ASSESSMENT OF USE OF INFORMATION AND COMMUNICATION TECHNOLOGY FACILITIES IN UPPER BASIC SCHOOLS INKANO METROPOLIS,KANO STATE, NIGERIA

By

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CERTIFICATION

I hereby certify that this research work was conducted, written and complied by me. I also certify that to the best of my knowledge this research work has never been presented wholly or partially for the award of any degree or for publication elsewhere.

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DEDICATION

This project is dedicated to my beloved husband, Alhaji Ahmad Madaki Gwarzo and my parents, Alhaji Zakari Ahmad Alhaji Ali Sharif and Hajiya Kilishi. May the blessings of Allah be upon them, Ameen.

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ABSTRACT

This study employs descriptive statistics using chi-square analysis on A Survey of Availability, utilization and management of ICT in Upper Basic schools in Kano metropolis, Kano state. The main objective is to find the availability of ICT in Upper Basic schools in Kano state five research Questions with corresponding hypotheses were formulated to guide the study. The population comprises of all the principals and teachers of Upper Basic schools in Kano state which consist of 400principals and teachers of upper basic schools in Kano metropolis. The sample was 196 teachers and principals drawn from Upper Basic schools in Kano state (research advisor 2006). Two instruments tagged. 'questionnaire for principals on availability utilization and management of ICT in Upper Basic schools of Kano sate and 'Questionnaire for teachers on availability utilization and management of ICT in Upper Basic schools, Kano state. Was adopted and used for the study. Data were analyzed using percentages for the research questions. chi-square table was used for the hypotheses. The findings indicate there is availability, utilization and management of ICT in Upper Basic schools in Kano state. Another finding revealed that information and communication technology is not yet fully integrated in Upper Basic schools in Kano metropolis. The study also revealed that Upper Basic school administrators who manage their record with the use of ICT have better management and are more effective and efficient. Recommendations include Nigeria should fully integrate ICT Education in school curriculum and administration. There is need to recruit teachers with Educational background and computer knowledge for proper ICT teaching and learning; government should improve the power supply of the schools so as to cover the recommended hours of teaching ICT practically. The government should provide teachers with computer on loan basis since most of the teachers cannot afford buying a computer this will help the teachers to keep record using computer. With reference to the influence of the study, it has been established that there is availability of ICT in Upper basic schools in Kano metropolis however inadequate skilled teachers with ICT knowledge, in adequate power supply are still major problems to be tackled if ICT will be fully functional and effective suggestion for other studies include; a study can be carried out on impacts of availability utilization and management of ICT in effect management of schools. A similar study can be carried out on impacts of ICT on the management and keeping of school records.

CHAPTER ONE:
Introduction

1.1 Background to the study

Globalization and technological developments have been introduced with the skills for easy life management, bringing about application for higher commitment to the provision for life-long education. For the benefit of the beneficiaries of education, many countries are now putting efforts towards meeting-up these expectations and reconsidering the development of their education system. ICT have been introduced in Upper Basics schools in Kano to assist schools' administrators in the areas of school record keeping, it can also be seen as a catalyst for changing teachers' practices, and introducing a variety of network-based tools that serve as an effective means of helping teachers to develop a more student-directed and classroom learning environment.

The use of Computer in education seems to be a highly dynamic technology and a dominant delivery system in education which appeared to have potentialities of improving teaching and learning. According to Clayton, (2007) ICT provides an increase in students' scores, reductions in necessary learning, and improved attitudes towards teaching. Furthermore Akpan,Ndem & Usoro(2004) stressed that;

> *It assists teachers minimize in the use of facilities and equipment in education and provides student and teachers with a means of studying, investigative simulating or practicing complex skills, procedures and concepts in a non-realistic situation without risk to people, capital or other resources. In class rooms, it is to be cost effective mean of instruction in*

which learning materials or information can be accessed easily irrespective of time and space many teachers can interact with a group or whole class of students and be provided with immediate feedback on their performances and appreciate the self- spaced and private learning environment".

Paradigm shifts is demanding many educators in changing their classroom environments from being teacher-centered to learner-centered; where teachers move from being the key source of information and transmitter of knowledge to a guide or facilitator in student learning; and the role of the students changes from being passive in receiving information to active in making meaning to their own learning, prepared for challenges and life-long learning. Thus, computer technology is considered to have the potentiality of transforming a passive learning environment into one which is more active.

ICT is increasingly enhancing teachers and students accessibility to a broader range of materials than they can be used in the classroom. Supplementary computer tools such as scanners or digital cameras allow teachers to bring in outside sources, enter them into a computer, and customize assignments. Encyclopedias, art collections, atlases, and other reference books in a less expensive, and less space-consuming electronic format will be of everyday use in classrooms Already, in many schools, students can browse interactively or conduct electronic searches in CD-ROM databases, encyclopedias, or other reference work. Thus, the new technologies allow access to a broader range of instructional resources. They also offer students the opportunity to learn how to use electronic tools to access information and develop research skills in solving problems.

1.2 Statement of the problems

This study shall examine the availability, utilization and management of ICT uses in the Upper Basic schools in Kano state. The extent to which students do not have access to the use of ICT is disturbing. Thus there is need to make a study concerning the problem of availability of ICT at the Upper Basic schools. However, the increasing cases of lack of infrastructure fully equipped computer rooms, well standard class rooms and access to internet services in the Upper Basic schools has become a great concern.

The decline level of quality teachers with little or no knowledge of how to teach computer further compound the problem. Fadipe (2003) posits that teachers apart from student are the largest most crucial inputs of an educational system; they influence, to a great extent, the quality of the educational output. In most of our Upper Basic schools the teachers are overloaded, less motivated and inadequately trained in performing their primary Assignment.

The problem of epileptic power supply is of great concern to teachers and students ICT training cannot take place without adequate power supply, as the schools may not be able to shoulder the responsibility of fueling a generating set that will be enough to teach the student for hours as ICT needs practical teaching for the student to be conversant with the theoretical aspect. More so, the time and methods use in teaching ICT at the Upper Basic school may not be adequate in most schools. More so, the awareness about the utilization of ICT in education how they can be accessed and utilized in the keeping of school record effectively may be regarded as one of the problems or challenges in Upper Basic schools. This awareness and knowledge about ICT plays a great role in teaching of ICT in the Upper Basic schools.

