizenry relevant, current and up-to-date information that will help them in making quality decisions that will bring about educational and national development.

1.7 Basic Assumptions for the Study

For the purpose of this study, the following assumptions were made that:

1. all the Secretarial Teachers in the Nigerian Colleges of Education have developed some level of Information Technology skills.
2. there is lack of widely accepted standards by which skills and qualifications in the new and rapidly changing field of Information Technology can be measured.
3. there are insufficient Information Technology facilities in the Nigerian Colleges of Education which may affect Internet utilization by the Secretarial Teachers.

1.8 Delimitation of the Study

There are 83 Colleges of Education in Nigeria (NCCE, 2009), out of which 58 have been accredited to offer the Business Education programme under which Secretarial

Education is offered as a course of study (NCCE, 2010). The study was delimited to Secretarial Teachers in the 58 accredited Nigerian Colleges of Education by the National Commission for Colleges of Education (NCCE) as at 2011. They served as the main focus of the study. The research work was also delimited to IT skills utilization for accessing information from the Internet, which are all components of Information Technology (IT).

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter reviewed literature under the following sub-headings:

- 2.1 Effects of Information Technology on Effective Teaching
- 2.2 The Concept of Information and its Uses
- 2.3 Features and Benefits of Internet
- 2.4 Information Technology for Teaching and Learning
- 2.5 The Realities of Information Technology Utilization
- 2.6 Need for Information Technology Skills Utilization
- 2.7 The Secretarial Business Education Programme
- 2.8 Information Technology Implication for Secretarial Business Education
- 2.9 The Challenges of Information Technology in Secretarial Business Education
- 2.10 Information Technology Competency Requirements for Secretarial Teachers,
- 2.11 Integrating Information Technology to Teaching,
- 2.12 Empirical Studies
- 2.13 Summary of Literature Reviewed

2.1 Effects of Information Technology on Effective Teaching

World population exceeds six billion of which more than 4.7 billion reside in the developing world (UNDP, 2000; US Census Bureau, 2010). As the population is increasing there is a need to find ways of improving efficiency and quality of teaching and learning in all school systems in developing countries. Information Technology (IT) has been identified as a vehicle with the potential to improve the quality of good service delivery as well as the efficiency of the teachers both in the developed and developing countries. Information

Technologies have changed the face of the world we live in. Information Technology enables people to communicate with family, friends and colleagues around the world instantaneously, gain access to global libraries, information resources, and numerous other opportunities, hence, Information Technology might also have brought an improvement in the educational sector (Olakulehin, 2007).

Information Technology can be defined as one of the driving forces of globalization. With Communication Technology integrated into it gave it a broad spectrum of technologies that includes the use of radio, film, television, press, and telephone along with more participatory forms such as theatre, video or story telling. It also focuses on the electronic end of the spectrum such as e-mail, the internet, mobile phones and digital video (Adeshina, 2006). Information and Communication Technology came into existence in most of the African countries through research institutions, educational institutions, or international organizations like the World Bank, UNDP, USAID, UNICEF, etc. The first Information Technology initiative in Nigeria started in the 1950s with focus on print and electronic media. No major policy or other outcome was achieved because of strict government control (Olakelehin, 2007).

The full awareness of the importance of Information Technology was absent, only the private sector demonstrated Information Technology initiatives. The Obasanjo Administration in 2001 established the National Information Technology Development Agency (NITDA) to serve as a bureau for the implementation of National Policy on Information Technology. NITDA is trying to increase the internet penetration levels in Nigeria but much is yet demanded in the educational sector delivery systems. Nigeria started implementing its Information Technology policy in April 2001 after the Federal Executive

Council approved it by establishing the National Information Technology Development Agency (NITDA), as the implementing body. The policy empowers NITDA to enter into strategic alliances and joint ventures and to collaborate with the private sector to realize the specifics of the country's vision of, "making Nigeria an IT capable country in Africa and a key player in the information society by the year 2005, using IT as an engine for sustainable development and global competitiveness". (Emadoye, 2002). This vision though is yet to be fulfilled, because not many teachers particularly the Secretarial teachers in the Nigerian Colleges of Education have come to accept the need to use IT for teaching.

The objectives NITDA was to pursue were as follows: ensure that Information Technology resources are readily available to promote efficient national development, guarantee that the country benefits maximally, and contributes meaningfully, by providing the global solutions to the challenges of the Information Age, empower Nigerians to participate in software and Information Technology developments in a competitive manner, establish and develop Information Technology infrastructure and maximize its use nationwide, empower the youth with Information Technology skills and prepare them for global competitiveness, and integrate Information Technology into the mainstream of education and training Nigeria.

The telephone system in Nigeria has been for years. A breakthrough in telephone infrastructure emerged in January 2001 when the sector was totally liberalized with the licensing of MTN and ECONET (Mobile Phone Companies). They injected over a million lines into Nigeria within a year. Also Globacom came into existence late that year. The Global System of Mobile Communication (GSM) is spreading in a highly competitive manner from state to state and city-to-city. The advent of GSM has greatly enhanced the

exchange of information especially in Nigeria tertiary institutions (Daniels, 2002). Telephone calls are now made at cheaper rates both locally and internationally within real time. Text messages using the handsets have also contributed in no small measure to information exchange both locally and internationally. Before the advent of IT, it was not possible.

There is a number of factors affecting access to the Internet in Nigeria with cost being the leading factor. The average charges by Internet Service Providers (ISPs) to connect to the Internet are prohibitive for most Nigerian Colleges of Education. Informal observation revealed that there have been considerable (though uncoordinated) Information and Communication Technology training efforts of late both at personal and institutional level among teachers in the Colleges of Education. The purpose of these trainings was to make teachers Information Technology skilled both in personal activities and day-to-day professional practices. The problem has been that these trainings do not seem to have any impact in the Teachers' classroom teaching delivery. At best, teachers use the Internet, and in few cases, use computers for word processing (Adeshina, 2006).

Thus teaching with Information Technology in Primary and Secondary Schools still becomes impossible to achieve. This is because serving teachers did not experience Information Technology immersed curriculum in their professional preparations and they pass on what they received. The products of the Nigerian Colleges of Education that will use computers and Information Technology in later teaching practice must have observed their teachers using computers (Jegade & Adelodun, 2003). The most critical factor in the successful integration of Information Technology into education is the extent to which teacher educators are able to prepare teachers with the required knowledge and skills to

utilize Information Technology effectively (Information and Communication Technology in Education, 2004). Oliver (2002) in Oluwalola (2006) identified the needs for student teachers to experience models of Information Technology use in their own learning before they can go ahead to implement same in their later profession.

Teacher education institutions may either assume a leadership role in the transformation of education or be left behind in the swirl of rapid technological change (UNESCO, 2002). This is because the teacher is an agent of change, therefore cannot operate from the background but take the leading role in imparting this needed skill. The need for the development of Information and Communication Technology is a global resolution and has been a subject of great significance to all mankind (Idih and Njoka, 2008). These technologies have become central to contemporary societies. Whether one is talking on phone, sending an e-mail, going to the bank, using a library, listening to sports coverage on the radio, watching the news on television working in an office or in field, going to the doctor, driving a car or catching a plane, one is using Information Technology.

Information Technology is a shorthand for the computers, software, networks, satellite links and related systems that allow people to access, analyze, create, exchange and use data, information and knowledge in ways that were almost imaginable (Association of African Universities, 2000). The prevalence and rapid development of Information and Communication Technology has transformed human society from the "Information age" to the "knowledge age" (Okebukola, 2008). Most Nigerian tertiary institutions are already having computer study as part of their academic programs, most of them are still theoretical in nature to impact meaningfully on the society. The Nigeria University Commission

recently established a virtual learning website but its impact is yet to be seen and it is too early to be assessed (Adeshina, 2006).

Information Technology has had more impact on administrative services such as admissions, registration, fee payment and purchasing than on the fundamentals of classroom teaching and learning. Even if Information Technology has not revolutionized the classroom yet, it is changing the learning experience of students by relaxing time and space constraints as well as providing easier access to information online journals and e-books; students portals; etc, an achievement that should not be downplayed (Gambari and Okoli, 2007). Igbino (2008) identified the following competencies required by lecturers in Information Technology application in education. These include: competence to make personal use of Information Technology, competence to master range of educational paradigms which make use of Information Technology for teaching and learning. Lecturers in tertiary institutions are involved basically in two things: teaching and research, with auxiliary administrative assignments.

The Information Technology have the potentials of not only ensuring effectiveness and efficiency in these two areas of teaching and learning; they have the potentials of easing the administrative duties. According to Organization for Economic Co-operation and Development (OECD, 2005) Information Technology can be used in the following ways: to help in school administration, to train students in skills which they will need in further education and as an ongoing learning process throughout the rest of their lives and for their future jobs, e.g, word processing, email communications; to provide access to information outside the classroom e.g., via the Internet, to support teacher development via external networks, and to support and potentially transform the learning and teaching process

Information Technology has a feature which is particularly suitable for tertiary education. It combines and integrates a full range of media essential for effective learning. The Information Technology uses sounds, vision, text and numeric data which provides lecturers with new opportunities and in particular, distance learning and involvement in the real-world. There is also the opportunity to increase the interest and involvement by the one to one relationship provided by the student and computer and it provides students with opportunity within an opportunity to work and learn on their own.

When teaching and learning process is assessed critically in tertiary institutions in Nigeria, it could be observed that the challenge for lecturers in tertiary institutions is in not having access to Information Technology and using it to enhance quality of teaching and learning (Igbinoba, 2008). Milken Exchange on Education Technology (1999) as cited by Onasanya, Shehu, Oduwaiye, and Shehu (2010) identified three major ways of using Information Technology for teaching and learning. These are Information Technology (IT) assisted learning, technology as a tool and computer for information. Abimbade (1998) reported the benefits of Information Technology to lecturers in the areas of teaching as: (1) increase the time learners devote to learning, (2) enhance the speed of availability of data and information, (3) provide immediate feedback, (4) assist less qualified teachers and, (5) increase teachers efficiency and effectiveness. Abimbade (1998) explained further that one needs to be literate in the use of computers to effectively use them in teaching.

Research is another core business of the university. Distance research collaboration has been made possible using Information Technology, virtual lab technology making it possible for researchers located in different geographical regions to participate in joint projects. Onasanya, et. al. (2010) identified three specific areas of relevance of Information

Technology to lecturers in the area of research as follows: that, it provides opportunities for scholars to communicate with one another through e-mail, mailing lists and new groups and chat rooms. These Information Technology resources enable communication between scholars as they can post research, assignments, books or journal lists references to on-line materials. Problems and solution can be discussed between researchers and scholars spread throughout the world, thus, national and international dimensions of research issues can be studied as they can allow for communication with peers and experts around the world. Through collaborative knowledge building, studies can spotlight trans-national trend analysis through human and instrumentation collaboration.

Information Technology can facilitate research in any discipline as they provide quicker and easier access to more extensive and current information through digital libraries that provide digitized full-text resources to learners and researchers. Others are the electronics list-a directory of scholarly and professional e-conferences containing relevant topics and articles relevant to researchers and electronic reference desks or virtual libraries. Others include electronic journal and catalogues and image database. Others are Internet resources; gopher and CD-ROM can provide a researcher with current, in depth, firsthand information.

Information Technology can be used to do complex mathematical and statistical calculations which are important in research. They can be used for data manipulation and analysis. The Information Technology will facilitate the compilation of data on time, performance of statistical analysis. In fact, complex statistical analyses are not only performed instantaneously but also more accurately than possible manually.

Information Technology has become a necessary tool for every day activity and the utilization of emerging Information Technology (IT) in the institutions of learning (School) as a means of teaching has become incumbent on teachers and students for the purpose for which they are established. The application of Information Technology skills is responsible for the effectiveness and efficiency of Information management in schools today and every Secretarial (Business) Education Teacher is expected to be able to maximize the full potential of this technology (Igbino, 2000). It is important to note that Information Technology has been considered as one of the greatest forces bringing changes in the world of work and any teacher who wants to remain relevant, competitive and effectively productive, must, therefore, embrace and put to use the Information Technology skills to access vital and up-to-date information on the internet for the purpose of teaching.

Ikelegbe (2007) opined that Information Technology (IT), has all the modern systems for processing information in data, text, image and voice. It embraces all the technologies that support activities involving the creation of data, storage, manipulation and communication of information, including other methods, procedures, management and application. Butcher (2003) described Information Technology as electronic technologies for collecting, storing, processing and communicating information. Since the Secretarial (Business) Education Teachers play prominent roles in preparing Secretarial students, they are expected to utilize the Information Technology skills they have so far acquired, to access relevant, vital and up-to-date information from the internet, in order to make the content of their subject matter to be imparted to the students relevant to the world of work of the current dispensation.

Agbamu (2005) opined that business educators might find it difficult to deliver the appropriate education and training to their students. This is because, the more a teacher knows, the more the teacher will be able to impart to his students. Thus the need to shift from the traditional instructional materials to more modern materials in imparting the right type of knowledge, skills, attitudes and values to enable students move on the fast lane of Information Technology. Arunachalam (2005) said, “the electronic or digital revolution is affecting the nature of learning and the production of knowledge and transforming the world in unexpected ways”. Rai and Bhattacharya (2005) agreed that, Information Technology (IT) is one of the key technologies of our age and has had a profound effect on every aspect of modern society including education.

The use of Information Technology in acquiring knowledge and skill has become an essential element in education (training) and these Information Technology elements in the educational process have magical effects. Higher education without the support of Information Technology makes the lives of learners and teachers equally difficult. Ezenwafor and Ndinechi (2003) opined that business teachers need a thorough knowledge of the standard instructional methods in the field and should use a variety of them according to the situation, subject matter being taught, and instructional objectives so as to enhance teaching/learning effectiveness. Standard instructional methods for business education as outlined by Osuala (1989) and Aliyu (2000) included lecture, discussion, role play/dramatization, questioning, problem solving, project and assignment, demonstration, drill/practice, simulation and field trip.

Information Technology provides a powerful instructional delivery media for employing any or a combination of these identified instructional methods in business

education of which secretarial education is an integral part. However, the UNESCO 2000 World Education report identified the following conditions as essential for improving learning: that, Students and teachers must have sufficient access to digital technologies and the internet in their classrooms, schools, and teacher education institutions, high quality, meaningful, and culturally responsive digital content must be available for teachers and learners, and teachers must have the knowledge and skills to use the new digital tools and resources to help all students achieve high academic standards. The opportunity exists to harness this force and use it positively, consciously and with design in order to contribute to meeting defined learning needs.

Based on the stated facts it could be inferred that, Information Technology provides opportunities for teachers and students to collaborate with others across the country and across the globe. They also provide new tools to support this collaborative learning in the classroom and on-line. Bruer, (2000) in Nwanewezi and Okpokwu (2008) noted that Information Technology is quite adept at “breaking knowledge and skills into thousands of little standardized, de-contextualized pieces, which could be taught and tested one at a time”. Information Technology can provide powerful tools to help teachers access vast knowledge resources, collaborate with others, consult experts, share knowledge, and solve complex problems using cognitive tools. It can also provide teachers with powerful new tools to represent their knowledge with text, images, graphics, and video.

Business educators use computers and interactive multimedia to make their teaching more efficient, effective, powerful, and flexible. Internet is one of the computer and multimedia tools that have revolutionized the business world and classroom in recent times. By using the internet, a teacher can get virtually any type of information. The internet brings

teachers instructive information that they could not find in any other way, especially through the World Wide Web (www). Business teachers can register on line to read journals, magazines, book reviews, business statistics, etc on the internet, and they can also download useful information into their own computers for subsequent impartation to the students.

It is true that not all the Secretarial (Business) Teachers who claim to have the Information Technology skills have the time to access the internet, talk less of browsing to update on the content of their subject matter, thereby making it very current. Ngurukwem (2005) rightly discovered that if an audit of business teachers with Information Technology skills is conducted today, the result will reveal that only very few teachers who possess the skills and utilize them to support them in their teaching. If a business teacher is not capable of utilizing the Information Technology skills to enhance what he/she teaches, he/she should be charged with professional obsolescence. Based on this reason, Ngurukwem (2005) remarked that it is necessary that teachers of business utilize Information Technology skills to enable them grow professionally and remain relevant.

Computer literacy is crucial in accessing and using information on the Internet, and modern teaching methods should incorporate Information Technology as part of teaching learning strategies. The implication is that, Internet revolution will impact on Nigerian Education, as it would reposition it for effective classroom delivery and global competitiveness (Okoji, 2008). This could explain the reason for which Government is pursuing the implementation of IT and ensuring it becomes a necessary tool for everyday activity.

Secretarial programme is in the frontline of information management, letter writing, receiving and giving information, and word processing, therefore, Information Technology

literacy and ability to utilize IT to access quality Information is therefore very crucial (Igbinoba, 2008). There has been a gradual and steady increase in Information Technology skills acquisition by teachers teaching secretarial education, there is still a gap in terms of adequacy of training and availability of Information for effective teaching delivery. Therefore, there is still the need for secretarial teachers to acquire and use Information Technology skills for teaching and training of secretarial teachers, particularly at the Colleges of Education level in Nigeria. The missing link between IT skill acquisition and effective teaching would have been filled, which is the use of Internet to improve the quality of teaching in the classroom.

The Federal Government of Nigeria (2001) introduced Information Technology from two perspectives: for a supportive service and to be integrated to enhance sustainable development and global competitiveness. Information obtained from this Technology would be managed to give support and the IT itself would be used to fast-track the national goal. Information Technology is hereby seen as a very important resource in the country's search for economical, social, technological and educational development. Obviagele (2006) shared this opinion as he stated that, everywhere in the world, information technology is essential for efficient running of offices, industry and institution. Information Technology (IT) sparked off the information revolution and this is noticeable as the most powerful tool of change in management practice, as it stands in the center of the economic and technological development of any nation in this information age.

Information Technology has great implications for the secretarial students in the colleges of education in Nigeria. The existing curriculum for the programme produced by NCCE (2002) has incorporated some elements of ICT. Therefore, acquisition of Information

Technology competencies and ability to utilize such competencies have now become imperative, if the teaches are to graduate students that would be relevant to their world of work. Osuwa (2002) concludes that, no organization can survive without information and the advent of IT has made information very easily available for people. For Nigeria to be able to compete favourably globally, through accessing latest information in all educational fields, he advocated, that efforts must be made to link up all universities, Colleges of Education, Polytechnics, Libraries, Research centres, Teaching Hospitals and Government Departments with internet. He without doubt said, this would be expensive but the country stand to gain more than what should be the cost.

Ekruyota (2005) outlined the following as the benefits of Information Technology (IT) as it enables employees to cope with a variety of manufacturing systems, can improve the standard of employee's productivity, can create job satisfaction and improve job mobility, helps to keep contact with friends, families and business associates via the internet and using e-mail, provides facilities for managing personal finances with the use of spreadsheet packages and online, real time banking and it is helpful in pursuant of hobbies with specialized software packages. Other benefits are: it enables hand on activities, real time data collection on the internet, provides a medium to develop and exercise critical thinking ability, enable the student to known many new types of educational opportunities available elsewhere, and can be a conduit of powerful ideas and the seed of cultural changes, helping people form new relationships with knowledge that cut across the traditional lines separating humanities from science and knowledge of the self. These benefits gave IT stronger and powerful reasons for the usage to teach in the Nigerian Colleges of Education.

2.2 The Concept of Information and its Uses

Various attempts have been made to define information, as such no simple definition is universally acceptable. This is because to understand the nature of information exactly, there is a need to understand another term called data. Onajaife (2006) defined data as raw facts or observations that describe a particular phenomenon, while information is data that has a particular meaning within a specific context processed from data. Curtis, Folley, and Morin (1998) established the difference that exists between Data and Information that, data are raw and could include numbers, sounds, video or photographs, when they are processed; they become information in the form of letters, charts or multi-media. Sometimes, some information could become data depending on the circumstance or context in which it is used; but when they are processed they transform again into information.

Ibrahim (2005) opined that information is data that have been processed into a meaningful and usable context. It involves the transmission and reception of intelligence or knowledge. Eytayo, Eytayo and Akeju (1999) defined information as data which has been processed in such a way as to be meaningful and useful to the person who receives it. The definitions have some things in common: such as data referred to as facts events, activities and transactions which have been recorded, which when processed would give rise to information. In view of the aforementioned submissions it is important to state here that there are volumes of data that had already being processed which are available on the internet that secretarial business education teachers can access, which will help them in their teaching of the course. These data had gone through series or rigorous reviews and they have been up-dated to reflect views that are current hence up-to-date meaningful and useful information

which are capable of making one well informed in the global village and remain relevant in the world of work.

Information can be written, oral, visual or sensory. Written information is information that is made up of numbers and words which are in written form and transmitted from one person to another. Oral is the face to face exchange of information, through talking, while the visual information refers to information that is transmitted graphically or pictorially (Adeshina, 2007). For an item to be information, Afedia (2006) maintains that it has to pass from one person to another (communicated) and from one place to the other. Many ways have been devised in the past for passing information especially in the traditional setting. These included: oral discussion, beating of drums to call out people, and town criers going round a village to pass some messages to people. In the traditional office, the most common means of passing information was the messenger service who delivers messages through passing circulars, notices, and memos to authorized persons.

With the advent of Information Technology, today's business environment revolves around navigating computer file system. Whereas recording of information was done manually in the past, modern Information and Communication Technology equipment has been invented to satisfy all human efforts and ease human labour. Modern Information Technology has changed that cost of information acquisition processing and communication and if effectively applied could reduce the problems arising in the dissemination of information in the public and private sectors of developing countries. This is done through computers, internet, Global System for Mobile (GSM), Communications to mention but a few. A teacher who wishes to be relevant in the education industries, producing graduates

that are relevant to the modern world of work must not be Information Technology ignorant, he/she must possess the skill and utilize it for teaching.

The computer as an electronic device, according to Oduguwa (2002) in Omolorhe (2006) is capable of receiving data as input, and processing the data into meaningful information (output) in printed or visual form. In order to be able to communicate with the computer, knowledge of the system operation is essential. Information Technology through the use of internet has come of age to enhance productivity by improving the ability to store and retrieve information accurately. When such information are obtained they will serve the purpose of bringing currency into the classroom. He stated further that, it includes ability to download files of interest, exchange files through file transfer, participate in professional discussions on different subjects, sending and receiving e-mail on required information for institutions and students and the use of the world wide library services by researchers. The usage of Internet by the Secretarial Teachers affords them ability to compete globally.

2.3 Features and Benefits of Internet

The internet has been described as a global collection of many different types of computer networks linked together. The National Teachers Institute (2000) describes the internet as consisting of computers permanently joined together for high speed interaction in the information super highway. The word “internet” is derived from inter-Net-work. Obviagele (2006) stated that, for a business office or any other person for that matter to be permanently connected to the internet, you simply connect your computer to any of the computers on the network through internet service (Access) providers. Once you are connected to the internet, you can communicate with any other computer that is linked to the network anywhere in the wide world.

The use of internet is of great benefits to the secretarial workers especially in this information age, where knowledge is power. Yerima and Mohammed (1998), in Chukwumezie (2002), describes internet as a major breakthrough in technology and the most flexible mediums currently available in the technological world. Adebayo (2006) points out that the network quickly grew to include scientists and researchers across the countries and virtually schools, business, libraries and individuals around the world. Each, organization that subscribes to the net is responsible for maintaining its own network. It is therefore important to note that most of the information on the internet is free. Government; universities, colleges, companies and individuals provide free information to educate and entertain the public.

Osuwa (2002) posits that the internet provides services that have educational value and which serve useful purposes, stressing that using the internet is like travelling to a new country with many things to see and hear. It is possible for any educator to have global sharing of course materials of any other informational between educators in different countries. In view of the way internet has been described, it is sufficient to state that it is a new technology based on the principle that every piece of data held electrically anywhere is potentially accessible to any persons with appropriate computer technology. A word processed, document, picture, sound or video can be produced and shared among unlimited persons, no matter where they are located in the world, as long as it has been digitalized and recorded on disk somewhere.

It is important to consider the following in relation to internet: Internet features, Internet services, and Internet benefits.

Internet Features: Chukwumezie (2002) gave the following to inform Internet features:

Real time information: Retrieval and Transfer is one of the most remarkable features of the internet as it enables communication in real time e.g. E-mail can be sent and received from any location in no time.

Global access: the internet is global and it can be accessed from anywhere in the world as long as a connection to a local provider can be established.

Interactively user friendly: the internet presents information to its assessors in user friendly modes for example world-wide-web (www) pages are formatted with brilliant graphics and text providing a very good enabling environment for information dissemination.

Dynamic: internet content is constantly being updated providing users with current state of the art technologies and information.

Internet Services: A list of internet services were recommended by Mmeruwa (2001) that are supposed to inform the necessary skills required for use by secretaries in order to make them effective in information management: these includes the following: E-mail, Newsgroup/usenet, Telecommuting or teleworking, Computer Aided Telephony, World Wide Web (www), Surfing the net, Internet relay chat, Corporate lease access, File sharing and topic sharing, Video conferencing, Public voice messaging, Topic searching, Radio paging, Mobile telephone system and Internet address and host address.

Benefits of Internet: Internet has a great benefit to everyone that has to do with information. Obviagele (2006) opined that the use of internet therefore helps in three basic ways, which are, to get information, to provide information and to compile information. Through the internet, the end users of information, researchers, educationists and executives get information about people, products, organizations, research data and results. The internet also offers one of the best media which enables people to know who you are, what you are

doing, or that you have done and how. This is what is called global “advertising”. The easiest way for business organizations or institutions is to set up a website to let the world know what their products and services are. Adebayo (2006) also maintained that, the most recent and very successful attempt at presenting information over the internet is the world-wide-web (www).

The much that have written about Internet, the features, services it offers and the benefits stopped short at accessing the Internet. To use Internet by the secretarial teachers in Nigerian Colleges of Education for effective classroom delivery, there must be ability to access.

Dangana and Sabitu (2009) stated that, the emergence of the internet and its resources has helped in no small measures to effective dissemination of information, record management and improvement in commerce and the global economy politics and life in its ramifications. The products of Secretarial Business Education being a part of the ever changing and dynamic world of work, must move in the same pace with information technology in order to be relevant in today’s world of work. The ability of the teacher of the Secretarial Business Education to harness the internet resources and apply them in the classroom will go a long way to improving the students effectiveness and productivity. The speed of the e-mail for instance, and the ease with which it can be sent, even to multiple recipients all over the world has made it very useful to most organizations that can afford it.

2.4 Information Technology for Teaching and Learning

The present educational delivery system is Business Education places emphasis on teacher-centered approach in which case the teacher is the focus. The main characteristics of teacher-centered approach according to the Federal Republic of Nigeria (2003) were: Teachers select what the learners learn, the methods by which they learn and the pace at

which they learn; and Teachers see their role as communicating knowledge to their learners as effective as possible. In view of the observed phenomena, the teacher as a link between the learner of secretarial education and vital information must possess the skill of sorting, analyzing and disseminating vital information to students. This is where the Information Technology comes in with the attendant information sorting through the internet. Where the teacher is also saddled with the responsibility of selecting what the learners learns, he must be able to provide assorted kinds of information from where the students cannot make a selection as well. The Information Technology through the use of the internet enables a teacher to access numerous information.

In order to also communicate up-to-date information which would help the students of secretarial studies, which is very dynamic, then the teacher must rely on the use of internet where such up-to-date information can be obtained (Solomon, Nweze and Eze, 2008). These assertions supported ahead to suggest that for a good delivery system in Business Education (with which is secretarial studies), the teacher must understand the different models of computer used in education, among which are: Computer Aided Instruction (CAI), Computer Managed Instruction (CMI) and Computer Based Education (CBE). The combination of these models, according to Akudolu (2004), would help the teacher to use the computer not only for instruction and recording purposes but also for the production of instructional materials and the development of instructional systems.

Solomon, Nweze and Eze (2008) concludes that the effective implementation of Information Technology driven instructional approach using the aforementioned computer modes are avertable tools for reforming the delivery system of Business (Secretarial) Education. This would also serve a catalyst for re-engineering education in general and

making it technology based and learner centered. Therefore, every teacher needs adequate knowledge of how best to use computers to achieve educational objectives in his/her subject area.

Adebayo (2006) defines Information Technology as computer based tools which are utilized for the information needs of a particular organization, institution or individual. The particular individual, who should use Information Technology in his/her teaching methodology, is the teacher of secretarial studies in the Nigerian Colleges of Education. Olorundare (2006) posited that, Information Technology comprises different types of technologies which are utilized for processing, transmitting or communicating data and information. The implication of this position to secretarial studies programme is that, processed information awaits the secretarial teacher if they can be accessed on the web using the internet.

According to Ogbaekirigwe and Uloh (2008), Information Technology tools are indispensable in this modern age and its use in teaching and learning business (secretarial) studies in Nigerian schools will go a long way in producing skilled graduates that will effectively deliver afterwards in their respective places of employment. Akpotohwo and Ugeh (2008) observed that, the internet has become especially popular among educators because of its ubiquitous, global platform independent nature that support education through the creation, sharing and distribution of on-line course materials. This observation supported the researcher's suggestion that secretarial studies teachers in Colleges of Education should enlist in the usage of internet. It has been termed popular and would give support to their efforts, as they would be accessing available up-to-date information from the Internet.

Alavi (1998) and Hilderbrand (1999) observed that, Business Schools have been under constant pressure to provide students the skill and experience needed to effectively use emerging technologies. Also, Ladner and Jarvenpaa (2003) in Akpotowho (2008) observed that the technologies are being used by business to gain competitive advantage. For graduates in the Nigerian Colleges of Education to have a competitive advantage in the global market, they must be equipped with global information not found in textbooks that were written in the medieval centuries or in the past years, but on the internet where current research studies are daily reported.

Research findings supported that development of education in any nation will always have its root in classroom instructions; therefore, the classroom should be made conducive both for the students and the instructors (Ezeabii and Obayi, 2008). The conduciveness of such environment could be explained also in the light of whether it is using the current universally accepted instruction, that is, the usage of Information Technology for teaching and learning. When the same instructional materials a teacher has been using for the past two or three years are still very handy for the next succeeding class without any update, there is no way that such class would not become monotonous and subsequently not interesting. This is because the students have a way of passing their lecture notes to the next class succeeding them. As soon as the students discover that nothing has really changed in the lecture notes, the environment now becomes too boring and it may begin to make students to stay back from attending lectures.

Contrary to this disadvantage of using the Internet, when the students discover that the teacher is inclined to the dynamism that Information Technology could give to his subject matter content, through accessing vital up-to-date information from the internet, students

curiosity would be aroused and they would be eager to attend to their lectures. It is important to note that man loves to hear things that are new, modern and current. Nwosu (2009) observed that, today secretarial functions and training have been greatly improved due to improvement in the dynamic training methodology. This dynamism has posed a challenge for secretarial profession more than any single profession because it is saddled with the responsibility to process information needed by every sphere of human endeavour. Nwosu (2009) said these challenges have come in the area of curriculum content, instructional facilities, teaching methods, domination, and nomenclature.

