INFORMATION COMMUNICATION TECHNOLOGY (ICT) INTEGRATION INTO SCHOOL ADMINISTRATION: A CASE STUDY OF SECONDARY SCHOOLS IN EKITI STATE.

by

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ABSTRACT

This research examines information communication technology (ICT) integration into school administration: A case study of secondary schools in Ekiti State, Nigeria. The research uses a cross-sectional design. Purposeful sampling was used to select 62 of 141 administrators in Ekiti South Senatorial District public secondary schools of Ekiti State, Nigeria. The instrument used to collect data for the study was a questionnaire while the data were prepared and analyzed using a statistical package for the social sciences (SPSS 22.0) for frequency counts and percentages. It was found that ICT resources were not adequately provided to the school administrators, and that the low usage of computers for their jobs was a result of lack of training in the use of computer and other ICT resources.

It is concluded that the administrators of the studied schools in Ekiti South Senatorial District of Ekiti State, Nigeria have not really integrated ICT into their administrative jobs. It is recommended that the Ministry of Education, through the State government, should work with the federal government and policy makers to ensure that ICT resources are supplied to the school administrators. Finally, administrators will need to take part in more ICT training, workshops, and seminars to improve their comfort with ICT resources.

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LIST OF ABBREVIATIONS AND SYMBOLS

1	B.SC	Bachelor of Science
2	B.ED	Bachelor of Education
3	CMEC	The Council of Ministers of Education, Canada.
4	FME	Federal Ministry of Education
5	FRN	Federal Republic of Nigeria
6	HND	Higher National Education
7	ICEHR	Interdisciplinary Committee on Ethics in Human Research
8	ICT	Information Communication Technology
9	IEP	Individual Education Plan
10	IITE	Institute for Information Technologies in Education
11	MAR	Missing at Random
12	MCAR	Missing Completely at Random
13	MNAR	Missing Not at Random
14	M.ED	Master of Education
15	NCCE	The national committee on computer education.
16	NCE	Nigeria Certificate in Education
17	NCES	The National Center for Education Statistics.
18	NECO	National Examinations Council
19	NMEC	The National Mass Literacy, Adult and Non-Formal Education Commission.

20	NPEC	National Primary Education Commission.
21	NSEC	The National Secondary Education Commission.
22	NUC	The National Universities Commission
23	PGDE	The Professional Graduate Diploma in Education
24	SA	Strongly Agree
25	SD	Strongly Disagree
26	SPSS	Statistical Package for the Social Sciences
27	STD	Standard
28	SWOT	Strengths, Weaknesses, Opportunities, and Threats
29	UNESCO	The United Nations Educational, Scientific and Cultural Organization
30	UPE	Universal Primary Education
31	US	United State
32	WAEC	West African Examination Council

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Chapter One

Introduction

The purpose of my research is to examine the level of information communication technology (ICT) integration in the educational administration system in Nigeria. Specifically, this chapter briefly explains what information communication and technology (ICT) means, it demonstrates its importance, and it shows how ICT is being integrated. The chapter also outlines problems in a general context, and shows how it relates to public secondary schools of Ekiti South Senatorial District Ekiti State Nigeria, West Africa. Finally, I identify the research questions.

Definition of ICT

Information and communication technology (ICT) evolved from the quest for faster and easier management of enormous amounts of information available to users. Thus, ICT is essential for the generation of quality information and for the management of that information as required for effective decision-making. ICT in the words of Aboderin (2009) "encompasses the broad fields of information and communications by means of computer and telecommunication; tools that are being increasingly used for organization or personal information processing in all sectors of economy and the society as a whole" (Olayemi & Omotayo, 2012, p. 60).

Umeagukwu and Etuh (2014) describe Information and Communication Technology (ICT) as an advance in technologies that provides rich global resources and collaborative environments for the dissemination of ICT literacy materials. They also explain that interactive discussions, research information, and an international exchange of ideas are critical for

advancing meaningful educational initiatives. They further explain that ICT has the potential for increasing access to and improving the relevance and quality of education. It thus represents potentially equalizing strategies for developing countries. ICT greatly facilitates the acquisition and absorption of knowledge, offering universities unprecedented opportunities to enhance the educational system, to improve policy formation and execution, and to widen the range of opportunities for empowerment in poor countries (p. 61).

Importance of ICT

The importance of information communication technology (ICT) cannot be over emphasized in the educational sector and other economic sectors in the world today; ICTs are making dynamic changes in society. The technologies are influencing all aspects of life. The influences are felt more and more in school administrations and management. The impacts are also felt by both students and teachers as they provide them with more opportunities to adapt learning and teaching to individual and societal needs.

Tinio (2002) states that information and communication technologies (ICTs) are capable of unlocking the doors of educational systems. They have the potential to increase access and improve the relevance and quality of education in developing countries. He further states the potential of ICT as follows: "ICTs greatly facilitate the acquisition and absorption of knowledge, offering developing countries unprecedented opportunities to enhance educational systems, improve policy formulation and execution, and widen the range of opportunities for business and the poor" (p. 6). One of the greatest hardships endured by the poor, and by many others who live in the poorest countries is their sense of isolation, and ICTs can open access to knowledge in

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ways unimaginable not long ago. Watson (2001) added that ICTs have revolutionized the way people work today and are now transforming educational systems.

Adetuyi and Oluwatayo (2012) in their research "Information and Communication Technology (ICT) in Nigerian Educational System" observed that ICT has helped to increase access and to improve the relevance and quality of education (p. 2). ICT offers developing countries unprecedented opportunities to enhance educational systems, to improve policy formulation and execution, and to widen the range of opportunity for business and the poor. Tinio (2002) also noted that ICTs are powerful enabling tools for educational change and reform. When used appropriately, ICT helps expand access to education, strengthens the relevance of education to the workplace, and raises educational quality by creating an active process connected to real life.

ICT Integration

Since the early 1980s, societies have become increasingly concerned with the rapid progress or growth of technology and the prospects this holds for the future in facilitating all aspects of life: work, leisure, and education. In their article "ICT in the education around the world: Trends, problems and prospects", Pelgrum and Law (2003) observed that the integration of computers and technology into schools is an expensive and sometimes complex process (p. 7). It requires all the necessary equipment, competent staff to get it up and running, and technology support. However, the advantages of ICT are evident, and the benefits that it can bring to schools and their pupils are significant enough to make the introduction of technology into the classroom one of the priorities of educational planners in both developed and developing countries,

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although the challenges and obstacles that may need to be overcome in both of these settings can be quite different.

Nigeria as a nation has recognized the potential of ICT in its educational system. The (FME, 1988) national policy on computer education emphasized the need for the integration of ICT into the Nigerian educational system. This policy also emphasized the need for primary school pupils to be introduced to basic computer skills, and showed the importance of computers to facilitate learning and for writing, computation, and data entry. For secondary school, the country has related goals which were to be achieved at higher levels. The tertiary institutions were also required to teach computer science as a discipline and to integrate it in school administration and instruction. However, the implementation was not effective.

The National Policy on Education (NPE) as revised in 1988 and 2004, re-emphasized the need for the integration of ICT in the Nigerian educational system. This is an acceptance of the need to go beyond the computer to the level of ICT and also the need for infrastructure. Three major objectives among others were emphasized in the Nigerian National policy for Information Technology (FRN, 2001). These were to empower youths with ICT skills to prepare them for competitiveness in a global environment, to integrate ICT into the mainstream of education and training and to establish multifaceted ICT institutions as centers of excellence of ICT.

Research Problem

As stated above, my research will look at information communication technology (ICT) integration into school administration. Adeyemi and Olaleye (2010) observed that there has been

an enormous increase in student enrolment and teacher data in Nigerian secondary schools. Previous researchers (Okebukola, 1996 & Adeyemi, 2007) also observed.

Furthermore, Okereke (2008) stated that school administration involves managing, administering the curriculum, teaching, pastoral care, discipline, assessment, evaluation, and examinations. He added as part of school administration: resource allocation, costing and forward planning, staff appraisal, relationship with the community, use of the practical skills necessary for surviving the policies of organization such as decision-making, negotiation, bargaining, communication, conflict handling, and running meetings. These functions are complex and to efficiently and effectively perform them requires the appropriate tools and resources. ICT may offer the necessary platform for school administrators to perform these complex tasks.

Ehiametalor (1985) stated, "Primary school administration in Nigeria has become a complex entity in recent years, due mainly to the implementation of the Universal Primary Education (UPE) scheme and the subsequent increase in enrollment of students. Enrollment increases have led to the assignment of a large number of teachers under the supervision of the headmasters" (p. 566). The agglomeration of these larger number of teachers has prompted the need for enhanced leadership skills at the school and district levels. It is thus logical that increased availability of ICT resources for these school leaders is necessary to give them the ability to properly administer their schools. To determine the level and usage of ICT resources in the Nigerian school system, I have developed the following research questions.

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Research Questions

1. What are the ICT resources available to school administrators?

2. To what extent are school administrators trained to use ICT resources for their jobs?

3. To what extent are school administrators using ICT resources to manage the complex nature of their jobs?

Chapter Two

Review of the Literature

Introduction

The aim of this chapter is to provide a thorough examination of research on information communication technology (ICT) integration into school administration. The first part looks at the history of education in Nigeria, while the literature presented in the second part of this chapter focuses on ICT integration in Nigeria and other developed countries in the world such as Canada, the United States of America (USA), and a view of ICT integration in United Kingdom (UK). First, an introduction to the definition and constraints of school administration, an educational administration and educational leadership literature review is provided. In the second section, a brief history of educational administration in Nigeria and Canada and a review of ICT for school administration in Nigeria and North America are provided. The last section focuses on some areas in which ICT can be used for effective educational administration.

Brief History of Education in Nigeria.

I felt the need to provide some of the history of education in Nigeria in this research, as it will give some insight into the system of education in Nigeria. Education in Nigeria is more of a public enterprise that has witnessed complete and dynamic governmental intervention and active participation (Federal Republic of Nigeria, 1981).

Education in Nigeria is divided into three forms, namely: formal, informal, and non-formal. First, formal education is the type of education that people receive in the regular formal school setting, for instance, the primary, secondary, and tertiary institutions. Second, informal

education is the type of education that people receive outside the formal education system or learning system such as the home (family), church or mosque, peer-group, and mass media. Thirdly, non-formal education can be received through workshops, seminars, correspondence, and television and radio media.

In this part, I focus on formal education in Nigeria in the past. Historically, formal education in Nigeria can be traced to the advent and activities of European missionaries and colonialists. Then, the scope of education in Nigeria was narrow and lacked a properly defined focus and to make education have such a focus, a national policy on education became extremely necessary in Nigeria. The National Policy on Education in Nigeria was launched in 1977. The purpose of the policy was aimed towards the realization of individual and national efficiency, and national unity aimed at achieving social, cultural, economic, political, scientific, and technological development.

The Nigerian education system has 6 years of primary school, 5 to 7 years of post primary school (Secondary, Teacher Training College and sixth form) and 4 to 6 yrs of tertiary education (College of Education, polytechnics, College of Technology and University education). In 1985, the objectives of the policy were broadened to include free primary education among other things, and from that year, the structure was classified into pre-primary or kindergarten education (2 to 3 years), for children aged 3 to 5 years. Primary school lasts 6 years for children aged 6 to 11 years; the post-primary education is also 6 years duration but is divided into two, the first 3 years of Junior Secondary School and the second 3 years of Senior Secondary School. There are four to six years of tertiary education level; this is called the 6-3-3-

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4 system (UNESCO 2000). After the inception of the Obasanjo-led administration in 1999, a Universal Basic Education Scheme was launched. The specific targets of the scheme were total eradication of illiteracy by the year 2010 and an increase in the adult literacy rate from 57% to 70% by 2003 (Amaghionyeodiwe & Osinibi, 2006; FRN, 2000).