It is in view of all these that the researcher intends to conduct a survey on the challenges and potentialities of ICT uses in the management of Upper Basic schools in Kano state.

1.3 Objectives of the study

The study tried to:

1. Find out the availability and utilization and management of ICT at the Upper Basic schools in Kano metropolis;
2. Examine the academic qualification of teachers teaching ICT in Upper Basic schools in Kano metropolis;
3. Determine computer rooms and access to internet services in upper basic schools in Kano metropolis;
4. Find out utilization of ICT in keeping records in Upper Basic schools in Kano metropolis;
5. Find out utilization of ICT by student in the Upper Basic schools in Kano metropolis;

1.4 Research Questions

The study provided answers to the following questions

1. Is ICT available and utilized at the Upper Basic school in Kano metropolis?
2. What are the educational qualifications of teachers teaching ICT at the Upper Basic schools of Kano metropolis?
3. Do Upper Basic schools have well equipped computer rooms and internet services in Kano metropolis?
4. Is ICT utilized in keeping of school records in upper basic schools in Kano metropolis?

5. How often student utelize ICT in Upper Basic schools in Kano metropolis?

1.5 Research Hypotheses

The following research hypotheses are here by formulated to guide this study

1) There is no existence of ICT utilities at the Upper Basic schools in Kano metropolis.
2) There is no significance difference in teachers with educational qualification and their counterpart without educational qualification in teaching ICT in Upper Basic schools in Kano metropolis.
3) There is no significance difference in learning of ICT in the schools with well-equipped computer rooms and have internet services and the schools that are not well equipped and don't have internet services in Kano metropolis.
4) There is no difference in Upper Basic schools that use ICT in keeping of school records and the school that don't use ICT in keeping of school records.
5) There is no significant difference between student that utilize ICT and those that don't utilize ICT in Upper Basic schools.

1.6 Significance of the Study

The research is important to Educational administrators as it will create a good awareness for teaching and learning for students.

The findings of this research will lead to greater improvement in the quality of Upper Basic schools students as it will assist the principals to adopt the best way of keeping schools records as well as guiding principles that will facilitate effective management through application of ICT in Upper Basic schools.

The study will be beneficial to educational officials especially those at the state ministry of education, to fashion out how best to provide schools with well-equipped ICT laboratories, constant power supply to enhance the use of ICT for the teachers to perform their primary assignment satisfactorily.

The study shall also be of immense importance to future researchers on the challenges and potentialities of ICT uses in the management of Upper Basic schools in Kano so as to bring about other better ways of application of ICT in the schools.

1.7 Scope and Delimitation of the Study

This research work is intended to examine the availability, utilization and management of ICT in Upper Basic schools in Kano state. (6) Upper Basic schools within the Kano metropolitan are selected.

The research is delimited to the availability, utilization and management of ICT uses in the management of Upper Basic schools. The study will consider both Day and Boarding schools. Anything outside the public schools in Kano municipal zone is outside this study and will not be considered as part of this study Leadership style and principals' financial capability will not form part of this study.

CHAPTER TWO: REVIEW OF RELATED LITERITURE

2.1 Introduction:

This chapter reviewed the literatures in line with the topic under study in the following order

1. theoretical frame work
2. concept of ICT
3. history of ICT, information and communication technology
4. overview of ICT in education,
5. impact of ICT in Upper Basic Schools
6. Record management,
7. challenges facing ICT in Upper Basic Schools
8. Review of empirical studies
9. summary and uniqueness of the chapter.

2.2 Theoretical frame work:

This study hinged on Adaptive Structuration Theory (AST). This theory is based on Gidden Anthony's (1984) structural theory. It emphasizes the roles of information technology in organization changes. Desantis and Poole adapted Gidden's theory which aimed at studying the interaction of groups and organizations with information technology. The concept of Adaptive Structuration Theory is that it provides a dynamic picture of the process by which people incorporate advance technologies into their work practices.

According to Adaptive Structuration Theory, organizations are viewed as system (patterns of relationship and communicative interaction among people), which in turn are

produced by actions of people creating structures (rules and resources) however adaptation of technology structures is a key factor in organizational development because there is an interplay between the types of structures that are inherent to advanced technology and also the structures that emerge in human action as people interact with these technologies.

Adaptive Structuration Theory portrays that behavior and structure as inter – twined and that the inter –play between systems and structure exist in a dual relationship with each other such that they tend to produce and reproduce each other in an ongoing. Furthermore, the theory laid emphases that technology alone does not bring changes but behaviors of the users. Adaptive Structural Theory, therefore is a viable approach for this study as it examines the process and the types of structure that are provided by advance technology the structures that actually emerge as a result of human action by teachers and school administrations as they interact with this technology.

More so, there is also an interplay between teachers, school administrations and responses they give to this technology in terms of school rules, records, management policies and resources provided. According to this theory technology alone does not bring effectiveness in school administration but behavior of the users being the teaches and the school administrations. The study therefore aims at examining the challenges and potentialities in using ICT in the management of Upper Basic Schools in Kano for effective Schools administration.

2.3 Conceptual Frame Work:

Information communication technology (ICT) means different things to different researchers. According to Yusuf (2007) ICT is an electronic technology used for

assessing, processing, gathering, manipulating presenting and communicating information. French 1996 quoted in white (2007) state that information communication technology is a broad based technology which Include management and applications that are employed in the creation, storage, manipulation, and communication of information.