In order to solve specifically the challenges of instruction in secretarial teaching and learning Nwosu (1987) argued that, the teaching learning of skills had long shifted from subject centeredness in which the teacher dominates the learning scene to learner centeredness in which the learner dominates by actively participating in the learning himself. This is very relevant to secretarial subjects such as shorthand, typewriting, secretarial duties, office practice, key boarding among others. According to Nwosu (2009), the best way to keep students active as possible throughout the period of instruction is to inspire and guide them on activities specially designed to present as near as possible the work situation they will come in contact with when they become employed. The resource material for instruction, which are developed based on the societal needs, are ever changing since they can be accessed on the internet for the use of students.

Onyejem (2005) in Nwosu (2009) stated that the use of resource materials do not achieve any of the attributed value on their own. Their usefulness depended on what the teacher makes out of them. The reason why some of these facilities are not used by teachers, as observed by Nwosu (2009) was because, the teachers lacked the necessary skills to operate

them. It is in recognition of the vital importance of the instructional facilities that National Commission for Colleges of Education (NCCE) provided that for accreditation of NCE Business Education (embodying secretarial studies) programme, one of the requirements is having a model office. Model office according to Oxford Dictionary (2006) is “something to be copied”, “a pattern” “thing closely resembling another”. From these definitions it can be said that, a model office is a teaching learning facility which should closely resemble the real life office. The purpose is to create an office-like environment in the classroom and to enable the students not only to see office and office related facilities but also to manipulate such facilities under real life situations.

The model office in the IT era is called e-office, an office that is being electronically manipulated. i.e introduction of Information Technology into office. The model office cannot be anything short of what obtains from the real life office and if it must be so, then the teacher must be up to the task to deliver using the Information Technology and all the vital up-to-date information it affords. Ndinechi (2001) saw the strength and power of Vocational education (the umbrella under which Business education is offered) as being a veritable means of meeting manpower needs of the society. Whereas these instructional facilities are either lacking or inadequate, the training institutions will continue to graduate half-baked individuals, those who are unable to either secure paid employment or be self-employed. The implication is that the graduates are jobless which may lead some into other vices like robbery, cult, prostitution or production of those who roam about the streets hawking recharge cards.

The teacher will give only what he has. The possession of IT skill by the secretarial teacher for teaching will impact upon their products who will in turn utilize it effectively and

efficiently in the real world of work. One of the objectives of teacher education as contained in the National Policy of Education (2004) was to provide teachers with the intellectual and professional background required for their assignment and to make them adaptable to any organizing situation not only in the life of their country but also in the wide world. Nwaiwu (2009) remarked that, Business teachers should adapt to the changing environment in the business world by equipping themselves with knowledge of Information Technology.

The possession of IT skills by the secretarial teachers will equip them with the knowledge of the components Information Technology and how it works; such as the computers, mobile telephones, fax machines, electronic mails, and internet so as to bring about desired effectiveness and efficiency required teaching in the classroom. Information Technology especially the use of computer has gradually become a rule than an exception, owing to its capacity to improve the quality of life through the advancement it has given to education. Information Technology is of great importance in teaching and learning business education in Nigerian Colleges of Education as it will produce skilled IT NCE graduates that will effectively deliver afterwards in their respective classrooms.

2.5 The Realities of Information Technology Utilization

In the face of the unfolding realities of Information Technology holding sway in the 21st century, Ihimekpen (2002) submitted that, it would lead to the introduction and provision of services based on member cards, electronic funds transfer. The implication of this on the Secretarial Business Education is to revisit its curricula offerings which would reflect the teaching of topics such as Internet, Very Small Aperture Terminal (VSAT); Electronic Organizer, voice messaging system, teleconferencing, Electronic mail (e-mail), Bulletin Board system, interactive Radio, Videotext, the concept of connectivity, office information

system; computer aided instruction (Aliyu, 2000). With the changing role of secretarial (Business) education, and as the content to be taught improves the teacher of the program must be upgraded too. The teacher has to be equipped with these competencies in order to achieve the objectives of secretarial (Business) education.

Baba (2009) reported what led to the advent of Information Technology, which started in the 1960s due to manager's search for increased productivity and reduced office costs. Today, office technology, which is the mechanization of office work to enhance greater speed and accuracy is gaining grounds and creating a revolution in the way information is processed and handled. Aromolaran (1999) defines automation as a process of replacing human work with the work done by machine or system designed to perform a specific combination of actions automatically or repeatedly. Oborah (1999) opines that the establishment of Federal and State Polytechnics in the 70s and 80s paved the way for the training of qualified secretaries in Nigeria. Within this period also the office environment changed and automated machines started replacing the manual ones such as manual typewriters. The present modern office has increased in complexity and this necessitated fast and efficient means of handling information.

According to Azuka (2003), the goal of business education programme at all levels was to provide training in business skills and to develop ability to use these skills in work environment. Baba (2009) postulated that, the success or failure of any classroom interaction depends to a great extent on the adequacy, functionality and utilization of instructional equipment and facilities such as Information Technology, the teacher and the curriculum from which the learner can draw experiences especially in the practical skills. Komolafe (2005) described the realities of Information Technology utilization as both positive and

negative. Some of the positive impacts of IT include the following that Information Technology has: helped in shaping the business world in many ways, led to increased job opportunities for secretaries by providing additional career areas, enhanced speed and accuracy, boosted the morale of the secretary, led to increased productivity on the part of secretaries, improve upon the use of word Processor, desktop publishing, packages, telecommunication devices, e-mail, fax etc and brought a lot of relief to secretaries, thereby enhancing their performance in the office.

The introduction of Information Technology in the business world has led to the retraining of traditional secretaries, thereby widening their scope of knowledge and skills. Wastes have been eliminated routine jobs such as records management. With the emergence of the technologies, secretarial duties can now be done from different locations including houses, motorcars or even airplanes. Making decisions have been made easier because it is easier to collect, analyze and make information available more effectively and speedily. Communication has been made easier between people; and effective maintenance, updating and manipulating of records are greatly enhanced e.g keeping of personal and financial records and correspondence.

The need to train and retrain secretarial teachers in the Nigerian Colleges of Education cannot be overemphasized as the utilization of Internet will guarantee access to quality information that will help the secretarial teachers to deliver their subject matter effectively.

The negative impact of Information Technology as highlighted by Komolafe (2005) includes: Knowledge and skills required over a period of time can be disrupted. A secretary whose security is the mastery of many typewriters and filing cabinets is understandably threatened by the change to computerization. Modus operandi of the office work can change.

This may lead to resistant behaviour, which takes a variety of forms such as aggression, withdrawal, hostility and non-compliance by the secretary. Information Technology may lead to fear of the unknown, that is, that Information Technology may replace secretarial staff thereby leading to unemployment. Information Technology may result to frustration, strain or threat of destruction or destroying ways of carrying out office routines or obstructing social relationships. Information Technology has made the duties of secretaries undefined as everybody can now perform secretarial duties with the aid of one machine or the other.

Looking at these effects, the positive outweighs the negative; nevertheless, if because of the negative effects, Information Technology is not given its right of place in our educational sector, it would be difficult for Secretarial teachers to be equipped with relevant up-to-date skills that will make them relevant in today's classroom that is IT engineered. Secretarial Teachers who refuse to be trained or retrained with required IT skills for effective teaching delivery, stands the risk of being charged with professional obsolescence and redundancy.

2.6 Need for Information Technology Skills Utilization

Today, it has become absolutely imperative for teachers of secretarial studies programmes to utilize their Information Technology skills to access internet for current information which will equip graduates with competencies for self reliance, self employment and less dependence on paid employment. Ikelegbe (2007) opined that education in Nigeria today cannot be relevant without effective preparation of new generation of pupils and students to effectively acquire competencies in the use and operation of the new Information Technology (IT) in their professional practices. It is suffice to say, therefore, that for these generations of pupils and students to acquire these competencies, the teachers must first possess the skills, as it is correct to say, that one cannot give what he does not possess. The

teachers must possess the Information Technology skills and they are adequately being utilized before they can impart to the students. Acquisition of the skills is not enough but the utilization that is of great importance.

Ohakwe (2004) also noted that educational resources of the internet, which schools can harness for their programmes are many and varied. In view of the foregoing remarks, it is important to agree that if teachers of secretarial studies utilize their skills appropriately, they would be able to go online register for e-mail alerts; they can receive feeds from educational sites/websites for information on latest developments or innovations in the educational sector, latest researches, and new developments in the secretarial studies discipline.

2.7 The Secretarial Business Education Programme

Secretarial education programme is an integral part of Business Education, one out of the three options available at NCE III, others being Accounting and Distributive options. The Secretarial Education according to NCCE (2002) was designed to equip students with Secretarial skills for teaching, and for employment in various fields of endeavours. Students of the programme are exposed to courses in their special areas as well as in Education General Studies (GNS). In addition to the acquisition of vocational skills in secretarial education, the students are equipped with effective work competencies, entrepreneurship and Information Technology related work skills which are very essential in everyday interactions with the world of work (FCE, Zaria students' Handbook 2009).

Secretarial education is designed at NCE III levels and the curriculum was designed by National Commission for College of Education (NCCE) in 1985 and placed emphasis on Typewriting, Shorthand and Office related courses.

The courses to be taught under this programme as contained in the NCCE minimum standard was reviewed in 2002 to include the following. Entrepreneurship, Office Management, Business Commission, Secretarial Duties, Shorthand V and VI, Word Processing I and 2; and Principles of Management (NCCE, 2002).

Adeshina (2006) posits that secretarial course contents are related to Information Technology. The job description of secretaries along which they are trained includes: receiving, processing, storing, retrieving and transmitting information. With the use of IT the jobs of the secretary in the office is being greatly enhanced as the jobs are carried out with ease, accurately and in real time. The secretarial teacher, therefore, cannot afford to be IT illiterate if he must produce secretaries or secretarial educators. To support this view, the reviewed 2002 NCCE curriculum took into cognizance the new trend in modern offices. The curriculum in use before this 2002 review used manual machines, and most of the old generation secretarial teachers had their training in secretarial education without the use of modern IT equipment. Njoku (2000) therefore, suggests the need to retrain them.

Nwosu (2000) opines, that, a modern teacher of secretarial education is a centre of information, the caretaker of management information system and an image maker of every organization he/she belongs to. Okoji (2008) said, for the teacher to deliver effectively in the classroom, the teacher is expected to be well groomed theoretically and practically in Information Technology. Secretarial studies programme as an integral part of Business Education Programme is offered in the Nigerian colleges of Education, and upon graduation the recipients are awarded NCE (Business Education). In order to achieve the goals of teacher education, the Federal Government established regulatory bodies. One of such

regulatory body's is the National Commission for Colleges of Education which was established by the provision of section 5 (c) and (d) of Decree No. 3 of 1989.

The goals of the Commission at the NCE Vocational and Technical Education level as entrenched in the blue print are (a) to produce competent teachers of the discipline for primary and junior secondary schools classes; (b) to produce trained manpower in applied science; technology and commerce at sub-professional level; (c) to produce the technical knowledge and vocational skills necessary for the nation; and (d) to produce skills, self-reliant and enterprising craftsmen and technicians. Specifically, the objectives of NCE business education contained in the minimum standards are to: produce well-qualified and competent NCE graduates in business subjects who will be able to teach business subjects in our secondary schools and other related educational institutions; produce NCE business teachers who will be able to inculcate right vocational aspects of business education into the society; equip students with necessary competencies so as to qualify them for a post NCE – degree programme in business education in Nigeria; equip graduates with the right skills that will enable them to engage in a life of work in the office as well as for self employment; and produce NCE –business teachers who will be involved in the much-desired revolution of vocational development right from primary and secondary schools (NCCE, 2002).

According to Okorie (2001) in Esene and Esene (2009) the enumerated goals and objectives were no doubt related to two of the National Policy on Education (FRN, 2004) as follows: the inculcation of the right types of values and attitudes for the survival of the individual and the Nigerian society; and acquisition of appropriate skills, abilities, and competencies both mental and physical as equipment for the individual to live in and contribute to the development of his society. Secretarial teachers possessing the requisite IT

skills will definitely result into the products acquiring the appropriate IT skills, abilities and competencies. Osuala (1998) in Esene and Esene (2009) reported that the course description showed that an integrated approach was adopted in teaching for the first two years, while in the third year; there are options like Accounting or Distributive, or Secretarial option.

The researcher's area of study is the secretarial option where graduates of NCE in secretarial education receive appropriate instructions in terms of learning activities and learning experiences acquired during training. Based on these, Esene and Esene (2009) said, that students are supposed to acquire practical skills and competencies needed for use as secretarial educators, as practicing secretaries, and for self-employed business. This assertion was corroborated by Okorie (2001) who posited that the programme of instructions of NCE business education (secretarial option) offers employment opportunities covering a wide range of training requirements from certain skill jobs to managerial and executive positions. The secretarial teacher that will convey effectively all the learning experiences across to the learner of Secretarial education, must be proficient in the Information Technology Content of the curriculum which includes: Word Proceeding (concept, application areas eg using Microsoft word, wordstar, etc data processing with Lotus/Excel (spread sheet) Application systems desktop publishing); Electronic Data Application systems (Batch Processing; on-line processing and real time processing systems, Record Keeping systems; decision making systems; problem solving systems; and Electronic communication systems (E-mail systems; facsimile communication systems, Internet local Area Networking (LAN); Global system for mobile communication (GSM); Computer Assisted Learning (CAL) (NCCE, 2002).

Okoro (2003) explained the end product of this programme, that, the job opportunities available for the NCE secretarial education graduates are legion and they include computer analyst, computer programmer, documentaries, secretarial educator, information officer, computer operators, administrative secretary, office manager, office supervisor, personal secretary and personal assistant. The preparation of these products with right IT skills for teaching will adequately position them to also deliver their lessons effectively.

Chukwumezie (2002) emphasized on the need for every educational programme to get richer and more effective learning resources, providing students with new exciting and challenging resources in the present dispensation. This calls for a periodic review of the curriculum content so that NCCE can integrate new IT innovations. This will ensure that the societal needs are constantly met vis-à-vis quality teaching delivery. Information Technology therefore is an indispensable tool as it would open doors for Nigerian graduates to compete favourably in the global teaching and learning world of work. Anunobi (2005) concurred to this assertion as he stated that, graduates may only be employed in contemporary offices if they are Information Technology compliant. It therefore follows that teachers of secretarial studies in the Nigerian Colleges of Education must be well equipped with these Information Technology skills to enhance their teaching and learning so as to increase the employability chances of their products..

2.8 Information Technology Implication for Secretarial Business Education.

Initially secretarial education provides skills, knowledge and attitudes needed for performance in the office world when most of the equipment was manual. Today, the use of manual equipment has been replaced with the use of electronic equipment. Nwosu (1999) in Atueyi (2001) observed that, in the past technology was supportive because it served as aid to

secretarial (business) education but innovations in information technology have stuffed this role from supportive to integrative. This in effect has changed the nature of office work as well as teaching methods. Visual aids were used by teachers for illustrations but today both students and teachers operate these equipment especially IT equipment which are used by students to learn in the absence of a teacher.

Mann (1986), stated that office technology revolution is now washing the shore of African business. The old jangling clattering typewriters, the room full of dusty filing cabinets and piles of ledger books, day books and reams of accounts sheets are all on the dust heap. Office equipment have now become office technology and businessmen become technocrats armed with dazzling variety of tools, which at the touch of a button put him in total control of every facet of his business. As a result of the sophisticated office technology, there have come to be a whole set of new skills for the secretaries to learn and apply perfectly. The secretarial duties have expanded so much that they now participate in evaluating, selecting, coordinating and training others. To a great extent, these observations have affected the curricula offerings of secretarial studies. Whatever that affects a curricular offering certainly would also touch on the methodology, which is the crux of this project.

Ezechukwu (2002) posited that, while technology creates a lot of new skills, it at the same time provide means of discharging them with the appropriate tools or machineries such as computers, facsimiles, word processors and Dictaphones. These machines have the capability to enhance the ability of the secretaries thereby improve their efficiency and productivity. The implication of these positions are that, IT in the secretarial world reduces the requirement of increasingly expensive and unproductive human labour and as a matter of necessity increases the recruitment of qualified personnel, who fit in properly. As a result of

this alteration in the offices by Information and Communication Technology, professional secretaries and intending secretaries are incomplete without computer knowledge. It suffice to say here that the teacher is seen as a very important factor who is expected to get this information that would achieve this noble objective.

Aja (2002) observed that Information Technology (IT) has already impacted on office jobs; hence, secretarial practice is one of the office occupations deriving huge benefits from Information Technology. The basic secretarial functions of collecting, transferring, verifying, processing and transmission of information lend themselves to computerization. It is important therefore to agree with these assertions, and suggest that, a functional secretarial studies programme is required that would enable teachers of this program, to put into use their Information Technology skills to access useful, up-to-date information for teaching the programme. This in turn will equip the students with current work habits, thereby making them confident enough to be useful to themselves and to the society.

Balogun (2002) went further to lend support to what other authors have said, that Information Technology have pervaded the office today and has increased the value of the services of the secretaries who are the major operators of these office automations. Hence the need for the teachers of the programme to be up to the task of providing vital information that will well equip the trainees. Balogun (2002) outlined the emerging roles of secretaries as including: fast and accurate keyboarding for composition; input, checking and editing data; familiarity with both hardware and software; ability to operate word-processing effectively; ability to keep and retrieve records in database; operation of electronic messaging software; extraction of relevant information from computers using integrated software packages; use of electronic mail and other communication network; numerical ability to facilitate the

preparation of costing and budgetary information; the skills to use video-conferencing system; ability to use voice recognition system; a broad understanding of the different technologies and their benefits/problems to facilitate effective communication; and market awareness to assist in equipment selection/evaluation exercises and ability to read further and keep abreast of newly invented office automation.

In view of this role expectancy at the time of graduation, it shows that the secretarial education programme is indeed Information Technology driven; hence Information Technology has become an indispensable innovation for the students. The secretarial education curriculum at the NCE level is designed to prepare teachers to teach secretarial related courses at the Junior Secondary School level. Olowu (2002) said although this stage could be regarded as the exploratory or introductory stage, whereby it is intended to create awareness and provide a general understanding of the world of technology it is no doubt the function of preparing the student for the world of work. He went further to say, to a large extent, whatever is imparted on the child at this critical stage will have a far-fetched effect on what becomes of the child. Consequently the need for the trainer to be taught with up-to-date and comprehensive curriculum to meet technological changes cannot be overemphasized.

Nwaiwu (2009) stated that the world of business has gone global. The twenty-first century businessman/woman or teacher talks about electronic business (e-business) and e-commerce. One can stay in Nigeria and order for goods abroad and make payments through the computer (on-line shopping). One can learn how to set up a business enterprise by accessing information which abound in the internet. One can apply for job on-line and get employment through the internet without first visiting the company. Nwaiwu (2009) further established that, presently the whole world is laying emphasis on entrepreneurship and small

business development which is the oil that turns the engine of a nation's economy. The implication here is that, the teacher of secretarial (Business) education must be well equipped with Information Technology and how to impart the knowledge to students who is a teacher also in the making.

The inability of the teacher of secretarial studies to utilize the Information Technology skills appropriately would mean the next generation teachers of secretarial studies would also be affected negatively and a vicious circle, the effect on the entire nation is better imagined. Nwanawezi and Onoh (2009) stated that with the application of Information Technology and information management in business offices today, secretaries are expected to be able to maximize the full potential of this technology. In the event that the capacity of secretarial business education is inadequate to train modern secretaries who are required to show expertise in the use of Information Technology in their prospective offices, it means they would not be able to face challenges of work in modern offices.

2.9 The challenges of Information Technology in Secretarial Business Education.

The application of Information Technology to every facet of the education industry has been observed to have some challenges, Ogbaekirigwe and Uloh (2008) submitted the following: The personnel normally entrusted with the responsibility of training/teaching students on the utilization of Information Technology are poorly equipped with the basic and necessary skills needed for the realization of the set objectives for example about 60% of the lecturers in our tertiary institutions do not have e-mails and most times are computer ignorant.

The in-availability of resource materials needed for Information Technology (IT) is another major handicap. Resources such as computer, Radio, video conferencing, television,

and telephone, are lacking; and where found it is either they are obsolete, weak or inadequate.

Cost and financial implication of acquiring and sustaining the usage of the resource materials; Poverty on this side of the globe has been a thorn in the flesh of individual groups, institutions and government. Institutions cannot provide needed facilities and government are faced with conflicting responsibilities, making it impossible to satisfactorily meet up with the needs of every sector.

The issue of inadequate electric power supply has stagnated, hindered and obstructed growth and development adversely. Electric power is needed to operate almost all Information Technology equipments and tools in Nigeria. Power supply in this country has been epileptic, law, unsteady and at times unavailable in the rural areas of the country.

Conservatism on the part of educators is alarming. Most people (lecturers inclusive) are not computer literate and as such do not feel they have to apply Information Technology in their teaching and learning process. They are comfortable with the old paradigm of face to face and teacher centered pattern of education. No matter the challenges, it cannot still explain away the importance and the great need for secretarial teachers to be IT skilled in order to build their capacity to utilize internet for effective teaching delivery.

These challenges are expected to set every teacher who has not started to utilize Information Technology in teaching and to do something fast before they are declared redundant. This is because there are quite a lot of new generation breed that are already acquainted with Information Technology skills ready to take up their jobs.

Alozie (1998) stated that modern technology did not remove the traditional role of the office, but it has changed and enlarged the process by which the office fulfils its processing

role to realize the objectives of organization. He went further to assert that, it also has helped to prepare the trainee for a world of work with modern facilities. He concluded that, modern technology has implication for the teacher of business office skills; as it is said that, no educational system can be better than its teachers; hence, the teacher must be a part of the technological change. Admittedly, acquisition of modern office machines and facilities require huge capital outlay, nevertheless, Adebisi (2008) recommended that Government should give adequate financial support in order to realize the dreams of Information Technology with secretarial business education programme.

2.10 Information Technology Competency Requirements for Secretarial Teachers

In order to qualify to be a secretarial teacher, according to the NCCE Minimum standards, a person is to possess NCE (Business Education) with specialization in the secretarial option. Any graduate here may wish to pursue a degree in this specialization in the University to obtain a B.Ed (Business Education) with specialization in secretarial/office option. The position of Oyedele (2001) could be applied here that a secretarial (Business Education) teacher should be: as broadly educated as possible within the constraints of a three year or four year teacher education programme in the sciences, humanities social sciences and in the communication skills; one who need to broadly prepare in the business area of concentration (i.e. secretarial/office education); prepared as a vocational teacher, with an orientation to vocational education and with a record of occupational employment Certifiable in the area of basic business-economic education; and one who is a director of learning and as such needs expertise in the use of multi-media resources and their contributions for improving the quality of instruction i.e to be ICT compliant. A secretarial teacher that falls out of these requirements, particularly as it applies to Information

Technology is neither qualified nor competent to be found in the classroom of the 21st millennium.

It has been noted by the Federal Republic of Nigeria in 2004 that no education system may rise above the quality of its teachers. The quality of the education to be given is therefore, related to the quality of the teachers. This is true of secretarial (Business) Education. According to Nolan, Harden and Malsbury (1976) as cited by Oladebo (1987) no curriculum however well written they may be, however costly it may be, will compensate for a poor business teacher. On the other hand, good business teachers will more than offset deficiencies in curriculum, in textbooks and in equipment. This assertion attests to the important role the secretarial (business) education teacher plays in the development of a viable secretarial (Business) education programme. With professionally sound and motivated secretarial (Business) education teachers, many deficiencies in the curriculum and the instructional facilities could be corrected.

In order to play the required role, the secretarial (Business) teacher should be well prepared and informed. According to Roberts (1971) the business education teachers should possess the knowledge, skills and attributes desired of all educated persons, the technical competencies required on one or more areas of secretarial (business) education acknowledge of the principles and methods of teaching, and some practical experience in one of the Business occupations. Obi and Oborah (2001) posited that, the business (secretarial) teacher should be well prepared in information technology (IT), in addition to other required courses. This preparation should be based on practical experience rather than theoretical aspects alone. This certainly will enable the teacher to effectively demonstrate information technologies to the students. Harrison (1980) in Obi and Oborah (2001) attested to this, and

wrote that, the business (secretarial) education teachers are required to be well informed about the technologies used in the offices and to be proficient in demonstrating them to the students.

In order to be well informed and prepared about current Information Technology, Obi and Oborah (2001) said the business (secretarial) education teachers should perform the following responsibilities: Develop an information technology laboratory in the business (secretarial) education department. This laboratory should be adequately with the appropriate information technology equipment. The procurement of such equipment should be on the recommendations of the business education teacher after a thorough survey study to identify the current trends and need of the business organization; develop a resource library in the department where current information about information technology could be stocked. This could be done through established links with other viable libraries in the country; and adopt appropriate and affordable information technology training methods. There are three basic training techniques that could be adopted for information technology training.

In view of the above professional role of the secretarial teacher, it is therefore, become imperative for the secretarial teacher to be well equipped with Information Technology competencies of he/she is to remain relevant. Having justified the application of Information Technology in secretarial (Business) education programme, Akinpelu and Adewoyin (1999) stressed that at the close of the century, there are new challenges in information technology that teachers and educationists, who are not familiar with the new technologies find themselves threatened by professional obsolescence i.e a feeling that one is no longer competent in his profession. Thus, Ihimekpen (2009) suggested on the need to train and retrain business teachers in the use of contemporary Information Technologies.

Such training is not only necessary it improves and update their teaching skills, it is imperative that teachers should be sufficiently conversant with the skills they intend their products should acquire and apply in the world of work. Since Information Technology has become a working tool in most industries and commerce, it is necessary that teachers of secretarial education possess and utilize Information Technology skills if they are to grow professionally and remain relevant.

Ihimekpen (2009) listed opportunities that secretarial teachers stand to gain with Information Technology which included the following: web-based education i.e on line virtual class, distant learning through on-line system; access to texts in libraries that are connected to the web, and e-mail services for mailing of assignment, enquires and course materials. Against this backdrop therefore, secretarial education teachers need professional literacy in computer which involves learning to use technology to foster the educational growth of students. Information Technology competency has become a basic skill needed by secretarial studies teachers in the colleges of education as it would enable them to train the graduates to be relevant in the technological office. Igbino (2000) supports this assertion with the following that executives often rely on secretaries to provide comprehensive accurate and up-to-date information promptly to enable them arrive at quality management decisions.

The secretary must show competencies in the use of computer in the organization and be able to produce mailable documents, file and retrieve information process data available from the internet via the computer. For the teachers of secretarial studies programme in an NCE programme of Business Education to cope with these challenges, they are expected to be able to operate a computer in order to run prepared programs. They should be able to

find, select and write simple programs and to type, modify, rearrange, print and even transmit text over telephone lines with ease and proficiency. To be able to do this efficiently on the internet using computer, the following skills, as suggested by Chukwumezie (2002), should be considered important for the secretarial teachers: Keyboarding skill and accuracy; Grammatical and communication skills; Computer fluency; Operating the telephone; Surfing the web; Browsing the net offline and online; and Downloading and uploading the software.

There is a fact worth mentioning here that, no one can give what he does not possess. As these teachers are proficient in these skilled areas, they would be able to impart it also to the students. It is not enough to possess these skills but more importantly that the enabling environment is provided for the teacher to put into use these skills hence the need to apply the provisions of the NCCE as stated in the Minimum Standard to provide a model office, Shorthand Laboratory, Word Processing Laboratory equipped with the following. Computers, colour printers, Modem card with E-mail software, copier-scanner printer, intelligent photocopier, computer printers, word Processors, facsimile machines (Fax), Telex machines, CD ROMs, flash drives, manual typewriters and other Information Technology gadgets.

Some research findings, like that of Igbinoba (2000), revealed that most of the institutions of learning do not possess adequately the aforementioned modern equipment. The adequacy of this equipment both in quality and quantity will help to train the trainees in the use of Information Technology and will invariably prepare them to participate effectively and fully in a rapidly developing technological society. In view of the on-going submissions, it can be concluded that, with the introduction of Information Technology to learning, the role of the secretarial teacher is going to change. The students will no longer depend solely

upon the teachers as expert who dispenses knowledge but at a guide in the bid to discover knowledge. For the secretarial studies teacher to be able to effectively carry out these functions, he must be current, in knowledge, skills and attitudes to face adequately challenges of imparting the new skills. Invariably the teacher would develop more flexible teaching methods which may include web-based formats, use of current education technologies to complement existing teaching aids. All these as they constitute some challenges to the secretarial teachers would ultimately make training and retraining of teachers in secretarial studies of great importance.

2.11 Integrating Information Technology to Teaching

It is the contention of this study that the concept of integration as expressed in the White paper on e-education (DoE 2003) needs to be unpacked or problematical. In practice, the adoption and integration of Information Technology skills to access information from the Internet to teach is a challenging and complex process for schools, particularly where there is limited previous experience in the use of ITs to support teaching and learning. Furthermore, at many schools that have had access to ITs, the focus has tended to be on ‘learning *about* ITs’ rather than learning *with* or *through the use of* ITs (Jonassen, Peck & Wilson 1999).

Historically, the concept of IT integration as an approach evolved as a reaction to early computer-in-schools programmes where the emphasis lay on developing computer literacy or technical knowledge of computers and the use of various computer applications. More recently IT integration has been recognised as “using computers for teaching and learning, rather than learning to use computers” (UNESCO/COL, 2004). Thus the focus is on adding value to the curriculum in numerous ways, What is important is that IT skills are not taught as a distinct activity (“just-in-case”), but are acquired “just-in-time,” in the context of activity

that is meaningful to learners” (UNESCO/COL, 2004). Indeed, “the integrated approach places information technology in a pivotal role in the already transforming learning process. Its success as an approach lies with the ability of teachers to set tasks that require learners to use these information skills. This is appropriate and necessary at this time when South African teachers are being encouraged to adopt new teaching strategies that are outcomes based and learner-centered” (Roos, 2005).

In addition to describing stages of integration, it is thought valuable to differentiate between types of integration. Here, it is useful to distinguish between “representational” and “generative” use of IT, as explained by Hokanson and Hooper (2000). The term “representational use” is used to describe how IT is used to merely represent information in another medium. Here the IT is incorporated within a task, but its purpose is to “re-present” information, not to generate or construct new information. It is suggested here that the underlying epistemological assumption of Hokanson and Hooper’s (2000) “representational use” is that knowledge is absolute, definable and “re-presentable”. This thesis suggests that if teachers’ epistemological assumptions are defined by objectivist beliefs of knowledge and their pedagogical practices are informed by behaviourist theories of learning, then they are likely to limit the use of IT skills to representational uses. This might account for teachers’ beliefs that merely typing an essay or making a pretty front cover using every conceivable font and page border can be termed “integration”. It is hereby maintained that using ITs as a “representational tool” is only partly integrative.

2.12 Empirical Studies

The advent of IT has on a day to day basis impacted upon every field of human endeavour, particularly the education sector. There are numerous studies that have been

conducted on Internet and the features, but not on how to access the Internet and use it for teaching, such studies include the following.