Overview of ICT Integration

In the literature on ICT integration, few studies have sought to determine the level of integration, and how effectively it can be used to tackle school administrative tasks. Olayemi and Omotayo (2012) examined how the secondary educational system is expanding at an unprecedented rate, coupled with the problems of its planning, organizing, coordinating, controlling, and directing which are to be performed by the school administrator. Marlow and Minehira (2011) stated that school principals (administrators) must possess a wide array of competencies in order to lead schools effectively towards the accomplishment of educational goals, which has led to changing expectations of what leaders need to know and must be able to do (Taole, 2013).

Uwadia (2009) "emphasized that ICT serves as a tool for increased productivity and effective decision making. For instance, knowledge of ICT can be explored by secondary school administrators to ensure effective teacher delivery of services, effective communication, effective maintenance of accurate student records, and the maintenance of an academic planning record system among others" (as cited in Olayemi & Omotayo, 2012)

In addition, Pedro, Enrique, Ernesto, and Lucio (2004) explained the important roles that ICT plays in making school administration less burdensome and more effectively integrated to

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the official information flow about students, curricula, teachers, budgets, and activities through the educational system information pipelines. They further said, "They are also a good means for informing community members (parents, politicians, and researchers) about educational news and policies. In the school system today, it seems impossible to ignore the place of ICT anymore". (p. 4)

Olayemi and Omotayo (2012), Aboderin (2009), and Uwadia (2009) observed that the ICT awareness of the school administrators in Ekiti State seems to be low. Many of the administrators seem to lack basic knowledge of ICT facilities such as computer, projector, internet, and other software facilities. It also appears as if some of the school administrators in Ekiti State are not even well equipped with necessary ICT facilities and it seems as if school administration is as effective in the schools with ICT facilities as those without it (Olayemi & Omotayo, 2012).

Asiabaka (2010) talks about how administrators cannot perform their administrative duties without accurate, timely, sufficient, and relevant information. The deficiencies associated with storage, preservation, and presentation of large volumes of the information in paper form make managerial processes very cumbersome. Consequently, alternative methods provided by Information and Communication Technology (ICT) became imperative. The ICT is technology-based and knowledge-driven and is indispensable in the present age.

Definition and constraints of school administration

Stewart (1982) in her view chooses demands, constraints, and choices to describe the world of school administration and the nature of managerial work. She suggests that managerial

jobs comprise "an inner core of demands, an outer boundary of constraints and in-between area of choices" (Sergiovanni, Burlingame, Coombs, & Thurston, 1992, p. 1). The descriptions given by Stewart show how demanding administrators' work is and the amount of responsibility placed on the work of school administrators. She further explains demands as something that comes from the forces and pressures that school administrators cannot ignore, things they must do to avoid sanctions for their schools that ultimately could imperil their jobs. Constraints are the factors internal and external to the school that limit what school administrators can do, and choices are something that exist within any demand and constraint set. Choices are opportunities for school administrators in similar jobs to do different things or to do the same things in different ways.

My interest in examining the level of information communication technology (ICT) integration in the administrative system in Nigeria grew deeper when I saw how it is being used in various sectors in Canada, the USA, and other developed countries in the world.

Clearly, one of the hallmarks of a successful school administrator is the ability to expand the area of choice by the deft handling of demands and constraints (Sergiovanni et al., 1992). The effort and the policy put in place to govern education and school administration in Canada, the USA, and other developed countries have make things work better compared to the way those policies are being used in school administration in Nigeria. It is good to understand what educational administration is, what is not educational administration, and what school administrators can and cannot do.

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In order to know the ICT resources available to school administrators in Nigeria particularly in Ekiti State, it is also important to know and understand what school administrators can and cannot do. What is the importance of administrative activities in Nigerian society? What are the types of ICT equipment that should be available in schools according to educational standards? Who is responsible for making them available? What is the role of government from the federal level to the local level in making ICT resources available and who should be in charge of maintaining these resources?

When a question like, "What is educational administration or administration?" is asked, there are a number of different answers. An individual responding to such a question either will try to give one of the definitions of the concept or will try to explain its meaning in view of his/her perception of it. According to Okumbe (1998), educational administration is a process of acquiring and allocating resources for the achievement of predetermined educational goals (as cited in Kimani, 2010)

Many writers have used the term administration to mean management. Kimani (2010) said the difference between administration and management is very thin. In his view, he described management as the process of working with and through groups or individuals to accomplish organizational goals, while administration is concerned with directing and controlling life in a social system. In addition, he said that administration deals with establishing a policy that guides decision-making laws and regulations.

According to Henri Fayol (1841-1925), "to manage is to forecast and plan, to coordinate and control" (p. 16). Van Fleet and Peterson (1994) define management "as a set of activities

directed at the efficient and effective utilization of resources in pursuit of one or more goals" (p. 16). Keitner (cited in Kimani, 2010) stated, "Management is a problem solving process of effectively achieving organizational goals and objectives through efficient use of scarce resources in a changing environment. Brech defined management as a social process, which constitutes planning, controlling, coordinating, and motivating". (pp. 16 – 17).

Levitt (1976) said management consists of the rational assessment of a situation and the systematic selection of goals and purposes (what is to be done?). The systematic development of strategies to achieve these goals; the marshalling of the required resources; the rational design, organization, direction, and control of the activities required to attain the selected purposes; and, finally, the motivating and rewarding of people to do the work (Cited in Sergiovanni et al., 1992, p. 75).

According to Sergiovanni et al. (1992), administration is generally defined as the process of working with and through others to accomplish organizational goals efficiently (p. 60). They further explained what the administrator is, that there is a performance quality to most definitions of administration, and since resources are always limited and decisions must be made as to how best to allocate these resources, efficiency becomes an additional quality.

According to Remasay (1999), administration is a generalized type of human behaviour found in an organization. Administration is a process through which decisions are reached. Administration is the process of directing and controlling life in any social organization such as schools or in an industry. Allocating resources in administration as described by Okumbe (1998) and managing people could be a difficult task to perform if the administrator who is responsible

to manage them is not well equipped with necessary knowledge of ICT and the skills that needed to perform the administrative jobs (Cited in Kimani, 2010).

Katz (1955), when talking about critical administrative skills, identified three basic skills upon which he feels, successful administration rests - technical, human, and conceptual. He further explained what the skills mean to administration.

Technical skill assumes an understanding of and proficiency in the methods, processes, procedures, and techniques of education. Non-instructional technical skills include specific knowledge in finance, accounting, scheduling, purchasing, construction, and maintenance. Technical skills are more important to administrative and supervisory roles lower in the school hierarchy. The department chairperson or grade-level supervisor, for example, needs far greater command of technical skills related to instruction than does the principal. The business manager needs a more technical command of accounting procedures and computer uses than does the superintendent.

Human skill refers to the school administrator's ability to work effectively and efficiently with others in a one-to-one basis and in-group settings. This skill requires considerable self-understanding and acceptance as well as appreciation, empathy, and consideration for others. Its knowledge base includes an understanding of and facility for leadership, adult motivation, attitudinal development, group dynamics, human needs, morale, conflict management, and the development of human resources. Human skills seem equally important to

administrative and supervisory roles throughout the school hierarchy. Regardless of position, all administrators work through others; that is, they use human skills to achieve goals.

Conceptual skill includes the school administrator's ability to view the school, the district, and the educational program as a whole. This skill includes the effective mapping of interdependence for each of the components of the school as an organization, the educational program as an instructional system, and the functioning of the human organization. The development of conceptual skill relies heavily on a balanced emphasis of administrative theory, knowledge of organizational and human behaviour, and educational philosophy. Conceptual skills are considered more important to roles further up the organizational hierarchy. The superintendent, for example, may not know much about the technical aspects of teaching youngsters with learning disabilities to read but must know how this piece of the puzzle fits and interacts with other aspects of operating the school district. (Cited in Sergiovanni et al., 1992, pp. 72 - 73).

Educational Administration and Educational Leadership

From a management perspective, Sergiovanni et al. (1992) viewed educational administrators as professional managers. Like other professionals, they possess certain insights and technical skills that have great instrumental value. If one gives an engineer the specifications required, for example, then the engineer will provide the blueprint for action. Similarly, the professional medical practitioner responds to a particular diagnosis with a predetermined and

standardized treatment. In our case, if we provide a professional administrator-manager with outcomes to be achieved then this person will engineer organization and talent in that direction. However, educational leadership, by contrast, is a more expansive concept that includes concern for the worth of objectives and their impact on school and society.

For an administrator to actually make things work, it is very important to take a good leadership and management role to develop plans for improving all aspects of the school system. Bennis (1959) viewed leadership as the process by which an agent induces a subordinate to behave in a desired manner (Cited in Spillane & Coldren, 2011, p. 27). Jennings (1944) defines leadership as a "manner of interaction involving behaviors by and toward the individual lifted to be a leadership role by offer individuals" (Cited in Spillane & Coldren, 2011, p. 27).

Bavelas (1960) sees leadership as "maintaining the operational effectiveness of decision making systems which comprises the management of the organization" (Cited in Spillane & Coldren, 2011, p. 27). Leithwood, Day, Sammons, Harris, and Hopkins (2006) see leadership as all about organizational improvement; more specifically, it is all about establishing widely agreed upon and worthwhile directions for the organization and doing whatever it takes to prod and support people to move in those directions.

Historical Overview of Educational Administration in Nigeria and Canada

Administration of education in Nigeria dated back to the commencement of Western education in the country. Gang, Udo, and Akpa (1987) assert that the administration and management of education in Nigeria reflects the earlier impact of the various agencies such as the missionaries, British colonial government, and Nigeria herself. Each of these agencies left

footprints that have adversely guided educational administration in Nigeria. At independence in 1960, the management and administration of Nigeria education rested with Nigerians themselves.

This period witnessed active participation by non-governmental agencies, communities, and individuals as well as government intervention (NPE, 2004). The Nigeria government got involved in the management of education from the time of the Richards Constitution of 1946. This included the creation of regional governments and the total management and administration of Nigerian education by Nigeria following independence.

The most important giant step ever taken in the management and administration of the nation's education took place in 1969 with the convening of the national curriculum conference. This lead to the provision of the educational document named national policy on education in 1977 that serves as a guide to the direction of our educational practice. The administration of Nigerian education, however, changed between the civilians and the military from 1960-1999 when education witnessed unstable policies (Amaghionyeodiwe & Osinubi, 2006).

Administration and management of education in the 21st century have actively experienced a laudable and historic landmark as Nigerians have taken complete control of their destiny in education. Educational administration is the responsibility of Government at all levels (Local government, state, communities, private organizations, and federal governments). The Ministry of Education has the major responsibility for education but other Ministries also play an important role (Udey, Ebuara, Ekpoh, & Edet, 2009).

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The administration of the education system in Nigeria is shared mainly amongst the Federal and State Ministries of Education as well as statutory bodies referred to as Commissions. There are Commissions established for different sub-sectors of the education system and are charged with various responsibilities for the sub-sectors. There is a National Primary Education Commission (NPEC), the National Secondary Education Commission (NSEC), the National Mass Literacy, Adult and Non-Formal Education Commission (NMEC) and the National Universities Commission (NUC). In addition, there are other major role players at local government level, district level, and in the immediate environment where the school is located.