Obanya (2002) views ICT as a broad concept that has to do with harnessing of the process; the method and the product of electronic and communication related technologies (and other related resources. Today, knowledge driven societies) for enhancing the availability the spread and efficiency of asset of programmed activities learned toward the achievement of clearly define goals. In this regard one can state that ICT has the capacity to change the way we learn, the way we work and the way we live in our society today. According to Ogunsola (2002), ICT is an electronic based system of information transmission, reception, processing and retrieval, which has drastically changed the way we think, the way we live and the environment in which we live and also it can be used to access global knowledge and communication with other people. Shanker (2008) observe that the revolution in the use of ICT has profound implications for economic and social development and has pervaded every aspect of human life. A good way to think about ICT to consider all the uses of digital technology that already exist to help individuals, business and organizations use information. It covers any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form. Examples are personal computer, digital television, PDAs, email, robots, mobile phones, digital cameras, etc. Bandele (2006) defines ICT as a revolution that involves the use of computers, internet and other telecommunication technology in every aspect of human endeavor. He sees ICT as all about sharing and having access to

data with ease. Wangwe (2007), refers to ICT as a myriad of stand- alone media, that includes telephone and mobile telephony, radio, television, video, tele-text, voice information systems and fax, as well as computer- mediated networks that links a personal computer to the internet. Therefore, ICT can be seen as an electronic device for managing and processing information with the use of software and hardware to convert, store, manipulate, protect, transmit, manage, control, retrieve and share information for the enhancement and productivity of personal and organizational activities. Advances in science and technology have increased the reach and speed of record keeping and information communication management. In man's evolution of digital technology, Afolabi in Isyaku (2001) observe that ICT remains the best tools for information communication. Presently, it has touched on every profession thus changing our ways of life. Several attempts have been made in the past to improve the process of record keeping and information communication management. However, Greaves, Jeane & Leslie (2003) observe that technology revolutionized the way we work and it is now set to transform education with ICT as its driving force.

According to Poulymenakou (2002) the world has been reshaped and the evolving information society is coming widespread. ICT is an interactive platform through which information available through the electronic media and internet technologies. The development of internet is the most important revolutionary intervention of the century. ICT has offered administrators, resources online, and according to Anos, Prastacos, & Poulymenakou (2002), ICT has removed distance and time restraint in accessing required information flows.

Buhalis (2001) assert that there is reduction in the degree of inefficiencies and uncertainty with the use of ICT because it enables business to interact more efficiently. They will also be able to exchange messages with others throughout the Whole world. Ayo (2001) adds that network turned the world into a global village, with internet access, one has an unprecedented access to records and information on global scale. It provides mechanism to locate document nearly instantaneously, copy and move many of them electronically. Technology has made the world smaller, this major changes in human interaction is having a profound impact on Schools and educators.

2.4 Concept of Record Management in Schools

Records management is essential for the diagnostic and remedial purposes remarked Edem (2003). Elaborating on this point, Alani (2005) said that records management is useful for performance appraisal and that helps to ensure accountability in Schools. Nkon (2006) opine that record keeping is vital education for the purpose of monitoring the health of the Schools. According to him, inspections generally depend on documentation which includes records on the Schools, and records are documentary evidence upon which to base evaluation.

Similarly, Udeozo (2004) expand further and states that Schools records serves as information bank and historical archive, portraying its development and trends.

In order to make decision on both short and long term policies, Schools authorities rely on information that are properly stored. Rapid growth in the field of education has made governance in academic sector a very complex task. But by means of modern data storage facilities like computers, microfilm, CD-Rom, cassette, email, collaboration

software and management of Schools records. ICT has The potentials for easing the administrative duties of records keeping and management.

Records of most secondary Schools are kept manually and, with the passage of time, vital records and information are lost due to the rise in the number of disasters occurring frequently in Schools. Students suffer due to lack of skills in records and preparation of records, shortage of experts in record keeping, etc.

Record is the engine room that provides information on how organization can move forward. Duze (1988) state that the education law of any country and future oriented planning of the Schools system. This means that record management is a statutory demand for all Schools. Ndu, Ocho & Okereke, (1997) and Udeozor (2004) opined that Schools record as document statement of facts about persons, facilities, proposals and activities in and about the Schools, it is clear that records management in Schools includes all activities concerning Schools whether International or external.

Supporting Ndu, Udeozo and Nwagu, Bello in Alani (2005) assert that Schools record consisting of all the books and files or document containing information relating to what goes on in the Schools as well as what types of property the Schools own. The emphasis is not just on document containing information, but also on the ability of one having knowledge of what goes on in a Schools. This knowledge is for a purpose and that is why Isidienu (2003) opines that Schools records are formidable tool for the achievement of education goals. Records and records management constitute the life wire of organizations.

(Egwunyenga, 2006), it would be very difficult to plan administer any organization such as Schools effectively if records are not kept and mange properly.

Management of secondary Schools which involves process of making use of the available resources towards the achievement of an educational goal requires centralized control of the information assets of organizations. According to Alani (2005), Man has kept records of events and activities since creation, starting with the use of chalk till recently in form of writing and other forms. In the educational sector, Schools records are the pivot around which positive planning and management revolve too.

2.5 History of Information and Communication Technology (ICT)

Origin, growth and impact of ICT can be traced to the origin of industrial solution. The distinct technological breakthrough in the development of ICT cannot be discussed without references to the generation of computers. The history of ICT originates from humble beginnings, which includes abacus, early version of calculator that replaced primitive method of mathematics, mechanical versions of calculation before the first general purpose computer designed by Charles Babbage analytical engine (Kandell 1998).

The rate and level of development of computer became very explosive and meaningful with the period of 1st generation 1946 – 1958. 5th generation (1985 – date) marked as distinct the advent of artificial intelligence. According to Afolabia Isyaku (2001) the successful integration of computers telecom knowledge industry let to a global electronic resources sharing mechanism, referred to as computer network.

The term “information technology” which recently was bounded to include electronic communication so that people tend to use it as ICT, evolved in the 1970’s World War II alliance of the military and industry in the development of electronics, computers and information theory. After the 1940’s, the military remained the major source of research and development funding for the expansion of automation to replace manpower with machine power.

Before the introduction of information technology, information flows through media as letter, telephone, telex, fax etc. In recent years, it has metamorphosed into www which is essentially a networking arrangement with global access, meaning work wide network. It has finally provided a common interface on the internet. It has fulfilled one of mankind’s long time dreams, providing users with a simple and consistent means of access to the collection of knowledge electronically available on earth. The net has introduced a new dimension to the way we do our business.

The development of the World Wide Web has given commercial enterprise a new business practices. Today, the internet links many millions of computers worldwide. Subsequent research led to the introduction of network in the form of several varieties such as LAN, MAN, WAN. Network within one compound or office or organization is referred to as LAN (Local Area Network) or intranet. When it is within a State, it is called MAN (Metropolitan Area Network), equivalent to internet (International Network).