Chibuikwe and Igboke (2009) conducted a study on adequacy of Information and Communication Technology content taught to Business education students in Nigerian Tertiary Institutions. Descriptive research design was adopted. Out of the forty items only seven had their means above the cut-off point of 2.55 indicating that the respondents were not adequately exposed to the vital aspects of Information and Communication Technology in their various institutions. The standard deviation of the items ranged from 0.31 to 1.23 showing that the respondents were not far apart from their opinions.

The item relating the adequacy of teaching Information and Communication Technology in the institutions, only four (4) had means above the cut-off points 2.55 indicting inadequacy. The result showed that there was no significant difference between the mean response of male and female business education graduates in their perception of the adequacy of the Information and Communication Technology content taught in the various institutions of higher learning in Nigeria.

This research revealed that business education (which secretarial education is a component) did not respond positively to the emphasis on Information and Communication Technology. This may be the reason why the potential graduate teachers of Business Education remained uninformed and ignorant. It recommended the need to integrate ICT into the teaching of Business Education.

The findings in this study lent a good support to the statement of problem of this research study. It gave a boost to the study on the need to find out the relationship between adequacy and inadequacy of internet (IT) competencies on the ability of these teachers of

Secretarial (Business) Education in the Colleges of Education in Nigeria to access information.

Jegede (2009) conducted a study on Assessment of Nigeria Teacher Educators Information and Communication Technology training. The study used descriptive survey design with 500 teacher educators randomly selected from 12 Teacher Training Institutions (6 Colleges of Education, 6 Universities) from the South Western part of Nigeria. The result of the study showed that, barely 50% of the respondents had undergone “formal Information and Communication Technology training”. Observation also showed that majority of those trained did so on personal expense. In most of these trainings, web skills were hardly taught this was because most of the facilities were not internet connected. Only 8 teachers had been trained in the use of Information and Communication Technology for teaching.

On what the teacher educators perceived as necessary Information and Communication Technology contents, it seems as if teacher educators themselves did not understand what was needed mostly in Information and Communication Technology for their professional practices. This is because software and hardware skills enjoyed more popular inclusion, while CAI (Computer Aided Instruction) was the third in ranking. Even programming was accepted for inclusion beyond web skills. This indicated the extent of teacher educators’ deficiency in Information and Communication Technology knowledge and understanding. Jegede (2009) remarked, that, the design of teacher education curriculum depended primarily with this category of people who themselves were minimally informed on Information and Communication Technology concepts.

The nature of training had no significant effect on Information and Communication Technology use level of teachers. Similarly, significant effects were not found between training delivery provided for teacher educators and use level of each data processing.

The study concluded that, the trainings in Information and Communication Technology that teacher educators received had similar contents irrespective of the training providers, the trainings had not impacted on classroom practices as mere word and data processing skills have been the emphases.

The study revealed that, out of the four specified Information and Communication Technology skills, Computer Assisted Instruction or teaching with Information and Communication Technology was the least possessed by teachers. This was because, it was hardly been part of the training contents. The need today is moving from learning to use Information and Communication Technology to using Information and Communication Technology to learn. The researcher recommends a more focused and teacher –targeted Information and Communication Technology training content to be freely delivered by the Colleges and the Universities of the study, since that is what is now needed by these Teachers and Lecturers respectively.

Omeje (2009) conducted an assessment of Information and Communication Technology (ICT) skills required by secretarial studies Teachers in Tertiary institutions in Kogi state. The study used descriptive survey research design. The findings of the study indicated that Information and Communication Technology was an important skill for secretarial teachers and students to possess in order to fit into today's business offices. The report went further to state that, any teacher who lacked these skills cannot claim to be Information and Communication Technology literate and will not be able to teach them.

Specifically internet has made the whole world a global village and it is very important for secretarial (business) education teacher to improve and update and be adequately prepared in this area in order to get current information for teaching the programme. The result established this statement, as the analysis showed that, the teacher of secretarial (business) education required internet skills not only to adequately teach the course but also to remain currently well informed.

The research concluded that, business teachers (secretarial studies teacher inclusive) who have been long in the service may find it difficult to up-date themselves; a teacher of Business Education needs to complete his/her preparation for his/her job and keep abreast of the changes in his/her profession through engaging in activities that can improve him/her professionally. This study is an indication to the impact Information and Communication Technology may have on the teachers especially in the use of internet to source current information.

Igberaharha (2009) carried out a study issues of Information Communications Technology (ICT) Assessment in the teaching and Learning of Business Education courses. The researcher was interested in finding out the extent to which business teachers were Information and Communication Technology skilled, utilization of available Information and Communication Technology facilities and how Information and Communication Technology aids students leaving of business education courses. One null hypothesis and three research questions were formulated for the study. The researcher adopted a survey research design for the study. The findings revealed that there were serious problems in the availability utilization of Information and Communication Technology facilities for teaching business education courses. This was a serious implication as it could make it impossible for

secretarial teachers to access internet for any meaningful information. The result also showed that Information and Communication Technology aided students in the learning of business education courses. The only null hypothesis of the study was rejected at a degree of freedom not stated. It was reported that there was no significant difference in the use of Information and Communication Technology in teaching and learning by lecturers and students of business education.

The study concluded with this emphasis that in a globalized economy, issue of Information and Communication Technology in the educational economy was no longer a “hear say” because it enhances improved instruction. This study has stressed that business education of which secretarial education is a part of, cannot remain stagnant in an ever changing economy necessitated by Information and Communication Technology. Hence, the need for secretarial (business) education teachers to totally embrace the new face of giving current, up-to-date information propelled and backed up by Information and Communication Technology development. It was recommended that the government should respond urgently in this area, in order to save our educational system from losing value in this information age.

Nwanezi and Onoh (2009) in their study examined the perception of students on the barriers to effective acquisition of Information and Communication Technology competencies in the Secretarial Studies Programme. The result of this study showed that there were barriers to the effective acquisition of ICT competencies in the Secretarial Studies Programme as perceived by students of the program, and there also existed possible ways of overcoming such barriers.

This study was though not directed at the teachers of secretarial (Business) education, but it has a relationship with the researcher’s work as the result showed that, lack of appropriate

Information and Communication Technology skills and competencies by secretarial educators and instructors were among the major barriers in their quests to acquire excellent and employable Information and Communication Technology competencies.

Onasanya, Shehu, Oduwaiye and Shehu (2010), in another related research they conducted on Higher Institutions Lecturers attitude towards integration of Information and Communication Technology into Teaching and Research in Nigeria. Research design adopted was descriptive survey. 150 lecturers responded to the questionnaire, the t-test and one-way ANOVA were used to assess differences between groups of lecturers. The 4 null hypotheses were rejected as there was no significant difference in the attitudes of male and female lecturers at 0.05 level of significance. Also there was no significant difference in the scores of science lecturers and other lecturers (in Arts, Humanities and social sciences) in respect of utilization of Information and Communication Technology facilities/equipment in higher institutions. The third null hypothesis, also was rejected as there was no significant difference between the attitudes of less experienced and highly experienced lecturers in their use of Information and Communication Technology facilities and equipment for teaching and research in tertiary institutions. The fourth null hypothesis which was rejected also showed a no significant difference between University, Polytechnics and College of Education lecturers' Information and Communication Technology skill acquisition for teaching and research work. Having rated the Colleges of Education as coming low in the Information and Communication Technology skill acquisition for teaching, the findings of this research study gave support to this current research project, as it has uncovered what effect the lack of some basic ICT skills may have particularly on the Secretarial Business Education Teachers at the Colleges of Education in Nigeria.

Conclusion was drawn on this project and recommendations were made that, old lecturers should be encouraged to develop good attitudes towards the use of Information and Communication Technology for teaching and research work and that, there should be an effective integration of Information and Communication Technology into tertiary institutions in Nigeria. This study supports the fact that, Teachers need ICT skills in order to be able to access up-to-date information from the Internet, which in turn will help in their quality service delivery.

Marcel and Amos (2010) conducted a study on Evaluation of Information and Communication Technology skills needed by accounting education lecturers in Nigeria. The study examined Information and Communication Technology (ICT) Sub skills needed by accounting education lecturers. The study concluded that Information and Communication Technology skills were vital for effective teaching of accounting courses. Recommendations of the study included among others, that accounting lecturers in the Colleges of Education situated in the South-East geo-political zone in Nigeria should acquire through symposia, seminars, conferences and workshops Information and Communication Technology skills and put into practice these skills to enable them to use these skills effectively and efficiently in the teaching of accounting. Accounting education is a similar programme to secretarial education. They are all together courses taught under the Business Education programme. Whatever that has been recommended for Business Education could be adequately fitted for every course taught within the entire programme.

The study basically showed that Information and Communication Technology has a great influence on lecturer's effectiveness and efficiency in their teaching of all the courses offered in Business Education, hence a positive relationship between Information and

Communication Technology and lecturers effectiveness in obtaining relevant up-to-date information for teaching and learning in the Colleges of Education in Nigeria. This study helped to validate the fact that, with the ICT skills possessed by the Secretarial Teachers, they can obtain vital information to teach Secretarial Studies, Word Processing, Office Practice, and other Secretarial courses. The area of study of the researcher is the same with this current research study except that, this recent study is directed at the Secretarial Education lecturers of the Colleges of Education in Nigerian.

Bongotons and Onyenwe (2010) conducted a research on availability and adequacy of Information and Communication Technology resources in Business Teacher Education programmes in Nigeria. A descriptive survey research design was adopted with an instrument designed for Business Teacher Educators (Lecturers and Instructors), Managers of Business Teacher Education Programme and Information Technology Managers. The study found out that institutions lacked the needed Information and Communication Technology resources, no pedagogical considerations were given to curriculum in use, business teacher education lacked Information and Communication Technology cognate conceptual and technical skills. The study recommended for a national policy framework for monitoring both acquisition and utilization of Information and Communication Technology resource in higher educational institutions. There is a call for a collaborative effort by major stakeholders and in particular Information and Communication Technology-based multi-nationals to be more socially responsible by assisting educational institutions to acquire the resources which are capital intensive. Tertiary institutions were to also mount graduate teacher education courses and programmes/workshop to enhance utilization of Information and Communication Technology resource in teaching. The findings here lent support to the

work to show that the absence of a conducive enabling environment is capable of affecting the lecturers' ability to provide a good service delivery.

2.13 Summary of Literature Reviewed

The literature reviewed in this chapter of the research study revealed different methods in use for accessing, processing and disseminating of information before the advent of Information Technology. The introduction of Information Technology brought about the paradigm shift from the traditional way of accessing information to a more modern way of doing it which has improved efficiency and effectiveness in teachers' service delivery especially in teaching and learning of Business Education. The literature also revealed the impacts that Information Technology could have on the curriculum of secretarial (business) education. As the societal needs change, there will be need to revisit the curricula content, which would also mean that; the methodology of teaching the subject matter will change. Based on the fact that education is moving from use of chalkboard to use of internet, the teacher certainly would require retraining to enable them offer a good service delivery of the subject matter, which would subsequently bring forth graduate teachers that are universally acceptable in the global market. Positive relationship exists between Information Technology and the usage of the Internet. The teacher is rated effective and efficient when he/she is able to access current and relevant information for teaching as reported in the literature reviewed. The repositioning of the secretarial (business) education programme by curriculum planners, implementers and major stakeholders will bring about effective educational delivery.

In the review were discoveries that, there are hosts of current and vital information ready for use in teaching, research and quality decision making stored up on the Internet waiting to

be accessed by potential users. Secretarial teachers are to utilize their Information Technology skills to access this vital information and lesson delivery will be greatly enhanced. This therefore, called for acquisition of relevant IT skills by the Teachers through training or retraining until they are adequately equipped to access such information from the internet.

In the review the role of the teacher in the classroom is now transformed from being a font of knowledge to an instructional manager helping to guide students through individualized learning pathways, identifying relevant learning resources, creating collaborative learning opportunities, and providing insight and support both during formal class time and outside of the designated few minutes instruction period to play.

The importance of the Information Technology to teaching greatly emphasized shows the need to foster trusted partnerships, cooperation and safe collaboration by all stakeholders. These stakeholders include teachers, curriculum planners, the various government agencies saddled with education policies and implementation.

The studies conducted by some other researchers includes: adequacy of content to be taught using IT; level of curriculum content deficiency; importance of IT skill acquisition; the extent of IT skill acquisition; availability and non-availability of IT facilities to teach; Barriers to effective acquisition of IT competencies in the Secretarial programme; Need for Teachers to develop good attitudes towards the use of IT for teaching and research; Evaluation of IT skills by accounting education Lecturers in Nigeria; and availability and adequacy of IT resources in Business Teacher Education. These research studies gave a very good support to this current research study. It is not enough to know the theory that underlies

the functioning of Information Technology as these authors reported in their research study, but to be able to put into use these IT skills to access the Internet.

There appears to be a gap between the theory of IT skill possession and the practical usage of the skills to access diverse information stored up in the Internet, which is very useful for effective classroom delivery. It is against this backdrop that this study finds out the relationship between the Information Technology skills of Secretarial Teachers in Nigerian Colleges of Education and their ability to utilize the Internet for effective teaching, with a view to transforming the classroom from one that teaches to the middle, to one that uses the Internet to teach in order to bring effectiveness to teaching in the classroom, thereby removing or minimizing the observed gap.

CHAPTER THREE

RESEARCH DESIGN AND METHODOLOGY

This chapter dealt with research design and methodology that were employed in the study and discussed under the following sub-headings:

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

3.1 Research Design

The survey research design was employed in carrying out this study. This design is concerned with “what is”, which covers the description, recording, analysis and interpretation of conditions that exist. According to Wimmer and Dominick (1989) a survey research attempts to picture or document current conditions or attitudes, that is, to describe what exists at the moment. It helps to discover current happenings, changing values, and lifestyle variations that might affect programming. It involves some type of comparison or contrast and attempts to discover relationship between existing non-manipulative variables. The survey method being non-experimental dealt with relationship between Information

Technology Skills of Secretarial Teachers in Nigerian Colleges of Education and their ability to utilize the Internet for effective Lecture delivery.

Sambo (2005) defined descriptive survey method as that research methodology which require some historical base in answering research questions. Reasons for the usage of descriptive survey method: Used to explore relationship between two or more variable. As it finds out the relationship between Information Technology Skills and Internet utilization by Secretarial Teachers in Nigeria Colleges of Education; It has critical components with sound methodology, and a well designed collection instrument, hence the need to have a standard instrument that will yield quantifiable results (Phillip 2001).

Phillip (2001) maintains that there are many extraneous variables in educational environments that cannot be controlled in a realistic situation hence the need for careful observation and need to collect data from a large number of people spread throughout a wide geographic region. Phillip (2001) still maintained that descriptive survey has the advantage of including multiple variables for analysis, unlike other methods that require only one variable.

It also involves a critique of the relationship between these non-manipulative variables. Therefore the research is concerned with null hypotheses formulation and testing whether relationship discovered between the Information Technology skills possessed, and Internet skill utilization will form the basis for revising or improving upon the pedagogy of teaching secretarial studies programme in Nigeria Colleges of Education. This was considered to be in line with achieving the objective of the National Policy on Education (2004) and the National Policy on Information Technology (2001).

3.2 Population of the Study

The population of the study was 250 Secretarial Teachers teaching in the 58 Colleges of Education located within the six Geo-political zones of Nigeria in the course of carrying out the study. These 58 Colleges of Education were the ones accredited by the National Commission of Colleges of Education as at year 2011 to offer Secretarial Education programme. Summary of the population for the study is presented in Table 3.1, and the details presented in Appendix III

Table 3.1 Population of the Study

S/No.	Geo Political Zones	Number of Colleges	Number of Teachers		Total
			Male	Female	
1.	North Central	13	32	23	55
2.	North East	10	21	18	39
3.	North West	10	32	23	55
4.	South East	07	16	11	27
5.	South South	07	15	11	26
6.	South West	11	28	20	48
	Total	58	144	106	250

3.3 Sample Size and Sampling Procedure

The researcher used the entire 250 Secretarial Teachers for the study which was a 100% sample. This was made up of Secretarial Teachers that are teaching in the 58 Nigeria Colleges of Education that have been accredited by National Commission for Colleges of Education (NCCE) to teach Business Education programme of which Secretarial Education

is part of. The researcher used all the population because of the small size of the target population; hence there was no need to carry out any sampling technique.

3.4 Instrument for Data Collection

The research instrument used to collect the required data was a Questionnaire for the Secretarial Teachers on Information Technology Behavior (STITB Appendix II). It was divided into four (4) parts, namely: The Bio-data and computer use background of the respondents with items 1-12 in Section A. Section B comprised of: Teacher Information Technology Skill Competence and Usage (TITSC), with items 1-42 that were used to answer research questions 1 and 2; however, items 20-42 were mainly to assess the IT usage by Males and Females, and Old and New Generation Secretarial Teachers. Teacher Internet Skill Usage and the Consistency (TISU) with items 43-78 were used to answer research question 3; and the extent of usage of Internet information to teach the Secretarial courses with items 79-90 were used to answer research question 4. These instruments were originally developed for use with Singapore teachers by Sols (1998), and used for Nigerian University Teachers by Jegede (2009).

The research instrument solicited for Information Technology training background of the secretarial teachers as well as what they perceived as needed contents in teachers Information training curriculum. The Teachers Information Technology used checklist to find out how often the computer has been used for a specific purpose in the past three months. The scores were organized into four sub-scores and described as Data Processing, Word Processing, Communication (that is, using internet for searching teaching materials and sending messages to others) and instructions using Information Technology.

The items were scored using 4 point scale as follows: Adequately Skilled = 4, Skilled 3, Fairly Skilled = 2, Not Skilled =1; Very Well = 4, Well = 3, Fairly Well = 2, Not at all = 1, Very Knowledgeable = 4, Knowledgeable = 3, Fairly Knowledgeable = 2, Not Knowledgeable = 1; Very Often = 4, Often = 3, Occasionally = 2, Never = 1; Very Much = 4, Much = 3, Little = 2, Not at all = 1.

3.4.1 Validity of Instrument: Golafshani (2003) and Sambo (2005) emphasized on the importance of establishing the validity of research instruments. In view of this, the researcher submitted the questionnaire to the Business Education experts in the Department of Vocational and Technical Education, Ahmadu Bello University, Zaria for vetting, before the pilot and the pre-test were carried out. This agreed with Udoh (2002) who opined that, validation of content of a research instrument by experts is both important and acceptable.

The final instruments were restructured in line with all the observations and corrections made before they were administered to the target group.

3.4.2 Pilot Study: In order to establish and approve the reliability of the questionnaire, a pilot study was conducted using the – Questionnaire for the Secretarial Teacher of Nigerian Colleges of Education on Information Technology Behavior (STITB) which contained: The Bio-data and computer use background, Teacher Information Technology Skill Competence (TITSC), Teacher Information Technology Skills Usage (TITSU), Teacher Internet Skill Usage (TISU) and The extent of usage of Internet information to teach the Secretarial courses, were administered on 20 Secretarial Studies Teachers who were graduates of Secretarial Business Education and whose colleges also run similar secretarial programmes as in the Nigerian Colleges of Education. They were randomly drawn from Kaduna

Polytechnic, Kaduna and Nuhu Bamalli Polytechnic, Zaria. The coverage area had equal representation of 10 Secretarial Teachers each.

3.4.3 Reliability of Instrument for Data Collection: The data obtained from the Pilot Study were analysed using Pearson Product Moment Correlation Coefficient on the Statistical Package for Social Sciences (SPSS). The results gave a reliability coefficient of 0.90 for STITB. This falls within the range suggested by Papillion (1978) in Ade (1999) establishing that the questionnaire used for data collection was reliable and valid when reliability coefficients are variously set at 0.97, 0.90 or around 0.70.

In view of the reliability coefficient of 0.90 for STITB obtained, it showed that, the questionnaire used for data collection was reliable and valid.

3.5 Procedure for Data Collection

The questionnaires were administered by the researcher, who was assisted by twelve (12) field assistants. Two assistants were attached to each of the six geo-political zones, namely, North East, North Central, North West, South East, South South, and South West. The administration of the questionnaires in the six zones lasted for three weeks. The team returned to the Colleges of Education two weeks after the administration for the collection of the completed copies of the questionnaires.

In the course of travelling to administer the questionnaire by the researcher and the respondents, the following challenges were encountered: the difficult terrains of where the schools in the study were located. This was solved through the use of motor bikes to access such schools. There was also the inability to collect all the questionnaires sent out to the

respondents. The research study had to use the 225 out of the 250 questionnaires sent out for the study.

3.6 Procedure for Data Analysis

Descriptive statistics, that is, the mean and standard deviation were used to answer the Research Questions. Any item with a mean rating that is equal to or more than 2.5 was accepted, while a mean rating that is less than 2.5 was rejected. To tests the null hypotheses, inferential statistics such as student t-test, was used to test for differences, and Pearson Product Moment Correlation Coefficient was used to test the relationship. The null hypotheses 1 and 2 formulated for differences were all tested at 0.05 level of significance, while null hypotheses 3 and 4 formulated for relationships were tested at 0.01 level of significance. In order to determine the strength of the relationship, Choudhury’s Range of ρ was used as shown in Table 3.2.

Table 3.2 Choudhury’s Range of ρ
Decision Rule Table

Value of ρ	Strength of relationship
-1.0 to -0.5 or 1.0 to 0.5	Strong
-0.5 to -0.3 or 0.3 to 0.5	Moderate
-0.3 to -0.1 or 0.1 to 0.3	Weak
-0.1 to 0.1	None or very weak

Choudhury, A. (2009). Pearson Product Moment Correlation Coefficient.

Table 3.2 displays correlation coefficient that ranges from -1 to 1 . A value of 1 implies that a linear equation describes the relationship between X and Y perfectly, with all data

points lying on a line for which Y increases as X increases. A value of -1 implies that all data points lie on a line for which Y decreases as X increases. A value of 0 implies that there is no linear correlation between the variables. When the correlation is positive, as the value of one variable increases, so does the other. If a correlation is negative, when one variable **increases**, the other variable **decreases**. This means there is an inverse or negative relationship between the two variables.

The implication of this table to the study is that, if the correlation coefficient between the Information Technology skills of the Secretarial Teachers in the Nigerian Colleges of Education (X), and their ability to utilize the Internet (Y) is either -1 or 1 it shows there is a relationship. The direction of the relationship could also be determined where the X variable increases and the Y variable also increase, there is a positive relationship. Where X increase and Y decrease, there is a negative relationship. The level of the strength of the positive or negative relationship is determined by the value of p .

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

The instrument for data collection was administered, carefully filled by 225 respondents in the study zones. This chapter contained the Presentation and Analysis of Data under the following sub-headings:

4.1 Data Presentation

4.1.1 Analyses of Bio Data

4.1.2 Background on use of Computer

4.1.3 Teacher Information Technology Skill Competence

4.2 Analyses and Interpretation of Data

4.3 Test of Hypotheses

4.4 Summary of Findings

4.5 Discussion of the Findings

4.1 Data Presentation

A total of 250 copies of the instrument were sent to the respondents out of which 225 were completely responded to and returned, that is 90% return. Mean and Standard Deviation were employed in data analysis. A cut off point of 2.50 was determined by finding the means of the nominal values assigned to the options of:

- a. Adequately Skilled, Very Well, Very Knowledgeable, Very Often and Very Much (AS, VW, VK, VO, and VM = 4)
- b. Skilled, Well, Knowledgeable, Often, and Much (S, W, K, S, O, and M = 3)
- c. Fairly Skilled, Fairly Well, Fairly Knowledgeable, Sometime/Occasionally and Little (FS, FW, FK, FS, S/O, and L = 2)
- d. Not Skilled, Not at all, Not Knowledgeable, Never and Not at all (NS, N, NK, NS, N and N = 1)

e. Zero score (0) was assigned to any question that was not answered on the questionnaire by the respondents.

Any response, therefore, with a mean of 2.5 or above was regarded as Skilled, knowledgeable, and Well, while those below were regarded as Not Skilled, Not Knowledgeable and Not Well.

The questionnaire for data collection from respondents was Secretarial Teacher on Information Technology Behaviour (STITB). They were distributed to the Secretarial Teachers in 58 Colleges of Education in Nigeria Accredited by the National Commission of Colleges of Education (NCCE) to offer Secretarial Education programme. (See Appendix IV).

4.1.1 Analyses of Bio Data: The Bio-data presented included Gender of respondents, the year they received their training, age, academic qualification, rank, years of teaching experience and background on computer use. The analysis on background on computer use included the following: personal contact with computer, years of usage of computer, training to acquire skills and average hours per week of using computers. The summary of responses was presented in Tables 4.1 to 4.13.

4.1.1.1 Gender – The responses of the respondents by gender were presented in Table 4.1.

Table 4.1 Percentage of Respondents by Gender

Gender	Frequency	Percent
Male	131	58.2
Female	94	41.8
Total	225	100.0

Source: Field Survey, 2011

Table 4.1 showed that out of the 225 Secretarial Teachers that responded to the questionnaire, there were 131 males which represented 58.2%, while 94 females responded which represented 41.8%. The result here shows that there are more male teachers than the female teachers to teach Secretarial Education in the Nigerian Colleges of Education. There is need to encourage the participation of more female teachers to teach Secretarial Studies in Colleges of Education, because it will lead to the achievement of the national objective of an egalitarian society as contained in the National Policy on Education. (FGN, 2004)

4.1.1.2 Old and New Generation– The responses of respondents whether they were Old or New Generation Secretarial Teachers were presented in Table 4.2.

Table 4.2 Percentage of Respondents by Generation of Secretarial Teachers

Old and New Generation Secretarial Teachers	Frequency	Percent
Before 2002 (Old Generation)	146	64.9
After 2002 (New Generation)	45	20.0
No date indicated	34	15.1
Total	225	100.0

Source: Field Survey, 2011

Table 4.2 shows that 146 Secretarial Teachers representing 64.9% were taught with the Pre 2002 National Commission for Colleges of Education (NCCE) minimum standard that was not ICT inclusive, which may be termed the old generation Secretarial Teachers. While only 45 (20.0%) were of the new breed teachers (New generation Secretarial Teachers) that were trained with the ICT enriched NCCE Minimum Standards. 34 (15.1%) respondents did not indicate whether they are old or new generation Secretarial Teachers.

4.1.1.3 Age of Respondents – Responses of the respondents by age were presented in

Table 4.3

Table 4.3 Percentage of Respondents by Age

Age (in Years)	Frequency	Percent
Less than 25	1	0.4
25-29	8	3.6
30-34	24	10.7
35-39	34	15.0
40-44	62	27.6
45-49	53	23.6
50-54	31	13.8
55-59	9	4.0
Above 59	2	0.9
No Age Indicated	1	0.4
Total	225	100.0

Source: Field Survey, 2011

Table 4.3 shows that in the next nine (9) years from here when Nigeria would have become one of the 20 developed economies, only 11 lecturers out of the current respondents would have been out of the system by reason of retirement from their respective places of employment. These 11 lecturers fall within the clusters of ages 55-59 (9) (4.0%) and 59 and above (2) (0.9%). The remaining 212 lecturers that would carry on with Secretarial Education Teacher service delivery into the 20:20:20 vision and beyond would still impact positively, with the ICT skills they possess, on the students currently in the programme and potential students.

4.1.1.4 Educational Qualifications of the Respondents – The responses of the

respondents by their educational qualifications were presented in Table 4.4.

Table 4.4 Percentage of Respondents by Educational Qualifications

Qualification	Frequency	Percent
Bachelor Degree	57	25.3
Masters Degree	145	64.5
Doctorate Degree	9	4.0
Others	14	6.2
Total	225	100.0

Source: Field Survey, 2011

Table 4.4 showed that showed that the Colleges of Education in Nigeria are equipped with qualified post graduate teachers to teach the secretarial Education. This will go a long way to offset any deficiencies in curriculum, in textbooks and in equipment.

4.1.1.5 Ranks of the Respondents – The responses of the respondents by ranks were presented in Table 4.5.

Table 4.5 Percentage of Respondents by Rank

Rank	Frequency	Percent
Chief Lecturer	15	6.7
Principal Lecturer	23	10.2
Senior Lecturer	54	24.0
Lecturer 1	26	11.5
Lecturer 2	31	13.8
Lecturer 3	33	14.7
Assistant Lecturer	38	16.9

No Rank indicated	5	2.2
Total	225	100.0

Source: Field Survey, 2011

Table 4.5 revealed that the Colleges of Education in Nigeria are equipped with qualified teachers that are also well advanced in their teaching experiences as could be seen in their respective ranks. The Colleges of Education are not bottom heavy as there are 52.4% Senior Academics that can mentor the other 47.6% for a positive teaching learning processes.

4.1.1.6 Number of Years of Teaching Experience – The responses of the respondents by number of years of teaching experience were presented in Table 4.6.

Table 4.6 Percentage of Respondents by Years of Teaching Experience

Teaching Experience (in Years)	Frequency	Percent
1-3	28	12.5
4-6	41	18.2
7-10	45	20.0
11-15	31	13.8
Above 15	79	35.1
Not indicated	1	0.4
Total	225	100.0

Source: Field Survey, 2011

Table 4.6 showed that the Colleges of Education in Nigeria are not only equipped with qualified Teachers who had rose to become senior academics, but their years of teaching experience attested for them. These lecturers that have at least four years of teaching experience sum up to 87.1%, who by regulation have their appointments confirmed.

4.1.2 Background on Use of Computer

This section collected and sought for information in the following areas: Respondents' personal use of computers, years of experience in using computers, mode of computer

procurement, reasons for not using computer (if any), formal training acquired, computer accessibility and hours of computer utilization per week.

4.1.2.1 Personal Use of computer – The responses of respondents by personal use of computer were presented in Table 4.7.

Table 4.7 Percentage of Respondents by Personal Use of Computer

Personal use of computer	Frequency	Percent
I have	217	96.4
I do not have	8	3.6
Total	225	100.0

Source: Field Survey, 2011

Table 4.7 showed that 8 teachers had no personal contact with computers while 217 had. This few must do something fast to acquaint themselves with Information and Communication Technology skills before they are declared redundant or unproductive staff.

4.1.2.2 Number of Years of experience in using computer – Responses of the respondents by number of years of experience using computer were presented in Table 4.8.

Table 4.8 Percentage of Respondents by Years of Experience Using Computer

Years of experience In using computer	Frequency	Percent
1-3	58	25.8
4-6	58	25.8
Above 6	101	44.9
No year indicated	8	3.5
Total	225	100.0

Source: Field Survey, 2011

Table 4.8 showed the years of experience in using computer by the secretarial teachers. The total of 217 respondents out of the 225 that had been using the computer for an upward of 1 year and above was considered to be adequate. This is because any consistent practical session given to using computer on a daily basis for an upward of one year should bring some degree of perfection.

4.1.2.3 Computer procurement – The responses of the respondents by who procured computer for them were presented in Table 4.9.

Table 4.9 Percentage of Respondents by Computer Procurement

Source of Computer Procurement	Frequency	Percent
Employer	49	21.8
Personal	167	74.2
Not indicated	9	4.0
Total	225	100.0

Source: Field Survey, 2011

Table 4.9 showed the ability of most of the secretarial teachers to procure computers for themselves which was very commendable. Out of this number, 49 had theirs procured for them by their employers, most probable on loan, which is also a good gesture towards promoting efficiency in teaching and learning, through the use of computer.