A comparison with another Commonwealth member country can be illustrative in enhancing our understanding of the Nigerian system. The Council of Ministers of Education, Canada (CMEC, 2008) explains what educational administration in Canada looks like, who is responsible for education, and the role of the CMEC itself. In Canada, there is no federal department of education and no integrated national system of education. It stated, in the 13 jurisdictions - 10 provinces and 3 territories - departments or ministries of education are responsible for the organization, delivery, and assessment of education at the elementary and secondary levels, for technical and vocational education, and for postsecondary education. Some jurisdictions have two separate departments or ministries, one having responsibility for elementary to secondary education and the other for postsecondary education and skills training (CMEC 2008).

The Council of Ministers of Education, Canada (CMEC, 2008) was formed in 1967 by the provincial and territorial ministers responsible for education to provide a forum in which they

could discuss matters of mutual interest, undertake educational initiatives cooperatively, and represent the interests of the provinces and territories with national educational organizations, the federal government, foreign governments, and international organizations. CMEC is the national voice for education in Canada and, through CMEC, the provinces and territories work collectively on common objectives in a broad range of activities at the elementary, secondary, and postsecondary levels.

The public funding for education in Canada comes either directly from the provincial or territorial government or through a mix of provincial transfers and local taxes collected either by the local government or by the boards with taxing powers. Provincial and territorial regulations, revised yearly, provide the grant structure that sets the level of funding for each school board based on factors such as the number of students, special needs, and location (CMEC 2008, p. 3)

In trying to understand what an educational administrator or a school principal does, it is necessary to compare and contrast with a country like Canada or the USA with Nigeria. Educational administrators are the same everywhere in terms of who they are and what they do. However, there are many differences and views as to individual perspectives about how their jobs are being carried out, the resources that are available for the job, the size of the school, and the policies that govern or guard their administrative roles. These differences and views are inevitable, especially when one is trying to see the gaps or differences in relation to one or two countries (i.e. between a developed, developing, and underdeveloped country).

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ICT for School Administration in Nigeria and North America.

Information communication and technology (ICT), as described by Adeoye, Oluwole, and Blessing (2013), is an indispensable part of the contemporary world. In fact, culture and society have to be adjusted to meet the challenges of the information age. Information and communication technology (ICT) is a force that has changed many aspects of people's ways of life. Kirschner and Wopereis (2003) have said that information and communication technology can make the school more efficient and productive, by organizing a variety of tools to enhance and facilitate teachers' professional activities. Yusuf and Onasanya (2004) also view ICT as opportunities for school to communicate with one another through e-mail, mailing lists, chat rooms, and other facilities. It provides quicker and easier access to more extensive and current information (Adeoye et al., 2013)

When it comes to the level of information communication technology (ICT) integration in school administration in Canada, the United States of America, the United Kingdom and Nigeria, the gap is huge and its negative effect on the educational sectors is unavoidable. Blurton defines and analyses the new directions of ICT use in education. In his contribution to UNESCO's World Communication and Information Report (1999) he said, "Information and communications technologies (ICT) are a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information." (p. 1).

Communication and information are at the very heart of the educational process, consequently ICT-use in education has a long history. Blurton (1999) further gives insight to the educational role that ICT has played, in both formal and non-formal settings, in programs

provided by governmental agencies, public and private educational institutions, for-profit corporations and non-profit groups, and secular and religious communities.

The World Education Report (UNESCO, 1998a) reveals a significant challenge that education worldwide is facing when it comes to integrating the new information and communication technologies and in preparing students and teachers for "our future 'knowledge-based' society" in which the most developed countries are not excluded (Blurton, 1999. p. 1). The reports on ICT infrastructure in Canadian schools (Statistics Canada, 2012) corroborate the above statement that if schools and teachers are to be effective in integrating ICT into the learning environment, then having the necessary infrastructure or plan to acquire and maintain the infrastructure is the crucial first step.

A number of studies have been completed on the integration and access of ICT to school administration in Canada, the United States of America, and other developed countries. Early research results were presented from the Information and Communications Technologies in School Survey 2003 – 2004 "Connectivity and ICT integration in Canadian elementary and secondary schools". It was explained in the research how the Canadian education authorities and governments have recognized the importance of integrating information and communications technologies (ICT) into teaching and learning both to prepare students for today's economy and to make the most of new learning tools.

The account shows the considerable effort that had been devoted to acquiring hardware and software for elementary and secondary schools, to connecting them to the Internet, and to helping educators improve their own ICT-related knowledge (Johanne & David, 2004).

This report, which presents the first results of the 2003/04 ICTSS, is based on the responses of nearly 6,700 elementary and secondary schools, which were weighted to represent 15,500 schools in Canada. The first section of the report presents a profile of the current ICT infrastructure in schools. It includes information on the number of computers available to students and teachers for educational purposes; their characteristics (i.e. desktops, laptops, operating systems and processor speeds); and the average amount of time devoted per computer each month for ICT technical support.

Section two offers a snapshot of school connectivity across the country. It looks at the number of Internet-connected computers available to students and teachers for educational purposes, the types of connections used to access the Internet, the proportion of schools with an intranet or a website, as well as the presence of videoconferencing technology.

The third section documents the access that students and teachers have to the available ICT infrastructure (computers, Internet-connected computers and software). The analysis examines the availability of computers outside of regular school hours, presence of e-mail accounts and online courses.

The fourth section explores several factors that may play a role in the integration of ICT in the classrooms. It summarizes the views of principals regarding the ability of teachers to use ICT effectively for learning purposes. (pp. 6 – 7)

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In 2009, the report shows that Canada "was tied for second in the G8 with the USA" (Human Resources and Skills Development Canada, 2013), at a ratio of 1.4 fifteen-year old students for each computer across the country (Statistics Canada, 2012). In Europe, more than 80% of schools in Slovenia have access to the Internet, 93% of secondary schools and 80% of primary schools, which is similar to the percentages of developed countries. Nearly two-thirds of secondary schools have a website (Research Internet in Slovenia, 1998).

The available data on the Canadian Council on Learning, (2006) give the account of the schools in Canada with information and communication technology (ICT) that, over 97% of Canadian schools have computers and are connected to the Internet. This high rate of connectivity holds for both urban and rural schools; however, urban schools may be better able to make use of this connectivity. Rural schools are still hampered by slower internet connections: more than 20% of rural schools still use dial-up connections, while less than 5% of urban schools do so.

In the United States, over the past decade, K–12 public schools have dramatically increased Internet access and ICT availability in an effort to meet the demands of the rapidly evolving and technologically advanced work environment. According to a ten-year study conducted by the National Center for Education Statistics (NCES 2006) confirms the increase, showing an 85 percent growth in the number of instructional computers with Internet access in K–12 schools from 1995–2003.

The above study also shows a sharp decline in the ratio of computers per student over a seven-year span. In 1998, data reported one instructional computer for every twelve students,

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whereas by 2005 the ratio had dropped to one instructional computer for every four students (NCES 2006). Despite this increased investment in technology, however, reformers have watched in dismay as the machines continue to sit idle or to be "underused" in many schools (Bauer & Kenton 2005; Cuban 2001, 2006; Evans & Gunter 2004; Moursund & Bielefeldt 1999; NCES 2000; Sandholtz & Reilly 2004, Citing (Hassell & Baldauf, 2008).

The above literature shows the level in which ICT is being used in Canada and the USA, and also explains what educational administration is, the importance of administrative activities in the society, and the role of government in making information communication and technology (ICT) equipment available for the use of the school administrators, teachers, and students.

In 1987, the Federal Government of Nigeria through a constituted National Council on Education proposed the introduction of ICT or computer studies in the secondary school system. The report of the national committee on computer education in 1988 (NCCE, 1988), which handled the formulation of the policies, concluded that Nigeria will be a computer literate society by mid -1990s. Unfortunately, the realization of this policy has yet to take effect, as many school leavers could not use computers in various aspects of their lives and future employment. It is sad to see Nigeria, the giant of Africa, a nation endowed with many resources still far behind, failing to develop and implement information communication and technology policies in schools in Nigeria after all these years.

In 2004, the Federal Government of Nigeria, in the National Policy on Education (Federal Republic of Nigeria, 2004), recognized the prominent role of ICTs in the modern world and has integrated ICTs into education in Nigeria. To actualize this goal, the document states that

government will provide basic infrastructure and training at the primary school. At the junior secondary school, computer education has been made a pre-vocational elective, and is a vocational elective at the senior secondary school. It is also the intention of government to provide necessary infrastructure and training for the integration of ICTs in the secondary school system.

Okebukola (1997) concluded that computer education is not part of classroom technology in over 90% of public schools in Nigeria. Thus, the chalkboard and textbooks continue to dominate classroom activities in most secondary schools in Nigeria. He further asked that, if a country such as Uganda, which has less than a-fifth of Nigeria's resources, is now using information and communication technology to help secondary school students to become better information users, why is Nigeria lagging behind?

ICT for Educational Administration

Looking at the assistance that ICT gives to school administrators, Kumar, Rose and D'Silva (2008) reveal that the integration of ICT helps to reduce the complexity and enhance the overall administration of higher education. Computers can be used extensively for educational administration. Some areas in which ICT can be used for effective educational administration are further stated as follows:

i) General Administration

ii) Pay Roll and Financial Accounting

iii) Administration of Student Data

iv) Inventory Management

v) Personnel Records Maintenance

vi) Library System. (p. 282)

The UNESCO IITE Policy Brief (2012) supports the above statement that; "ICTs are now vital to support the business of educational institutions, and support the full academic lifecycle. [They are important] in terms of learning and teaching from initial student enquiries through to accreditation and graduation and in terms of research from initial bid writing through to project delivery and dissemination. It includes six main areas: pay roll and financial accounting, administration of student data, inventory management, personnel records maintenance, library systems and learning management systems" (p. 2).

Thomas (1987) also shared his view on the functions of educational administration; these functions include a wide variety of activities such as educational governance, supervision, support services, infrastructure, finance, budgeting, accounting, personnel selection and training system monitoring and evaluation, facilities procurement and management, equipment maintenance, research, and so on.

Krishnaveni and Meenakumari (2010) argue that computers can be used extensively for educational administration. They list the following as some of the areas where computers can be used for effective educational administration: general administration, pay roll and financial accounting, administration of student data, inventory management, personnel records maintenance, and the library system. They suggest ICT can support three areas of activity: student administration, staff administration, and general administration. Another researcher highlighted General Administration, Pay Roll and Financial Accounting, Administration of

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Student Data, Inventory Management, Personnel Records Maintenance, and Library System as some of the areas where computers can be used for effective educational administration (p. 1)

ICT for General Administration

According to Hossein (2008),"Information and Communication technology provides several facilities and possibilities for educational administrators to do their tasks" (p. 24). It is also mentioned that usage of ICT in higher education administration involves "harnessing technology for better planning, setting standards, effecting change and monitoring results of the core functions of universities. One of the key conclusions arrived at is that the integration of ICTs in higher education is inevitable (UNESCO, 2009).

Krishnaveni and Meenakumari (2010) viewed the importance of ICT as it related to information administration in the general administration of higher education institutions, which includes the various day-to-day activities of the entire system. Various literature reviews reveal that information administration is one part of the overall administration of education institutions, which mainly covers general and day-to-day operational activities. They categorized the following as general administration in educational administration:

i) Usage of e-media for scheduling / allocation of halls for examinations

ii) Dissemination of information in the institution through e-kiosks

iii) Usage of e-media by students to apply for university examinations

iv) Usage of e-media for the processing and display of results of students and;

v) Facility for students to make fee payments electronically

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As stated above, it is evident that ICT in educational administration for general administration is key; it helps the spread of information within and outside the administrative work. Mugenda (2006) said, "ICT fosters the dissemination of information and knowledge by separating content from its physical location" (as cited in Krishnaveni and Meenakumari 2010, p. 283).