2.6 Overview of ICT in Education

The history of the use of ICTs in education is relatively short in the world . Before 1979, computers existed primarily in tertiary level educational institutions. Then, in the 1980’s,

microcomputers began to be distributed to Schools, and teachers began; paragraphed with the questions of how to use computer. Starting from the mid-centuries, the use of ICT's in Schools rapidly expanded in developed nations through curriculum support, networking, the professional development of researchers and software improvements (Aston, 2002). A growing number of researchers and educator began to develop application that used hypertext, multimedia and networking. In recent years, internet evolved and bandwidth has greatly increased and user familiarity with the web and ICTs in general has involved, contributing to an evolution of the web. Some are referring to this solution as numbered "versions" or "generations" (Web 1.0, 2.0 and 3.0).

White (2008) summarizes the history of ICTs in education by explaining that the period from 1981 till present has seen the educational use of computers evolve from stand-alone data processors in computer labs, through to accessing the web and building a web presence, to providing integrated web service for student record, administration, professional development, teaching and learning activities, resources collections and community relations. Policy based on the prevailing ideas about ICTs has also been a major driver shaping the adoption of ICT's in education. For example, the late 1980's and nearly 1990s were dominated by rhetoric surrounding the idea of the transition from the industrial society to the information society. This idea promoted the concept that the education system would need to create a learning culture which would prepare citizens for lifelong learning in an information society. ICT tools are not single technologies but combinations of hardware, software, media, and delivery systems. This includes computer system (processes information), telecommunication system (disseminates information), and multimedia system (represents information). Today, ICT tools for

record management in education encompass a great range of rapidly evolving technologies. Some of these technologies are:

a. **Display Devices –** Interactive full functionally PC, desktop, notebook, digital cameras, kiosk, laptop, tablet, PDAs and handheld computers).
b. **Portable storage multimedia (CD/DVD/VCD) VHS, USB** storage device, pen drive, flash, external hard disk, cloud virtual).
c. **Schools connectivity/Internet access (telecommunication infrastructure) –** High bandwidth, broadband, wire line, Vsat, Wimax/FWA/Wifi 3G, Blue tooth, infra-red, Narrowband dial up, cellular, ISDN offline access).
d. **Operating System –** Proprietary (Window, apple), open source (Linux, UNIX).
e. **Physical Schools infrastructure –** Adequate furniture, rooms, window bars, secured doors, lighting conditions, ventilation access.
f. **Power Backup infrastructure –** Availability of sufficient and reliable electricity for ICT usage (UPS, power backup, generator, solar, wind air conditioning.
g. **Broadcast:** TV, microwave radio, satellite, projectors, local area networking, the internet and the World Wide Web.
h. **Application such as** word processors**,** spreadsheet, tutorials, simulations, electronic mail (email), digital libraries, and computer medicated conferencing, videoconferencing and virtual reality.
i. **Basic software:** Word processors, spreadsheet programmes, email website etc.
j. **Schools administration software: -** Educational management information system (EMIS), MIS.
k. **Electronic content: -** E-Lesson plan.

(Agnew, Keller man and Meyer 1996), (Neo and Neo 2001).

2.7 ICT in Nigeria

For a sustainable development of a nation, ICT has become essential knowledge to every nation and more so to the developing nation (Karisddappa, 2004). ICT resources and facilities seems to be grossly limited in Nigeria and the development of ICT sector therefore was far not satisfactory in Schools. Policy on adoption of ICT in Nigeria was initiated in 1999 when the civilian regime came into power of government (Isoun, 2003). But a significant milestone was made in the development of the ICT industry in the country with the formulation of a National Information Technology Policy (NITP), which was approved in March, 2001 by the Federal Executive Council, followed by the establishment of an implementing agency – The National Information Technology Development Agency (NITDA) in April 2001.

2.8 ICT in Nigerian Education

The provision of appropriate frame work for the full integration of ICT into the education system of any nation is the responsibility of the federal or central government as the case may be. For the proper integration of the computer, and other ICT element into the education system, there is the need for a comprehensive policy document to serve as a guide for stakeholders in the education sector. The policy document is expected to give direction to the implementation of the policy in terms of the provision of the conceptual framework, the objectives, the strategy, the action plan and the evaluation of the successes of the integration.

In 2001, the federal government of Nigeria published the national policy on information technology, and established the national information technology development agency

(NITDA) to serve as the umpire in the implementation of the policy. However, this document failed to adequately address the issue of the integration of the ICT into the Nigerian education system. The document presented the issue of ICT in education vaguely. While some sectorial aspect of our society like governance, health, agriculture, art, culture and tourism etc. were given individual sectoral treatment, there was no sectoral treatment for education in the document. The document merely mentioned issue relating to education under the sectoral application for human resource development. One would have expected education to be treated distinctively like the other sectors therein, so that there are clear cut policy statements to guide stakeholders. It is also worthy of mentioning that the document does not give any emphasis on the development of indigenous software that are in tune with the educational needs of Nigerians, neither does it address issues of its incorporation into teacher training, classroom instruction and evaluation. The policy on Information Technology listed nine major strategies for realizing the objectives of applying information technology (IT) in human resources development, one of which is 'making the use of IT mandatory at all levels of educational institutions through adequate financial provision for tools and resource '. While these noble strategies are applauded, the implication of the inadequacies in the document is that the national IT policy cannot adequately take care of the need of the Nigerian education system (Yusuf, 2005).

ICT in Nigeria

The federal ministry of education and its agencies have initiated many ICT driven programmes. These programmes include the Schools Net Nigeria. The National Open University of Nigeria (NOUN) and the virtual library project. The NUC is implementing

a number of ICT project including library Automation project, Nigeria Universities Management information system (NUMIS), Nigerian University Network, virtual institute for Higher Education Pedagogy (VIHEP), and the virtual institute for higher Education in Africa (VIHEAF), NUC is also conducting on e-learning pilot programme for Nigerian Universities. Nigerian University have been encourage by NUC to utilize at least twenty percent of teaching and research equipment grant for development. No system is impeccable. Every system has its challenges as ICT in education. Currently, there are lots of challenges to effective utilization of the online application by Schools which the most outstanding is the very low ICT capacity in Upper Basic Schools, and low level of data literacy among all categories of staff in the Schools. Existence of a productive information structure environment is also lacking in Schools.

Furthermore, poor steady power supply, sustainable source of alternative power supply and high cost of internet access contribute greatly to the limited practice of e-learning and records management in FCT Schools. However, with intensive capacity building, and improved funding, Schools will hopefully improve.