4.1.2.4 Reasons for not Using Computer – The responses of respondents by reasons for not using computer were presented in Table 4.10.

Table 4.10 Percentage of Respondents by Reasons for Not Using Computer

Reason for Not Using Computer	Frequency	Percent
Do not have knowledge to use it	2	0.9
None available	6	2.7
Too expensive	5	2.2
	2	0.9

No time	1	0.4
Others	209	92.9
No response		
Total	225	100.0

Source: Field Survey, 2011

Table 4.10 showed 16 teachers that could not use the computer and their reasons for not using one. 209 teachers did not respond because they are using computer. It is important to note that, whatever was the reason for not using a computer by any teacher in this IT compliant educational sector is no excuse, for such teachers will soon become obsolete in the teaching profession, because they cannot give effective teaching through the use of IT skills. There will be a replacement of those teachers that cannot perform for those who can offer the IT related teaching service.

4.1.2.5 Previous Training in computer – Responses of respondents by previous training were presented in Table 4.11.

Table 4.11 Percentage of Respondents by their Previous Computer Training

Formal computer training	Frequency	Percent
Had previous training	189	84.0
No previous training	33	14.7
No response	3	1.3
Total	225	100.0

Source: Field Survey, 2011

Table 4.11 showed something very impressive on the part of these teachers. The result indicated that many of them that had no computer literacy made personal effort to acquire the

skills. This effort supports or agreed with the recommendations of Ugwuanyi and Eze (2009), that, teachers are expected to make personal efforts to have their own personal computers and engage private teachers where possible. This will make them become useful in the IT compliant classroom, as they will be able to teach effectively, giving quality information obtained from the internet.

4.1.2.6 Computer accessibility – The responses of the respondents by computer accessibility were presented in Table 4.12.

Table 4.12 Percentage of Respondents by Computer Accessibility

Computer accessibility	Frequency	Percent
Not accessible	7	3.1
Occasionally accessible	39	17.4
Restricted access	3	1.3
Freely accessible	173	76.9
No response	3	1.3
Total	225	100.0

Source: Field Survey, 2011

Table 4.12 reveals the respondents' computer accessibility. The result was commendable as they had access. It is important to note that there are some Colleges of Education that collaborate with computer sales depot and Information Technology service providers. This partly explains for the improved accessibility of teachers to computer. The learning of Information Technology skills will only be meaningful to the extent that equipment for teaching are available and functional.

4.1.2.7 Number of hours using computer per week - The responses of respondents by number of hours they use computer per week were presented in Table 4.13

Table 4.13 Percentage of Respondents by Duration of Using Computer per Week

Duration of Using Computer Per Week (in Hours)	Frequency	Percent
1-3	121	53.8
4-6	63	28.0
7-11	19	8.4
Above 11	16	7.1
No response	6	2.7
Total	225	100.0

Source: Field Survey, 2011

Table 4.13 reveals good number of hours per week using computer. This explains increased for mastery of the Information Technology skills. Practice brings about perfection. As the Teachers perfect in their skill acquisition, the students are better for it, as the teacher can give what they have, and accessing information using the Internet also becomes easier, hence an improvement in their teaching.

4.1.3. Teacher Information Technology Skill Competence.

The data collected from items number 1 to 90 in Section B were the ones used to answer the research questions, and were analyzed to test the null hypotheses. They results were presented with the use of frequencies, percentages, mean and standard deviation. They were displayed in the Appendix IV and VI, however, the summary of relevant ones will be seen in each of the Research Questions in Tables 4.14 – 4.20 and Null Hypotheses analyzed in Tables 4.21-4.25 respectively.

4.2 Analyses and Interpretation of Data

This section shows the analyses and Interpretation of data collected in order to answer research questions 1 -5 that were asked for this research work.

4.2.1 Research Question One

What is the difference between male and female secretarial teachers in the use of Information Technology skills to access information from the internet for classroom delivery?

Items 1-42 were drawn to answer this question. While Appendix IV provides details of the responses, Tables 4.14 and 4.15 were presented to show the summary of the responses:

Table 4.14: Mean Score of the Responses of Male and Female Secretarial Teachers on their Information Technology Skill Competence.

Gender	N	\bar{x}	SD	Remark
Male	131	2.58	0.67	Skilled
Female	94	2.63	0.62	Skilled

Source: Field Survey, 2011

Table 4.14 showed that the male and female secretarial teachers were IT skilled, gender has not affected the secretarial teachers from being IT competent; however, the mean score for female teachers in their IT competence was higher with 2.63 than the mean score for male teachers at 2.58. There was a difference of 0.05 in their mean rating. This difference puts the female at a comparative advantage over the male in being IT competent. It shows there are some IT skills that the female Secretarial Teachers have acquired that are lacking in the Male secretarial teachers.

Table 4.15: Mean Score of Responses of Male and Female Secretarial Teachers on the use of IT Skills to Access Information from the Internet for classroom delivery.

Gender	N	\bar{x}	SD	Remark
Male	131	2.62	0.77	Well used
Female	94	2.54	0.76	Well used

Source: Field Survey, 2011

The result in Table 4.15 showed that the male and female secretarial teachers well utilized their ICT skills to access information from the Internet for classroom delivery; however, the mean score for the Male teachers at 2.62 was higher than the Females Secretarial Teachers in their IT skill usage to access information from the internet. There was a difference of 0.08 in their mean ratings. Although Table 4.14 showed that the female were more IT skilled than the male, nevertheless, Table 4.15 indicated that the male utilized their IT skills more than the female teachers to access information from the Internet for classroom delivery. The result revealed that the IT skills possessed by these teachers have an effect in their usage, as was seen that, they were able to put into use what skills they possessed to access information from the Internet. There is a relationship between skill possession and usage before it translates to effective teaching

The implication of this result is that the male secretarial teachers will be more effective in their ability to use Internet for classroom teaching than the female secretarial teachers, as those IT skills that are not put to use cannot access any quality information from the Internet.

4.2.2 Research Question 2

What is the difference between the old and new generation secretarial teachers in using Information Technology skills to access information from the internet for classroom delivery?

Items 1-42 were drawn to answer this question. While Appendix IV provides details of the responses, Tables 4.16 and 4.17 were presented to show the summary of the responses of the old and new generation secretarial teachers' IT skill competence and the use of the ICT skill to access information from the Internet respectively.

Table 4.16: Mean Ratings of the Responses of the Old and New Generation Secretarial Teachers in their IT Skill Competence.

Generation	N	\bar{x}	SD	Remark
Old	146	2.66	0.54	Skilled
New	45	2.69	0.68	Skilled
No response	34			

Source: Field Survey, 2011

Table 4.16 indicated that the Old and New Generation secretarial teachers were IT skilled; however, the mean rating of the New Generation Secretarial Teachers (2.69) was higher than that of the Old Generation Secretarial Teachers (2.66) in their IT skill competence. The difference was 0.03 in the mean rating. The New generation secretarial teachers, as shown here, are more IT competent than the Old generation secretarial teachers. There is also the possibility that the new generation teachers will do better than the old generation teachers in their ability to access the Internet for classroom delivery.

Table 4.17: Mean Ratings of Responses of the Old and New Generation Secretarial Teachers in the use of IT Skills to Access Information from the Internet.

Generation	N	\bar{x}	SD	Remark
Old	146	2.59	0.75	Well used
New	45	2.71	0.80	Well used
No response	34			

Source: Field Survey, 2011

The data in Table 4.17 revealed that the old and new generation secretarial teachers used well their IT skills; however, there was a higher mean rating for the new generation secretarial teachers (2.71) than the old generation secretarial teachers (2.59) on their usage of

Information Technology (IT) skills to access information from the Internet. There was a difference of 0.12. The standard deviations of the generations were not too far apart showing that they were close in their opinions. It was discovered that the New Generation Secretarial Teachers' ability to use the Internet more than the Old Generation was consequent upon the effect that the 2002 Minimum Standards enriched with IT experiences have on them. Except something is done to bridge this gap, the new generation will continue to have this comparative advantage over the old generation teachers in effective lesson delivery using IT.

4.2.3 Research Question 3

What Is the relationship between the Information Technology skills acquired by the Secretarial Teachers and their utilization of Internet for effective teaching?

Items 43-78 were drawn to answer this question. While Appendix IV provides details of the responses, Tables 4.18 and 4.19 were presented to show the summary of the responses to the Research Question:

Table 4.18: Correlation Analysis of Scores of Information Technology Skills of Secretarial Teachers and their Awareness to use Internet as Instructional Delivery Tool.

Variables	N	Mean	SD	r	Remark
IT Skills (X)	225	2.60	0.65	0.54	Average Positive Relationship
Sec. Teachers Internet usage Awareness (Y)	225	2.37	0.78		

Source: Field Survey, 2011

Table 4.18 data indicated that the Pearson's Product Moment Correlation Coefficient (r) was 0.54. This revealed an average positive relationship between the scores in the Information Technology skills of Secretarial Teachers in the Nigerian Colleges of Education

and the scores in their awareness to use the Internet as Instructional delivery tool. There is a relationship between the Information Technology skills of Secretarial Teachers in the Nigerian Colleges of Education and their awareness to use the Internet as Instructional delivery tool. The result shows that, as the IT skills increase, their awareness to use Internet as instructional delivery tool is also increasing. If these teachers are exposed to more IT training, their awareness to some other Internet search engines that can be used for instructional delivery will be greatly enhanced.

Table 4.19: Correlation Analysis of Scores of Information Technology Skills Acquired by the Secretarial Teachers and their Utilization of Internet to Access Information.

Variables	N	Mean	SD	r	Remark
IT Skills (X)	225	2.60	0.65		Moderate Positive Relationship
Sec. Teachers Internet usage (Y)	225	2.59	0.76	0.59	

Source: Field Survey, 2011

Table 4.19 data indicated that the Pearson's Product Moment Correlation Coefficient (r) was 0.59. This also revealed a moderate positive relationship between the scores in the Information Technology skills of Secretarial Teachers in the Nigerian Colleges of Education and their scores in ability to use the Internet to access Information. There is therefore, a relationship between the Information Technology skills of Secretarial Teachers in the Nigerian Colleges of Education and their ability to use the Internet to access Information. The result here shows that, as moderate as the quality of the IT skills the secretarial teachers have, that is how moderate also their ability to used the Internet for classroom delivery.

The relationship established here indicates that if the quality of classroom delivery must be improved and be made effective as required, teachers will need to be trained or retrained

in relevant IT skills they do not possess to build their capacity in order to enable them to access all the Internet search engines for quality information.

4.2.4 Research Question 4

To what extent is the relationship between the utilization of Internet based Information obtained by Secretarial Teachers in the Nigerian Colleges of Education, and the effectiveness of their lesson delivery?

To answer this question, Items 79-90 were drawn. While Appendix IV provides details of the responses, Table 4.20 was presented to show the summary of the responses to the Research Question:

Table 4.20: Correlation Analysis of Scores of Utilization of Internet based Information obtained by Secretarial Teachers and the Use of it for Teaching.

Variables	N	Mean	SD	r	Remarks
Sec. Teachers Internet usage (X)	225	2.60	0.65	0.37	Poor Positive Relationship
Usage of Internet Information for Lesson Delivery (Y)	225	2.30	1.00		

Source: Field Survey, 2011

The data in Table 4.20 showed that the Pearson's Product Moment Correlation Coefficient (r) was 0.37. This showed a poor positive relationship between the scores in the Secretarial Teachers' usage of Internet to obtain Information and their scores in the extent to which such information assisted them to teach secretarial courses. There is a relationship between the Secretarial Teachers' usage of Internet to obtain Information and the extent to which such information assisted them to teach secretarial courses.

The result shows that the IT skills the secretarial teachers possess were such that could help them get only related information or material that will help them teach Office Practice, that is the reason for which Office Practice enjoyed more Internet based information in its instructional delivery. The other courses that could not be taught with Internet based

information such as Entrepreneurship, Shorthand, Typewriting, and other courses was all because the teacher is deficient of the IT skills needed to be able to launch into the Internet for relevant material for effective lesson delivery.

4.3 Test of Hypotheses

The two null hypotheses, which are 1 and 2 formulated for differences were all tested at 0.05 level of significance, while the 3 and 4 null hypotheses formulated for relationships were tested at 0.01 level of significance. The details were as shown in Appendix VI, however, for each of the Null Hypotheses formulated, the summary were presented as follows from Table 4.21 to Table 4.24

4.3.1 Null Hypothesis 1

There is no significant difference between male and female secretarial teachers in the use of Information Technology skills to access information from the internet for classroom delivery..

To Test Null Hypothesis 1, the details of the data analyzed using the SPSS statistical package were contained in Appendix VI, while Table 4.21 was shown to provide the summary.

Table 4.21: t-Test of Mean Responses by Male and Female Secretarial Teachers' on IT Skills Utilization to Access Information from the Internet for classroom delivery.

Variables	N	\bar{x}	SD	DF	t-value	Decision
Male	131	2.62	0.77	223	0.781	NS
Female	94	2.54	0.76			

t-critical = 1.96 at p = 0.05

From Table 4.21, it was observed that the t-critical (1.96) is greater than the t-cal (0.781). The difference observed was therefore not significant. Meaning that, the difference between the means of the two groups is not different, given the variability. There was no significant difference between the Male and Female Secretarial Teachers in the utilization of

their IT skills to access information from the Internet for classroom delivery. The Null Hypothesis is therefore retained, because there is a positive result. These results suggest that the IT skills that male and female secretarial teachers possess do have some effect on their ability to access information from the Internet for classroom delivery. Specifically, these results suggest that when more IT skills are possessed by the Secretarial Teachers, their capacity is increased to access information from the Internet for classroom delivery.

4.3.2 Null Hypothesis 2

There is no significant difference between old and new generation secretarial teachers in using Information Technology skills to access information from the internet for classroom delivery.

To Test Null Hypothesis 2, the details of the data analyzed using the SPSS statistical package were contained in Appendix VI, while Table 4.22 was shown to provide the summary.

Table 4.22: t-Test of Mean Responses by Old and New Generation Secretarial Teachers on IT Skills Utilization to Access Information from the Internet for classroom delivery.

Variables	N	\bar{x}	SD	DF	t-value	Decision
Old Generation	146	2.59	0.75	189	0.896	NS
New Generation	45	2.71	0.80			

t-critical = 1.96 at p = 0.05

Table 4.22 showed that the t-critical (1.96) is greater than t-cal (0.896). The difference between the means of the two groups is not different. The difference observed was not significant. There is therefore, no significant difference between the old and new generation secretarial teachers in the utilization of their IT skills to access information from the Internet

for classroom delivery; hence the Null Hypothesis is hereby retained. This is also because the result was positive. The results suggest that the IT skills that Old and New generation secretarial teachers possess do have an effect on their ability to access information from the Internet for classroom delivery. Specifically, the results suggest that when more IT skills are possessed by the Secretarial Teachers, they have increased ability to access information from the Internet for classroom delivery.

4.3.3 Null Hypothesis 3

There is no significant relationship between the Information Technology skills acquired by secretarial teachers and their utilization of internet for effective teaching.

To Test Null Hypothesis 3, the details of the data analyzed using the SPSS statistical package were contained in Appendix VI, while Table 4.23 was shown to provide the summary.

Table 4.23: Pearson Product Moment Correlation Coefficient between Secretarial Teachers' ICT skills and Ability to Use Internet for Effective Teaching.

Variables	N	\bar{x}	SD	DF	R	Decision
IT skill competence (X)	225	2.60	0.65	189	0.586**	S
Sec. Teachers' Internet usage (Y)	225	2.59	0.76			

** Correlation is significant at 0.01 level

Table 4.23 indicated that the Pearson's Product Moment Correlation Coefficient r was 0.586. Using Choudhury's Range, there is a moderate positive correlation or relationship between the IT skills of Secretarial Teachers and the ability to use internet to access information for effective teaching. Hence the Null Hypothesis is rejected. The result shows

that the correlation coefficient is positive for as the value of the mean score of the IT skills competence of the secretarial teachers increases, so does the mean score of their using Internet for effective teaching at a moderate level. The implication of this result is that, if the secretarial teachers are more competent in their IT skills, then the more will they be enabled to access information from the Internet for effective teaching.

4.3.4 Null Hypothesis 4

There is no significant relationship between the utilization of internet based information by secretarial teachers in the Nigerian Colleges of Education in Nigeria and the effectiveness of their lesson delivery.

To Test Null Hypothesis 4, the details of the data analyzed using the SPSS statistical package were contained in Appendix VI, while Table 4.24 was shown to provide the summary.

Table 4.24: Pearson Product Moment Correlation between Information obtained by Secretarial Teachers from the Internet and the Utilization for Teaching.

Variables	N	\bar{x}	SD	DF	R	Decision
Sec. Teachers' Internet usage	225	2.59	0.76	189	0.370**	S
Use of Internet for lessons.		2.29	0.99			

** Correlation is significant at 0.01 level (2 tailed)

Table 4.24 indicated that the Pearson's Product Moment Correlation Coefficient r was 0.370. Using Choudhury's Range, there is a weak positive correlation or relationship between the IT skills of Secretarial Teachers and the ability to use internet for lesson delivery. Hence the Null Hypothesis is rejected. The result here also shows that the correlation coefficient is positive for as the value of the mean score of the Secretarial

Teachers usage of the Internet increases, so does the mean score of their using Internet for effective lesson delivery, though at a weak rate. The implication of this result is that, if the secretarial teachers equipped with more of the skills of using the Internet search engines to access information, then the more will they be enabled to obtain relevant information for all the components of the secretarial education programme, thus, promoting effective classroom teaching.

4.4 Summary of the Findings

The following were the summary of the major findings:

1. There were more of Male Teachers than Female Teachers to teach Secretarial Education in the Colleges of Education in Nigeria, and it was found out that the Female Teachers were more IT skillful than the Male Teachers, yet the Colleges of Education have more Male teachers than the female teachers. Although, 42% female teachers is very good. Secretarial Teachers showed that they were skilled and competent in all areas of Information Technology (IT) except in the following: ability to operate data base, ability to extract relevant information using integrated software packages, ability to extract information using electronic mails and application software, ability to use voice recognition system and ability to operate other different technologies and appreciate their benefits. This is all because they are deficient in the acquisition of the relevant and requisite IT skills that will help them to operate in these skillful areas.
2. The old and new generation secretarial teachers showed a well utilized Information Technology skill to access information from the Internet except in these areas: ability to operate data base, ability to extract relevant information using integrated software

packages, ability to extract information using electronic mails and application software, ability to use voice recognition system and ability to operate other different technologies and appreciate their benefits. These inabilities were discovered to be more associated with the old generation secretarial teachers.

3. In this study it was found that the secretarial teachers were not knowledgeable in the use of some vital and important Internet instructional delivery tools. The established deficiencies of Secretarial teachers as reported in the study, made it difficult for them to use the 20 internet skilled areas provided in the study. The teachers were able to use only 11 Internet skilled areas and the 9 Internet skilled areas they were not able to use shows that the more IT skills the teachers possesses, the more the Internet skills they will be able to display to access all the vital and up-date information that guarantees quality and effective classroom delivery. The more the Information at the disposal of the teacher the better informed the teacher is about all the courses within the secretarial education offering and very effective will be the teaching of all the courses.
4. The result revealed a poor assessment of the utilization of Internet based information for lesson delivery. It was discovered that the secretarial teachers in the Nigerian Colleges of Education were able to use Internet based information to teach only Office Practice, out of the 12 courses that were provided to be taught in the NCE Secretarial Education Programme (NCCE,2002).

4.5 Discussion of the Findings

The study was conducted to find out the relationship between Information Technology Skills of Secretarial Teachers in Nigerian Colleges of Education and their ability to utilize the

Internet for Effective Teaching. The possession of the Information Technology skills by the Secretarial Teachers of Colleges of Education in Nigeria has been established as a very important tool in order to use the Internet to obtain vital information that will help in lesson delivery.

The findings of this research concerning the comparative advantage the male teachers have over the female teachers in their ability to use IT for classroom delivery, and the one that the Old generation teachers have over the new generation teachers obtains support from what Nolan, Harden and Malsbury (1976) as cited by Oladebo (1987) said that no curriculum however well written they may be, however costly it may be, will compensate for a poor business teacher. On the other hand, good business teachers will more than offset deficiencies in curriculum, in textbooks and in equipment. This assertion attests to the important role the secretarial (business) education teacher plays in the development of a viable secretarial (Business) education programme. With professionally sound and motivated secretarial (Business) education teachers, many deficiencies in the curriculum and the instructional facilities could be corrected.

Result of the study showed that the old generation secretarial teachers had to go for a retraining to acquire some level of IT skills to be able to teach with the reviewed minimum standard that came into force in 2002 that was enriched with IT components and subject matter. Those who have to go for retraining certainly were not in touch with IT learning experiences, all about the IT policy which was signed into law in 2001, led to the review of the minimum standard that now had IT incorporated into it. In order to perfect on these skills, and avoid becoming obsolete, it would be expedient for the stakeholders in the Education sector to continue to give a continuous workshops, seminars and conferences to

train the trainers. This is in line with Chibuiké and Igboke (2009) who reported that, those that are ignorant of modern IT should devise a means to get acquainted and familiarize with them to avoid being laid off. While supporting the above statement, Ugwuanyi and Eze (2009) recommended a retraining so that these teachers would be able to handle secretarial courses well. Every teacher who submits to a retraining is good gesture towards promoting efficiency in teaching and learning. It is important to note that, whatever was the reason for not using a computer by any teacher in this IT compliant educational sector is no excuse, for such teachers will soon become obsolete in the teaching profession.

The result also showed that the teachers who were not computer literate made personal effort to acquire the skills. This effort supported or agreed with the recommendations of Ugwuanyi and Eze (2009), that, teachers should make personal efforts to have their own personal computers and engage private teachers where possible. If any teacher in the field of secretarial education is to remain relevant, in this age of technology, the lack of competencies in IT, and the equipment must be addressed. This observation lends credence to what Azuka (2003) said that, the learning of business skills (of which secretarial education is inclusive) can only be meaningful to the extent that equipment for teaching are available and functional.

The study revealed that, secretarial teachers possessed some degree of IT skills, nevertheless they were deficient in some very key requisite and important IT skill area thereby making it difficult for these secretarial teachers to get quality information from the Internet that will support them in giving quality and effective instructional delivery. This in turn will produce competent self reliant products that will also become effective and productive in classroom delivery.

Ikelegbe (2007) supported this assertion that, education in Nigeria today cannot be relevant without effective preparation of new generation of pupils and students to effectively acquire competencies in the use and operation of the new Information Technology (IT) in their professional practices. It is suffice to say therefore, that for these generations of students to acquire these competencies, the teachers must first possess the skills, as it is correct to say, that one cannot give what he does not possess. The teachers must possess the Information Technology skills and they are adequately being utilized before they can impart to the students. Acquisition of the skills is not enough but the utilization that is of great importance.

Information Technology as defined by Ikelegbe (2007) is all the modern systems for processing Information and Communication in data, text, image and voice. If the Secretarial Teacher should demonstrate professional qualities, it is imperative that they must, according to Omeje (2009) not only have the deep rooted knowledge and skills in those IT equipment and operations of automated office facilities... and must effectively teach skills in these areas to their students. Omeje reiterated further that a Secretarial teacher should be able to teach effectively, for instance, IT skills relating to word processing, internet services and facilities, and spreadsheet operating system. Nwaokolo (2000) observed that these would make the secretarial teachers remain relevant in the teaching profession. Jegede (2009) maintained that even were teachers used all of these skills well, there will be need for these teacher to move away from this foundational IT knowledge to a higher level of processes that can be translated to a more efficient learning model for student. The Secretarial teachers will therefore need to move away from this foundational IT knowledge to a higher level of processes that can be translated to a more efficient learning model for student.

The study showed the resultant effect of the deficiencies of the respondents in those required IT skills, as they could not also perform well in the use of all the Internet search engines to access information for effective teaching. The Introduction of Information Technology into the office has revolutionized every aspect of secretarial function. This is an information age and the secretary is at the centre of distribution and communication of information, therefore, specified IT skills have been judged by Jegede (2009), to be beneficial for educators. Internet has made the whole world a global village and it is very important that secretarial teachers improve, update and be adequately prepared to remedy these areas of deficiencies in order to teach very vital skills involved in internet application for information. Agomuo (2004) asserted that, today's business electronic tools include: e-mail, e-commerce, e-banking, and total office operations, and all these demand that the business teachers should be very knowledgeable and skilled in their uses and application to enable them impart the skills to business students. The findings here also agreed with Moore (2004) that in as much as there are a lot of information on the Internet, it is sometimes hard to find out what you are looking for if you do not know how to use the Internet facilities. Unfortunately, the design of Business Secretarial Education curriculum lies primarily with the category of people who themselves were minimally informed on Internet concepts.

The observed phenomenon is a positive result that shows that the secretarial teachers could not effectively demonstrate skillfulness in IT by searching the Internet to download or upload important information or learning materials useful for effective teaching. No teacher teaches what he/she does not know. Akume (2004) in agreement with this assertion therefore, said, that teachers of Business (secretarial) subjects (ICT inclusive) require a lot of skills and competence if they must impart desired knowledge to the learners. Gbenedio

(2007) and Ekpenyong (2002) in Omeje (2009) observed that, many business teachers who have been long in the service may find it difficult to update themselves, a teacher of business (secretarial) education needs to complete his/her preparation for his/her job and keep abreast of the changes in his profession through professional improvement activities.

The study also showed the consequence of the secretarial teachers' lack of knowledge of some Internet components as it affected their ability to teach all the course offerings in secretarial studies with Internet based materials, hence making their teaching delivery ineffective in the light of IT driven classroom. The need in the educational industry today is moving from "learning to use IT" to "Using IT to learn" (Bevarnage, Cornille and Mwaniki 2005). Jegede (2009) posited that, ICT based instruction is at the core of teachers needs. This would therefore, involve training teachers to create lesson plans utilizing IT and to use educational software. The findings here agree with Marcel and Amos (2010), who suggested that, a major way to reform the delivery system of Business (secretarial) Education is through the acquisition of the appropriate basic IT skills by Lecturers. They stated that, computers and multi-media projectors can aid effective classroom interaction by enabling the teachers to show the power-points in the lessons. To do this, the Lecturer should possess basic IT skills.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

The study finds out the relationship between Information Technology Skills of Secretarial Teachers in Nigerian Colleges of Education and their ability to utilize the Internet for Effective Lecture Delivery. The problem of the study was that, some secretarial teachers possess some degree of IT skills but they do not adequately utilize the skills to access information from the Internet, which if utilized, would bring a lot of innovation and will make teaching and learning in the classroom effective. The major objective of the study was to find out the relationship between Information Technology Skills of Secretarial Teachers in

Nigerian Colleges of Education and their ability to utilize the Internet for effective teaching with a view to improving their teaching pedagogy.

Four Research Questions and four Null Hypotheses were generated for this research study. The descriptive survey research design was employed for the study. The Population for the study, which also served as the Sample size of the study were 250 Secretarial Teachers drawn from 58 Nigerian Colleges of Education accredited by the National Commission of Colleges of Education, participated in the study by responding to a research instrument divided into 4 parts. The instrument obtained information on the respondents' Bio-data and computer use background, Teacher Information Technology Skill Competence (TITSC), Teacher Information Technology Skills Usage (TITSU), Teacher Internet Skill Usage (TISU) and The extent of usage of Internet information to teach the Secretarial courses. Data were supplied by 225 respondents, and the data were analysed using descriptive statistics, t-test was used to test for difference and Pearson Product Moment Correlation Coefficient (PPMCC) was used to test for relationship. The null hypotheses 1 and 2 tested not significant at 0.05 level of significance, while null hypotheses 3 and 4 tested significant at 0.01 level of significance. The result of the study showed lack of some basic learning experiences that are needed to adequately equip these teachers with ability to download and upload quality information. Owing to the lack of these IT skills therefore, the teachers were not able to access Internet and use some IT facilities to move the frontiers of classroom lesson delivery to an enviable greater height. The result of the tested null hypotheses showed that there was no significant difference between the Males and Females Secretarial Teachers, and the Old and New generation Secretarial Teachers, in the utilization of their IT skills to access information from the Internet. However, there was a significant

relationship between the IT skills of Secretarial Teachers and their awareness to use internet for lesson delivery, and their ability to use the internet to access information for lesson delivery, though the strength of these relationships were not strong enough.

The following results and findings were obtained from the research study:

1. There were more of Male Teachers than Female Teachers to teach Secretarial Education in the Nigerian Colleges of Education, and it was discovered that the Female Teachers were more IT skilled than the Male Teachers, yet the Colleges of Education in Nigeria have more Male teachers than the female teachers. Secretarial Teachers showed that they were skilled and competent in all areas of Information Technology (IT) except in the following: ability to operate data base, ability to extract relevant information using integrated software packages, ability to extract information using electronic mails and application software, ability to use voice recognition system and ability to operate other different technologies and appreciate their benefits.
2. There was a gap between the Old and the New Generation Secretarial Teachers. The new generation secretarial teachers were more proficient in the use of the IT skills for classroom delivery in the Nigerian Colleges of Education than the old generation secretarial teachers. This is partly because the New Generation Secretarial Teachers were products of the revised Nigerian Certificate of Education Curriculum (2002) which was enriched with Information Technology learning experiences or content.
3. Secretarial Teachers in the Nigeria Colleges of Education lacked some vital Information Technology skills such as, ability to operate data base, ability to extract relevant information using integrated software packages, ability to extract information

using electronic mails and application software, ability to use voice recognition system and ability to operate other different technologies and appreciate their benefits. The reason for the lack could be either because they were not trained, or they refused to be trained.

Owing to the above deficiencies, which can be solved through training and retraining, there were some Internet skills the Secretarial Teachers of Nigerian Colleges of Education could not use which certainly will pose some difficulty for them to be able to access quality and up-to-date information that will assist them in their lesson delivery. These Internet skills include the following: internet connections to commercial establishments, governmental organizations and school network, use of some internet services equipments such as: computer aided telephone and telephone line modem, knowledge of some available internet services and their operations such as: e-commerce, e-banking, e-marketing, Newsgroups/usenet, Internet Relay Chat, World-Wide-Web (www), Telnet, Tele/video conferencing, and electronic data exchange, knowledge of a contemporary library (virtual library), knowledge of how to carry out marketing transactions on the internet, knowledge of using internet to make the world a global village, acting as resources for education, knowledge of website, knowledge of one of the search engines, which is alts vista, knowledge of data security and protection techniques and knowledge of protecting private information against un-authorized access.

- 4 It was discovered that Secretarial teachers in the Nigerian Colleges of Education do not access Internet to obtain information to teach Shorthand, Typewriting, Business Law, Computer Appreciation, Entrepreneurship, Office Management,

Business Communication, Secretarial Duties, Computer Application, Word Processing and Principles of Management. The only course that enjoys information from the Internet vis-à-vis lesson delivery is Office Practice. The reason is because the requisite IT skills that will enable the secretarial teachers to be able to search extensively for learning materials to teach effectively other courses with Internet based information, outside office practice were lacking.