Student administration, as part of the three areas that ICT supported, "involves various activities from the admission process to learning activities through to the processing of results and performance analysis. Important aspects include the automation of admission processes through e-media (including dealing with initial student enquiries, applying for admissions through electronic media, registration, electronic enrolment, course allocating, and information about timetable and attendance monitoring. This also includes communication with peers and tutors. Staff administration includes recruitment and work assignment, recoding attendance, leave management and performance appraisal" (UNESCO 2012, p. 4)

Another area of the school administrator's job is curriculum planning. On the other hand, the administrative functions are viewed as involving policy formulation, decision-making, record keeping, implementation of rules and regulations that govern the organization. In addition to these Acero (2000) identifies the following functions of educational administration:

i) Providing school supplies including textbooks and other teaching and learning materials;

ii) Assisting in curriculum instruction and the organization of an instructional programme;

iii) Keeping school records, accounts and reminding stakeholders of the aims and needs of the school;

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    iv) Budgeting for school requirements;

    v) Planning for new buildings. (pp. 638 – 634).

Acero (2000) discusses another aspect of educational administration; involvement and assisting curriculum instruction and organization of the instructional programme. This function appeared to support some of the roles and functions of the school head as expected by the Ministry of Education, Arts, Sport, and Culture (Wellington, 2013).

    The complexity of administrative jobs cannot be overridden; it would take an administrator to effectively and properly use the ICT resources available to them to tackle the complexity. Maki (2008) specified that technology could be used right from student administration to various resource administrations in an educational institution. Information and Communication Technology (ICT) plays a vital role in supporting powerful, efficient management, and administration in education sector. In addition, Salerno (2009) highlighted the following as a way of introducing technology in education institution administration (as cited in Krishnaveni & Meenakumari, 2010)

    i)   Sending e-mail notices and agendas to staff, rather than printing and distributing them

    ii) Submission of lesson plans through e-mail

    iii) Fostering technology growth by asking parents to write e-mail addresses on medical forms.

    iv) Insisting that all teachers create a class Web page

    v) Attending technology conferences to see what other schools are doing, what other teachers are doing to integrate technology, and what principals are doing to encourage the use of technology in their schools and classrooms.

    vi) Admissions through web-enabled services.

    vii) All day-to-day activities of the institution (General Administration)

    Viii) Staff administration.

Stated above are some of the ways that ICT can be used in schools for administrative purposes. Maki (2008) again specified that ICT has played a major role in reducing operational inefficiency and improving decision-making in many areas of governance in schools and school administrative subsystems. He further explained what an administrative subsystem entails: personnel administration, student administration, resources administration, financial administration, and general administration.

According to Krishnaveni and Meenakumari (2010), ICT provides several facilities and possibilities for educational administrators to do their tasks. ICT could change the very nature of higher education, allowing information to be transferred, stored, retrieved, and processed by almost all who work, study, or interact with a given institution.

ICT for Payroll and Financial Accounting

Muhammad et al. (2011) reveal the uses and importance of ICT for payroll and financial accounting, the records of purchases, budgets, grants administration, cash flows, audits, and other financial transactions carried out by institutions and that they need proper documentation for reference purposes. The availability and accessibility of ICTs and their integration in the

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financial sector make it possible and easy for accountants and financial administrators to process all transactions on-line via the system called E-accounting. Electronic accounting (e-accounting) as the name implies, makes it possible for transactions to be captured, measured, recognized, and reported electronically.

ICT for Administration of Student Data

The analysis of SWOT on Information and Communication Technology (ICT) Integration: An Innovative Strategy to Improve Educational Administration and Management Effectiveness (2011) states the first focus of the ICT integration was to manage and organize the student administration related matter from the time of enrolment to when students become alumni. It is a more student-centric database that is used to record the following issues:

i) The student information detail

ii) The student attendance record

iii) Awards, behaviours and suspension

iv) The student enrolment and timetable

v) Extracurricular activities

vi) Alumni information detail and programs

vii) Financial registration and scholarships

UNESCO also explains the Student Record System as a central part of the core administration function for every institution and its support for maintaining personal and study information relating to the following: handling inquiries from prospective students; handling the admissions process, enrolling new students and storing teaching option choices, automatically

creating class and teacher schedules; handling records of examinations, assessments, marks, grades and academic progression; maintaining records of absences and attendance, recording communications with students maintaining discipline records; providing statistical reports; maintenance of boarding house details; communicating student details to parents through a parent portal; Special Education / Individual Education Plan (IEP) services; human resources services; accounting and budgeting services; student health records (IITE Policy Brief, 2012)

ICT for Library System

Shariful and Nazmul (2006) talk about the functions and benefits of ICT based library systems. They stated four stages that the use of ICT in libraries has gone through, which are the reasons for automating: improving the efficiency of internal operations, improving access to local library resources, improving access to the resources outside the library, and interoperability of information system. It added that traditionally, computers in libraries have been used and in most cases still are being used to automate the following functions:

i) Acquisition and budget

ii) Cataloguing and short loan

iii) Circulation

iv) Serial control (Periodicals)

v) Provision of access to online catalogue

Finally, Shariful and Nazmul (2006) talk about the impact of ICT to the library and information usage, and the way ICT has assisted library professionals to provide value added quality information service and give more remote access to the internationally available

information resources. According to the report of UNESCO 2012, Library systems cover all aspects of the management of library materials both physical and digital.

Based on the descriptions given the several researchers above, ICT facilities, and the uses of information communication and technology (ICT) for educational administration, it is clear that educational administrators/ principals in secondary schools need effective and fast communication and accessibility to information (Wiley, 2003). An educator is a professional communicator. Administrators need to correspond through e-mail and the internet, creating websites for school communications. They can save time while using a program to communicate to parents, teachers, students, other school administrators, business executives, suppliers, and the wider community. Effective educators must possess ICT knowledge.

According to the data on the availability of Information Communication and Technology (ICT) facilities in Ekiti State, the facilities available include computers, internet services, projector screens, laptops, scanning machines, printers, hardware, software, radio cassettes, televisions, satellite dishes, handsets, photocopying machines, and fax machines. In addition, the findings show that many schools in Ekiti State are deficient in the availability of ICT equipment. The percentage of schools with computers and printers are (92.5 %) and (90.6 %), while almost all the schools did not have projectors, projectors screens, scanning machines, and fax machines. This is an indication that ICT materials are not vigorously provided for the schools (Adeyemi & Olaleye, 2010, p. 108).

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My research seeks to find out the availability of the ICT to school administrators presently in Ekiti State particularly in Ekiti South Senatorial District and the extent in which they are making use of them to manage the complex nature of their jobs.

The policy note, ICT, and Education, (World Bank 2004), described some of the key critical factors in the successful integration of ICTs in schools across countries in Europe, North America, and Asia in the creation of a responsive education system. A receptive education structure is needed that is open to the evolving technological changes, to make the education environment more responsive to the needs of the knowledge-based society. In my opinion, if the Nigeria government can embrace and properly allow ICT to be integrated to educational administration, it would benefit not only schools but also society.

Summary

The aim of this chapter is to provide a thorough examination of research on information communication technology (ICT) integration into school administration. The literature presented in this chapter focuses on ICT integration in Nigeria and other developed countries in the world such as Canada, the USA, and a view of ICT integration in the UK. First, an introduction to the definition and constraints of school administration, educational administration, and educational leadership literature review is provided. In the second section, a brief history of educational administration in Nigeria and Canada and ICT for school administration in Nigeria and North America are provided. The last section focuses on some areas in which ICT can be used for effective educational administration.

Chapter Three

Research Methodology

Introduction

In this chapter, I describe how the data for this research were collected, measured, and analyzed. Specifically, I present a description of the study design, sample, and data collection, and the techniques used to analyze the data.

Study Design

This research uses the most popular form of survey design used in education, a cross-sectional design to collect data about current opinions of the participants about information communication technology (ICT) integration into school administration, and the survey is used to answer the research questions. According to Marczyk, DeMatteo, and Festinger (2005) this is a type of design in which the investigator gathers data from a large number of people on their behaviours, attitudes, and opinions (p. 151). This design is appropriate for the study because it involves collecting data from administrators in order to determine their responses to the research questions.

Data Collection

To collect data, it is necessary to identify and select individuals for a study, to obtain their permission to study them, and to gather information by asking people questions or observing their behaviours (Creswell, 2012). Having received the necessary permissions from the Interdisciplinary Committee on Ethics in Human Research (ICEHR) of Memorial University in the month of November 2015, recruitment letters were sent to invite participants to complete a

questionnaire (Appendix B). The data were collected using a questionnaire that was administered to the participants. Sixty-two administrators of public secondary schools from Ekiti South Senatorial District were selected using purposeful sampling from among 141 administrators of the whole public secondary school of Ekiti State, Nigeria, while the study solely relies on the views of the selected participants and the data collected.

The population studied consisted of 62 administrators in Ekiti South Senatorial District public secondary schools of Ekiti State, Nigeria. The questionnaire has three sections: Section 1, which contains respondent's gender, qualifications, and years of experience; Section 2 questions were designed as Yes or No options. It contains questions about 12 of the ICT resources to determine their availability to the school administrators and three (3) other related questions: Section 3 was structured on a 4-point Likert Scale of Strongly Agree (SA); Agree (A); Disagree (D) and Strongly Disagree (SD) with rating scale of 1, 2, 3, and 4 respectively, other questions in section 3 were structured with   Yes or No options.

Data Analysis

The data were prepared and analyzed using the Statistical Package for the Social Science (SPSS 22.0). Each survey was assigned an identification number (1 - 62), in this way if there is a mistake in coding it will be easy to locate the survey number and then make the changes. No attempt was made to identify the individual respondent's identity in order to ensure their anonymity. Gender was coded as Male = 1, Female = 2, Other = 3, qualifications were filled in by the participants, and years of experience was coded as $31 - above = 1$, $21 - 30 = 2$, $11 - 20 = 3$, $1 - 10 = 4$. The yes or no questions was coded, Yes = 1, No = 0. The Likert scale questions

were coded as, SD = 1, D = 2, A = 3, SA = 4 and Never = 1, Some of the time = 2, Most of the time = 3, Always = 4.

Question number 1 in Section 3 was re-coded to reflect Yes and No responses. Strongly disagree and disagree responses were re-coded to reflect no responses, and where respondents selected strongly agree and agree these items were re-coded as yes. The percentages were then added together to reflect yes or no answers.

Missing Data

Missing data are a problem in virtually all survey research and how it is dealt with can have consequences for research results (Enders, 2010). There are three types of missing data: missing completely at random (MCAR), missing at random (MAR), and missing not at random (MNAR). MCAR happens when the data are missing without a pattern. That is, "the data are MCAR when the probability of a missing data on variable X is unrelated to other measured variables and to the values of X itself" (p. 7). Enders (2010) calls this missing data haphazard therefore the 'missingness' is not related to the data.

In this study, missing data are not included in the analysis of statistics, as they in no way affect the results, because the percentage of the respondents and the questions answered are sufficient to finding solutions to the research problem.

Summary

In this chapter, a description of the methodology employed in this research was put forward. The procedures used to collect the data from the school administrators were detailed. As

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well, a description of how the data were prepared and analyzed using statistical package for the

social science (SPSS 22.0) was described.

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Chapter Four

Results

Introduction

This chapter provides the results from the surveys obtained from the participants, based on the three research questions outlined in chapter one.

- Question One: What are the ICT resources available to school administrators?

- Question Two: To what extent are the school administrators trained to use ICT resources for their jobs?

- Question Three: To what extent are school administrators using the ICT resources to manage the complex nature of their jobs?