2.9.1 Challenges of ICT in developing countries

There are many challenges in implementing ICTs effectively in Schools in -developing countries. Given that a number of Schools still do not even have appropriate classrooms, computers, telecommunication facilities and Internet services; ICT continues to be a distant dream. The existing shortage of quality teachers further compounds the problem. In developing countries, budgetary allocations for deploying ICTs in Schools education are typically limited, and given the high initial costs of setting up ICT systems, the cost factor works as a further deterrent. Shifting the existing focus from traditional

educational models to an ICT-based education system is bound to be met with constraints and road blocks is expensive and prone to upgrades and requires resources put aside for new versions and upgrades. Operating System (OS) itself adds to the cost burden of the hardware.

Availability of Funds to Implement ICTs

Given the current budgetary and resource constraints of various Governments, a widespread investment in ICTs in education is probably not possible in most developing countries. It is therefore, critically important to better understand the cost-benefit equation of the wide range of ICT options and uses in order to effectively target-spend the scarce resources.

Capacity Building of Teachers

In most of Schools in the subcontinent, the teachers are overloaded, less motivated and inadequately trained, and often deal with inconvenient working conditions. The use of ICTs in the classroom or in distance education does not diminish the role of the teacher; neither does it automatically change teaching practices. In such an atmosphere, building the capacity of teachers so that they are equipped to deal with using ICTs in classrooms is a challenge.

Resistance to Change

Resistance is commonly witnessed while attempting to introduce ICTs into Schools, very often from the teachers themselves, since they may be of the opinion that they shall become redundant once technology comes in or due to their perception that it is too late

for them to adapt to a new environment. Educators themselves may be skeptical about the effectiveness of using ICTs in Schools education.

Poor Awareness by the teachers

There is a general lack of awareness about the utility of ICTs in education, as well as about the ICTs at our disposal and how they can be accessed and utilized economically and effectively. This lack of awareness and knowledge about ICTs and their use in education, even on the part of policy makers, administrators and educators, makes it particularly difficult to deploy ICTs in the field of Schools education.

Another critical issue with the usage of ICT in Schools is the implementation of new technologies without having analysed their appropriateness, applicability and impact on various environments and contexts. In the developing countries, they must learn from the Experiences of others, but must also use technology to respond to their own needs and not just follow trends.

Internet Usage by the teachers

While the Internet contains tremendous potential for education, as described in the sections earlier, it also has its own pitfalls. For one, providing all the students with Internet access is a very expensive proposition for most Government Schools. This is more so in the case of rural centres and remote areas, where Internet connections are bound to be erratic, if available at all. A different challenge altogether when it comes to Internet usage is the effort involved in monitoring the students usage of the Internet to ensure that they do not visit educationally irrelevant and socially undesirable sites, thus detracting from the intended objective.

Language Barriers of teachers of developing countries

English is the dominant language of the Internet. An estimated 80 percent of online content is in English. A large proportion of the educational software produced in the world market is in English. For developing countries where English language proficiency is not high, especially outside metropolitan areas; this represents a serious barrier to maximizing the educational benefits of the World Wide Web.

Monitoring and evaluation

Many of the issues and challenges associated with ICTs in education initiatives are known by policymakers, donor staff, and educators. However, data on the nature and complexity of these issues remains limited because of the poor or inadequate monitoring and evaluation tools and processes.

2.9.2 Challenges of ICT in Nigerian Education

Although ICT holds great potentials in supporting and augmenting existing educational as well as National development efforts in Nigeria, several challenges remain. If these challenges are not addressed the effectiveness of any ICT4D program will be reduced considerably and we will not be able to successfully replicate them at the national level. These challenges include: as observed by Ikemenjima,.(2003).

1. Inadequate ICT infrastructure including computer hardware and software high, and bandwidth/access;

2. Ikemenjima, (2003). Lack of skilled manpower, to manage available systems and inadequate training facilities for ICT education at the Upper Basic Schools.
3. Resistance to change from traditional pedagogical methods to more innovative, technology based teaching and learning methods, by both student and academics.
4. The overall educational system is underfunded, therefore, available funds are used to solve more urgent and important survival needs by the Institutions.
5. The over-dependence of educational institutions on government for everything has limited institutions ability to collaborate with the private sector or seek alternative funding sources for ICT educational initiatives.
6. Ineffective coordination of all the various ICT for education initiatives. This list is not exhaustive but represents the major problems faced in the development of ICT for education in Nigeria. We believe that when adequately addressed, the chances that e-education will thrive in Nigeria will increase dramatically. It can be assumed that this will have larger, much desired impacts on development and modernization of Nigerian society.

The development of information and communication technology in Upper Basic education is faced with many challenges here in Nigeria. One of these is challenges teacher's failure to help the students develop the capacities necessary to take full advantages of the opportunities offered by the ICT. They also need to acquaint the students with the strategies and mechanisms of ICT so far ICT have not been used as a way of acquiring new knowledge and skills in

Upper Basic Schools to inadequacy of curriculum content and limited accesses to ICT.

Gbadamosi (2006) notes that inadequate funding is the major challenges because it has a negatively affected many areas of education in Nigeria. Area it has affected include funding of ICT projects, training and retraining of teachers, provision of technological infrastructure development and maintenance of software package and electricity. The current level of funding in Nigeria with reduce budgetary allocation to the education sector is a major constraint in the provision of ICT equipment; computers, its accessories, software packages and maintenance. In the Upper Basic Schools, there is lack of qualified personnel to manage available systems, develop and use information communication technology facilities for the teaching-learning process. However, in Schools where these personnel exist, they lack skills in designing and delivering lecture in electronic formats.

Ibadin (2001) Argue that there is acute shortage of well-trained ICT handlers. In every educational system, certain Basic facilities are required. The National Policy on Education (FRN 2004) posits that the government should provide facilities and necessary infrastructure for the promotion of ICT at all levels of education. However, in Upper Basic Schools, there is inadequate or non-existence of physical facilitates and materials resources such as computer rooms, furniture, electricity or electric generators. Electricity is essential for the operation of all ICT appliances without which they cannot function effectively. Also there is lack of well-articulated educational policy by the Nigerian government. More attention is given to other sectors than to education this is the challenges to the development of ICT Education in Upper Basic Schools.