5.2 Conclusion

A research into the need for Secretarial Teachers in the Nigerian Colleges of Education to utilize Information Technology skills to access information from the Internet to assist them for good service delivery has added a new dimension to knowledge creation for Business Education programme.

The role of the teacher in the classroom is being transformed from that of the fountain of knowledge to an instructional manager helping to guide students through individualized learning pathways, identifying relevant learning resources, creating collaborative learning opportunities, and providing insight and support both during formal class time and outside of the designated 40 minute instruction period. These IT resources complement textbooks and may eventually supplant the textbook as the primary learning resource.

In view of the findings of the study, that there were more male teachers than the female teachers that teach secretarial education in the Nigerian Colleges of Education; comparatively, the female teachers were more IT skilled than the male teachers. With these educational institutions failing to encourage the male teachers to learn and acquire those IT skills they are lacking, which the Female teachers have, they will not be able to give quality Internet based information for teaching and learning of Secretarial subjects.

The comparative advantage the new generation Secretarial teachers have over the old generation Secretarial Teachers means additional cost on the part of the old generation Teachers, employers and other stakeholders. To retrain or train will involve spending money. In view of the findings, those teachers that were not exposed to the 2002 IT enriched curriculum (termed the old generation Teachers), will not be relevant in the teaching industry. In this case, these teachers would soon become obsolete and will affect the quality of the materials used for teaching and learning of Secretarial Education in the Colleges of Education in Nigeria.

In view of the findings, the lack of some basic learning experiences that were needed to adequately equip these teachers with ability to download and upload quality information, because of the lack of these IT skills will incapacitate them in accessing Internet and using some IT facilities to move the frontiers of classroom lesson delivery to an enviable greater height.

It is important to note that, the internet is a very rich library that has vital information for every discipline, and so, for the Teachers of Secretarial Education to think that only office practice could be taught using the Internet services amount to a poor service delivery. Other courses in the secretarial programme are very important to the students. Service delivery in the Secretarial Education will not be holistic to achieve the common goal of preparing the learner to enter and advance in this secretarial occupation at a local and at international level. Consequently, Teacher will not be well armed with the tool of accessing the global market (Internet) to obtain the relevant and vital information in the discipline. This will in turn compromise the quality of output of secretarial education which ultimately will affect national development.

It has also become imperative to note that, anyone that must be a proficient, versatile, current, effective and efficient teacher of office education in any Nigerian College of Education must be computer literate, highly skillful and innovative, and should demonstrate how to utilize and develop Information Technology in order to remain relevant in the Modern day world of work. The resultant effect will be that the teachers in the training institutions will not be imbued with the skills and abilities of IT literacy and sensibilities, hence there will be no knowledge and attitude to transmit onto the learners that they come in contact with in the classrooms, and therefore, there will be a serious gap at the point of practice. Consequently, the collaboration of the government, non-governmental and international agencies to build the capacity of secretarial teachers on IT driven teacher education will be a total waste. Curriculum drawn for developing countries such as Nigeria to encourage them to utilize the IT skills to download useful information related to their subject matter for teaching in the classroom will also be a waste.

5.3 Recommendations

The following recommendations were made based on the findings of the study:

1. Colleges of Education in Nigeria should ensure that they encourage all Secretarial Teachers to learn and acquire those IT skills they are lacking, because the more the Information Technology skills they possess, the greater their ability to use Internet for effective teaching. When opportunities to attend workshops and seminars on IT training opens, they should be well sponsored to attend. This opportunity will bring them in contact with Information Technology experts that will impart into them those required IT skills they lack, and they will be taught how to use these skills to access

the Internet for current and vital information that will help them have an effective classroom teaching.

2. Secretarial Education Teachers in the Colleges of Education in Nigeria should avail themselves with the opportunity of staff development programme of their respective institutions in order to get appropriate and adequate training in IT: through in-service training, part time programmes, and attendance to conferences, workshops and seminars. They could also update and improve themselves through the process of self-sponsorship training in private computer/business as well as in house (departmentally arranged) training scheme. The mentoring approach could be employed here, where the older Teaching staff that are Information Technology skilled can develop training sessions at free period or at week ends to build the capacity of other who may be deficient in IT usage.
3. National Commission of Colleges of Education should bring together all the secretarial education stakeholders: curriculum experts, the teachers, representatives of ministries and industries; to revisit the existing curriculum. The integration of latest Information Technology practices and the requisite Internet skills which the Secretarial Teachers lack, will reposition Secretarial Studies programme to meet the challenges of an IT driven classroom. The teachers will be more informed and current in the knowledge of what IT skills are required to possess to make them relevant and useful in the teaching industry. The consequence will be Teachers that will be well equipped for effective teaching in an electronic classroom..
4. The Ministries of Education should seek more collaboration with Education Trust Fund (ETF) to enable them develop integrated broad based model or strategy for

applied Information Technology to Secretarial Education with a definite timeline for completion.

The Ministries of Education should seek for more funds from donor agencies such as USAID, UNESCO and DFID to sponsor this expensive IT project of developing software and hardware for Computer Assisted Instructions (CAI), and Computer Assisted Learning (CAL) specially fitted for Secretarial Studies programme. The services of programme designers, computer and data software analysts would be required for these models. These wares are to be user friendly, Internet compliant and well suited for secretarial education purposes, by this, no course of study in the programme will be neglected, and this will affect positively the teaching of secretarial education in the Nigerian Colleges of Education.

4.4 Suggestions for Further Study

In view of the limitations of this study, the following were suggested for further study:

1. Comparative study of Information Technologies and their effect on the Teaching and Learning of Business Education in Nigeria.
2. Strategies for Increasing the Nigerian Business Education Teachers' usage of On-Line Resources for Teaching and Learning.
3. Strategies to increase the Internet usage by Male Secretarial Teachers in the Colleges of Education.

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APPENDIX I

Department of Vocational and Technical Education
Faculty Of Education
Ahmadu Bello University, Zaria

24th January, 2011.

Dear Sir/Madam,

Request to Fill Questionnaire

The researcher is a Post-graduate student of the above Department, undergoing a PhD programme in Business Education. As part of the requirements for the award of the degree, the researcher is undertaking a research study titled: Relationship between Information Technology Skills of Secretarial Teachers in Nigerian Colleges of Education and their ability to utilize the Internet for Effective Lecture Delivery.

You are requested to help complete the attached questionnaire which is meant to elicit information on the above research topic. Your response shall be kept strictly confidential and used for academic purpose only.

Thanks for your co-operation.

Yours faithfully,

Adeshina, Tunde Joel

APPENDIX II

QUESTIONNAIRE FOR THE SECRETARIAL TEACHER ON INFORMATION TECHNOLOGY BEHAVIOR (STITB)

Kindly fill or tick appropriately

Name of Institution _____

Section A

This section includes Personal information and Background on computer use of the respondents.

Personal Information

1. (a) Gender:
Male []
Female []
2. In what year did you receive your training?
(a) I received my training in Secretarial Education before 2002 []
(b) I received my training in Secretarial Education in 2002 and after []
3. What is your age? (in years)
Less than 25 []
25-29 []
30-34 []
35-39 []
40-44 []
45-49 []
50-54 []
55-59 []
60-65 []
4. (a) What is your highest academic qualification?
Bachelors []

Masters []

PhD []

others (Specify) _____

(b) Rank

Chief Lecturer []

Principal Lecturer []

Senior Lecturer []

Lecturer 1 []

Lecturer 2 []

Lecturer 3 []

Assistant Lecturer

5. Subject Taught: (Please tick as appropriate)

Office Practice []

Shorthand []

Typewriting/Keyboarding []

Business Law []

Computer Appreciation []

Office Management []

Business Communication []

Secretarial Duties []

Word Processing []

Entrepreneurship []

Computer Application []

6. How many years have you been teaching? (Tick as appropriate)

1 - 3 []

- 4 - 6 []
- 7 - 10 []
- 11 - 15 []
- 15 and above []

Background on Computer Use

- 7. Indicate if you have personal contact with computers
I have []
I do not have []
- 8. (i) If you have, how many years have you been using computers?
 - (a) 1-3 []
 - (b) 4-6 []
 - (c) 7 and above [](ii) Who provided the computer you use?
 - (a) My employer []
 - (b) Personally procured []
- 9. If you don't have, indicate why you do not use computers
 - (a) Do not know how to use one []
 - (b) Not available []
 - (c) Too expensive []
 - (d) No Time []
 - (e) others (specify)_____
- 10. Did you receive any previous training to acquire computer skills?
 - (a) Received previous training []
 - (b) No previous training []
- 11. How accessible are computers to you? (Pick an option)
 - (a) Not accessible []

- (b) (b) Occasionally accessible []
- (c) (c) restricted access []
- (d) (d) freely accessible []

12. Indicate on the average the number of hours per week you normally use computers.

- a. 1- 3 []
- b. 4 – 6 []
- c. 7 – 11 []
- d. 12 and above []

SECTION B

Please tick the most appropriate to rate how skilled you are in the use of Information Technology. (TITSC)

Teacher IT Skill Competence

Key: 4 – Adequately Skilled; 3- Skilled; 2- Fairly Skilled; 1- Not skilled.

S/N	ITEMS	SCALE			
		4	3	2	1
1.	ability for fast and accurate key boarding for efficient composition				
2.	ability for fast and accurate key boarding for making Inputs				
3.	ability for fast and accurate key boarding for checking and editing data				
4.	ability to operate word processing				
5.	ability to operate data base				

6.	ability to operate electronic messaging.				
7.	operate and use computer systems with hard ware packages				
8.	operate and use computer systems with soft ware packages				
9.	operate and use computer systems with both hard ware and soft ware packages				
10.	operate and use computer systems with electronic mails and application software				
11.	operate using Microsoft office power point				
12.	extract relevant information using integrated software packages				
13.	extract relevant information using electronic mails and application software				
14.	ability to use spreadsheet for forecasting				
15.	ability to use Video-conferencing				
16.	ability to use voice recognition system				
17.	ability to operate other different technologies and appreciate their benefits.				
18.	ability to use photocopier to produce multiple copies of document				
19.	ability to save documents using any micrographic equipment (diskettes, CD, or flashdrive)				

Teacher Information Technology Use checklist.

Please read each of the sentences below and indicate by ticking (✓) how well you have used the Information Technology appliances and Internet packages over the past three months. **(TITSU)**

Information Technology Skills usage

Key: 4- Very Well; 3- well; 2-Fairly Well; 1- Not at all

S/N	ITEMS	4	3	2	1
20.	Typing tests and exam papers				
21.	Typing official and other documents.				
22.	Typing handouts and teaching materials				
23.	Create a new document				
24.	Start up and shut down a computer safely				
25.	Copy files and directories/folders				
26.	Delete files and directories/folders				
27.	Move files and directories/folders				
28.	Rename files and directories/folders				
29.	Manage files and directories/folders.				
30.	Organize files and directories/folders				
31.	Arrange files and directories/folders.				
32.	Use operating system to find features to locate specific files				
33.	Amend an existing document				
34.	Save a document in a specified location				
35.	Save a document in a specified format other than the default format (save as read only)				
36a.	Apply basic text formatting changes and attributes such as: fonts				
b.	Sizes				

c.	Colours				
d.	Bold				
e.	Italics				
f.	Underline				
37.	Cut, copy and paste information from one location to another.				
38.	Set print options such as paper size and orientation and select a printer				
39.	Generate students results using computer				
40.	Access data stored on CD-Roms				
41.	Access data stored on private computer				
42.	Access data stored on networks and the Internet.				

Teacher internet Awareness

Rate each of the following aspects (43 - 60) of internet education based on your degree of knowledge of their place in the secretarial teacher education programme. **(TITIK)**

Key: 4 - Very Knowledgeable; 3 - Knowledgeable; 2 - Fairly Knowledgeable
1 - Not knowledgeable

S/N	ITEMS	4	3	2	1
43.	Knowledge of Internet concept as a worldwide interconnected computer networks.				
44.	Knowledge of Internet connecting private organizations				
45.	Knowledge of Internet connecting commercial establishments				

46.	Knowledge of Internet connecting governmental organizations				
47.	Knowledge of Internet connecting school network				
48a.	Knowledge of all equipments used for internet services such as: computer system				
b.	computer aided telephone				
c.	telephone line modem				
49.	Knowledge of available internet services and their				
a.	application and operations such as E-mails, _____	—	—	—	—
b.	E-commerce, _____	—	—	—	—
c.	E- banking, _____	—	—	—	—
d.	E-marketing, _____	—	—	—	—
c.	Newsgroups/ usenet, _____	—	—	—	—
d.	Internet Relay chat, _____	—	—	—	—
e.	World-wide-web (www), _____	—	—	—	—
f.	Telnet, _____	—	—	—	—
g.	Tele/video conferencing, _____	—	—	—	—
h.	electronic data exchange.				
50.	Knowledge of the advantage of Internet education., ,				
51.	Knowledge of a contemporary library (virtual library)				
52.	Knowledge of storing or uploading latest information on the internet.				
53.	Knowledge of how to carry out marketing transactions on the internet				
54.	Knowledge of using internet to make the world a global village, acting as resources for education.				
55a.	Knowledge of website, _____	—	—	—	—

b.	Knowledge of web-site browsing, _____	—	—	—	—
c.	Knowledge of filing/browsing the website.				
56.	Knowledge of search engines such as				
a.	Yahoo _____	—	—	—	—
b.	gmail, _____	—	—	—	—
c.	alts vista; _____	—	—	—	—
d.	how to search for information using any or all of the devices.				
57.	Knowledge of Internet services providers.				
58.	Knowledge of data security and protection techniques				
59.	Knowledge of protecting private information against un-authorized access				
60.	Knowledge of using password as a protection technique				

Teacher Internet skill usage. (TISU)

Indicate how often you have used these Information Technology and internet skills over the past 3 months.

Key: 4 - Very often; 3 - Often; 2 - Occasionally; 1 - Never

S/N	ITEMS	4	3	2	1
61.	Browsing on the internet				
62.	Accessing the world-wide web.				
63.	Using internet for teleconferencing.				
64.	Using the internet to send mails, conference papers, journals etc.				
65.	Communicating and retrieving information through internet				
66.	Searching for materials through internet				

67.	Check, create, send and reply e-mail				
68.	Send an attachment with an e-mail				
69.	Teaching through computer assisted computer software				
70.	Make presentation using presentation software (such as power-point)				
71.	Download a file from the internet				
72.	Save a file from the internet				
73.	Use search engine to find desired information				
74.	Using the internet for transacting business by placing orders				
75.	Using the internet for transacting business by booking for flight				
76.	Surfing the net				
77 a	Accessing your e-mail using Yahoo				
b.	Accessing your e-mail using gmail				
c.	Accessing your e-mail using alts vista				
78.	Consulting internet service providers				

Indicate the extent information obtained from the internet has assisted you to teach the listed Secretarial courses/Lesson Delivery

KEY: 4- Very Much; 3- Much; 2- Little; 1- Not at all

S/N	ITEMS	4	3	2	1
79.	Office practice				
80.	Shorthand				
81.	Typewriting				

82.	Business Law				
83.	Computer Appreciation				
84.	Entrepreneurship				
85.	Office management				
86.	Business communication				
87.	Secretarial duties				
88.	Computer Application				
89.	Word Processing				
90.	Principles of management				

APPENDIX III

Details of Population for the study

S/NO	Zones	Status	Locations	States	No of Secretarial Teachers		Total
					M	F	
1.	North	Federal College of Education	Kontagora	Niger	3	2	5
	Central	Federal College of Education	Okene	Kogi	3	2	5
		Federal College of Education	Pankshin	Plateau	2	2	4
		College of Education	Akwanga	Nassarawa	3	2	5
		College of Education	Gindiri	Plateau	2	2	4
		College of Education	Ilorin	Kwara	2	1	3
		College of Education	Katsina Ala	Benue	2	2	4
		College of Education (Technical)	Lafiagi	Kwara	3	2	5
		College of Education	Minna	Niger	2	1	3
		College of Education	Oju	Benue	3	2	5
		Federal Capital Territory College of Education	Zuba	FCT	3	2	5
		College of Education	Ilemona	Kwara	3	2	5
		Muyideen College of Education	Ilorin	Kwara	1	1	2
2.	North	Federal College of Education (Technical)	Gombe	Gombe	2	2	4
	East	Federal College of Education	Potiskum	Yobe	2	2	4
		Federal College of Education	Yola	Adamawa	2	2	4

		College of Education	Azare	Bauchi	2	1	3
		Umar Ibn E/Kanemi College of Education (Science	Bama	Borno	2	2	4
		College of Education	Gashua	Yobe	2	1	3
		College of Education	Hong	Adamawa	2	2	4
		College of Education	Jalingo	Taraba	2	2	4
		Kashim Ibrahim College of Education	Maiduguri	Borno	3	2	5
		College of Education	Waka-biu	Borno	2	2	4
3	North	Federal College of Education (Technical)	Bichi	Kano	3	2	5
	West	Federal College of Education (Technical)	Gusau	Zamfara	4	3	7
		Federal College of Education	Kano	Kano	5	2	7
		Federal College of Education	Katsina	Katsina	3	2	5
		Federal College of Education	Zaria	Kaduna	5	3	8
		Adamu Augie College of Education	Argungu	Kebbi	3	2	5
		College of Education	Gidan waya	Kaduna	3	3	6
		College of Education	Gumel	Jigawa	2	2	4
		Sa'adatu Rimi College of Education	Kumbotso	Kano	2	2	4
		Shehu Shagari College of Education	Sokoto	Sokoto	2	2	4
4.	South	Federal College of Education	Eha Amufu	Enugu	3	2	5
	East	Federal College of Education (Technical)	Umunze	Anambra	3	2	5
		Alvan Ikoku College of Education	Owerri	Imo	3	3	6
		College of Education (Technical)	Arochukwu	Abia	2	1	3
		College Of Education	Nsugbe	Anambra	2	1	3

		Institute of Ecumenical College of Education	Enugu	Enugu	1	1	2
		OSISA Technical College of Education	Enugu	Enugu	2	1	3
5.	South South	Federal College of Education (Technical)	Asaba	Delta	3	2	5
		Federal College of Education	Obudu	Cross River	2	2	4
		Federal College of Education (Technical)	Omoku	Cross River	3	2	5
		Akwa Ibom State College of Education	Afaha Nsit	Akwa ibom	2	1	3
		Delta state College of Education	Agbor	Delta	2	2	4
		College of Education	Ekiador	Edo	2	1	3
		College of Education	Warri	Delta	1	1	2
6.	South West	Federal College of Education	Abeokuta	Ogun	3	2	5
		Federal College of Education (Technical)	Akoka	Lagos	3	2	5
		Adeyemi College of Education	Ondo	Ondo	2	2	4
		Federal College of Education (Special)	Oyo	Oyo	2	2	4
		Osun State College of Education	Ilesha	Osun	3	2	5
		Tai Solarin College of Education	Yesuode	Ogun	2	2	4
		College of Education	Ikere Ekiti	Ekiti	3	2	5
		College of Education	Ila-orangun	Osun	2	1	3
		Adeniran Ogunsaya College of Education	Otto Ijanikin	Lagos	4	2	6
		Yewa Central College of Education	Aiyetoro	Ogun	2	2	4
		Delar College of Education	Ibadan	Oyo	2	1	3
		Total			144	106	250

Source: NCCE Digest 2009

APPENDIX IV

DETAILS OF DATA ANALYSED

The Data Analysed here included items 1-90 as contained in the Section B of the Research Instrument.

Teacher IT Skill Competence (TITSC)

Key: 4 – Adequately Skilled; 3- Skilled; 2- Fairly Skilled; 1- Not skilled.

S/N	ITEMS	SCALE					N/%	x̄	SD	Dec.
		4	3	2	1	0				
1.	ability for fast and accurate key boarding for efficient composition	90 (40.0%)	93 (41.3%)	35 (15.6%)	05 (2.2%)	02 (0.9%)	225 (100%)	3.17	0.84	Skilled
2.	ability for fast and accurate key boarding for making Inputs	75 (33.3%)	107 (47.6%)	38 (16.9%)	02 (0.9%)	03 (1.3%)	225 (100%)	3.11	0.81	Skilled
3.	ability for fast and accurate key boarding for checking and editing data	66 (29.3%)	98 (43.6%)	54 (24.0%)	04 (1.8%)	03 (1.3%)	225 (100%)	2.98	0.85	Skilled
4.	ability to operate word processing	88 (39.1%)	93 (41.3%)	35 (15.6%)	06 (2.7%)	03 (1.3%)	225 (100%)	3.14	0.87	Skilled
5.	ability to operate data base	24 (10.7%)	100 (44.4%)	72 (32.0%)	21 (9.3%)	08 (3.6%)	225 (100%)	2.49	0.93	Not Skilled
6.	ability to operate electronic messaging.	36 (16.0%)	101 (44.9%)	58 (25.8%)	22 (9.8%)	08 (3.6%)	225 (100%)	2.60	0.99	Skilled
7.	operate and use computer	36	98	57	25	09	225			

	systems with hard ware packages	(16.0%)	(43.6%)	(25.3%)	(11.1%)	(4.0%)	(100%)	2.56	1.02	Skilled
8.	operate and use computer systems with soft ware packages	43 (19.1%)	116 (51.6%)	46 (20.4%)	12 (5.3%)	08 (3.6%)	225 (100%)	2.77	0.94	Skilled
9.	operate and use computer systems with both hard ware and soft ware packages	30 (13.3%)	107 (47.6%)	64 (28.4%)	14 (6.2%)	10 (4.4%)	225 (100%)	2.59	0.95	Skilled
10.	operate and use computer systems with electronic mails and application software	22 (9.8%)	109 (48.4%)	63 (28.0%)	26 (11.6%)	05 (2.2%)	225 (100%)	2.52	0.90	Skilled
11.	operate using Microsoft office power point	32 (14.2%)	93 (41.3%)	70 (31.1%)	25 (11.1%)	05 (2.2%)	225 (100%)	2.54	0.94	Skilled
12.	Can extract relevant information using integrated software packages	23 (10.2%)	92 (40.9%)	78 (34.7%)	27 (12.0%)	05 (2.2%)	225 (100%)	2.45	0.91	Not Skilled
13.	Can extract relevant information using electronic mails and	25 (11.1%)	94 (41.8%)	78 (34.7%)	22 (9.8%)	06 (2.7%)	225 (100%)	2.49	0.91	Not Skilled

	application software									
14.	ability to use spreadsheet for forecasting	20 (8.9%)	63 (28.0%)	92 (40.9%)	48 (21.3%)	02 (0.9%)	225 (100%)	2.23	0.91	Not Skilled
15.	ability to use Video-conferencing	10 (4.4%)	48 (21.3%)	73 (32.4%)	84 (37.3%)	10 (4.4%)	225 (100%)	1.84	0.96	Not Skilled
16.	ability to use voice recognition system	11 (4.9%)	47 (20.9%)	69 (30.7%)	84 (37.3%)	14 (6.2%)	225 (100%)	1.81	1.00	Not Skilled
17.	ability to operate other different technologies and appreciate their benefits.	18 (8.0%)	66 (29.3%)	95 (42.2%)	36 (16.0%)	10 (4.4%)	225 (100%)	2.20	0.96	Not Skilled
18.	ability to use photocopier to produce multiple copies of document	85 (37.8%)	73 (32.4%)	46 (20.4%)	18 (8.0%)	03 (1.3%)	225 (100%)	2.97	1.01	Skilled
19.	ability to save documents using any micrographic equipment (diskettes, CD, or flashdrive)	74 (32.9%)	96 (42.7%)	36 (16.0%)	18 (8.0%)	01 (0.4%)	225 (100%)	3.00	0.92	Skilled

Grand Mean and Standard Deviation

2.60 0.65

With reference to the cutoff point of a Mean score of 2.5 points and above to be taken as a positive response, while any point below 2.5 points would be regarded as a negative response, the opinion of the Teachers showed that they were skilled and competent in all areas of Information Technology (IT) except in the following: ability to operate data base, ability to extract relevant

information using integrated software packages, ability to extract information using electronic mails and application software, ability to use voice recognition system and ability to operate other different technologies and appreciate their benefits.

The standard deviation of the items ranged from 0.81 to 1.02, which indicated that the respondents were not far apart from their responses.

Teacher Information Technology Skills Usage checklist. (TITSU)

Key: 4- Very Well; 3- well; 2-Fairly Well; 1- Not at all

S/N	ITEMS	4	3	2	1	0	N	\bar{x}	SD	Dec.
20.	Typing tests and exam papers	73 (32.4%)	96 (42.7%)	35 (15.6%)	19 (8.4%)	02 (0.9%)	225 (100%)	2.97	0.95	Well Used
21.	Typing official and other documents.	71 (31.6%)	98 (43.6%)	34 (15.1%)	20 (8.9%)	02 (0.9%)	225 (100%)	2.96	0.95	Well Used
22.	Typing handouts and teaching materials	56 (24.9%)	100 (44.4%)	41 (18.2%)	24 (10.7%)	04 (1.8%)	225 (100%)	2.80	0.99	Well Used
23.	Create a new document	63 (28.0%)	99 (44.0%)	50 (22.2%)	11 (4.9%)	02 (0.9%)	225 (100%)	2.93	0.88	Well Used
24.	Start up and shut down a computer safely	121 (53.8%)	81 (36.0%)	15 (6.7%)	04 (1.8%)	04 (1.8%)	225 (100%)	3.38	0.83	Well Used
25.	Copy files and directories/folders	70 (31.1%)	106 (47.1%)	37 (16.4%)	08 (3.6%)	04 (1.8%)	225 (100%)	3.02	0.88	Well Used
26.	Delete files and directories/folders	81 (36.0%)	94 (41.8%)	37 (16.4%)	07 (3.1%)	06 (2.7%)	225 (100%)	3.05	0.94	Well Used

27.	Move files and directories/folders	71 (31.6%)	102 (45.3%)	35 (15.6%)	11 (4.9%)	06 (2.7%)	225 (100%)	2.98	0.95	Well Used
28.	Rename files and directories/folders	69 (30.7%)	102 (45.3%)	39 (17.3%)	10 (4.4%)	05 (2.2%)	225 (100%)	2.98	0.93	Well Used
29.	Manage files and directories/folders.	57 (25.3%)	100 (44.4%)	45 (20.0%)	18 (8.0%)	05 (2.2%)	225 (100%)	2.83	0.97	Well Used
30.	Organize files and directories/folders	51 (22.7%)	102 (45.3%)	49 (21.8%)	15 (6.7%)	08 (3.6%)	225 (100%)	2.77	0.99	Well Used
31.	Arrange files and directories/folders.	52 (23.1%)	91 (40.4%)	55 (24.4%)	15 (6.7%)	12 (5.3%)	225 (100%)	2.69	1.06	Well Used
32.	Use operating system to find features to locate specific files	45 (20.0%)	96 (42.7%)	60 (26.7%)	17 (7.6%)	07 (3.1%)	225 (100%)	2.69	0.98	Well Used
33.	Amend an existing document	68 (30.2%)	85 (37.8%)	54 (24.0%)	12 (5.3%)	06 (2.7%)	225 (100%)	2.88	0.99	Well Used
34.	Save a document in a specified location	81 (36.0%)	84 (37.3%)	46 (20.4%)	07 (3.1%)	07 (3.1%)	225 (100%)	3.00	0.99	Well Used
35.	Save a document in a specified format other than the default format (save as read only)	61 (27.1%)	85 (37.8%)	61 (27.1%)	12 (5.3%)	06 (2.7%)	225 (100%)	2.81	0.98	Well Used
36a.	Apply basic text	88	65	35	08	29	225			Well

	formatting changes and attributes such as: fonts	(39.1%)	(28.9%)	(15.6%)	(3.6%)	(12.9%)	(100%)	2.78	1.34	Used
b.	Sizes	95 (42.2%)	78 (34.7%)	34 (15.1%)	05 (2.2%)	13 (5.8%)	225 (100%)	3.05	1.09	Well Used
c.	Colours	86 (38.2%)	80 (35.6%)	34 (15.1%)	14 (6.2%)	11 (4.9%)	225 (100%)	2.96	1.11	Well Used
d.	Bold	96 (42.7%)	82 (36.4%)	30 (13.3%)	05 (2.2%)	12 (5.3%)	225 (100%)	3.09	1.06	Well Used
e.	Italics	93 (41.3%)	74 (32.9%)	36 (16.0%)	08 (3.6%)	14 (6.2%)	225 (100%)	3.00	1.13	Well Used
f.	Underline	89 (39.6%)	75 (33.3%)	34 (15.1%)	06 (2.7%)	21 (9.3%)	225 (100%)	2.91	1.22	Well Used
37.	Cut, copy and paste information from one location to another.	94 (41.8%)	75 (33.3%)	41 (18.2%)	11 (4.9%)	04 (1.8%)	225 (100%)	3.08	0.98	Well Used
38.	Set print options such as paper size and orientation and select a printer	90 (40.0%)	73 (32.4%)	43 (19.1%)	14 (6.2%)	05 (2.2%)	225 (100%)	3.02	1.02	Well Used
39.	Generate students results using computer	50 (22.2%)	87 (38.7%)	41 (18.2%)	39 (17.3%)	08 (3.6%)	225 (100%)	2.59	1.12	Well Used

40.	Access data stored on CD-Roms	57 (25.3%)	88 (39.1%)	41 (18.2%)	36 (16.0%)	03 (1.3%)	225 (100%)	2.71	1.06	Well Used
41.	Access data stored on private computer	60 (26.7%)	82 (36.4%)	53 (23.6%)	26 (11.6%)	04 (1.8%)	225 (100%)	2.75	1.03	Well Used
42.	Access data stored on networks and the Internet.	50 (22.2%)	92 (40.9%)	48 (21.3%)	31 (13.8%)	04 (1.8%)	225 (100%)	2.68	1.02	Well Used

Grand Mean and Standard Deviation

2.89 0.76

This result showed the level to which Information Technology (IT) skill was used in the Colleges of Education in Nigeria. The result revealed that all the items included in the practical IT demonstration, were well utilized by the Secretarial teachers, since the mean score for each of the item was 2.5 and above.