First, I present the demographic data collected based on the gender, qualifications, years of experience. Next, I answer the three research questions respectively, based on the participant responses.

Data Presentation

Sixty-two surveys were distributed to the school administrators in Ekiti South Senatorial District public high schools Ekiti State, Nigeria. I had 62 surveys returned for a 100% response rate. Table 1 below describes the number of participants by gender, including their qualifications and years of experience. The data collected show that sixty (60) participants described their gender, two (2) participants did not check the box, and this is treated as missing data since their gender was not known. All sixty-two participants gave their qualifications, fifty-seven (57) described their years of experience, while five (5) did not check the box; this is also treated as missing data.

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Table 1 Statistics of gender, qualifications and years of experience

	Gender	Qualifications	Years of Experience.
Valid	60	62	57
Missing	2	0	5

Table 2 below presents the data collected on gender of those who participated in the research. The data show that (37.1%) male, (58.1%) female, (1.6%) other gender participated. As stated in the Table 1 above, two participants (3.2%) were missing because of not attempting the checkbox. The result of Table 2 below shows that the selected research area had more female administrators than male.

Table 2 Gender Data and Results

		Frequency	PercentValid
Valid	Male	23	37.1
	Female	36	58.1
	Other	1	1.6
	Total	60	96.8
Missing		2	3.2
Total		62	100.0

The Table 3 below present's data collected on the qualification of the participants. The qualifications are not analyzed in this research, but it is important, as it would help to know the educational background of study participants. The data show that the highest qualification that many of the participants obtained are a bachelor degree (B.Sc, , B.Ed, B.A, and B.Tech), while

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only a few of the respondents have a masters degree (M.Ed, and M.A), professional graduate

diploma in education (PGDE), and national college of education (NCE).

Table 3 Qualifications Data and Results

	Frequency	Percent
Valid	4	6.5
-	1	1.6
B.A (Ed)	1	1.6
B.A & PGDE	2	3.2
B.Agric	1	1.6
B.Ed	16	25.8
B.Ed & M.Ed	6	9.7
B.Ed Economics	1	1.6
B.Sc	6	9.7
B.Sc (Ed)	8	12.9
B.Sc (Ed) Biology	1	1.6
B.Sc (Pol. Sc)	1	1.6
B.Sc & PGDE	2	3.2

Countination of table 3…

	Frequency	Percent
H.N.D & PGDE	1	1.6
B.Tech	1	1.6
M.A Peace and		
Conflict Studies	1	1.6
M.Ed	2	3.2
N.C.E	1	1.6
N.C.E & B.Ed	1	1.6
N.C.E & B.Sc (Ed)	2	3.2
N.C.E, B.Ed & M.Ed	3	4.8
Total	62	100.0

The data in Table 4 below shows the participant's years of experience as categorized: 31 years and above (16.1%), $21-30$ years (17.7%), $11-20$ years (32.3%), $1-20$ years (25.8%). In this research, years of experience are not important, as they have no effect on the research question.

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Table 4 Years of Experience Data and Results

		Frequency	Percent
Valid	31 and above	10	16.1
	21-30	11	17.7
	11-20	20	32.3
	1-10	16	25.8
	Total	57	91.9
Missing System		5	8.1
Total		62	100.0

In the next section, first, I describe the resources available, the computer usage and finally access to computers, and then I discuss each research question separately.

Research Question Data and Results

Statistically, the data collected show that 57 participants had responded to the first question that asked what resources are available to the school administrators. Five (5) participants were treated as missing in question 1; this is because of the few questions that were attempted. Fifty-five participants responded to the question asking the extent of the training that school administrators had to use the available ICT resources for their jobs, seven (7) respondents were treated as missing; the reason was that no response was received from the participants. Fifty-seven (57) participants responded to the third question asking the extent to which school

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administrators are using the ICT resources to manage the complex nature of their jobs; five (5) participants were missing on this question as well.

Table 5 Statistics of the Research Questions

		Resources	Computer use	Have computes
N	Valid	57	55	57
	Missing	5	7	5
	Mean	2.56	2.44	1.07
	Median	1.00	2.00	.00
	Std. Deviation	2.91	2.12	1.69
	Minimum	.00	.00	.00
	Maximum	11.00	8.00	6.00

Question 1:   What are the ICT resources available to school administrator?

Fourteen questions were asked to determine the resources available to the school administrators in Ekiti South Senatorial District public high schools. Through the data collected, the total percentage of the respondents starts from question 1 through question 11 were (91.9%) and (8.1%) were missing. These questions were summed to find the average number of resources available to administrators.

Table 6 What are the ICT resources available to school administrators?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	17	27.4	29.8	29.8
	1.00	12	19.4	21.1	50.9
	2.00	8	12.9	14.0	64.9
	3.00	4	6.5	7.0	71.9
	4.00	4	6.5	7.0	78.9
	5.00	1	1.6	1.8	80.7
	6.00	3	4.8	5.3	86.0
	7.00	1	1.6	1.8	87.7
	8.00	5	8.1	8.8	96.5
	9.00	1	1.6	1.8	98.2
	10.00	-	-	-	-
	11.00	1	1.6	1.8	100.0
	Total	57	91.9	100.0	
Missing	System	5	8.1		
Total		62	100.0		

The above table is very significant to this research as it focuses on the resources that were available for the school administrators. As I have explained above the use of computers offers a school administrator a better means for storing lasting information that can easily be updated on personal data of staff/students. The data collected show that 1.6% have a desktop computer and

Laptop; this is at a very low rate as these facilities are key and helpful in making administrative tasks easier. It is also believed that ICT provides a better way for the school heads in storing an inventory of school properties that can be updated at any point in time, with the use of computers; administrators can easily keep confidential information secret.

School leaders communicate widely and get information from colleagues in other parts of the world with the use of internet connection; data collected shows the availability at a 24.2% rate and cell phones at 16.1%. Research has shown the importance of ICT in school administrations, one of these is the printer; it helps in printing of official documents, presentations, students' and teacher's reports. The data collected show that 9.7% have printers in their schools. USB (memory) sticks, photo scanners, radio, and television are reported to be available at 4.8% of schools, interactive whiteboards in 6.5% of schools, while 3.2% of the participants have projectors and photocopying machines.

What are the ICT resources available to school administrators in Ekiti State, Nigeria?

In answering this question, data on the availability of ICT resources were collected from the school administrators using the questionnaire. The available resources are desktop computers, laptops, internet connection, cell phones, printers, USB (memory) sticks, interactive whiteboards, projectors, photocopying machines, photo Scanners, radio, television, and telephone facsimile machines. The data were collated and analyzed using frequency counts and percentages. The findings are presented in Table 7 below.

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Table 7 ICT resources available to school administrators

S.No	Type of resources	Percent			
		No	Yes	Missing	Total
1.	Desktop computer	64.5	33.9	1.6	100.0
2.	Laptop	56.5	43.5	0.0	100.0
3.	Internet connection	80.6	17.7	1.6	100.0
4.	Cell phone	45.2	51.6	3.2	100.0
5.	Printer	58.1	41.9	0.0	100.0
6.	USB (memory) stick	77.4	17.7	4.8	100.0
7.	Interactive Whiteboard	85.5	9.7	4.8	100.0
8.	Projector	87.1	8.1	4.8	100.0
9.	Photocopying Machine	72.6	27.4	0.0	100.0
10.	Photo Scanner	90.3	6.5	3.2	100.0
11.	Radio and Television	77.4	19.4	3.2	100.0

As indicated in the Table 7 above, the data collection shows that many of the school administrators in the selected local governments are lacking in the availability of information communication and technology (ICT) resources. The data collected show 33.9% of the administrators have desktop computers, this is an indication that desktop computers are not fully provided to the school administration in Ekiti State as 64.5% responded No to the question. Laptops were not available to 56.5% as that number said No. Internet connection for the school administrators was available in 80.6%. Cell phones were owned by 51.6%, printers by 41.9%,

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USB (memory) sticks by 77.4%. Only 10% of schools had interactive white boards, 27.4% had photocopying machines, 6.5% had photo scanners and 19.4% had radio and television.

Part of the questions in Section 2 were designed to find out if the school administrators think that any of the above listed ICT resources are needed for their administrative job, 95.2% of the participants believed that ICT resources are needed to perform their job. When asked do you find your work more enjoyable and easier with the use of ICT, 88.7% said Yes that it was more enjoyable to use ICT resources. When asked do you think using ICT makes you more productive and 93.5% believed that ICT would make them more productive.

Table 8 Do you think any of above ICT resources are needed for your administrative job?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	3.2	3.3	3.3
	Yes	59	95.2	96.7	100.0
	Total	61	98.4	100.0	
Missing	System	1	1.6		
Total		62	100.0		

The percent of the people who answered yes in the Table 8 above is 96.7%. This is a good response in this research, because it shows the level of interest of the school administrators about having the resources, as they believed that they would help them perform effectively in their administrative jobs.

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Table 9 Do you find your work more enjoyable and easier with the use of ICT resources?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	4	6.5	6.8	6.8
	Yes	55	88.7	93.2	100.0
	Total	59	95.2	100.0	
Missing	System	3	4.8		
Total		62	100.0		

The valid percent shows the participants at a 93.2% positive response rate to the question; this is an indication that administrators will find their work easier and enjoyable with the use of ICT resources.

Table 10 Do you think using ICT makes you more productive?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2	3.2	3.3	3.3
	Yes	58	93.5	96.7	100.0
	Total	60	96.8	100.0	
Missing	System	2	3.2		
Total		62	100.0		

The data in the Table 10 above are a good response to this question as they clarified the opinion of the participants, the response is at 96.7% positive that ICT will make them more productive.

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Question 2:   To what extent are the school administrators trained to use the ICT resources for their jobs?

Through data collected, the extent of the school administrators on the training received to use the available ICT resources for their jobs was described. Seven (7) questions were asked in total; the percentage of the respondents was 91.9% with 58.1% who indicated training in ICT resources.

Table 11 To what extent are the school administrators trained to use the ICT resources for their jobs?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	36	58.1	63.2	63.2
	1.00	5	8.1	8.8	71.9
	2.00	5	8.1	8.8	80.7
	3.00	2	3.2	3.5	84.2
	4.00	6	9.7	10.5	94.7
	5.00	2	3.2	3.5	98.2
	6.00	1	1.6	1.8	100.0
	Total	57	91.9	100.0	
Missing	System	5	8.1		
Total		62	100.0		

The data in the Table 11 above are very important as they present a clear description of the participant's level of training in using ICT; the findings are important because the results will help in providing a solution to the lack of training on using ICT resources. It is believed that with proper training and skills in computer use, an administrator can retrieve information for decision-making, and deliver interesting papers during workshops/seminars using power point display.

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To what extent are the school administrators trained to use ICT resources for their jobs? Seven (7) questions were designed to reveal this. In answering these questions, data on the responses of the administrators to what extent are they trained to use ICT resources for their jobs were collated and analyzed using frequency counts and percentages, SD = strongly disagree, D = disagree, A = agree, SA = strongly agree. The findings are presented in Tables below.

Table 12 To what extent are the school administrators trained to use ICT resources for their jobs?

S.N	Questions	Responses			
		S.D	D	A	S.A
1.	Do you have any training on how to use computers and other ICT resources?	4.8	6.5	48.4	38.7
2.	Are you satisfied with the training you have received?	17.7	41.9	17.7	22.6
3.	Do you have any training on the use of Microsoft Word and Excel?	12.9	6.5	54.8	25.8
4.	Were you trained how to set up a multimedia projector and computer?	37.1	32.3	8.1	22.6
5.	Do you know how to use any software (e.g. staff and payroll entry)?	35.5	24.2	29	11.3
6.	Were you trained how to use the computer to keep records?	21	17.7	33.9	22.6
7.	Were you trained to create a presentation (e.g. using Microsoft PowerPoint)?	21	27.4	22.6	25.8

Most participants, 87.1%, answered yes that they have training on how to use computers and other ICT resources while 11.3% of the participants responded that they do not have training on how to use computers and other ICT resources.