2.10 Review of Empirical Studies

Oyenike (2010) investigates Nigeria's ICT in education policies, Implementation efforts, and availability of ICT tools in Schools. The study area was Lagos. 5 research

questions were adopted to guide the study. The study used descriptive survey design employing random sampling: procedures. The sample consisted of 351 Basic education teachers that were randomly selected from different private and public Schools in Lagos state, Nigeria. Survey instrument was self-designed 50 item questionnaires administered on Basic education teachers. Mean and standard deviation were used to answer the research questions. Findings showed that Nigeria is yet to fully commit to ICT integration in education as two key ingredients are lacking - skilled teachers and ICT tools and other infrastructure.

Adeyemi (2007) study examines the impact of information communication technology (ICT) on the effective management of universities in South-west Nigeria. Research design used was descriptive research. Study population surprised all the 11 public universities in the 6 States that made up southwest, Nigeria. Sample of 6 universities was taken and selected from 3 of the States, method of selection was by multi stage, purposive and stratified random sampling technique. 4 research questions and 2 hypotheses tested at .05 level significance guided the study. The instrument used for data collection was questionnaire. Data collected were analyzed through the use of frequency counts, percentages and Person Product Moment Correlation. The finding revealed that universities in Nigeria are not yet ready for technological development.

A review of the joint work of Adeyemi and Olaleye (2010) investigate the used of information communication and technology (ICT) for effective management of secondary Schools in Ekiti State, Nigeria. The study was a descriptive survey design and used stratified random sampling technique. While the work broadly investigated ICT in secondary Schools, this study stands to do the same in FCT but with main focus in

Schools records management using ICT tools However, most of the methodology used in this research jobs are also selected to be used in this work. The work of Odero (2013) was on evaluation of the head teachers' perception of online registration on Exam Performance in Kenya Certificate of secondary education enrolment. A census of all the 35 secondary Schools in the district was used to gather the necessary information to be used in the study. The data obtained was analysed using descriptive statistics. The result shows that lost of the respondents had been in their current Schools for less than three years, the results also indicate 88% of the respondents preferred online registration while 9% of the respondents showed preference for manual registration. It was established that online registration has reduced multiple registrations and impersonation cases during examinations.

Lazarus, Meremo & Jesse (2013) of the University of Eastern Africa, Baraton, Kenya, investigated whether there was a significant difference between teachers' and administrators' perceptions on the significance of Information and communications Technologies (ICT) in secondary Schools administration and evaluated the extent to which it was used by administrators. This was carried out by the students administration as important. Administrators rated the importance of using ICT in supervision of instruction and in student administration more highly,

Their study revealed that there was a significant difference between the perceptions of teachers and administrators on the importance of ICT use in record management of secondary Schools administration, student administration, general administration and supervision of i instruction study also stand also to be investigate by this study.

2.11 Summary and uniqueness of the chapter

This chapter reviewed scholarly literature to the study. The researcher

Reviewed the theoretical framework using Adaptive Structuration Theory which emphasizes the role of information technologies in organizational changes.Concept of record management, types of Schools records and methods of record management were discussed Overview of ICT in education was also reviewed. Empirical studies related to this work were also reviewed.

This study is unique in geographical scope because the study is delimited to only Kano municipality zone of Kano state. while most studies reviewed cover entire geo political zones in Nigeria which could be cumbersome due to time and logistic constraints. The study is also unique in the sense that it is restricted to challenges of teaching ICT at our Upper Basic Schools. The study is different from other studies reviewed due to the nature of research instrument to be employed which a close ended questionnaire that requires structural questions in which alternative responses are provided for respondents in order to facilitate prompt responses unlike other studies which have long questionnaire items which often discourage respondents.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

The nature of any research mostly determines the appropriate procedure and method adopted in conducting the research study for the purpose of attaining the intended goal. This chapter therefore deals with the methodology and the research procedure. This is to make a survey of availability utilization and management of ICT uses in Upper Basic Schools in Kano state. The methodology includes: Research Design, population and samples, the instrument, reliability and validity of the instrument and statistical method of Analysis of data collected

3.2 Research Design

The research study aimed at generating data through survey design by administering Questionnaire approach on the availability, utilization and management of ICT in Upper Basic Schools in Kano metropolisKano state.

3.3 population and sampling

3.3.1 Population

Bichi (1997) observed that population is not just everybody, but everybody falling into the category whose characteristic have been defined, anybody found to have any state in the issues being investigated can be sampled out to represent his/her interest and of course the interest of the sub-group. The population of the study covers all the teachers in the senior section of the Upper Basic Schools of Kano metropolis. The total population for the study is four hundred (400) teachers.

3.3.2 Sample size

The sample for this study was regarded as the respondent to whom the questionnaire was directed to in order to elicit relevant information on the subject matter. They are the people that were deliberately and purposefully selected to participate in the study. a sample size of one hundred and ninety-six (196) was selected from a total population of (400) according to research advisor (2006), this is presented in the table in appendix 3.3.3

Table3.1: Table showing the Schools, population and the sample size

Schools Name	**Population**	**Sample size**
Rumfa college	92	45
Women teacher's college	72	35
G.G.C Dala	75	37
Arabic Teachers college	54	26
G.S.S Shekara	60	29
S.A.S Kano	47	23
Total	**400**	**196**

3.3.4 Sampling technique

Simple random sampling technique was used for this study so as to ensure independent choices and allow each member of the teachers an equal and unbiased opportunity of

being included in the sample. Based on the research advisor (2006) a manageable number of the population, a sample size of 196 was used for this study.

3.4 Data Collection Instruments

The instrument that was used for data collection in the study was self-designed questionnaire which was titled a survey of availability, utilization and management of ICT uses in managing Upper Basic Schools .The questionnaire was drawn and presented to the supervisor who went through it and corrected it after which it was taken to specialist in test and measurement for expert guidance to test the validity of the instrument in a way that the respondents were able to respond accordingly depending on their opinion.

3.5 Validity of instrument

The validity of instrument refers to whether the test measures accurately what is intended to measure (Anikueze, 2005.) In order to ensure the validity of the research instrument, the first draft or the questionnaire for the study was presented to some academic staff for their comments. The purpose for validating the instrument is to ensure that the questionnaire items covered the research questions of the study In the light of which the researcher produced a neat copy for his supervisor for observation and comments. After his comments and observation another neat copy was produced and presented to him for approval and permission.