Teacher Internet Awareness/Knowledge. (TITIK)

Key: 4 - Very Knowledgeable; 3 - Knowledgeable 2 - Fairly Knowledgeable 1 - Not knowledgeable

S/N	ITEMS	4	3	2	1	0	N	\bar{x}	SD	Dec.
43.	Knowledge of Internet concept as a worldwide interconnected	53 (23.6%)	101 (44.9%)	55 (24.4%)	13 (5.8%)	03 (1.3%)	225 (100%)	2.84	0.90	K

	computer networks.									
44.	Knowledge of Internet connecting private organizations	37 (16.4%)	83 (36.9%)	66 (29.3%)	37 (16.4%)	02 (0.9%)	225 (100%)	2.52	0.98	K
45.	Knowledge of Internet connecting commercial establishments	38 (16.9%)	77 (34.2%)	69 (30.7%)	35 (15.6%)	06 (2.7%)	225 (100%)	2.47	1.03	NK
46.	Knowledge of Internet connecting governmental organizations	31 (13.8%)	88 (39.1%)	60 (26.7%)	40 (17.8%)	06 (2.7%)	225 (100%)	2.44	1.02	NK
47.	Knowledge of Internet connecting school network	31 (13.8%)	81 (36.0%)	69 (30.7%)	31 (13.8%)	13 (5.8%)	225 (100%)	2.38	1.07	NK
48a.	Knowledge of all equipments used for internet services such as: Computer system	42 (18.7%)	81 (36.0%)	69 (30.7%)	27 (12.0%)	06 (2.7%)	225 (100%)	2.56	1.01	K
b.	Computer aided telephone	27 (12.0%)	81 (36.0%)	66 (29.3%)	42 (18.7%)	09 (4.0%)	225 (100%)	2.33	1.04	NK
c.	Telephone line modem	28	78	73	37	09	225			

		(12.4%)	(34.7%)	(32.4%)	(16.4%)	(4.0%)	(100%)	2.35	1.02	NK
49a.	Knowledge of available internet services and their application and operations such as: E-mails	42 (18.7%)	103 (45.8%)	54 (24.0%)	23 (10.2%)	03 (1.3%)	225 (100%)	2.70	0.93	K
b.	E-commerce	25 (11.1%)	66 (29.3%)	58 (25.8%)	47 (20.9%)	29 (12.9%)	225 (100%)	2.05	1.21	NK
c.	E- banking	27 (12.0%)	73 (32.4%)	67 (29.8%)	42 (18.7%)	16 (7.1%)	225 (100%)	2.24	1.11	NK
d.	E-marketing	22 (9.8%)	72 (32.0%)	64 (28.4%)	52 (23.1%)	15 (6.7%)	225 (100%)	2.15	1.10	NK
e.	Newsgroups/ usenet	22 (9.8%)	54 (24.0%)	62 (27.6%)	70 (31.1%)	17 (7.6%)	225 (100%)	1.97	1.12	NK
f.	Internet Relay chat	14 (6.2%)	53 (23.6%)	69 (30.7%)	69 (30.7%)	20 (8.9%)	225 (100%)	1.88	1.07	NK
g.	World-wide-web (www)	33 (14.7%)	82 (36.4%)	57 (25.3%)	35 (15.6%)	18 (8.0%)	225 (100%)	2.34	1.15	NK
h.	Telnet	12 (5.3%)	48 (21.3%)	71 (31.6%)	75 (33.3%)	19 (8.4%)	225 (100%)	1.82	1.03	NK
i.	Tele/video conferencing	19 (8.4%)	49 (21.8%)	65 (28.9%)	74 (32.9%)	18 (8.0%)	225 (100%)	1.90	1.10	NK

j.	electronic data exchange	20 (8.9%)	50 (22.2%)	63 (28.0%)	64 (28.4%)	28 (12.4%)	225 (100%)	1.88	1.16	NK
50.	Knowledge of the advantage of Internet education.	55 (24.4%)	85 (37.8%)	60 (26.7%)	16 (7.1%)	09 (4.0%)	225 (100%)	2.72	1.04	K
51.	Knowledge of a contemporary library (virtual library)	37 (16.4%)	74 (32.9%)	67 (29.8%)	37 (16.4%)	10 (4.4%)	225 (100%)	2.40	1.08	NK
52.	Knowledge of storing or uploading latest information on the internet.	42 (18.7%)	91 (40.4%)	57 (25.3%)	25 (11.1%)	10 (4.4%)	225 (100%)	2.58	1.05	K
53.	Knowledge of how to carry out marketing transactions on the internet	26 (11.6%)	71 (31.6%)	62 (27.6%)	59 (26.2%)	07 (3.1%)	225 (100%)	2.22	1.06	NK
54.	Knowledge of using internet to make the world a global village, acting as resources for education.	30 (13.3%)	88 (39.1%)	61 (27.1%)	38 (16.9%)	08 (3.6%)	225 (100%)	2.42	1.03	NK
55a.	Knowledge of website	40	94	46	24	21	225			

		(17.8%)	(41.8%)	(20.4%)	(10.7%)	(9.3%)	(100%)	2.48	1.18	NK
b.	Knowledge of web-site browsing	46 (20.4%)	97 (43.1%)	48 (21.3%)	24 (10.7%)	10 (4.4%)	225 (100%)	2.64	1.06	K
c.	Knowledge of filing/browsing the website.	42 (18.7%)	87 (38.7%)	60 (26.7%)	26 (11.6%)	10 (4.4%)	225 (100%)	2.56	1.06	K
56a.	Knowledge of search engines such as: Yahoo	67 (29.8%)	79 (35.1%)	45 (20.0%)	25 (11.1%)	09 (4.0%)	225 (100%)	2.78	1.12	K
b.	Gmail	41 (18.2%)	70 (31.1%)	57 (25.3%)	43 (19.1%)	14 (6.2%)	225 (100%)	2.36	1.16	NK
c.	alts vista	34 (15.1%)	65 (28.9%)	48 (21.3%)	64 (28.4%)	14 (6.2%)	225 (100%)	2.18	1.18	NK
d.	how to search for information using any or all of the devices.	38 (16.9%)	90 (40.0%)	54 (24.0%)	29 (12.9%)	14 (6.2%)	225 (100%)	2.48	1.11	NK
57.	Knowledge of Internet services providers.	37 (16.4%)	100 (44.4%)	59 (26.2%)	22 (9.8%)	07 (3.1%)	225 (100%)	2.61	0.98	K
58.	Knowledge of data security and protection techniques	27 (12.0%)	76 (33.8%)	72 (32.0%)	43 (19.1%)	07 (3.1%)	225 (100%)	2.32	1.02	NK
59.	Knowledge of protecting private	33	81	61	45	05	225			

	information against un-authorized access	(14.7%)	(36.0%)	(27.1%)	(20.0%)	(2.2%)	(100%)	2.41	1.04	NK
60.	Knowledge of using password as a protection technique	52 (23.1%)	85 (37.8%)	64 (28.4%)	16 (7.1%)	08 (3.6%)	225 (100%)	2.70	1.02	K
Grand Mean and Standard Deviation								2.37	0.78	

Questionnaire items 43 -60 were used to evaluate the level of knowledge of internet among Teachers in the study zone. The result in showed that the Teachers were knowledgeable in all the items with a mean score of 2.5 and above. The only areas were, from the established standards, they showed not knowledgeable were in how internet connects commercial establishments, governmental organizations and school network. Others were the lack of knowledge of some equipments used for internet services such as: computer aided telephone and telephone line modem. They also lacked the knowledge of some available internet services and their operations such as: E-commerce, E-banking, E-marketing, Newsgroups/usenet, Internet Relay Chat, World-Wide-Web (WWW), Telnet, Tele/video conferencing, and electronic data exchange. Included in the list of what the Teachers lacked were knowledge of a contemporary library (virtual library), knowledge of how to carry out marketing transactions on the internet, knowledge of using internet to make the world a global village, acting as resources for education, knowledge of website, knowledge of one of the search engines, which is alts vista, knowledge of data security and protection techniques and knowledge of protecting private information against un-authorized access.

Key: K - Knowledgeable NK - Not Knowledgeable

Teacher Internet Skill usage. (TISU) (How consistent in the Past 3 Months)

Key: 4 - Very often; 3 - Often; 2 - Sometime/Occasionally; 1 - Never

S/N	ITEMS	4	3	2	1	0	N	x <input type="checkbox"/>	SD	Dec.
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61.	Browsing on the internet	63 (28.0%)	87 (38.7%)	65 (28.9%)	09 (4.0%)	01 (0.4%)	225 (100%)	2.90	0.87	Often Used
62.	Accessing the world-wide web.	45 (20.0%)	83 (36.9%)	65 (28.9%)	29 (12.9%)	03 (1.3%)	225 (100%)	2.61	0.99	Often Used
63.	Using internet for teleconferencing.	21 (9.3%)	46 (20.4%)	74 (32.9%)	78 (34.7%)	06 (2.7%)	225 (100%)	1.99	1.02	Not Used
64.	Using the internet to send mails, conference papers, journals etc.	47 (20.9%)	71 (31.6%)	67 (29.8%)	35 (15.6%)	05 (2.2%)	225 (100%)	2.53	1.06	Often Used
65.	Communicating and retrieving information through internet	55 (24.4%)	95 (42.2%)	53 (23.6%)	20 (8.9%)	02 (0.9%)	225 (100%)	2.80	0.94	Often Used
66.	Searching for materials through internet	67 (29.8%)	85 (37.8%)	54 (24.0%)	15 (6.7%)	04 (1.8%)	225 (100%)	2.87	0.98	Often Used
67.	Check, create, send and reply e-mail	57 (25.3%)	83 (36.9%)	59 (26.2%)	24 (10.7%)	02 (0.9%)	225 (100%)	2.75	0.98	Often Used
68.	Send an attachment with an e-mail	33 (14.7%)	72 (32.0%)	65 (28.9%)	49 (21.8%)	06 (2.7%)	225 (100%)	2.34	1.06	Not Used
69.	Teaching through computer assisted computer software	20 (8.9%)	60 (26.7%)	76 (33.8%)	63 (28.0%)	06 (2.7%)	225 (100%)	2.11	1.00	Not Used

70.	Make presentation using presentation software (such as power-point)	27 (12.0%)	70 (31.1%)	69 (30.7%)	55 (24.4%)	04 (1.8%)	225 (100%)	2.27	1.02	Not Used
71.	Download a file from the internet	54 (24.0%)	82 (36.4%)	63 (28.0%)	21 (9.3%)	05 (2.2%)	225 (100%)	2.71	1.01	Often Used
72.	Save a file from the internet	51 (22.7%)	85 (37.8%)	51 (22.7%)	31 (13.8%)	07 (3.1%)	225 (100%)	2.63	1.07	Often Used
73.	Use search engine to find desired information	43 (19.1%)	87 (38.7%)	44 (19.6%)	41 (18.2%)	10 (4.4%)	225 (100%)	2.50	1.13	Often Used
74.	Using the internet for transacting business by placing orders	20 (8.9%)	60 (26.7%)	64 (28.4%)	69 (30.7%)	12 (5.3%)	225 (100%)	2.03	1.07	Not Used
75.	Using the internet for transacting business by booking for flight	26 (11.6%)	45 (20.0%)	68 (30.2%)	77 (34.2%)	09 (4.0%)	225 (100%)	2.01	1.08	Not Used
76.	Surfing the net	35 (15.6%)	66 (29.3%)	56 (24.9%)	53 (23.6%)	15 (6.7%)	225 (100%)	2.24	1.17	Not Used
77a.	Accessing your e-mail using Yahoo	61 (27.1%)	79 (35.1%)	48 (21.3%)	28 (12.4%)	09 (4.0%)	225 (100%)	2.69	1.12	Often Used
b.	Accessing your e-mail	34	74	41	69	07	225			Not

	using gmail	(15.1%)	(32.9%)	(18.2%)	(30.7%)	(3.1%)	(100%)	2.26	1.14	Used
c.	Accessing your e-mail	29	63	42	82	09	225			Not
	using alts vista	(12.9%)	(28.0%)	(18.7%)	(36.4%)	(4.0%)	(100%)	2.09	1.15	Used
78.	Consulting internet	36	77	55	52	05	225			Not
	service providers	(16.0%)	(34.2%)	(24.4%)	(23.1%)	(2.2%)	(100%)	2.39	1.08	Used

Grand Mean and Standard Deviation

2.44 0.79

The result showed how frequently or consistently the Secretarial Teachers used internet in the past 3 months. The responses as shown indicated that only 11 areas had been consistently in use within the past 3 months of the period of this study, whereas the other 10 areas of the internet competencies were not used. The table revealed that out of the 20 internet skilled areas, the teachers were only skilled and can use 11 areas whereas they were not skilled and cannot use the other 9 areas. These 9 areas include: using internet for tele-conferencing, send an attachment with an e-mail, teaching through computer assisted computer software, make presentation using presentation software (such as power point), using internet for transacting business and booking for flight, surfing the net, accessing E-mail using gmail and alts vista, and consulting internet service providers.

The extent to which Internet information obtained had assisted in teaching Secretarial Courses

KEY: 4- Very Much; 3- Much; 2- Little; 1- Not at all

S/N	ITEMS	4	3	2	1	0	N	\bar{x}	SD	Dec.
79.	Office practice	62	84	24	24	31	225			Assisted
		(27.6%)	(37.3%)	(10.7%)	(10.7%)	(13.8%)	(100%)	2.54	1.36	Much
80.	Shorthand	43	87	31	40	24	225			Not
		(19.1%)	(38.7%)	(13.8%)	(17.8%)	(10.7%)	(100%)	2.38	1.27	Assisted
81.	Typewriting	48	86	28	37	26	225			Not

		(21.3%)	(38.2%)	(12.4%)	(16.4%)	(11.6%)	(100%)	2.41	1.30	Assisted
82.	Business Law	41 (18.2%)	71 (31.6%)	21 (9.3%)	36 (16.0%)	56 (24.9%)	225 (100%)	2.02	1.49	Not Assisted
83.	Computer Appreciation	47 (20.9%)	84 (37.3%)	23 (10.2%)	24 (10.7%)	47 (20.9%)	225 (100%)	2.27	1.45	Not Assisted
84.	Entrepreneurship	52 (23.1%)	93 (41.3%)	18 (8.0%)	23 (10.2%)	39 (17.3%)	225 (100%)	2.43	1.40	Not Assisted
85.	Office management	40 (17.8%)	85 (37.8%)	21 (9.3%)	19 (8.4%)	60 (26.7%)	225 (100%)	2.12	1.50	Not Assisted
86.	Business communication	57 (25.3%)	77 (34.2%)	26 (11.6%)	19 (8.4%)	46 (20.4%)	225 (100%)	2.36	1.46	Not Assisted
87.	Secretarial duties	52 (23.1%)	87 (38.7%)	28 (12.4%)	18 (8.0%)	40 (17.8%)	225 (100%)	2.41	1.39	Not Assisted
88.	Computer Application	50 (22.2%)	76 (33.8%)	18 (8.0%)	31 (13.8%)	50 (22.2%)	225 (100%)	2.20	1.49	Not Assisted
89.	Word Processing	59 (26.2%)	73 (32.4%)	26 (11.6%)	18 (8.0%)	49 (21.8%)	225 (100%)	2.33	1.49	Not Assisted
90.	Principles of Management	45 (20.0%)	61 (27.1%)	38 (16.9%)	24 (10.7%)	57 (25.3%)	225 (100%)	2.06	1.48	Not Assisted

Grand Mean and Standard Deviation

2.29 0.99

Questionnaire items No 79 – 90 were used to analyze the extent the information obtained from the internet had assisted the Secretarial Teachers in their course/lesson delivery. From the results in, the information obtained from the internet has only assisted the secretarial teachers to teach only one course out of 12 courses that was included in the NCE secretarial education programme (NCCE Min Standards:2002).

APPENDIX V

Frequency Table

GENDER

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Valid MALE	131	58.2	58.2	58.2
FEMALE	94	41.8	41.8	100.0
Total	225	100.0	100.0	

GENERATION

Generation	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0.00	34	15.1	15.1	15.1
BEFORE 2002	146	64.9	64.9	80.0
2002 AND AFTER	45	20.0	20.0	100.0
Total	225	100.0	100.0	

AGE (IN YEARS)

Age	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0.00	1	0.4	0.4	0.4
LESS THAN 25	1	0.4	0.4	0.9
25-29	8	3.6	3.6	4.4
30-34	24	10.7	10.7	15.1
35-39	34	15.1	15.1	30.2
40-44	62	27.6	27.6	57.8
45-49	53	23.6	23.6	81.3
50-54	31	13.8	13.8	95.1
55-59	9	4.0	4.0	99.1
ABOVE 59	2	0.9	0.9	100.0
Total	225	100.0	100.0	

EDUCATIONAL QUALIFICATION

Qualification	Frequency	Percent	Valid Percent	Cumulative Percent
Valid BACHELOR DEGREE	57	25.3	25.3	25.3
MASTERS DEGREE	145	64.4	64.4	89.8
DOCTORATE DEGREE	9	4.0	4.0	93.8
OTHERS	14	6.2	6.2	100.0
Total	225	100.0	100.0	

RANK

Rank	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0.00	5	2.2	2.2	2.2
CHIEF LECTURER	15	6.7	6.7	8.9
PRINCIPAL LECTURER	23	10.2	10.2	19.1
SNR LECTURER	54	24.0	24.0	43.1
LECTURER 1	26	11.6	11.6	54.7
LECTURER 2	31	13.8	13.8	68.4
LECTURER 3	33	14.7	14.7	83.1
ASSISTANT LECTURER	38	16.9	16.9	100.0
Total	225	100.0	100.0	

NO OF YEARS OF TEACHING EXPERIENCE

Teaching Experience	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1-3YRS	29	12.9	12.9	12.9
4-6YRS	41	18.2	18.2	31.1
7-10YRS	45	20.0	20.0	51.1
11-15YRS	31	13.8	13.8	64.9
ABOVE 15YRS	79	35.1	35.1	100.0
Total	225	100.0	100.0	

PERSONAL CONTACT WITH COMPUTER

Contact with Computer	Frequency	Percent	Valid Percent	Cumulative Percent
Valid I HAVE	217	96.4	96.4	96.4
I DO NOT HAVE	8	3.6	3.6	100.0
Total	225	100.0	100.0	

NO OF YEARS YOU HAVE BEING USING COMPUTER

No of Years	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0.00	8	3.6	3.6	3.6
1-3	58	25.8	25.8	29.3
4-6	58	25.8	25.8	55.1
ABOVE 6	101	44.9	44.9	100.0
Total	225	100.0	100.0	

WHO PROVIDED THE COMPUTER FOR YOU

Provisions	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0.00	9	4.0	4.0	4.0
EMPLOYER	49	21.8	21.8	25.8
PERSONAL	167	74.2	74.2	100.0
Total	225	100.0	100.0	

REASONS FOR NOT USING CMPUTER

Reasons	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0.00	209	92.9	92.9	92.9
DO NOT KNOW	2	0.9	0.9	93.8
NONE AVAILABLE	6	2.7	2.7	96.4
TOO EXPENSIVE	5	2.2	2.2	98.7
NO TIME	2	0.9	0.9	99.6
OTHERS	1	0.4	0.4	100.0
Total	225	100.0	100.0	

ANY FORMAL TRAINING TO ACQUIRE COMPUTER SKILLS?

Training	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0.00	3	1.3	1.3	1.3
YES	189	84.0	84.0	85.3
NO FORMAL TRAINING	33	14.7	14.7	100.0
Total	225	100.0	100.0	

ACCESSIBILITY OF COMPUTERS TO YOU

Accessibility	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0.00	3	1.3	1.3	1.3

NOT ACCESSIBLE	7	3.1	3.1	4.4
OCCASIONALLY	39	17.3	17.3	21.8
RESTRICTED ACCESS	3	1.3	1.3	23.1
FREELY ACCESSIBLE	173	76.9	76.9	100.0
Total	225	100.0	100.0	

NO OF HOURS YOU USE COMPUTER PER WEEK

No of Hours/week	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 0.00	6	2.7	2.7	2.7
1-3	121	53.8	53.8	56.4
4-6	63	28.0	28.0	84.4
7-11	19	8.4	8.4	92.9
ABOVE 11	16	7.1	7.1	100.0
Total	225	100.0	100.0	

SKILL FOR FAST AND ACCURATE KEY BOARDING FOR EFFICIENT COMPOSITION

RESPONSES	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	2	0.9	0.9	0.9
NOT SKILLED	5	2.2	2.2	3.1
FAIRLY SKILLED	35	15.6	15.6	18.7
SKILLED	93	41.3	41.3	60.0
ADEQUATELY SKILLED	90	40.0	40.0	100.0
Total	225	100.0	100.0	

SKILL FOR FAST AND ACCURATE KEY BOARDING FOR MAKING INPUTS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	3	1.3	1.3	1.3
NOT SKILLED	2	0.9	0.9	2.2
FAIRLY SKILLED	38	16.9	16.9	19.1
SKILLED	107	47.6	47.6	66.7
ADEQUATELY SKILLED	75	33.3	33.3	100.0
Total	225	100.0	100.0	

SKILL FOR FAST AND ACCURATE KEY BOARDING FOR CHECKING AND EDITING DATA

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	3	1.3	1.3	1.3
NOT SKILLED	4	1.8	1.8	3.1
FAIRLY SKILLED	54	24.0	24.0	27.1
SKILLED	98	43.6	43.6	70.7
ADEQUATELY SKILLED	66	29.3	29.3	100.0
Total	225	100.0	100.0	

SKILL TO OPERATE WORD PROCESSING

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	3	1.3	1.3	1.3
NOT SKILLED	6	2.7	2.7	4.0
FAIRLY SKILLED	35	15.6	15.6	19.6

SKILLED	93	41.3	41.3	60.9
ADEQUATELY SKILLED	88	39.1	39.1	100.0
Total	225	100.0	100.0	

SKILL TO OPERATE DATA BASE

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	8	3.6	3.6	3.6
NOT SKILLED	21	9.3	9.3	12.9
FAIRLY SKILLED	72	32.0	32.0	44.9
SKILLED	100	44.4	44.4	89.3
ADEQUATELY SKILLED	24	10.7	10.7	100.0
Total	225	100.0	100.0	

SKILL TO OPERATE ELECTRONIC MESSAGING

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	8	3.6	3.6	3.6
NOT SKILLED	22	9.8	9.8	13.3
FAIRLY SKILLED	58	25.8	25.8	39.1
SKILLED	101	44.9	44.9	84.0
ADEQUATELY SKILLED	36	16.0	16.0	100.0
Total	225	100.0	100.0	

DEVELOP SKILL TO USE COMPUTER SYSTEMS WITH HARDWARE PACKAGES

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	9	4.0	4.0	4.0
NOT SKILLED	25	11.1	11.1	15.1
FAIRLY SKILLED	57	25.3	25.3	40.4
SKILLED	98	43.6	43.6	84.0
ADEQUATELY SKILLED	36	16.0	16.0	100.0
Total	225	100.0	100.0	

HAVE THE SKILL TO USE COMPUTER SYSTEMS WITH SOFTWARE PACKAGES

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	8	3.6	3.6	3.6
NOT SKILLED	12	5.3	5.3	8.9
FAIRLY SKILLED	46	20.4	20.4	29.3
SKILLED	116	51.6	51.6	80.9
ADEQUATELY SKILLED	43	19.1	19.1	100.0
Total	225	100.0	100.0	

HAVE THE SKILL TO OPERATE AND USE COMPUTER WITH BOTH HARDWARE AND SOFTWARE PACKAGES

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	10	4.4	4.4	4.4
NOT SKILLED	14	6.2	6.2	10.7
FAIRLY SKILLED	64	28.4	28.4	39.1
SKILLED	107	47.6	47.6	86.7

ADEQUATELY SKILLED	30	13.3	13.3	100.0
Total	225	100.0	100.0	

SKILLED TO OPERATE AND USE COMPUTER SYSTEMS WITH ELECTRONIC MAILES AND APPLICATION SOFTWARE

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	5	2.2	2.2	2.2
NOT SKILLED	26	11.6	11.6	13.8
FAIRLY SKILLED	63	28.0	28.0	41.8
SKILLED	109	48.4	48.4	90.2
ADEQUATELY SKILLED	22	9.8	9.8	100.0
Total	225	100.0	100.0	

SKILLED TO OPERATE USING MICROSOFT OFFICE POWER POINT

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	5	2.2	2.2	2.2
NOT SKILLED	25	11.1	11.1	13.3
FAIRLY SKILLED	70	31.1	31.1	44.4
SKILLED	93	41.3	41.3	85.8
ADEQUATELY SKILLED	32	14.2	14.2	100.0
Total	225	100.0	100.0	

HAVE THE SKILL TO EXTRACT RELEVANT INFORMATION USING INTEGRATED SOFTWARE PACKAGES

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	5	2.2	2.2	2.2
NOT SKILLED	27	12.0	12.0	14.2
FAIRLY SKILLED	78	34.7	34.7	48.9
SKILLED	92	40.9	40.9	89.8
ADEQUATELY SKILLED	23	10.2	10.2	100.0
Total	225	100.0	100.0	

HAVE SKILL TO EXTRACT RELEVANT INFORMATION USING ELECTRONIC MAILES AND APPLICATION SOFTWARE

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	6	2.7	2.7	2.7
NOT SKILLED	22	9.8	9.8	12.4
FAIRLY SKILLED	78	34.7	34.7	47.1
SKILLED	94	41.8	41.8	88.9
ADEQUATELY SKILLED	25	11.1	11.1	100.0
Total	225	100.0	100.0	

HAVE SKILL TO USE SPREADSHEET FOR FORECASTING

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	2	0.9	0.9	0.9
NOT SKILLED	48	21.3	21.3	22.2
FAIRLY SKILLED	92	40.9	40.9	63.1
SKILLED	63	28.0	28.0	91.1
ADEQUATELY SKILLED	20	8.9	8.9	100.0
Total	225	100.0	100.0	

HAVE SKILL TO USE VIDEO CONFERENCING

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	10	4.4	4.4	4.4
NOT SKILLED	84	37.3	37.3	41.8
FAIRLY SKILLED	73	32.4	32.4	74.2
SKILLED	48	21.3	21.3	95.6
ADEQUATELY SKILLED	10	4.4	4.4	100.0
Total	225	100.0	100.0	

HAVE SKILL TO USE VOICE RECOGNITION SYSTEM

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	14	6.2	6.2	6.2
NOT SKILLED	84	37.3	37.3	43.6
FAIRLY SKILLED	69	30.7	30.7	74.2
SKILLED	47	20.9	20.9	95.1
ADEQUATELY SKILLED	11	4.9	4.9	100.0
Total	225	100.0	100.0	

HAVE SKILL TO OPERATE OTHER DIFFERENT TECHNOLOGIES AND APPRECIATE THEIR BENEFITS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	10	4.4	4.4	4.4
NOT SKILLED	36	16.0	16.0	20.4
FAIRLY SKILLED	95	42.2	42.2	62.7
SKILLED	66	29.3	29.3	92.0
ADEQUATELY SKILLED	18	8.0	8.0	100.0
Total	225	100.0	100.0	

HAVE SKILL TO USE PHOTOCOPIER TO PRODUCE MULTIPLE COPIES OF DOCUMENTS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	3	1.3	1.3	1.3
NOT SKILLED	18	8.0	8.0	9.3
FAIRLY SKILLED	46	20.4	20.4	29.8
SKILLED	73	32.4	32.4	62.2
ADEQUATELY SKILLED	85	37.8	37.8	100.0
Total	225	100.0	100.0	

HAVE SKILL TO SAVE DOCUMENTS USING ANY MICROGRAPHIC EQUIPMENT (DISKETTES, CD, OR FLASHDRIVE)

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	1	0.4	0.4	0.4
NOT SKILLED	18	8.0	8.0	8.4
FAIRLY SKILLED	36	16.0	16.0	24.4
SKILLED	96	42.7	42.7	67.1
ADEQUATELY SKILLED	74	32.9	32.9	100.0
Total	225	100.0	100.0	

SKILL IN TYPING TESTS AND EXAM PAPERS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	2	0.9	0.9	0.9
NOT SKILLED	19	8.4	8.4	9.3
FAIRLY SKILLED	35	15.6	15.6	24.9
SKILLED	96	42.7	42.7	67.6
ADEQUATELY SKILLED	73	32.4	32.4	100.0
Total	225	100.0	100.0	

SKILLED IN TYPING OFFICIAL AND OTHER DOCUMENTS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	2	0.9	0.9	0.9
NOT SKILLED	20	8.9	8.9	9.8
FAIRLY SKILLED	34	15.1	15.1	24.9
SKILLED	98	43.6	43.6	68.4
ADEQUATELY SKILLED	71	31.6	31.6	100.0
Total	225	100.0	100.0	

SKILL IN TYPING HANDOUTS AND TEACHING MATERIALS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	4	1.8	1.8	1.8
NOT SKILLED	24	10.7	10.7	12.4
FAIRLY SKILLED	41	18.2	18.2	30.7
SKILLED	100	44.4	44.4	75.1
ADEQUATELY SKILLED	56	24.9	24.9	100.0
Total	225	100.0	100.0	

SKILLED TO CREATE A NEW DOCUMENT

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	2	0.9	0.9	0.9
NOT SKILLED	11	4.9	4.9	5.8
FAIRLY SKILLED	50	22.2	22.2	28.0
SKILLED	99	44.0	44.0	72.0
ADEQUATELY SKILLED	63	28.0	28.0	100.0
Total	225	100.0	100.0	

SKILLED TO START UP AND SHUTDOWN A COMPUTER SAFELY

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	4	1.8	1.8	1.8
NOT SKILLED	4	1.8	1.8	3.6
FAIRLY SKILLED	15	6.7	6.7	10.2
SKILLED	81	36.0	36.0	46.2
ADEQUATELY SKILLED	121	53.8	53.8	100.0
Total	225	100.0	100.0	

SKILLED TO COPY FILES AND DIRECTORIES/ FOLDERS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
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Valid	NOT CERTAIN	4	1.8	1.8	1.8
	NOT SKILLED	8	3.6	3.6	5.3
	FAIRLY SKILLED	37	16.4	16.4	21.8
	SKILLED	106	47.1	47.1	68.9
	ADEQUATELY SKILLED	70	31.1	31.1	100.0
	Total	225	100.0	100.0	

SKILLED TO DELETE FILES AND DIRECTORIES/ FOLDERS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	6	2.7	2.7	2.7
NOT SKILLED	7	3.1	3.1	5.8
FAIRLY SKILLED	37	16.4	16.4	22.2
SKILLED	94	41.8	41.8	64.0
ADEQUATELY SKILLED	81	36.0	36.0	100.0
Total	225	100.0	100.0	

SKILLED TO MOVE FILES AND DIRECTORIES/FOLDERS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	6	2.7	2.7	2.7
NOT SKILLED	11	4.9	4.9	7.6
FAIRLY SKILLED	35	15.6	15.6	23.1
SKILLED	102	45.3	45.3	68.4
ADEQUATELY SKILLED	71	31.6	31.6	100.0
Total	225	100.0	100.0	

SKILLED TO RENAME FILES AND DIRECTORIES/ FOLDERS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	5	2.2	2.2	2.2
NOT SKILLED	10	4.4	4.4	6.7
FAIRLY SKILLED	39	17.3	17.3	24.0
SKILLED	102	45.3	45.3	69.3
ADEQUATELY SKILLED	69	30.7	30.7	100.0
Total	225	100.0	100.0	

SKILLED TO MANAGE FILES AND DIRECTORIES/ FOLDERS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	5	2.2	2.2	2.2
NOT SKILLED	18	8.0	8.0	10.2
FAIRLY SKILLED	45	20.0	20.0	30.2
SKILLED	100	44.4	44.4	74.7
ADEQUATELY SKILLED	57	25.3	25.3	100.0
Total	225	100.0	100.0	

SKILLED TO ORGANIZE FILES AND DIRECTORIES/ FOLDERS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	8	3.6	3.6	3.6
NOT SKILLED	15	6.7	6.7	10.2