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Are you satisfied with the training you have received? All the 62 participants responded, and a total of 40.3% participants are satisfied with the training they have received, while 59.6% responded no, that they are not satisfied with the training they have received on the use of computers and other ICT resources.

Do you have any training on the use of Microsoft Word and Excel? All the 62 participants responded to this question and 80.6% participants responded that they have been trained on the use of Microsoft Word and Excel; 19.4% of the participants answered no, that they do not have training on the use of Microsoft Word and Excel.

The findings show that only 30.7% of the administrators know how to set up a multimedia projector and computer, while 69.4% responded no to the question, that they do not know how to set up a multimedia projector and computer.

As indicated in Table 13 above, all the 62 participants responded to the question: Do you know how to use any software (e.g. staff and payroll entry)? The findings show that only 40.3% know how to use software for staff and payroll entry processing, while (59.7%) of the participants responded no, that they do not know how to use any of this kind of software (e.g. staff and payroll entry).

The next question was designed to determine the level of administrator training in the use of computers to keep records of their work. In answering this question, 95.2% responded and 56.5% responded yes to having training on how to use computers to keep records, while 38.7% participants answered no, that they were not trained on how to use computers to keep records.

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Were you trained to create a presentation (e.g. using Microsoft PowerPoint)? The percentages of the respondents who replied yes were 48.4% and respondents who said no were 48.4% respectively. To obtain additional clarification if respondents selected yes to question one (1) above the following question was asked: What type of training do you feel you need for computers and other ICT equipment?

In answering this question, the data collected showed the percentage of the people who agree to the question. This question seemed interesting to all the participants as they all specified the type of computer training they needed to perform their administrative job. Only 6.5% specified their interest in programming training, networking, and SQL while 3.2% want to be trained on staff and payroll entry. Other participants stated the type of training they needed for computers and other ICT equipment as follows:

1. A comprehensive and up-to-date web designer training;

2. Administrators should be trained on how to use computer to keep records;

3. Basic computer training on how to use Microsoft Excel, Word and PowerPoint, and internet browsing; and training on how to set up and use multi-media projectors for presentations.

Question 3:   To what extent are school administrators using the ICT resources to manage the complex nature of their jobs?

Table 13 below shows the frequency table of the data collected in response to the Nine (9) questions that were asked to know the percentage of the administrators that have computers and 88.7% responded that they have computers.

Table 13 To what extent are school administrators using the ICT resources to manage the complex nature of their jobs?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	None	14	22.6	25.5	25.5
	1.00	2	3.2	3.6	29.1
	2.00	20	32.3	36.4	65.5
	3.00	4	6.5	7.3	72.7
	4.00	6	9.7	10.9	83.6
	5.00	2	3.2	3.6	87.3
	6.00	4	6.5	7.3	94.5
	7.00	2	3.2	3.6	98.2
	8.00	1	1.6	1.8	100.0
	Total	55	88.7	100.0	
Missing	System	7	11.3		
Total		62	100.0		

To what extent are school administrators using the ICT resources to manage the complex nature of their jobs? The questions were designed using a Four-point Likert scale.

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Table 14 How often do you use the internet to do the following at work?

S.N	Use of the internet	Never	Some of the time	Most of the time	Always
			Responses		
1	Browse the Internet for administrative work (e.g. preparing presentation)?	53.2	21.0	12.9	11.3
2	Use e-mail for communication with your staff and other administrators about schoolwork?	83.9	8.1	3.3	4.8
3	Use e-mail to send messages and receive messages about your students and teachers?	80.6	12.9	1.6	-
4	Download, upload, or browse material from the ministry of education website (e.g. latest news, exams timetable, syllabus or other reading materials)?	74.2	14.5	4.8	4.8
5	Browse the Internet for fun (such as chatting or watching videos, e.g. Facebook, Skype, YouTube)?	33.5	32.3	16.1	14.5
6	Check the Ministry of Education website for announcements or any updates?	72.6	16.1	1.6	8.1

When asked how often they used the internet at work for various functions, most indicated they never used them. Table 14 shows that 53.2 percent of the school administrators

have never browsed the internet for their job, 21.0% responded to some of the time, while those that browse the internet most of the time and always are below 13.0 percent.

The second question was set to know if the school administrators were using email for communication; 83.9% have never used email to communicate with their staffs and other school administrators, 8.1% use e-mail some of the time, 3.3% use e-mail most of the time, while 4.8% use e-mail to communicate with their staff and other administrators about schoolwork always. On the other hand, 80% of administrators responded to never for question 3: How often do you use email to send messages and to receive messages from your students and teachers? To the question: How often do you download, upload, or browse material from the ministry of education website 74.2% answered negatively, and 72.6% responded that they never check the ministry website for announcements or updates. It shows in the table that responses to those who use these ICT sources some of the time, most of the time, and always and rated low as 1.6% and as high as 32.3%.

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Table 15 Do you use computers to do any of the following work?

S.N	Questions	Responses	
		Yes	No
1	To check the absence of teachers	1.6	96.4
2	To check the absence of students	1.6	96.8
3	To monitor timetables	4.8	93.5
4	To monitor lesson plans	6.5	91.9
5	Administration of student data		
	(e.g. Term text and exams)	12.9	85.5
6	To disseminate information to teachers	6.5	91.9
7	For payroll and financing of school activities	29.0	67.7
8	For monitoring of school properties		
	(e.g. Laboratory equipments, school store, library		
	and staff common room	12.9	83.9

In answering the questions in the Table 15, the data collected show low percentages of administrators who answer (Yes) to all the questions, those that answer (No) were as high as 96.8% in all the questions.

Table 16 below was also designed on a yes or no option to know if the administrators have or use special software for any of the questions in the table. The data collected show that most administrators do not have specialized software for General Administration, Payroll and Financial Accounting, Administration of Student Data, Inventory Management, Personnel

Records management, or Library System. On the other hand, 66.1% think it is important to have

specialized administrative software and 69.4% think is important for them to work with a

computer.

Table 16 Do you have or use special software for any of the following?

S.N	Questions	Responses	
		Yes	No
1	General administration?	12.9	82.3
2	Payroll and financial accounting?	27.4	67.7
3	Administration of student data?	16.1	79.0
4	Inventory management?	21.0	74.2
5	Personnel records maintenance?	17.7	75.8
6	Library system?	9.7	85.5
7	Do you think it is important to have specialized administrative software?	66.1	29.0
8	Is it important for you to work with a computer?	69.4	24.2

One of the questions that was asked in section three (3) sought to know what the school

administrators felt that they needed if they felt that computers were not important to perform

their daily administrative work. Most of the participants responded to the question that

computers are very important and are needed to perform effectively in their daily administrative

jobs. Many of them believed that working with computers and other ICT equipment such as

scanners, printers, projectors, USB (memory) sticks, or photocopier machines will make them more effective and efficient in performing their jobs. A few of them believed that they could do their jobs without using computers.

Do you think that ICT can help solve your administrative work problems? The response rate to this question was 91.9% with several emphasizing the importance of ICT equipment. This is consistent with findings referenced in the literature review. The data collected give insights to some of the areas that the respondents believe ICT is needed and that can help solve administrative work problems. The data collected show that they feel that they need computers and other ICT equipment for data storage, monitoring school activities, updating student and teacher bio-data, sending and receiving emails, disseminating information within their schools and to the other administrators. Some even believed that having payroll software will help in the financial administration in the school.

There is a high response rate to the question: Do you think that ICT can improve your administrative skills and knowledge? Respondents answered positively at a rate of 90.3%. Some of the areas which administrators think ICT will improve them were highlighted in the data collected. They believed that ICT would make them more effective and efficient in carrying out their administrative duties, for speed and accuracy, easy access of information and wider knowledge of the latest development in the educational sectors. ICT will improve my human relations and communication skills with teachers, students, and within the ministry of education. The significance of these responses is discussed in the following chapter.

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Chapter Five

Summary of Findings, Suggestions and Conclusions

The purpose of the study was to examine ICT integration in school administration in Ekiti South Senatorial District of Ekiti State, Nigeria. To accomplish this purpose, surveys were distributed to the administrators of selected high schools. A detailed introduction and history of education in Nigeria was given in chapter one of the study. This was enhanced by looking at ICT globally, how important ICT is in educational sectors and other economic sectors. This study focused more on what ICT means in school administration, its importance, how it is being integrated, the problems with ICT in the study area, and finally the research questions.

In Chapter Two, the literature of ICT integration into school administration in Nigeria, and other countries such as Canada, the USA, and the UK was reviewed. Approaches to ICT use by Stewart (1982), and other researchers such as Okumbe (1998), and (Sergiovanni et al., 1992) were reviewed. An overview of educational administration in Nigeria and Canada was also described in detail. In addition, some areas in which ICT can be used for effective educational administration were stated in relations with how the survey was designed.

Chapter Three of this research provides a description of the methodology, study design, how the data were collected, presented, and analyzed. Chapter 4 presents the data collected for the research and detailed explanation was given for every section of the questionnaire.

The response rate was high from the participants to all the questions asked in the survey, through the data collected from the ICT resources available to school administrators; these were presented and analyzed in Table 6. From the results, it could be concluded that the

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administrators of the study high schools in Ekiti South Senatorial District were not sufficiently equipped with ICT facilities. It is evident in the study that ICT was not adequately provided to the school administrators. The study seems important to most of the participants because they believed that ICTs are needed for their jobs, and would make them more productive. The results agree with some of the findings in past research that say, with ICT, administrators have easier access in collating results of the students in Microsoft Excel, with maintaining accurate school records especially in the area of continuous assessment, and also to make it easy to carry out online registration of students for WAEC/NECO.

Research Questions and Recommendations

It is, therefore, recommended that adequate provision of ICT resources be made available to school administrators in Southwest Nigeria. The Ministry of Education through the state government should play a lead role to make sure that the federal government provides and channels ICT resources in accordance with educational standards, needs, and desires of the state in order to facilitate appropriate and effective administrative performance by school administrators. In addition, private company owners, parents, and other organizations should also assist educational institutions by donating to support the procurement of the equipment.

The International Institute for Communication and Development, in its study ICTs for Education (2012) says, "The active participation of the government is essential to ensure the sector-wide introduction of ICT in education. Government involvement is critical to source additional investments in the ICT infrastructure; to integrate ICT into the curriculum, and to facilitate the widespread diffusion of materials" (p. 11).

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The second question is about the extent of the training the school administrators have to use ICT resources for their jobs. The participants showed their interest in question 2 by responding at a very high rate (95.2%), and their responses give an indication of the level of satisfaction to training received in the use of Microsoft Word, PowerPoint, and Excel, multimedia projector, software for staff and payroll entry, and other ICT resources. It also gives a direction to the types of training they need to perform their administrative jobs. As shown in Table 13, 87.1% of administrators answered yes that they have training, while 11.3% responded no. Forty-point three percent (40.3%) of administrators are satisfied with the training they received on the use of computers and other ICT, while 59.6% responded no (are not satisfied with the training they received).

It can be concluded that study participants feel that they lack or do not have enough training in the use of computers and other ICT resources. As well, they are not very satisfied. Most of the participants believe that skills and ability to use ICT very well would expand their knowledge and enhance their productivity. Tinio (2002) observed, "Improving the quality of education and training is a critical issue, particularly at a time of educational expansion. ICTs can enhance the quality of education in several ways: by increasing learner motivation and engagement, by facilitating the acquisition of basic skills, and by enhancing teacher training" (pg. 7).