3.6 Reliability of research instrument

Reliability indicates the degree of accuracy and consistency which a test measure what is designed to measure (Anikweze, 2005). reliability is simply the consistency of value

gotten from an instrument used for measuring a particular item several times. The reliability of the instrument was ascertained by test re test in three different Schools outside the metropolitan area this was not part of the main study. The data from the questionnaire was collected and analysed the reliability coefficient of 0.71 was obtained which show that the instrument is reliable for conducting research. Since reliability coefficient of between 0.60 and 0.79 signifies high reliability (Imam,2003). Therefore, such result was considered an acceptable level of reliability for use in the main study(pallant,2001)

3.7 Pilot Study

The pilot testing of the instrument was conducted by the researcher to establish the reliability of the instrument for this study. A total of Nine Questionnaires were distributed to three different Schools that are not from the sample used for pilot testing, the questionnaire was given to Nine different respondents in three different selected Schools from Kano state. the purpose of pilot study was to examine whether the content of the questionnaire is understood or not going by the responses of the selected subjects for pilot study, it was indicated the content was understood.

3.8 Data Collection Procedure

A letter from the department of Education Bayero University Kano introducing the researcher was presented to Kano state ministry of Education soliciting permission to conduct this study. Having obtained the permission, the researcher administered the questionnaire personally. The administration and collection of data was done simultaneously which ensured a high rate of return to the researcher.

3.9 Data Analysis Procedure

The completed and returned questionnaires were tabulated and analyzed using percentage and chi- square respectively. The interpretation of the result was done based on data collected and the researcher made his comments and discussion during the analysis.

CHAPTER FOUR: DATA PRESENTATION AND ANALYSIS

4.1 Introduction

The chapter presents data from the study, the interpretation of the findings and discussions of results respectively.

Therefore, the data on the availability, utilization and management of ICT as the theme of the study, from the sampled schools, the researcher asked the subjects about the questionnaire items 1 - 15, were calculated and presented in Table 4.1

Table4.1: Analysis of Questionnaire items on the Availability, utilization and management of ICT in sampled schools

	Variables	SA	A	DA	SDA
1.	There is availability of Information and communication technology (ICT) in Upper Basic Schools in Kano Metropolis	18 (12.00)	115 (74.00)	17 (11.00)	0 (0.00)
2.	The ICT facilities are functional and effective	4 (3.00)	17 (11.00)	77 (50.00)	11 (7.00)
3.	The student frequently utilizes the available ICT facilities	24 (15.00)	49 (32.00)	62 (40.00)	15 (10.00)
4.	Teachers attend computer training in the school	22 (14.00)	44 (28.00)	80 (52.00)	0 (0.00)
5.	The school has internet facilities for proper ICT usage	22 (14.00)	46 (29.00)	66 (43.00)	16 (10.00)
6.	Teachers use computer for keeping records	13 (8.00)	59 (38.00)	55 (35.00)	23 (15.00)
7.	School principals do not use computers to keep records in their school.	18 (12.00)	70 (45.00)	38 (25.00)	24 (15.00)
8.	There is no constant supply of electricity	35 (22.00)	79 (51.00)	23 (19.00)	13 (8.00)
9.	Generator/Solar is used as an alternative source of power for computer classes	23 (14.00)	57 (37.00)	44 (28.00)	26 (17.00)
10.	I can operate a computer alone	27 (17.00)	59 (38.00)	59 (38.00)	5 (3.00)
11.	I have a personal computer	29 (19.00)	49 (32.00)	49 (32.00)	23 (9.00)
12.	Personal E-mail Address allows teachers to regularly use internet/ICT facilities	27 (17.00)	75 (48.00)	37 (24.00)	11 (7.00)
13.	I use internet to do more research on my teaching	17 (11.00)	68 (44.00)	48 (31.00)	17 (11.00)
14.	Teachers attend ICT Training outside the school to improve their knowledge	42 (27.00)	62 (40.00)	40 (26.00)	6 (4.00)
15.	Use of ICT has Positive impact on the academic success of the student	60 (40.00)	73 (47.00)	17 (11.00)	0 (0.00)

4.2 ANSWERS TO RESEARCH QUESTIONS

In questionnaire item one where the researcher wanted to know the frequency distribution and percentages of all items on each variable relating to the availability, utilization and management of ICT in Upper Basic schools of Kano metropolis. The results were calculated, analyzed and presented accordingly in table 4.2

Table 4.2.1: Availability and utilization of ICT from the sampled Basic Schools in Kano Metropolis

	Variables	**SA**	**A**	**DA**	**SDA**
1.	There is Availability of information communication technology in the school	1 (20.00)	4 (80.00)	0 (0.00)	**0 (0.00)**
2.	The ICT facilities are functional and effective for teaching in schools	1 (20.00)	0 (0.00)	4 (80.00)	**0 (0.00)**
3.	Student frequently utilizes the available ICT.	0 **(0.00)**	5 (100.00)	**0 (0.00)**	**0 (0.00)**
4.	the school use internet facilities for proper ICT usage	22 (14.00)	46 (31.00)	66 (44.00)	16 (11.00)
5.	School principals do not use computer to keep records in the schools	18 (12.00)	70 (47.00)	38 (25.00)	24 (16.00)
6.	Teachers use computers in keeping Records	13 (8.00)	59 (38.00)	55 (35.00)	23 (15.00)
7.	The student frequently utilizes the available ICT	24 (16.00)	49 (32.00)	62 (42.00)	15 (10.00)
8.	The school has Internet facilities for proper ICT usage	10 (7.00)	12 (8.00)	**93 (62.00)**	**35 (23.00)**

Table 4.3presents the statistic/frequencies and percentages of the availability and utilization of ICT in Upper Basic Schools in Kano Metropolis. The figures in bracket are in percentages. The Table 4.3revealed that there was availability of ICT in Upper Basic Schools in Kano metropolis. However, 20% of the principals agreed very strongly that the ICT facilities were functional and effective while 80% of them disagreed. They insisted that the ICT facilities were not functional and effective for teaching in those sampled schools. In terms of student utilization of the available ICT facilities 100% of the respondents agreed that students of the Upper Basic Schools of Kano Metropolis frequently utilize the available ICT facilities in the school for teaching purposes. Besides, the table shows the sampled schools were equipped with fully equipped computer rooms, with internet services/facilities, for the purpose of teaching and learning using I.C.T.