	FAIRLY SKILLED	49	21.8	21.8	32.0
	SKILLED	102	45.3	45.3	77.3
	ADEQUATELY SKILLED	51	22.7	22.7	100.0
	Total	225	100.0	100.0	

SKILLED TO ARRANGE FILES AND DIRECTORIES/ FOLDERS

Responses		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NOT CERTAIN	12	5.3	5.3	5.3
	NOT SKILLED	15	6.7	6.7	12.0
	FAIRLY SKILLED	55	24.4	24.4	36.4
	SKILLED	91	40.4	40.4	76.9
	ADEQUATELY SKILLED	52	23.1	23.1	100.0
	Total	225	100.0	100.0	

SKILLED IN OPERATING SYSTEM TO FIND FEATURES TO LOCATE SPECIFIC FILES

Responses		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NOT CERTAIN	7	3.1	3.1	3.1
	NOT SKILLED	17	7.6	7.6	10.7
	FAIRLY SKILLED	60	26.7	26.7	37.3
	SKILLED	96	42.7	42.7	80.0
	ADEQUATELY SKILLED	45	20.0	20.0	100.0
	Total	225	100.0	100.0	

SKILLED TO AMEND AN EXISTING DOCUMENT

Responses		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NOT CERTAIN	6	2.7	2.7	2.7
	NOT SKILLED	12	5.3	5.3	8.0
	FAIRLY SKILLED	54	24.0	24.0	32.0
	SKILLED	85	37.8	37.8	69.8
	ADEQUATELY SKILLED	68	30.2	30.2	100.0
	Total	225	100.0	100.0	

SKILLED TO SAVE A DOCUMENT IN A SPECIFIED LOCATION

Responses		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NOT CERTAIN	7	3.1	3.1	3.1
	NOT SKILLED	7	3.1	3.1	6.2
	FAIRLY SKILLED	46	20.4	20.4	26.7
	SKILLED	84	37.3	37.3	64.0
	ADEQUATELY SKILLED	81	36.0	36.0	100.0
	Total	225	100.0	100.0	

**SKILLED TO SAVE A DOCUMENT IN A SPECIFIED FORMAT OTHER THAN THE DEFAULT FORMAT
(SAVE AS READ ONLY)**

Responses		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NOT CERTAIN	6	2.7	2.7	2.7
	NOT SKILLED	12	5.3	5.3	8.0
	FAIRLY SKILLED	61	27.1	27.1	35.1

SKILLED	85	37.8	37.8	72.9
ADEQUATELY SKILLED	61	27.1	27.1	100.0
Total	225	100.0	100.0	

SKILLED TO APPLY BASIC TEXT FORMATTING CHANGES AND ATTRIBUTES SUCH AS: FONTS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	29	12.9	12.9	12.9
NOT SKILLED	8	3.6	3.6	16.4
FAIRLY SKILLED	35	15.6	15.6	32.0
SKILLED	65	28.9	28.9	60.9
ADEQUATELY SKILLED	88	39.1	39.1	100.0
Total	225	100.0	100.0	

SKILLED TO USE SIZES

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	13	5.8	5.8	5.8
NOT SKILLED	5	2.2	2.2	8.0
FAIRLY SKILLED	34	15.1	15.1	23.1
SKILLED	78	34.7	34.7	57.8
ADEQUATELY SKILLED	95	42.2	42.2	100.0
Total	225	100.0	100.0	

SKILLED TO USE COLOURS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	11	4.9	4.9	4.9
NOT SKILLED	14	6.2	6.2	11.1
FAIRLY SKILLED	34	15.1	15.1	26.2
SKILLED	80	35.6	35.6	61.8
ADEQUATELY SKILLED	86	38.2	38.2	100.0
Total	225	100.0	100.0	

SKILLED TO USE BOLD

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	12	5.3	5.3	5.3
NOT SKILLED	5	2.2	2.2	7.6
FAIRLY SKILLED	30	13.3	13.3	20.9
SKILLED	82	36.4	36.4	57.3
ADEQUATELY SKILLED	96	42.7	42.7	100.0
Total	225	100.0	100.0	

SKILLED TO USE ITALICS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	14	6.2	6.2	6.2
NOT SKILLED	8	3.6	3.6	9.8
FAIRLY SKILLED	36	16.0	16.0	25.8
SKILLED	74	32.9	32.9	58.7
ADEQUATELY SKILLED	93	41.3	41.3	100.0

Total	225	100.0	100.0
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SKILLED TO USE UNDERLINE

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	21	9.3	9.3	9.3
NOT SKILLED	6	2.7	2.7	12.0
FAIRLY SKILLED	34	15.1	15.1	27.1
SKILLED	75	33.3	33.3	60.4
ADEQUATELY SKILLED	89	39.6	39.6	100.0
Total	225	100.0	100.0	

SKILLED TO USE CUT, COPY AND PASTE INFORMATION FROM ONE LOCATION TO ANOTHER

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	4	1.8	1.8	1.8
NOT SKILLED	11	4.9	4.9	6.7
FAIRLY SKILLED	41	18.2	18.2	24.9
SKILLED	75	33.3	33.3	58.2
ADEQUATELY SKILLED	94	41.8	41.8	100.0
Total	225	100.0	100.0	

SKILLED TO SET PRINT OPTINS SUCH AS PAPER SIZE AND ORIENTATION AND SELECT A PRINTER

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	5	2.2	2.2	2.2
NOT SKILLED	14	6.2	6.2	8.4
FAIRLY SKILLED	43	19.1	19.1	27.6
SKILLED	73	32.4	32.4	60.0
ADEQUATELY SKILLED	90	40.0	40.0	100.0
Total	225	100.0	100.0	

SKILLED TO GENERATE STUDENTS RESULTS USING COMPUTER

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	8	3.6	3.6	3.6
NOT SKILLED	39	17.3	17.3	20.9
FAIRLY SKILLED	41	18.2	18.2	39.1
SKILLED	87	38.7	38.7	77.8
ADEQUATELY SKILLED	50	22.2	22.2	100.0
Total	225	100.0	100.0	

SKILLED TO ACCESS DATA STORED ON CD-ROMS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	3	1.3	1.3	1.3
NOT SKILLED	36	16.0	16.0	17.3
FAIRLY SKILLED	41	18.2	18.2	35.6
SKILLED	88	39.1	39.1	74.7
ADEQUATELY SKILLED	57	25.3	25.3	100.0
Total	225	100.0	100.0	

SKILLED TO ACCESS DATA STORED ON PRIVATE COMPUTER

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	4	1.8	1.8	1.8
NOT SKILLED	26	11.6	11.6	13.3

	FAIRLY SKILLED	53	23.6	23.6	36.9
	SKILLED	82	36.4	36.4	73.3
	ADEQUATELY SKILLED	60	26.7	26.7	100.0
	Total	225	100.0	100.0	

SKILLED TO ACCESS DATA STORED ON NETWORKS AND THE INTERNET

Responses		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NOT CERTAIN	4	1.8	1.8	1.8
	NOT SKILLED	31	13.8	13.8	15.6
	FAIRLY SKILLED	48	21.3	21.3	36.9
	SKILLED	92	40.9	40.9	77.8
	ADEQUATELY SKILLED	50	22.2	22.2	100.0
	Total	225	100.0	100.0	

SKILLED IN KNOWLEDGE OF INTERNET CONCEPT AS A WORLDWIDE INTERCONNECTED COMPUTER NETWORK

Responses		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NOT CERTAIN	3	1.3	1.3	1.3
	NOT SKILLED	13	5.8	5.8	7.1
	FAIRLY SKILLED	55	24.4	24.4	31.6
	SKILLED	101	44.9	44.9	76.4
	ADEQUATELY SKILLED	53	23.6	23.6	100.0
	Total	225	100.0	100.0	

SKILLED IN KNOWLEDGE OF INTERNET CONNECTING PRIVATE ORGANIZATIONS

Responses		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NOT CERTAIN	2	0.9	0.9	0.9
	NOT SKILLED	37	16.4	16.4	17.3
	FAIRLY SKILLED	66	29.3	29.3	46.7
	SKILLED	83	36.9	36.9	83.6
	ADEQUATELY SKILLED	37	16.4	16.4	100.0
	Total	225	100.0	100.0	

SKILLED IN KNOWLEDGE OF INTERNET CONNECTING COMMERCIAL ESTABLISHMENTS

Responses		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NOT CERTAIN	6	2.7	2.7	2.7
	NOT SKILLED	35	15.6	15.6	18.2
	FAIRLY SKILLED	69	30.7	30.7	48.9
	SKILLED	77	34.2	34.2	83.1
	ADEQUATELY SKILLED	38	16.9	16.9	100.0
	Total	225	100.0	100.0	

SKILLED IN KNOWLEDGE OF INTERNET CONNECTING GOVERNMENTAL ORGANIZATIONS

Responses		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	NOT CERTAIN	6	2.7	2.7	2.7
	NOT SKILLED	40	17.8	17.8	20.4
	FAIRLY SKILLED	60	26.7	26.7	47.1
	SKILLED	88	39.1	39.1	86.2

ADEQUATELY SKILLED	31	13.8	13.8	100.0
Total	225	100.0	100.0	

SKILLED IN KNOWLEDGE OF INTERNET CONNECTING SCHOOL NETWORK

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	13	5.8	5.8	5.8
NOT SKILLED	31	13.8	13.8	19.6
FAIRLY SKILLED	69	30.7	30.7	50.2
SKILLED	81	36.0	36.0	86.2
ADEQUATELY SKILLED	31	13.8	13.8	100.0
Total	225	100.0	100.0	

**SKILLED IN KNOWLEDGE OF ALL EQUIPMENT USED FOR INTERNET SERVICES SUCH AS :
COMPUTER SYSTEM**

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	6	2.7	2.7	2.7
NOT SKILLED	27	12.0	12.0	14.7
FAIRLY SKILLED	69	30.7	30.7	45.3
SKILLED	81	36.0	36.0	81.3
ADEQUATELY SKILLED	42	18.7	18.7	100.0
Total	225	100.0	100.0	

SKILLED TO USE COMPUTER AIDED TELEPHONE

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	9	4.0	4.0	4.0
NOT SKILLED	42	18.7	18.7	22.7
FAIRLY SKILLED	66	29.3	29.3	52.0
SKILLED	81	36.0	36.0	88.0
ADEQUATELY SKILLED	27	12.0	12.0	100.0
Total	225	100.0	100.0	

SKILLED TO USE TELEPHONE LINE MODEM

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	9	4.0	4.0	4.0
NOT SKILLED	37	16.4	16.4	20.4
FAIRLY SKILLED	73	32.4	32.4	52.9
SKILLED	78	34.7	34.7	87.6
ADEQUATELY SKILLED	28	12.4	12.4	100.0
Total	225	100.0	100.0	

**SKILLED IN KNOWLEDGE OF AVAILABLE INTERNET SERVICES AND THEIR APPLICATION AND
OPERATIONS SUCH AS E-MAILS**

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	3	1.3	1.3	1.3
NOT SKILLED	23	10.2	10.2	11.6
FAIRLY SKILLED	54	24.0	24.0	35.6
SKILLED	103	45.8	45.8	81.3

ADEQUATELY SKILLED	42	18.7	18.7	100.0
Total	225	100.0	100.0	

SKILLED TO USE E-COMMERCE

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	29	12.9	12.9	12.9
NOT SKILLED	47	20.9	20.9	33.8
FAIRLY SKILLED	58	25.8	25.8	59.6
SKILLED	66	29.3	29.3	88.9
ADEQUATELY SKILLED	25	11.1	11.1	100.0
Total	225	100.0	100.0	

SKILLED TO USE E-BANKING

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	16	7.1	7.1	7.1
NOT SKILLED	42	18.7	18.7	25.8
FAIRLY SKILLED	67	29.8	29.8	55.6
SKILLED	73	32.4	32.4	88.0
ADEQUATELY SKILLED	27	12.0	12.0	100.0
Total	225	100.0	100.0	

SKILLED TO USE E-MARKETING

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	15	6.7	6.7	6.7
NOT SKILLED	52	23.1	23.1	29.8
FAIRLY SKILLED	64	28.4	28.4	58.2
SKILLED	72	32.0	32.0	90.2
ADEQUATELY SKILLED	22	9.8	9.8	100.0
Total	225	100.0	100.0	

SKILLED TO USE NEWSGROUPS/ USENET

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	17	7.6	7.6	7.6
NOT SKILLED	70	31.1	31.1	38.7
FAIRLY SKILLED	62	27.6	27.6	66.2
SKILLED	54	24.0	24.0	90.2
ADEQUATELY SKILLED	22	9.8	9.8	100.0
Total	225	100.0	100.0	

SKILLED TO USE INTERNET RELAY CHAT

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	20	8.9	8.9	8.9
NOT SKILLED	69	30.7	30.7	39.6
FAIRLY SKILLED	69	30.7	30.7	70.2
SKILLED	53	23.6	23.6	93.8
ADEQUATELY SKILLED	14	6.2	6.2	100.0
Total	225	100.0	100.0	

SKILLED TO USE WORLD-WIDE-WEB

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	18	8.0	8.0	8.0
NOT SKILLED	35	15.6	15.6	23.6
FAIRLY SKILLED	57	25.3	25.3	48.9
SKILLED	82	36.4	36.4	85.3
ADEQUATELY SKILLED	33	14.7	14.7	100.0
Total	225	100.0	100.0	

SKILLED TO USE TELNET

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	19	8.4	8.4	8.4
NOT SKILLED	75	33.3	33.3	41.8
FAIRLY SKILLED	71	31.6	31.6	73.3
SKILLED	48	21.3	21.3	94.7
ADEQUATELY SKILLED	12	5.3	5.3	100.0
Total	225	100.0	100.0	

SKILLED TO USE TELE/ VIDEO CONFERENCING

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	18	8.0	8.0	8.0
NOT SKILLED	74	32.9	32.9	40.9
FAIRLY SKILLED	65	28.9	28.9	69.8
SKILLED	49	21.8	21.8	91.6
ADEQUATELY SKILLED	19	8.4	8.4	100.0
Total	225	100.0	100.0	

SKILLED TO USE ELECTRONIC DATA EXCHANGE

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	28	12.4	12.4	12.4
NOT SKILLED	64	28.4	28.4	40.9
FAIRLY SKILLED	63	28.0	28.0	68.9
SKILLED	50	22.2	22.2	91.1
ADEQUATELY SKILLED	20	8.9	8.9	100.0
Total	225	100.0	100.0	

SKILL IN KNOWLEDGE OF THE ADVANTAGE OF INTERNET EDUCATION

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	9	4.0	4.0	4.0
NOT SKILLED	16	7.1	7.1	11.1
FAIRLY SKILLED	60	26.7	26.7	37.8
SKILLED	85	37.8	37.8	75.6
ADEQUATELY SKILLED	55	24.4	24.4	100.0
Total	225	100.0	100.0	

SKILL IN KNOWLEDGE OF A CONTEMPORARY LIBRARY (VIRTUAL LIBRARY)

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	10	4.4	4.4	4.4
NOT SKILLED	37	16.4	16.4	20.9
FAIRLY SKILLED	67	29.8	29.8	50.7
SKILLED	74	32.9	32.9	83.6
ADEQUATELY SKILLED	37	16.4	16.4	100.0
Total	225	100.0	100.0	

SKILL IN KNOWLEDGE OF STORING OR UPLOADING LATEST INFORMATION ON THE INTERNET

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	10	4.4	4.4	4.4
NOT SKILLED	25	11.1	11.1	15.6
FAIRLY SKILLED	57	25.3	25.3	40.9
SKILLED	91	40.4	40.4	81.3
ADEQUATELY SKILLED	42	18.7	18.7	100.0
Total	225	100.0	100.0	

SKILL IN KNOWLEDGE OF HOW TO CARRY OUT MARKETING TRASACTIONS ON THE INTERNET

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	7	3.1	3.1	3.1
NOT SKILLED	59	26.2	26.2	29.3
FAIRLY SKILLED	62	27.6	27.6	56.9
SKILLED	71	31.6	31.6	88.4
ADEQUATELY SKILLED	26	11.6	11.6	100.0
Total	225	100.0	100.0	

SKILL IN KNOWLEDGE OF USING INTERNET TO MAKE THE WORLD A GLOBAL VILLAGE, ACTING AS RESOURCE FOR EDUCATION

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	8	3.6	3.6	3.6
NOT SKILLED	38	16.9	16.9	20.4
FAIRLY SKILLED	61	27.1	27.1	47.6
SKILLED	88	39.1	39.1	86.7
ADEQUATELY SKILLED	30	13.3	13.3	100.0
Total	225	100.0	100.0	

SKILL IN KNOWLEDGE OF WEBSITE

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	21	9.3	9.3	9.3
NOT SKILLED	24	10.7	10.7	20.0
FAIRLY SKILLED	46	20.4	20.4	40.4
SKILLED	94	41.8	41.8	82.2
ADEQUATELY SKILLED	40	17.8	17.8	100.0
Total	225	100.0	100.0	

SKILL IN KNOWLEDGE OF WEBSITE BROWSING

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	10	4.4	4.4	4.4
NOT SKILLED	24	10.7	10.7	15.1
FAIRLY SKILLED	48	21.3	21.3	36.4
SKILLED	97	43.1	43.1	79.6

ADEQUATELY SKILLED	46	20.4	20.4	100.0
Total	225	100.0	100.0	

SKILL IN KNOWLEDGE OF FILING/ BROWSING THE WEBSITE

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	10	4.4	4.4	4.4
NOT SKILLED	26	11.6	11.6	16.0
FAIRLY SKILLED	60	26.7	26.7	42.7
SKILLED	87	38.7	38.7	81.3
ADEQUATELY SKILLED	42	18.7	18.7	100.0
Total	225	100.0	100.0	

SKILL ED TO USE SEARCH ENGINES SUCH AS: YAHOO

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	9	4.0	4.0	4.0
NOT SKILLED	25	11.1	11.1	15.1
FAIRLY SKILLED	45	20.0	20.0	35.1
SKILLED	79	35.1	35.1	70.2
ADEQUATELY SKILLED	67	29.8	29.8	100.0
Total	225	100.0	100.0	

SKILLED TO USE GMAIL

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	14	6.2	6.2	6.2
NOT SKILLED	43	19.1	19.1	25.3
FAIRLY SKILLED	57	25.3	25.3	50.7
SKILLED	70	31.1	31.1	81.8
ADEQUATELY SKILLED	41	18.2	18.2	100.0
Total	225	100.0	100.0	

SKILLED TO USE ALTS VISTA

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	14	6.2	6.2	6.2
NOT SKILLED	64	28.4	28.4	34.7
FAIRLY SKILLED	48	21.3	21.3	56.0
SKILLED	65	28.9	28.9	84.9
ADEQUATELY SKILLED	34	15.1	15.1	100.0
Total	225	100.0	100.0	

SKILLED TO SEARCH FOR INFORMATION USING ANY OR ALL OF THE DEVICES

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	14	6.2	6.2	6.2
NOT SKILLED	29	12.9	12.9	19.1
FAIRLY SKILLED	54	24.0	24.0	43.1
SKILLED	90	40.0	40.0	83.1
ADEQUATELY SKILLED	38	16.9	16.9	100.0
Total	225	100.0	100.0	

SKILLED IN INTERNET SERVICE PROVIDERS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	7	3.1	3.1	3.1
NOT SKILLED	22	9.8	9.8	12.9
FAIRLY SKILLED	59	26.2	26.2	39.1
SKILLED	100	44.4	44.4	83.6
ADEQUATELY SKILLED	37	16.4	16.4	100.0
Total	225	100.0	100.0	

SKILLED IN KNOWLEDGE OF DATA SECURITY AND PROTECTION TECHNIQUES

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	7	3.1	3.1	3.1
NOT SKILLED	43	19.1	19.1	22.2
FAIRLY SKILLED	72	32.0	32.0	54.2
SKILLED	76	33.8	33.8	88.0
ADEQUATELY SKILLED	27	12.0	12.0	100.0
Total	225	100.0	100.0	

SKILLED IN KNOWLEDGE OF PROTECTING PRIVATE INFORMATION AGAINST UN-AUTHORIZED ACCESS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	5	2.2	2.2	2.2
NOT SKILLED	45	20.0	20.0	22.2
FAIRLY SKILLED	61	27.1	27.1	49.3
SKILLED	81	36.0	36.0	85.3
ADEQUATELY SKILLED	33	14.7	14.7	100.0
Total	225	100.0	100.0	

SKILLED IN KNOWLEDGE OF USING PASSWORD AS A PROTECTION TECHNIQUE

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	8	3.6	3.6	3.6
NOT SKILLED	16	7.1	7.1	10.7
FAIRLY SKILLED	64	28.4	28.4	39.1
SKILLED	85	37.8	37.8	76.9
ADEQUATELY SKILLED	52	23.1	23.1	100.0
Total	225	100.0	100.0	

SKILLED IN BROWSING ON THE INTERNET

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	4	1.8	1.8	1.8
NOT SKILLED	10	4.4	4.4	6.2
FAIRLY SKILLED	36	16.0	16.0	22.2
SKILLED	111	49.3	49.3	71.6
ADEQUATELY SKILLED	64	28.4	28.4	100.0
Total	225	100.0	100.0	

SKILLED TO ACCESSING THE WORLD-WIDE-WEB

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
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Valid	NOT CERTAIN	4	1.8	1.8	1.8
	NOT SKILLED	14	6.2	6.2	8.0
	FAIRLY SKILLED	44	19.6	19.6	27.6
	SKILLED	112	49.8	49.8	77.3
	ADEQUATELY SKILLED	51	22.7	22.7	100.0
	Total	225	100.0	100.0	

SKILLED IN USING INTERNET FOR TELE-CONFERCING

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	5	2.2	2.2	2.2
NOT SKILLED	56	24.9	24.9	27.1
FAIRLY SKILLED	77	34.2	34.2	61.3
SKILLED	64	28.4	28.4	89.8
ADEQUATELY SKILLED	23	10.2	10.2	100.0
Total	225	100.0	100.0	

SKILLED IN USING THE INTERNET TO SEND MAILS, CONFERENCE PAPERS, JOURNALS ETC

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	3	1.3	1.3	1.3
NOT SKILLED	22	9.8	9.8	11.1
FAIRLY SKILLED	53	23.6	23.6	34.7
SKILLED	96	42.7	42.7	77.3
ADEQUATELY SKILLED	51	22.7	22.7	100.0
Total	225	100.0	100.0	

SKILLED IN COMMUNICATING AND RETRIEVING INFORMATION THROUGH THE INTERNET

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	3	1.3	1.3	1.3
NOT SKILLED	17	7.6	7.6	8.9
FAIRLY SKILLED	46	20.4	20.4	29.3
SKILLED	99	44.0	44.0	73.3
ADEQUATELY SKILLED	60	26.7	26.7	100.0
Total	225	100.0	100.0	

SKILLED IN SEARCHING FOR MATERIALS THROUGH THE INTERNET

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	2	0.9	0.9	0.9
NOT SKILLED	13	5.8	5.8	6.7
FAIRLY SKILLED	43	19.1	19.1	25.8
SKILLED	105	46.7	46.7	72.4
ADEQUATELY SKILLED	62	27.6	27.6	100.0
Total	225	100.0	100.0	

SKILLED IN CHECK CREATE, SEND AND REPLY E-MAIL

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	5	2.2	2.2	2.2
NOT SKILLED	16	7.1	7.1	9.3

FAIRLY SKILLED	34	15.1	15.1	24.4
SKILLED	108	48.0	48.0	72.4
ADEQUATELY SKILLED	62	27.6	27.6	100.0
Total	225	100.0	100.0	

SKILLED IN SEND AN ATTACHMENT WITH AN E-MAIL

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	10	4.4	4.4	4.4
NOT SKILLED	23	10.2	10.2	14.7
FAIRLY SKILLED	55	24.4	24.4	39.1
SKILLED	87	38.7	38.7	77.8
ADEQUATELY SKILLED	50	22.2	22.2	100.0
Total	225	100.0	100.0	

SKILLED IN TEACHING THROUGH COMPUTER ASSISTED SOFTWARE

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	3	1.3	1.3	1.3
NOT SKILLED	48	21.3	21.3	22.7
FAIRLY SKILLED	61	27.1	27.1	49.8
SKILLED	82	36.4	36.4	86.2
ADEQUATELY SKILLED	31	13.8	13.8	100.0
Total	225	100.0	100.0	

SKILLED IN MAKE PRESENTATION USING PRESENTATION SOFTWARE (SUCH AS POWER-POINT)

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	3	1.3	1.3	1.3
NOT SKILLED	49	21.8	21.8	23.1
FAIRLY SKILLED	64	28.4	28.4	51.6
SKILLED	81	36.0	36.0	87.6
ADEQUATELY SKILLED	28	12.4	12.4	100.0
Total	225	100.0	100.0	

SKILLED IN DOWNLOAD A FILE FROM THE INTERNET

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	3	1.3	1.3	1.3
NOT SKILLED	21	9.3	9.3	10.7
FAIRLY SKILLED	57	25.3	25.3	36.0
SKILLED	97	43.1	43.1	79.1
ADEQUATELY SKILLED	47	20.9	20.9	100.0
Total	225	100.0	100.0	

SKILLED IN SAVE A FILR FROM THE INTERNET

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	4	1.8	1.8	1.8
NOT SKILLED	26	11.6	11.6	13.3
FAIRLY SKILLED	45	20.0	20.0	33.3
SKILLED	101	44.9	44.9	78.2
ADEQUATELY SKILLED	49	21.8	21.8	100.0

Total	225	100.0	100.0
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SKILLED IN USE SEARCH ENGINE TO FIND DESIRED INFORMATION

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	5	2.2	2.2	2.2
NOT SKILLED	27	12.0	12.0	14.2
FAIRLY SKILLED	50	22.2	22.2	36.4
SKILLED	108	48.0	48.0	84.4
ADEQUATELY SKILLED	35	15.6	15.6	100.0
Total	225	100.0	100.0	

SKILLED IN USE THE INTRNET FOR TRANSACTING BUSINESS BY PLACING ORDERS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	6	2.7	2.7	2.7
NOT SKILLED	53	23.6	23.6	26.2
FAIRLY SKILLED	66	29.3	29.3	55.6
SKILLED	75	33.3	33.3	88.9
ADEQUATELY SKILLED	25	11.1	11.1	100.0
Total	225	100.0	100.0	

SKILLED IN USING THE INTERNET FOR TRANSACTING BUSINESS BY BOOKING FOR FLIGHT

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	7	3.1	3.1	3.1
NOT SKILLED	62	27.6	27.6	30.7
FAIRLY SKILLED	65	28.9	28.9	59.6
SKILLED	64	28.4	28.4	88.0
ADEQUATELY SKILLED	27	12.0	12.0	100.0
Total	225	100.0	100.0	

SKILLED USE TO SURFING THE NET

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	8	3.6	3.6	3.6
NOT SKILLED	53	23.6	23.6	27.1
FAIRLY SKILLED	48	21.3	21.3	48.4
SKILLED	86	38.2	38.2	86.7
ADEQUATELY SKILLED	30	13.3	13.3	100.0
Total	225	100.0	100.0	

SKILLED USE TO ACCESSING YOUR E-MAIL USING YAHOO

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	4	1.8	1.8	1.8
NOT SKILLED	27	12.0	12.0	13.8
FAIRLY SKILLED	41	18.2	18.2	32.0
SKILLED	99	44.0	44.0	76.0
ADEQUATELY SKILLED	54	24.0	24.0	100.0
Total	225	100.0	100.0	

SKILLED USE TO ACCESSING YOUR E-MAIL USING G-MAIL

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	4	1.8	1.8	1.8
NOT SKILLED	51	22.7	22.7	24.4
FAIRLY SKILLED	48	21.3	21.3	45.8
SKILLED	86	38.2	38.2	84.0
ADEQUATELY SKILLED	36	16.0	16.0	100.0
Total	225	100.0	100.0	

SKILLED USE TO ACCESSING YOUR E-MAIL USING ALTS VISTA

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	3	1.3	1.3	1.3
NOT SKILLED	66	29.3	29.3	30.7
FAIRLY SKILLED	55	24.4	24.4	55.1
SKILLED	76	33.8	33.8	88.9
ADEQUATELY SKILLED	25	11.1	11.1	100.0
Total	225	100.0	100.0	

SKILLED IN CONSULTING INTERNET SERVICE PROVIDERS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	3	1.3	1.3	1.3
NOT SKILLED	41	18.2	18.2	19.6
FAIRLY SKILLED	70	31.1	31.1	50.7
SKILLED	80	35.6	35.6	86.2
ADEQUATELY SKILLED	31	13.8	13.8	100.0
Total	225	100.0	100.0	

SKILLED IN BROWSING ON THE INTERNET

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT SURE	1	0.4	0.4	0.4
NEVER	9	4.0	4.0	4.4
SOMETIMES/OCCASSIONALLY	65	28.9	28.9	33.3
OFTEN	87	38.7	38.7	72.0
VERY OFTEN	63	28.0	28.0	100.0
Total	225	100.0	100.0	

SKILLED IN ACCESSING THE WORLD-WIDE-WEB

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT SURE	3	1.3	1.3	1.3
NEVER	29	12.9	12.9	14.2
SOMETIMES/OCCASSIONALLY	65	28.9	28.9	43.1
OFTEN	83	36.9	36.9	80.0
VERY OFTEN	45	20.0	20.0	100.0

Total	225	100.0	100.0
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SKILLED IN USING INTERNET FOR TELECONFERENCING

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT SURE	6	2.7	2.7	2.7
NEVER	78	34.7	34.7	37.3
SOMETIMES/OCCASSIONALLY	74	32.9	32.9	70.2
OFTEN	46	20.4	20.4	90.7
VERY OFTEN	21	9.3	9.3	100.0
Total	225	100.0	100.0	

SKILLED IN USING THE INTERNET TO SEND MAILS, CONFERENCE PAPERS, JOURNALS ETC

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT SURE	5	2.2	2.2	2.2
NEVER	35	15.6	15.6	17.8
SOMETIMES/OCCASSIONALLY	67	29.8	29.8	47.6
OFTEN	71	31.6	31.6	79.1
VERY OFTEN	47	20.9	20.9	100.0
Total	225	100.0	100.0	

SKILLED IN COMMUNICATING AND RETRIEVING INFORMATION THROUGH INTERNET

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT SURE	2	0.9	0.9	0.9
NEVER	20	8.9	8.9	9.8
SOMETIMES/OCCASSIONALLY	53	23.6	23.6	33.3
OFTEN	95	42.2	42.2	75.6
VERY OFTEN	55	24.4	24.4	100.0
Total	225	100.0	100.0	

SKILLED IN SEARCHING FOR MATERIALS THROUGH INTERNET

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT SURE	4	1.8	1.8	1.8
NEVER	15	6.7	6.7	8.4
SOMETIMES/OCCASSIONALLY	54	24.0	24.0	32.4
OFTEN	85	37.8	37.8	70.2
VERY OFTEN	67	29.8	29.8	100.0
Total	225	100.0	100.0	