The FRN (2004) in National Policy on Education made it clear that "Government shall provide necessary infrastructure and training for the integration of ICT in advancing knowledge and skills in the modern world" (Amaghionyeodiwe & Osinibi, 2006, p. 34). In line with this

statement, I recommend that the policy makers should plan computer programs to train the school administrators, help them to understand the use of computers for complex tasks of their jobs, and to provide emphasis to the policy on training for administrators in the effective use of ICT in their work.

Finally, continuous training must be organized so that school administrators can continue to learn how to use hardware and software applications within the context of their administrative and instructional responsibilities; all these can only be achieved through the support of the federal government.

The third research question asks, to what extent are school administrators using the ICT resources to manage the complex nature of their jobs? It is divided into three (3) parts. The findings show that school administrators are not using the internet very often. This is believed to have negative effects on their performance because they have limited access to information, and this lack of resources prevents them from communicating via the internet. This is another area in which that governments in the state and across the nation need to make improvements to increase internet connectivity for school administrators, and to organize and provide training on how to access information needed for their administrative jobs.

Findings in this study are similar to those of Ben-Zion Barta, Moshe, and Yaffa (1995), Kumar, Rose, and D'Silva (2008), and Krishnaveni and Meenakumari (2010). Study participants have low rates of use of computers for most of their administrative core jobs as stated by school administrators in response to this survey. Enhancing the usage of ICT in these functional areas and especially for general administration is encouraged as it would help reduce the complexity of

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their administrative job. The last part of this study revealed that having special software for those tasks listed in Table 16, will add to the skills and knowledge of school administrators, and ought to improve their daily administrative performance.

In conclusion, this study could serve as a basis for integrating ICT into school administration, and for policy makers and educational planners. It can hopefully inform the development of a policy capable of more effectively deploying ICT resources, and to provide evidence of the perceived need to train school administrators using workshops, seminars, and computer certificate programs. Therefore, the federal government should ensure that ICT policy statements are translated into reality. An ICT policy implementation commission should be created, and the commission should be funded and given the power to provide ICT facilities in the schools and to monitor their use for school administrators in Ekiti State, and across other states in Nigeria. In addition, I recommend that future research replicate this study and make use of some of the findings in this study.

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References

Aboderin, O. S. (2009). *The status of information and communication technology (ICT) in secondary schools in Ondo state.*

Acero .et. al (2000) Principles and Strategies of Teaching. Rex Bookstore, pp. 638 - 639.

Adeoye, Y. M., Oluwole, A. F., & Blessing, L. A. (2013). Appraising the role of information communication technology (ICT) as a change agent for higher education in Nigeria. *International Journal of Educational Administration and Policy Studies, 5*(8), 177 - 178. doi:10.5897/IJEAPS12.027

Adetuyi, P. A., & Oluwatayo, J. A. (2012). Information and communication technology (ICT) in the Nigerian educational system. *Mediterranean Journal of Social Sciences, 3*(3), 2

Adeyemi, T. O. (2007). Research methods and theses writing in educational studies. *New Haven Publishers,* 160-174.

Adeyemi, T. O., & Olaleye, F. O. (2010). Information communication and technology (ICT) for the effective management of secondary schools for sustainable development in Ekiti state, Nigeria. *American-Eurasian Journal of Scientific Research, 5*(2), 107-108.

Information communication technology (ICT) integration into school administration...

Amaghionyeodiwe, L. A., & Osinibi, T. S. (2006). The Nigerian educational system and returns to education. *International Journal of Applied Econometrics and Quantitative Studies, 3*(1), 31-32.

Asiabaka, I. P. (2010). Access and use of information and communication technology (ICT) for administrative purposes by principals of government secondary schools in Nigeria. *2*(1), 44.

Ben-Zion Barta., et.al. (1995)," Information Technology in Educational Management", Chapman and Hall, London.

Blurton, C. (1999). *New directions of ICT-use in education.* (UNESCO's World Communication and Information).

Creswell, J. W. (2012). Educational research: Planning, conducting, and evaluating quantitative and qualitative research. Upper Saddle River, New Jersey: Pearson Education, Inc.

Ehiametalor, T. E. (1985). Primary school principals' performance in critical administrative task areas; *The Journal of Negro Education, 54*(4), 566.

Enders, C. K. (2010). *Applied missing data analysis.* New York: The Guilford Press.

Federal Republic of Nigeria (Ed.). (1981). National policy on education. (revised). (Revised ed.). Lagos: NERC/Federal Government Press.

Information communication technology (ICT) integration into school administration...

FRN (Ed.). (2001). *Federal republic of Nigeria; Obansanjo's economic direction 1999 - 2003*. Abuja: Federal Government Press.

Hassell, S. H., & Baldauf, D. H. (2008). Information and communication technology use by North Carolina school library media specialists: Perceived competencies and barriers.*11*, 2.

Hossein, Z. P. (2008). Administration of faculties by information and communication technology and its obstacles. *International Journal of Education and Information Technologies, 2*(1), 24.

International Institute for Communication and Development (IICD). (2012). ICTs for education: Impact and lessons learned from IICD-supported activities., 53.

Johanne, P., & David, B. (2004). Connectivity and ICT integration in Canadian elementary and secondary schools: First results from the information and communications technologies in schools survey, 2003 - 2004. [What is the Information and Communications Technologies in the Schools Survey?] , 6-7.

Kimani, G. N. (2010). Educational management. *African Virtual University,*

Kirschner, P., & Wopereis, I. (2003). Mindtools for teacher communities: A European perspective. *Technology, Pedagogy and Education., 12*(1), 106.

Information communication technology (ICT) integration into school administration...

Krishnaveni, R., & Meenakumari, J. (2010). Usage of ICT for information administration in higher education institutions. *International Journal of Environmental Science and Development, ISSN: 2010-0264, 1*(3), 282-286.

Leithwood, K., Day, C., Sammons, P., Harris, A., & Hopkins, D. (2006). *Successful school leadership what it is and how it influences pupil learning.* (No. RR800). University of Nottingham: National College for School Leadership.

Marczyk, G. R., DeMatteo, D., & Festinger, D. (Eds.). (2005). *Essentials of research design and methodology*. Hoboken, New Jersey.: John Wiley & Sons, Inc.

Marlow, S., & Minehira, N. (2011). Principals as curriculum leaders: New perspectives for the twenty-first century, 76.

Muhammad S. S., Babawuro, S., Lokman, M. T., Yahaya, B., Noraffandy, Y., & Abdulsalam, Y. G. (2011). Applicability of information and communication technologies (ICTs) in the administration of technical and vocational education and training (TVET) in a knowledge-based society. *International Journal of the Physical Sciences, 6*(28), 6515. doi:10.5897/IJPS11.658

Nwankwo, J. I. (1987). In Ezewv E. E. (. (Ed.), *"School administration and human learning in school"* (Social Psychological Factors of Human Learning in School. ed.). Onisha: Leadway Books Limited.

Information communication technology (ICT) integration into school administration...

Okebukola O. (1996). Management of secondary schools yesterday, today and tomorrow. *Paper Presented at the Annual Conference of Nigeria Secondary Schools Principals.* Lagos, Nigeria.

Okereke, C. (2008). Quality assurance in teacher selection among private secondary schools in Owerri municipal, Imo state for effective implementation of the UBE. *Journal of Curriculum Organization for Nigeria,* 37-44.

Okumbe, J. A. (Ed.). (1998.). Educational management: Theory and practice. (1st ed.). Nairobi: Nairobi University Press.

Olayemi, A. O., & Omotayo, K. (2012). ICT adoption and effective secondary school administration in Ekiti-state. *European Journal of Educational Studies, 4*(1), 60.

Pedro, H. K., Enrique, H. S., Ernesto, L. M., & Lucio, R. F. (2004). Technology in schools: Education, ICT and the knowledge society, 4.

Pelgrum, W. J., & Law, N. (2003). ICT in education around the world: Trends, problems and prospects. *UNESCO: International Institution for Educational Planning,* 7.

Sergiovanni, T. J., Burlingame, M., Coombs, F. C., & Thurston, P. T. (1992). In Ray Short (Ed.), *Educational governance and administration* (Third ed.). Boston: Allyn and Bacon.

Spillane, J. P., & Coldren, A. F. (2011). *Diagnosis and design for school improvement. using a distributed perspective to lead and manage change*. New York: Teachers College Press.

Information communication technology (ICT) integration into school administration...

Stewart, R. (Ed.). (1982). The relevance of some studies in managerial work and behavior to leadership studies. Leadership: Beyond establishment views. (In J. G., Hunt, M., Sekaran, & C. A., Schreisheim (Eds.), ed.). Southern Illinois University Press: Carbondale, IL.

Taole, M. J. (2013). Exploring principals' role in providing instructional leadership in rural high schools in South Africa. *Stud Tribes Tribals, 11(1): 75 - 82.*

Tinio, V. L. (2002). ICT in education. New York, United Nations Development Programme, 6. Retrieved on http:www.eprmers.org.

Udey, F. U., Ebuara, V. O., Ekpoh, U. I., & Edet, A. O. (2009). Management and administration of nigerian education system: Problems, challenges, and the way forward. Being a paper presented at the 11th international conference of educational management association of south africa (EMASA) 7th – 9th august 2009.*11*(7 - 9), 4-5.

Umeagukwu, E. O., & Etuh B. N. (2014). An analysis of ICT impact on the curricular of major nigerian universities in the last ten years 2003-2013. *International Journal of Science and Technology, 3*(1), 61.

Uwadia, C. (2009). Is ICT a sine-qua-non to modern university management. . *Being an Address Delivered at 46th Edition of the Business Meeting of the Committee of Registrars of Nigerian Universities (CORNU). may 2nd – 4th.* Registrars of Nigerian Universities (CORNU).

Wellington, S. (2013). Management and administration in education: What do school heads do? A focus on primary school heads in one district in Zimbabwe. *International J. Soc. Sci. & Education, 3*(3), 635-638. doi:ISSN: 2223-4934

Yusuf, M. O., & Onasanya, S. A. (2004). Information and communication technology ICT and technology in tertiary institution in: Ogunsakin EA (ed), teaching in tertiary institutions ilorin.

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Appendix

Appendix 1 Request for completion of research questionnaire

QUESTIONNAIRE

Memorial University of Newfoundland

St. John's, NL

Canada.

Dear Respondents,

<u>REQUEST FOR COMPLETION OF RESEARCH QUESTIONNAIRE</u>

I am Israel Sunday OYENIRAN, a Master's student at Memorial University, St. John's,

Newfoundland, Canada.

I am undertaking research on the information communication technology (ICT) integration in

school administration: a case study of secondary schools in Ekiti State, Nigeria.

It is on this note that I request you to answer the attached questionnaire. This exercise is solely

for academic purposes. I therefore guarantee that the information supplied will be treated

confidentially and used only for this study.

Participation in this research study is voluntary. At any point you may choose not to participate.

If you decide to participate in this research, you can withdraw at any time prior to the completion

and submission of the completed survey. If you decide not to participate in this study or if you

withdraw from participating at any time, you will not be penalized.

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Participation is not a school district or employment requirement; superiors and other administrators will not know who does or does not participate; participants should skip any questions they are uncomfortable answering.

It will take approximately 30 minutes to complete this survey. Your responses will be confidential and I will not collect identifying information such as your name or school.

The proposal for this research has been reviewed by the Interdisciplinary Committee on Ethics in Human Research and found to be in compliance with Memorial University's ethics policy. If you have ethical concerns about the research, such as your rights as a participant, you may contact the Chairperson of the ICEHR at icehr.chair@mun.ca or by telephone at 709-864-2861.