SKILLED USE TO CHECK, CREATE, SEND AND REPLY E-MAIL

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT SURE	2	0.9	0.9	0.9
NEVER	24	10.7	10.7	11.6
SOMETIMES/OCCASSIONALLY	59	26.2	26.2	37.8
OFTEN	83	36.9	36.9	74.7

VERY OFTEN	57	25.3	25.3	100.0
Total	225	100.0	100.0	

SKILLED IN SEND AN ATTACHMENT WITH AN E-MAIL

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT SURE	6	2.7	2.7	2.7
NEVER	49	21.8	21.8	24.4
SOMETIMES/OCCASSIONALLY	65	28.9	28.9	53.3
OFTEN	72	32.0	32.0	85.3
VERY OFTEN	33	14.7	14.7	100.0
Total	225	100.0	100.0	

SKILLED IN TEACHING THROUGH COMPUTER ASSISTED COMPUTER SOFTWARE

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT SURE	6	2.7	2.7	2.7
NEVER	63	28.0	28.0	30.7
SOMETIMES/OCCASSIONALLY	76	33.8	33.8	64.4
OFTEN	60	26.7	26.7	91.1
VERY OFTEN	20	8.9	8.9	100.0
Total	225	100.0	100.0	

SKILLED IN MAKE PRESENTATION USING PRESENTATION SOFTWARE (SUCH AS POWER POINT)

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT SURE	4	1.8	1.8	1.8
NEVER	55	24.4	24.4	26.2
SOMETIMES/OCCASSIONALLY	69	30.7	30.7	56.9
OFTEN	70	31.1	31.1	88.0
VERY OFTEN	27	12.0	12.0	100.0
Total	225	100.0	100.0	

SKILLED TO DOWNLOAD A FILE FROM THE INTERNET

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT SURE	5	2.2	2.2	2.2
NEVER	21	9.3	9.3	11.6
SOMETIMES/OCCASSIONALLY	63	28.0	28.0	39.6
OFTEN	82	36.4	36.4	76.0
VERY OFTEN	54	24.0	24.0	100.0
Total	225	100.0	100.0	

SKILLED TO SAVE A FILE FROM THE INTERNET

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT SURE	7	3.1	3.1	3.1
NEVER	31	13.8	13.8	16.9
SOMETIMES/OCCASSIONALLY	51	22.7	22.7	39.6
OFTEN	85	37.8	37.8	77.3
VERY OFTEN	51	22.7	22.7	100.0
Total	225	100.0	100.0	

SKILLED USE SEARCH ENGINE TO FIND DESIRED INFORMATION

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT SURE	10	4.4	4.4	4.4
NEVER	41	18.2	18.2	22.7
SOMETIMES/OCCASSIONALLY	44	19.6	19.6	42.2
OFTEN	87	38.7	38.7	80.9
VERY OFTEN	43	19.1	19.1	100.0
Total	225	100.0	100.0	

SKILLED IN USING THE INTERNET FOR TRANSACTING BUSINESS BY PLACING ORDERS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT SURE	12	5.3	5.3	5.3
NEVER	69	30.7	30.7	36.0
SOMETIMES/OCCASSIONALLY	64	28.4	28.4	64.4
OFTEN	60	26.7	26.7	91.1
VERY OFTEN	20	8.9	8.9	100.0
Total	225	100.0	100.0	

SKILLED IN USING THE INTERNET FOR TRANSACTING BUSINESS BY BOOKING FOR FLIGHT

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT SURE	9	4.0	4.0	4.0
NEVER	77	34.2	34.2	38.2
SOMETIMES/OCCASSIONALLY	68	30.2	30.2	68.4
OFTEN	45	20.0	20.0	88.4
VERY OFTEN	26	11.6	11.6	100.0
Total	225	100.0	100.0	

SKILLED USE TO SURFING THE NET

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT SURE	15	6.7	6.7	6.7
NEVER	53	23.6	23.6	30.2
SOMETIMES/OCCASSIONALLY	56	24.9	24.9	55.1
OFTEN	66	29.3	29.3	84.4
VERY OFTEN	35	15.6	15.6	100.0
Total	225	100.0	100.0	

SKILLED IN ACCESSING YOUR E-MAIL USING YAHOO

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT SURE	9	4.0	4.0	4.0
NEVER	28	12.4	12.4	16.4
SOMETIMES/OCCASSIONALLY	48	21.3	21.3	37.8
OFTEN	79	35.1	35.1	72.9
VERY OFTEN	61	27.1	27.1	100.0
Total	225	100.0	100.0	

SKILLED IN ACCESSING YOUR E-MAIL USING G-MAIL

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT SURE	7	3.1	3.1	3.1
NEVER	69	30.7	30.7	33.8
SOMETIMES/OCCASSIONALLY	41	18.2	18.2	52.0
OFTEN	74	32.9	32.9	84.9
VERY OFTEN	34	15.1	15.1	100.0
Total	225	100.0	100.0	

SKILLED IN ACCESSING YOUR E-MAIL USING ALTS VISTA

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT SURE	9	4.0	4.0	4.0
NEVER	82	36.4	36.4	40.4
SOMETIMES/OCCASSIONALLY	42	18.7	18.7	59.1
OFTEN	63	28.0	28.0	87.1
VERY OFTEN	29	12.9	12.9	100.0
Total	225	100.0	100.0	

SKILLED IN CONSULTING INTERNET SERVICE PROVIDERS

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT SURE	5	2.2	2.2	2.2
NEVER	52	23.1	23.1	25.3
SOMETIMES/OCCASSIONALLY	55	24.4	24.4	49.8
OFTEN	77	34.2	34.2	84.0
VERY OFTEN	36	16.0	16.0	100.0
Total	225	100.0	100.0	

SKILLED USE IN OFFICE PRACTICE

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	31	13.8	13.8	13.8
NOT AT ALL	24	10.7	10.7	24.4
LITTLE	24	10.7	10.7	35.1
MUCH	84	37.3	37.3	72.4
VERY MUCH	62	27.6	27.6	100.0
Total	225	100.0	100.0	

SKILLED USE IN SHORTHAND

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	24	10.7	10.7	10.7
NOT AT ALL	40	17.8	17.8	28.4
LITTLE	31	13.8	13.8	42.2
MUCH	87	38.7	38.7	80.9
VERY MUCH	43	19.1	19.1	100.0
Total	225	100.0	100.0	

SKILLED USE IN TYPEWRITING

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	26	11.6	11.6	11.6

NOT AT ALL	37	16.4	16.4	28.0
LITTLE	28	12.4	12.4	40.4
MUCH	86	38.2	38.2	78.7
VERY MUCH	48	21.3	21.3	100.0
Total	225	100.0	100.0	

SKILLED USE IN BUSINESS LAW

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	56	24.9	24.9	24.9
NOT AT ALL	36	16.0	16.0	40.9
LITTLE	21	9.3	9.3	50.2
MUCH	71	31.6	31.6	81.8
VERY MUCH	41	18.2	18.2	100.0
Total	225	100.0	100.0	

SKILLED USE IN COMPUTER APPRECIATION

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	47	20.9	20.9	20.9
NOT AT ALL	24	10.7	10.7	31.6
LITTLE	23	10.2	10.2	41.8
MUCH	84	37.3	37.3	79.1
VERY MUCH	47	20.9	20.9	100.0
Total	225	100.0	100.0	

SKILLED USE IN ENTREPRENEURSHIP

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	39	17.3	17.3	17.3
NOT AT ALL	23	10.2	10.2	27.6
LITTLE	18	8.0	8.0	35.6
MUCH	93	41.3	41.3	76.9
VERY MUCH	52	23.1	23.1	100.0
Total	225	100.0	100.0	

SKILLED USE IN OFFICE MANAGEMENT

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	60	26.7	26.7	26.7
NOT AT ALL	19	8.4	8.4	35.1
LITTLE	21	9.3	9.3	44.4
MUCH	85	37.8	37.8	82.2
VERY MUCH	40	17.8	17.8	100.0
Total	225	100.0	100.0	

SKILLED USE IN BUSINESS COMMUNICATION

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	46	20.4	20.4	20.4
NOT AT ALL	19	8.4	8.4	28.9
LITTLE	26	11.6	11.6	40.4

MUCH	77	34.2	34.2	74.7
VERY MUCH	57	25.3	25.3	100.0
Total	225	100.0	100.0	

SKILLED USE IN SECRETARIAL DUTIES

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	40	17.8	17.8	17.8
NOT AT ALL	18	8.0	8.0	25.8
LITTLE	28	12.4	12.4	38.2
MUCH	87	38.7	38.7	76.9
VERY MUCH	52	23.1	23.1	100.0
Total	225	100.0	100.0	

SKILLED USE IN COMPUTER APPLICATION

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	50	22.2	22.2	22.2
NOT AT ALL	31	13.8	13.8	36.0
LITTLE	18	8.0	8.0	44.0
MUCH	76	33.8	33.8	77.8
VERY MUCH	50	22.2	22.2	100.0
Total	225	100.0	100.0	

SKILLED USE IN WORD PROCESSING

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	49	21.8	21.8	21.8
NOT AT ALL	18	8.0	8.0	29.8
LITTLE	26	11.6	11.6	41.3
MUCH	73	32.4	32.4	73.8
VERY MUCH	59	26.2	26.2	100.0
Total	225	100.0	100.0	

SKILLED USE IN PRINCIPLES OF MANAGEMENT

Responses	Frequency	Percent	Valid Percent	Cumulative Percent
Valid NOT CERTAIN	57	25.3	25.3	25.3
NOT AT ALL	24	10.7	10.7	36.0
LITTLE	38	16.9	16.9	52.9
MUCH	61	27.1	27.1	80.0
VERY MUCH	45	20.0	20.0	100.0
Total	225	100.0	100.0	

APPENDIX VI

DESCRIPTIVE STATISTICS

	N		Std.	
	Statistic	Statistic	Std. Error	Statistic

have ability for fast and accurate key boarding for efficient composition	225	3.1733	0.05568	0.83516
have ability for fast and accurate key boarding for making inputs	225	3.1067	0.05372	0.80578
have ability for fast and accurate key boarding for checking and editing data	225	2.9778	0.05685	0.85275
have ability to operate word processing	225	3.1422	0.05798	0.86975
have ability to operate data base	225	2.4933	0.06208	0.93121
have ability to operate electronic messaging	225	2.6000	0.06577	0.98652
can operate and use computer systems with hardware packages	225	2.5644	0.06775	1.01620
can operate and use computer systems with software packages	225	2.7733	0.06259	0.93884
can operate and use computer with both hardware and software packages	225	2.5911	0.06337	0.95052
operate and use computer systems with electronic mails and application software	225	2.5200	0.06012	0.90178
can operate using microsoft office power point	225	2.5422	0.06297	0.94455
can extract relevant information using intergrated software packages	225	2.4489	0.06069	0.91041
can extract relevant information using electronic mails and application software	225	2.4889	0.06079	0.91178
have ability to use spreadsheet for forecasting	225	2.2267	0.06098	0.91476
have ability to use video conferencing	225	1.8400	0.06397	0.95954

have ability to use voice recognition system	225	1.8089	0.06649	0.99728
have ability to operate other different technologies and appreciate their benefits	225	2.2044	0.06371	0.95571
have ability to use photocopier to produce multiple copies of documents	225	2.9733	0.06753	1.01295
have ability to save documents using any micrographic equipment (diskettes, CD, or flashdrive)	225	2.9956	0.06156	0.92340
typing tests and exam papers	225	2.9733	0.06328	0.94925
typing official and other documents	225	2.9600	0.06341	0.95113
typing handouts and teaching materials	225	2.8000	0.06607	0.99103
create a new document	225	2.9333	0.05876	0.88135
start up and shutdown a computer safely	225	3.3822	0.05548	0.83219
copy files and directories/ folders	225	3.0222	0.05891	0.88360
delete files and directories/ folders	225	3.0533	0.06289	0.94340
move files and directories/folders	225	2.9822	0.06361	0.95415
rename files and directories/ folders	225	2.9778	0.06186	0.92796
manage files and directories/ folders	225	2.8267	0.06489	0.97340
organize files and directories/ folders	225	2.7689	0.06607	0.99099
arrange files and directories/ folders	225	2.6933	0.07097	1.06453
use operating system to find features to locate specific files	225	2.6889	0.06520	0.97793
amend an existing document	225	2.8756	0.06615	0.99219
save a document in a specified location	225	3.0000	0.06577	0.98652
save a document in a specified format other than the default format (save as read only)	225	2.8133	0.06549	0.98234

apply basic text formatting changes and attributes such as: fonts	225	2.7778	0.08963	1.34445
Sizes	225	3.0533	0.07256	1.08841
Colours	225	2.9600	0.07382	1.10728
Bold	225	3.0889	0.07074	1.06113
Italics	225	2.9956	0.07546	1.13191
Underline	225	2.9111	0.08143	1.22150
cut, copy and paste information from one location to another	225	3.0844	0.06507	0.97604
set print options such as paper size and orientation and select a printer	225	3.0178	0.06813	1.02192
generate students results using computer	225	2.5867	0.07461	1.11915
access data stored on CD-roms	225	2.7111	0.07046	1.05691
access data stored on private computer	225	2.7467	0.06880	1.03199
access data stored on networks and the internet	225	2.6800	0.06828	1.02417
knowledge of internet concept as a worldwide interconnected computer network	225	2.8356	0.05991	0.89870
knowledge of internet connecting private organizations	225	2.5156	0.06549	0.98242
knowledge of internet connecting commercial establishments	225	2.4711	0.06873	1.03091
knowledge of internet connecting governmental organizations	225	2.4356	0.06804	1.02058
knowledge of internet connecting school network	225	2.3822	0.07115	1.06722
knowledge of all equipment used for internet services such as : computer system	225	2.5600	0.06747	1.01207
computer aided telephone	225	2.3333	0.06929	1.03940
telephone line modem	225	2.3511	0.06832	1.02483

knowledge of available internet services and their application and operations such as e- mails	225	2.7022	0.06221	0.93314
e-commerce	225	2.0489	0.08073	1.21093
e-banking	225	2.2356	0.07380	1.10703
e-marketing	225	2.1511	0.07277	1.09149
newsgroups/ Usenet	225	1.9733	0.07451	1.11771
internet relay chart	225	1.8756	0.07106	1.06594
world-wide-web	225	2.3422	0.07646	1.14691
telnet	225	1.8178	0.06894	1.03408
tele/ video conferencing	225	1.8978	0.07301	1.09514
electronic data exchange	225	1.8667	0.07741	1.16113
knowledge of the advantage of internet education	225	2.7156	0.06926	1.03896
knowledge of a contemporary library (virtual library)	225	2.4044	0.07213	1.08190
knowledge of storing or uploading latest information on the internet	225	2.5778	0.07027	1.05409
knowledge of how to carry out marketing transactions on the internet	225	2.2222	0.07055	1.05832
knowledge of using internet to make the world a global village, acting as resource for education	225	2.4178	0.06882	1.03235
knowledge of website	225	2.4800	0.07845	1.17671
knowledge of website browsing	225	2.6444	0.07065	1.05972
knowledge of filing/ browsing the website	225	2.5556	0.07065	1.05972
knowledge of search engines such as: yahoo	225	2.7556	0.07448	1.11715
Gmail	225	2.3600	0.07764	1.16466
alts vista	225	2.1822	0.07887	1.18308
how to search for information using any or all of the devices	225	2.4844	0.07376	1.10638

knowledge of internet service providers	225	2.6133	0.06506	0.97596
knowledge of data security and protection techniques	225	2.3244	0.06775	1.01620
knowledge of protecting private information against un-authorized access	225	2.4089	0.06906	1.03592
knowledge of using password as a protection technique	225	2.6978	0.06777	1.01649
browsing on the internet	225	2.9822	0.05908	0.88623
accessing the world-wide-web	225	2.8533	0.06012	0.90178
using internet for tele-conferencing	225	2.1956	0.06658	0.99865
using the internet to send mails, conference papers, journals etc	225	2.7556	0.06386	0.95795
communicating and retrieving information through the internet	225	2.8711	0.06256	0.93842
searching for materials through the internet	225	2.9422	0.05880	0.88198
check create, send and reply e-mail	225	2.9156	0.06353	0.95290
send an attachment with an e-mail	225	2.6400	0.07153	1.07288
teaching through computer assisted software	225	2.4000	0.06755	1.01330
make presentation using presentation software (such as power-point)	225	2.3644	0.06668	1.00026
download a file from the internet	225	2.7289	0.06275	0.94127
save a file from the internet	225	2.7333	0.06577	0.98652
use search engine to find desired information	225	2.6267	0.06403	0.96047
use the internet for transacting business by placing orders	225	2.2667	0.06843	1.02644
using the internet for transacting business by booking for flight	225	2.1867	0.07101	1.06520

surfing the net	225	2.3422	0.07246	1.08695
accessing your e-mail using yahoo	225	2.7644	0.06704	1.00560
accessing your e-mail using g-mail	225	2.4400	0.07091	1.06369
accessing your e-mail using alts vista	225	2.2400	0.06916	1.03734
consulting internet service providers	225	2.4222	0.06560	0.98400
browsing on the internet	225	2.8978	0.05819	0.87283
accessing the world-wide-web	225	2.6133	0.06597	0.98959
using internet for teleconferencing	225	1.9911	0.06784	1.01766
using the intrnet to send mails, conference papers, journals etc	225	2.5333	0.07043	1.05644
communicating and retrieving information through internet	225	2.8044	0.06258	0.93874
searching for materials through internet	225	2.8711	0.06505	0.97574
check, create, send and reply e-mail	225	2.7511	0.06547	0.98212
send an attachment with an e-mail	225	2.3422	0.07052	1.05781
teaching through computer assisted computer software	225	2.1111	0.06670	1.00050
make presentation using presentation software (such as power point)	225	2.2711	0.06791	1.01871
download a file from the internet	225	2.7067	0.06706	1.00588
save a file from the internet	225	2.6311	0.07160	1.07401
use search engine to find desired information	225	2.4978	0.07510	1.12648
using the internet for transacting business by placing orders	225	2.0311	0.07138	1.07068
using the internet for transacting business by booking for flight	225	2.0089	0.07210	1.08146
surfing the net	225	2.2356	0.07798	1.16977
accessing your e-mail using yahoo	225	2.6889	0.07457	1.11848
accessing your e-mail using g-mail	225	2.2622	0.07605	1.14082

accessing your e-mail using alts vista	225	2.0933	0.07651	1.14767
consulting internet service providers	225	2.3867	0.07174	1.07604
office practice	225	2.5422	0.09062	1.35924
Shorthand	225	2.3778	0.08485	1.27281
Typewriting	225	2.4133	0.08690	1.30343
business law	225	2.0222	0.09909	1.48638
computer appreciation	225	2.2667	0.09636	1.44544
Entrepreneurship	225	2.4267	0.09333	1.40000
office management	225	2.1156	0.09970	1.49552
business communication	225	2.3556	0.09754	1.46317
secretarial duties	225	2.4133	0.09286	1.39284
computer application	225	2.2000	0.09940	1.49104
word processing	225	2.3333	0.09940	1.49104
principles of management	225	2.0578	0.09883	1.48241
SKILL_COMPETENCE	225	2.6037	0.04335	0.65031
SKILL_USAGE	225	2.8917	0.05072	0.76080
INTERNET_AWARENESS	225	2.3718	0.05182	0.77723
SEC_TEACHER_USE_OF_INTERNET	225	2.5858	0.05088	0.76326
TEACHER_SKILL_USAGE	225	2.4364	0.05247	0.78699
LESSON_DELIVERY	225	2.2937	0.06620	0.99306
Valid N (listwise)	225			

APPENDIX VII

T-TEST ANALYSIS

Group Statistics

	GENDER	N	Mean	Std. Deviation	Std. Error mean
SKILL_COMPETENCE	MALE	131	2.5830	0.67349	0.05884
	FEMALE	94	2.6327	0.61895	0.06384
SKILL_USAGE	MALE	131	2.9057	0.75450	0.06592
	FEMALE	94	2.8723	0.77312	0.07974
INTERNET_AWARENESS	MALE	131	2.4468	0.73460	0.06418
	FEMALE	94	2.2672	0.82565	0.08516
SEC_TEACHER_USE_OF_INTERNET	MALE	131	2.6195	0.76968	0.06725
	FEMALE	94	2.5388	0.75581	0.07796
TEACHER_SKILL_USAGE	MALE	131	2.4885	0.79165	0.06917
	FEMALE	94	2.3638	0.77883	0.08033
LESSON_DELIVERY	MALE	131	2.3034	0.98020	0.08564
	FEMALE	94	2.2801	1.01584	0.10478

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	1	1	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
SKILL_COMPETENCE	Equal variances assumed	0.166	0.684	-0.565	225		-0.04973	0.08804	-0.22323	0.12376
	Equal variances not assumed			-0.573	0.532	0.281	-0.04973	0.08682	-0.22089	0.12142
SKILL_USAGE	Equal variances assumed	0.537	0.464	0.323	0		0.03333	0.10305	-0.16974	0.23640
	Equal variances not assumed			0.322	225.000		0.03333	0.10346	-0.17070	0.23736
INTERNET_AWARENESS	Equal variances assumed	1.858	0.174	1.717	1	0.561	0.17958	0.10461	-0.02656	0.38573
	Equal variances not assumed			1.684	0.000		0.17958	0.10664	-0.03079	0.38995
SEC_TEACHER_USE_OF_INTERNET	Equal variances assumed	0.018	0.894	0.781	225		0.08064	0.10326	-0.12286	0.28413
	Equal variances not assumed			0.783	1.000	0.816	0.08064	0.10295	-0.12236	0.28363
TEACHER_SKILL_USAGE	Equal variances assumed	0.000	0.985	1.173			0.12472	0.10629	-0.08474	0.33418

LESSON_DELIVERY	Equal variances not assumed			1.177	225.000		0.12472	0.10601	-0.08430	0.33374
	Equal variances assumed	0.408	0.523	0.173	1	0.370	0.02329	0.13453	-0.24181	0.28840
	Equal variances not assumed			0.172	0.000		0.02329	0.13532	-0.24358	0.29017

t-critical= 1.96 at p=0.05

All not significant

T-Test

Group Statistics

	GENERATION	N	Mean	Std. Deviation	Cumulative Percent
SKILL_COMPETENCE	BEFORE 2002	146	2.6590	0.54340	58.22222
	2002 AND AFTER	45	2.6854	0.68278	100.00000
SKILL_USAGE	BEFORE 2002	146	2.9540	0.72446	
	2002 AND AFTER	45	2.9127	0.68132	
INTERNET_AWARENESS	BEFORE 2002	146	2.4647	0.75365	30.22222
	2002 AND AFTER	45	2.2987	0.82636	57.77778
SEC_TEACHER_USE_OF_INTERNET	BEFORE 2002	146	2.5928	0.74727	81.33333
	2002 AND AFTER	45	2.7089	0.79839	95.11111
TEACHER_SKILL_USAGE	BEFORE 2002	146	2.4682	0.76595	99.11111
	2002 AND AFTER	45	2.4844	0.83236	100.00000
LESSON_DELIVERY	BEFORE 2002	146	2.3385	0.96213	
	2002 AND AFTER	45	2.5259	0.93099	0.10478

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	Df	1	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
SKILL_COMPETENCE	Equal variances assumed	2.076	0.151	-0.268	223	225.000	-0.02640	0.09870	-0.22109	0.16828
	Equal variances not assumed			-0.237	209.812	0.566	-0.02640	0.11128	-0.24883	0.19602
SKILL_USAGE	Equal variances assumed	0.051	0.822	0.339	223	0.000	0.04131	0.12185	-0.19905	0.28167
	Equal variances not assumed			0.350	197.545	225.000	0.04131	0.11794	-0.19353	0.27616
INTERNET_AWARENESS	Equal variances assumed	0.772	0.381	1.263	223	0.678	0.16605	0.13149	-0.09333	0.42543
	Equal variances not assumed			1.203	185.778	0.000	0.16605	0.13808	-0.10947	0.44158
SEC_TEACHER_USE_OF_INTERNET	Equal variances assumed	0.028	0.867	-0.896	223	225.000	-0.11608	0.12949	-0.37152	0.13936
	Equal variances not assumed			-0.865	202.636	0.820	-0.11608	0.13413	-0.38362	0.15146
TEACHER_SKILL_USAGE	Equal variances assumed	0.973	0.325	-0.122	223	0.000	-0.01629	0.13332	-0.27928	0.24669
	Equal variances not assumed			-0.117	202.420	225.000	-0.01629	0.13934	-0.29429	0.26171
LESSON_DELIVERY	Equal variances assumed	0.264	0.608	-1.151	223	1.000	-0.18746	0.16283	-0.50865	0.13373
	Equal variances not assumed			-1.172	196.144		-0.18746	0.16000	-0.50618	0.13127

t-critical= 1.96 at p=0.05

All not significant

Descriptive

		N	Mean	Std. Deviation	Std. Error Mean			Minimum	Maximum
						Sig. (2-tailed)	Upper Bound		
SKILL_COMPETENCE	1-3YRS	29	2.5880	0.67152	0.10178		2.8435	1.11	3.84
	4-6YRS	41	2.5379	0.73114	0.05996	0.5727	2.7686	0.00	4.00
	7-10YRS	45	2.6538	0.59593	0.10157	0.5674	2.8328	1.37	3.89
	11-15YRS	31	2.7267	0.50380	0.06237	0.7467	2.9115	1.16	4.00
	ABOVE 15YRS	79	2.5670	0.68509	0.12319	0.7477	2.7204	0.89	4.00
	Total	225	2.6037	0.65031	0.06184	0.0874	2.6892	0.00	4.00
SKILL_USAGE	1-3YRS	29	2.9384	0.70529	0.11902	0.0939	3.2067	1.61	4.00
	4-6YRS	41	2.9695	0.76447	0.06339	0.4357	3.2108	1.00	4.00
	7-10YRS	45	2.7706	0.84125	0.12408	0.4344	3.0234	0.75	4.00
	11-15YRS	31	3.1129	0.55144	0.07963	0.2419	3.3152	2.11	4.00
	ABOVE 15YRS	79	2.8165	0.79383	0.13878	0.2408	2.9943	0.00	4.00
	Total	225	2.8917	0.76080	189.00000	0.8627	2.9917	0.00	4.00
INTERNET_AWARENESS	1-3YRS	29	2.2049	0.83735	75.26137	0.8635	2.5234	0.71	3.71
	4-6YRS	41	2.2862	0.82897	0.12946	2.0246	2.5479	0.62	4.00
	7-10YRS	45	2.3627	0.72311	0.10779	2.1455	2.5800	0.88	3.68
	11-15YRS	31	2.4620	0.64084	0.11510	2.2270	2.6971	0.65	3.38
	ABOVE 15YRS	79	2.4471	0.80904	0.09102	2.2659	2.6283	0.47	4.00
	Total	225	2.3718	0.77723	0.05182	2.2697	2.4739	0.47	4.00
SEC_TEACHER_USE_OF_INTERNET	1-3YRS	29	2.5534	0.83098	0.15431	2.2374	2.8695	0.95	4.00
	4-6YRS	41	2.5012	0.89411	0.13964	2.2190	2.7834	0.95	4.00
	7-10YRS	45	2.5378	0.75665	0.11279	2.3105	2.7651	1.15	4.00
	11-15YRS	31	2.6935	0.71259	0.12799	2.4322	2.9549	1.10	4.00
	ABOVE 15YRS	79	2.6266	0.69650	0.07836	2.4706	2.7826	0.60	4.00
	Total	225	2.5858	0.76326	0.05088	2.4855	2.6861	0.60	4.00
TEACHER_SKILL_USAGE	1-3YRS	29	2.2276	0.82023	0.15231	1.9156	2.5396	1.05	3.95
	4-6YRS	41	2.4159	0.87181	0.13615	2.1407	2.6910	0.95	4.00
	7-10YRS	45	2.3644	0.75480	0.11252	2.1377	2.5912	1.05	3.85

LESSON_DELIVERY	11-15YRS	31	2.5984	0.64012	0.11497	2.3636	2.8332	1.20	4.00
	ABOVE 15YRS	79	2.5013	0.79643	0.08960	2.3229	2.6797	0.25	4.00
	Total	225	2.4364	0.78699	0.05247	2.3331	2.5398	0.25	4.00
	1-3YRS	29	2.4023	1.12843	0.20954	1.9731	2.8315	0.50	4.00
	4-6YRS	41	2.2480	1.08565	0.16955	1.9053	2.5906	0.00	4.00
	7-10YRS	45	2.3444	1.03010	0.15356	2.0350	2.6539	0.58	4.00
	11-15YRS	31	2.3844	0.82655	0.14845	2.0812	2.6876	0.67	3.92
	ABOVE 15YRS	79	2.2131	0.94467	0.10628	2.0015	2.4247	0.00	4.00
	Total	225	2.2937	0.99306	0.06620	2.1632	2.4242	0.00	4.00

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
SKILL_COMPETENCE	Between Groups	0.873	4	0.218	0.512	0.727
	Within Groups	93.858	220	0.427		
	Total	94.731	224			
SKILL_USAGE	Between Groups	2.935	4	0.734	1.274	0.281
	Within Groups	126.719	220	0.576		
	Total	129.654	224			
INTERNET_AWARENESS	Between Groups	1.813	4	0.453	0.747	0.561
	Within Groups	133.502	220	0.607		
	Total	135.315	224			
SEC_TEACHER_USE_OF_INTERNET	Between Groups	0.919	4	0.230	0.390	0.816
	Within Groups	129.576	220	0.589		
	Total	130.494	224			
TEACHER_SKILL_USAGE	Between Groups	2.661	4	0.665	1.075	0.370
	Within Groups	136.076	220	0.619		
	Total	138.736	224			
LESSON_DELIVERY	Between Groups	1.312	4	0.328	0.329	0.859
	Within Groups	219.591	220	0.998		
	Total	220.904	224			

APPENDIX VIII

CORRELATION ANALYSIS

		SKILL_COMPETENCE	SKILL_USAGE	INTERNET_AWARENESS	SEC_TEACHER_USE_OF_INTERNET
SKILL_COMPETENCE	Pearson Correlation	1	0.568	0.543	0
	Sig. (2-tailed)		0.000	0.000	0
	N	225	225	225	
SKILL_USAGE	Pearson Correlation	0.568	1	0.569	0
	Sig. (2-tailed)	0.000		0.000	0
	N	225	225	225	
INTERNET_AWARENESS	Pearson Correlation	0.543	0.569	1	0
	Sig. (2-tailed)	0.000	0.000		0
	N	225	225	225	
SEC_TEACHER_USE_OF_INTERNET	Pearson Correlation	0.586	0.532	0.726	
	Sig. (2-tailed)	0.000	0.000	0.000	
	N	225	225	225	
TEACHER_SKILL_USAGE	Pearson Correlation	0.546	0.566	0.678	0
	Sig. (2-tailed)	0.000	0.000	0.000	0
	N	225	225	225	
LESSON_DELIVERY	Pearson Correlation	0.327	0.311	0.356	0
	Sig. (2-tailed)	0.000	0.000	0.000	0
	N	225	225	225	

** . Correlation is significant at the 0.01 level (2-tailed).