Thanks for your co-operation.
Yours faithfully,

Israel Sunday OYENIRAN

INFORMATION COMMUNICATION TECHNOLOGY (ICT) INTEGRATION IN SCHOOL ADMINISTRATION: A CASE STUDY OF SECONDARY SCHOOLS IN EKITI STATE, NIGERIA.

SECTION 1

Please check ☐ **where appropriate**

Gender: ☐ Male   ☐ Female   ☐ Others

Qualification: _____

Years of experience: 31 – above ☐   21 – 30 ☐   11 – 20 ☐   1 – 10 ☐

SECTION 2

1. **What are the ICT resources available to school administrators?**

   Are any of these devices available for you to use in your office?

	Yes	No
a. Desktop computer	☐	☐
b. Laptop	☐	☐
c. Internet connection	☐	☐
d. Cell phone	☐	☐
e. Printer	☐	☐
f. USB (memory) stick	☐	☐

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g. Interactive Whiteboard ☐ ☐

h. Projector ☐ ☐

i. Photocopying Machine ☐ ☐

j. photo Scanner ☐ ☐

k. Radio and Television ☐ ☐

l. Do you think any of above ICT resources are needed for ☐ ☐

your administrative job?

m. Do find your work more enjoyable and easier with the use of ICT ☐ ☐

resources?

n. Do you think using ICT makes you more productive? ☐ ☐

SECTION 3

In all tables below S.D = Strongly Disagree, D = Disagree, A = Agree, S.A = Strongly Agree

2. To what extent are the school administrators trained to use ICT resources for their jobs?

S.N	Please state your opinions on the scale	S.D	D	A	S.A
1	Do you have any training on how to use computers and other ICT resources?				
2	Are you satisfied with the training you have received?				
3	Do you have any training on the use of Microsoft Word and Excel?				
4	Were you trained how to set up a multimedia projector and				

	computer?				
5	Do you know how to use any software (e.g. staff and payroll entry)?				
6	Were you trained how to use the computer to keep records?				
7	Were you trained to create a presentation (e.g. using Microsoft PowerPoint)?				

If you selected agree or strongly agree to question one (1) above: What type of training do you feel you need for computers and other ICT equipment?

_____

_____

3. To what extent are school administrators using the ICT resources to manage the complex nature of their jobs?

How often do you use the internet to do the following at work?

S.N	Please state your opinions on the scale	Never	Some of the time	Most of the time	Always
1	Browse the Internet for administrative work (e.g. preparing presentation)?				
2	Use e-mail for communication with your staff and other administrators about schoolwork?				

3	Use e-mail to send messages and receive messages about your students and teachers?				
4	Download, upload, or browse material from the ministry of education website (e.g. latest news, exams timetable, syllabus or other reading materials)?				
5	Browse the Internet for fun (such as chatting or watching videos, e.g. Facebook, Skype, YouTube)?				
6	Check the Ministry of Education website for announcements or any updates?				

	Yes	**No**

Do you use computers to do any of the following work?

a. To check the absence of teachers ☐ ☐

b. To check the absence of students ☐ ☐

c. To monitor timetables ☐ ☐

d. To monitor lesson plans ☐ ☐

e. Administration of student data (e.g. Term text and exams) ☐ ☐

f. To disseminate information to teachers ☐ ☐

g. For payroll and financing of school activities ☐ ☐

h. For monitoring of school properties (e.g. Laboratory equipments, school ☐ ☐
store, library and staff common room)

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	Yes	**No**
Do you have or use special software for any of the following?		
a. General administration?	☐	☐
b. Payroll and financial accounting?	☐	☐
c. Administration of student data?	☐	☐
d. Inventory management?	☐	☐
e. Personnel records maintenance?	☐	☐
f. Library system?	☐	☐
g. Do you think it is important to have specialized administrative software?	☐	☐
h. Is it important for you to work with a computer?	☐	☐

i. If (NO) to the above question, what do you need to perform your daily administrative work?

_____

_____

Do you think that ICT can help solve your administrative work problems? Yes ☐ or No ☐

If yes, how? _____

_____

If no why? _____

_____

Do you think that ICT can improve your administrative skills and knowledge? Yes ☐ or No ☐

If yes, how? _____

_____

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If no why? _____

_____

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Appendix 2 Recruitment Letter

2 Alananka Street,

Efon Alaaye,

Ekiti State,

Nigeria.

iso474@mun.ca

+234 803 418 5576

Dear Sir/Madam:

My name is Israel Sunday Oyeniran, and I am a Masters student in the Faculty of Education, at Memorial University of Newfoundland. I am conducting a research project called "Information communication technology (ICT) integration in school administration: A case study of secondary schools in Ekiti State, Nigeria." for my master's degree under the supervision of Dr. Noel Hurley. The purpose of the study is to examine the level of information communication technology (ICT) integration in school administration in Nigeria.

I am contacting you to invite you to participate in completing a questionnaire in which you will be asked to answer questions which need only a check mark and three questions where you will be asked to fill in your opinions. Participation will require 30 minutes or less of your time and can be filled in at home or in your office.

Information communication technology (ICT) integration into school administration...

If you are interested in participating in this study, please contact me at the above address or email me. Once your consent to do the survey is received, I will send out an informed consent form, which needs to be read before filling out the questionnaire. If you choose to complete the questionnaire, please place it in the self-addressed envelope, seal it, and send it to me. Alternatively, I could also come to your school and collect the completed consent for and completed survey in the sealed envelope.

If you have any questions about my project, or me please contact me by email at iso474@mun.ca, or by phone at +234 (803) 418 5576.

Thank-you in advance for considering my request,

Israel Sunday Oyeniran

The proposal for this research has been reviewed by the Interdisciplinary Committee on Ethics in Human Research and found to be in compliance with Memorial University's ethics policy. If you have ethical concerns about the research, such as your rights as a participant, you may contact the Chairperson of the ICEHR at icehr.chair@mun.ca or by telephone at +1 709-864-2861.

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Appendix 3 Informed Consent Form

Title: Information communication technology (ICT) integration in school

administration: A case study of secondary schools in Ekiti State, Nigeria.

Researcher(s):   Israel Sunday Oyeniran, Educational Leadership Studies, Faculty of

                             Education, iso474@mun.ca

Supervisor(s):   Dr. Noel Hurley, Faculty of Education, nhurley@mun.ca

                             Dr. Gerald J. White, Faculty of Education, geraldw@mun.ca

You are invited to take part in a research project entitled *"Information communication technology (ICT) integration in school administration: A case study of secondary schools in Ekiti State, Nigeria."*

This form is part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. It also describes your right to withdraw from the study. In order to decide whether you wish to participate in this research study, you should understand enough about its risks and benefits to be able to make an informed decision. This is the informed consent process. Take time to read this carefully and to understand the information given to you. Please contact the researcher, Israel Sunday Oyeniran, if you have any questions about the study or would like more information before you consent.

Information communication technology (ICT) integration into school administration...

It is entirely up to you to decide whether to take part in this research. If you choose not to take part in this research or if you decide to withdraw from the research once it has started, there will be no negative consequences for you, now or in the future.

Introduction:

I am Israel Sunday Oyeniran, a master's student of Educational Leadership Studies in Faculty of Education, Memorial University of Newfoundland, St. John's, NL Canada. As part of my Master's thesis, I am conducting research under the supervision of Dr. Noel Hurley.

Purpose of study:

The purpose of my research is to examine the level of information communication technology (ICT) integration in school administration in Nigeria. My research will focus on the public secondary schools in Ekiti South Senatorial District of Ekiti State, Nigeria, West Africa.

The following three (3) questions will be asked in the cause of the research.

1. What ICT resources are available to school administrators?

2. To what extent are the school administrators trained to use the ICT resources in their jobs?

3. To what extent are school administrators using the ICT resources to manage the complex nature of their jobs?

Information communication technology (ICT) integration into school administration...

There are several questions that have been developed to find out the current situation of information communication technology (ICT) in Ekiti State public high schools; these questions would be focusing more on the school administrators regarding what information communication technology (ICT) they have, how they are using it, and the kind of training they have. The results will reveal information that will provide new understandings about all the three (3) questions. Recommendations arising from the results will be developed; it is hoped that findings will be useful to policy makers as they make decisions about the acquisition of new technology.

What you will do in this study:

In order to know the level of information communication technology (ICT) integration in school administration in Nigeria, particularly in these selected schools. I will be asking each participant (the school administrators) to fill out the designed questionnaire to determine how the level of ICT integration in their administrative job helps or hinders work. You will be asked to answer questions which need only a check mark and three questions where you will be asked to fill in your opinions.

Length of time:

The estimated time for each participant to complete the survey is less than 30 minutes.

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Withdrawal from the study:

Participants do not have to participate in the research if they do not want to, and participation is voluntary. Participants will be asked to sign a consent form agreeing to their participation in the study. Participants can withdraw at any time prior to the completion and submission of the completed survey. After the completed survey has been submitted, withdrawal will not be possible as individual identification will not be possible. Participation is not a school district or employment requirement; superiors and other administrators will not know who does or does not participate; participants should skip any questions they are uncomfortable answering.

Possible benefits:

The research will better inform administrators to facilitate smoother running schools. The administrators will benefit from professional development because of the research. It is also hoped that it will help to inform policy makers on how to more effectively assign resources within educational sector.

Possible risks:

The type of data that we will be collecting has minimal risks for anyone who chooses to participate.

No direct personal identification is possible and anonymity will be easy to maintain. The questionnaire will have a special code and not identifying information. Questionnaires will be

locked in a cabinet at the Faculty of Education. My supervisors and I will be the only ones to have access to the cabinet, and the files will also be stored on password-protected computers.

Recording of Data:

My thesis will be archived on line, and I plan to do presentations as well as provide copies to the participating schools once the thesis has passed.

When finished, I hope to be able to publish my findings in peer-reviewed journals and also present findings at peer-reviewed conferences.

Dr. Noel Hurley, my supervisor, and Dr. Gerald J. White, my Co-supervisor, and I will have access to the data.

The electronic and hard copy will be stored in a locked cabinet in the Faculty of Education for 5 years.

Consent:

If you would like further information about this study, please contact me. My phone number is +1(709) 699-3731 or email is iso474@mun.ca. If you would like to talk to an independent third party, you can contact my supervisor, Dr. Noel Hurley +1(709) 864-3319, nhurley@mun.ca. or Dr. Gerald J. White, Co-Supervisor +1(709) 864-8100, geraldw@mun.ca.

Information communication technology (ICT) integration into school administration...

The proposal for this research has been reviewed by the Interdisciplinary Committee on Ethics in Human Research and found to be in compliance with Memorial University's ethics policy. If you have ethical concerns about the research, such as your rights as a participant, you may contact the Chairperson of the ICEHR at icehr.chair@mun.ca or by telephone at 709-864-2861.

By completing and returning the questionnaire, you agree that:

- You have read the information about the research titled "Information communication technology (ICT) integration in school administration: A case study of secondary schools in Ekiti State, Nigeria."

- You understand what the study is about and what you will be doing.

- You understand that you are free to withdraw participation at any time prior to the submission of the completed survey without having to give a reason and that doing so will not affect you now or in the future.

- You understand that these data are being collected anonymously and therefore, once you submit this survey your data **cannot** be removed.

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Researcher's Signature:

I have explained this study to the best of my ability. I invited questions and gave answers. I believe that the participant fully understands what is involved in being in the study, any potential risks of the study and that he or she has freely chosen to be in the study.

_____   _____

Signature of Principal Investigator   Date