For the purpose of record keeping in Upper Basic schools. However, the table revealed that 18% and 47% of the respondents observed that school principals do not use computer to keep records in their schools satisfactorily. Perhaps this was as a result of inadequate training for that purpose by the principals some of them might have recently appointed as principals.in table 4.2.1 the researcher wanted to know from the principals how regularly the students from the sampled schools use ICT in Upper Basic schools in Kano metropolis the result as presented in Table 4.3(Item 8) showed that they strongly agreed that students in Upper Basic Schools frequently utilized the available ICT facilities during their learning session. However, some of them did not share that opinion they stated that they don't frequently utilized the available ICT facility in the School. The difference of the opinion of these responses should be expected because of the sociological and political inclination that exists under the current political dispensation in Kano.

4.3 HYPOTHESES TESTING

In order to test the hypothesis presented in this study, the researcher used the chi-square (X^2) at 0.05 level of significance this was applied to test the options of respondents and the results are presented in Table 4.3.1 of this study.

4.3.1 RESEARCH HYPOTHESIS ONE:

There is no existence of ICT utilities at Upper Basic Schools in Kano Metropolis

Table 4.3.1: There is no existence of ICT utilities at Upper Basic Schools in Kano Metropolis

	Variables	**SA**	**A**	**DA**	**SDA**	total
1.	Availability of information communication technology in the school	1 20%	4 80%	0 0%	**0** **0%**	5
2.	The available ICT facilities are functional and effective for teaching in schools	1 20%	0 0%	4 80%	**0** **0%**	5
3.	Students frequently utilizes the available ICT in schools for learning purposes	0 **0%**	5 100%	**0** **0%**	**0** **0%**	5
	Total	2	9	**4**		15

Note; to get the observed figure, we multiply the total row score by the total column score and divide it by the grand total. This is calculated, analyzed and presented in Table 4.3.2

Table 4.3.2:Chi-square Analysis on the existence of ICT utilities at Upper Basic Schools based on Table 4.3.1

O	**E**	**O-E**	**(O-E)2**	**(O-E)2\E**

1	**0.66**	**0.34**	**0.1**	**0.2**
1	**0.66**	**0.34**	**0.1**	**0.2**
0	**0.66**	**-0.66**	**0.4**	**0.6**
4	**3**	**1**	**1**	**0.3**
0	**3**	**-3**	**9**	**3**
5	**3**	**2**	**4**	**1.3**
0	**1.33**	**-1.33**	**1.8**	**1.4**
4	**1.33**	**2.67**	**7.1**	**5.3**
0	**1.33**	**-1.33**	**1.8**	**1.4**
0	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**

Key:

O= observed figure

E= expected figure

O-E=observed minus expected figures

In table 4.3.2 chi-square was used to test the hypothesis and the decision rule if Xc> X^2 Tab Reject Null hypothesis Xc = 13.5, X^2 tab at 0.05 at df=4 is 9.48 Thus X tab 13.5 > X^2 tab 9.48. Therefore, the Null hypothesis is rejected.

4.3.3 RESEARCH HYPOTHESIS TWO

There is significance difference in teachers with Educational qualification and their counter parts without educational qualification in teaching ICT in Upper Basic Schools in Kano Metropolis.

Table 1.3.3 presented teachers educational qualification in the sampled schools.

Variable	Responses	Percentages
Diploma in computer	1	20.00
BSC computer	4	80.00
NCE computer	0	0.00
Total	5	100.00

Table 2: 4.3.4chi-square analysis on teacher's Educational qualification in the sampled schools

Response	O	E	O-E	$(O-E)^2$	$(O-E)^2/E$
Diploma	1	-4	3	9	2.25
Bsc. Computer	4	--1	3	9	9
NCE Computer	0	--5	5	25	5
Total	5	10	11	43	16.25

$X^2 = 7.815$

From the table 4.3.5 chi-square was used to determine the significant difference in Teachers with ICT educational qualification and their counterpart without such qualification in Upper Basic Schools in Kano metropolis. The result showed that X^2 tab 8.6 > X^2 tab 7.815, thus reject null hypothesis the X^2 = 7.815 was 0.05 level of significance at df = 3.

4.3.5 RESEARCH HYPOTHESIS THREE

There is no significant difference in learning of ICT in the schools with well-equipped computer rooms and have internet service and the schools that are not well equipped with computer and do not have internet services.

Table 4.3.5, learning performance difference between students in schools with well-equipped computer rooms and students in schools without equipped computer rooms

	Variable	SA	A	D	SD	Total
1.	Students' academic performance from schools with internet facilities for proper ICT usage	22	46	66	16	150
	TOTAL	22	46	66	16	150

Table: 4.3.6 Chi-square Table for learning difference between schools with well-equipped computer rooms and students in schools without equipped computer room

O	**E**	**O-E**	**$(O-E)^2$**	**$(O-E)^2/E$**
22	16	6	36	2.3
46	67.5	-21.5	-43.0	0.6
66	53.5	12.5	156.3	2.9
16	13	3	9	0.7

The Chi-Square was used to examine the significant difference in learning of ICT in the schools with well-equipped computer rooms and access to internet service and the schools that are not well equipped computer rooms and don't have access to internet

services in Upper Basic Schools. The X^2 tab 36.57 > X^2 tab 7 815. Therefore, the Null hypothesis is rejected.

4.3.6 RESEARCH HYPOTHESIS FOUR

There is no difference in schools that use ICT in keeping of school records and schools that donot use ICT in keeping of school records.

Table 4.3.7 the chi-square table on the analysis of school administrators where principals utilize ICT in keeping of school records and those without using ICT in keeping such records.

Variable	SA	A	D	SDA	TOTAL
School principals do not use computer to keep records in their schoolsfor effective administration	18 12%	70 47%	38 25%	24 16%	150
Teachers use computer in keeping records for effective administration	5 4%	12 8%	36 24%	97 60%	150
Total	23	82	74	121	300

Table 4.3.8 presents the chi-square table for the analysis school administrators where principals utilize ICT in keeping school records and those without using ICT in keeping such record.

O	E	**(O-E)**	**$(O-E)^2$**	**$(O-E)^2/E$**
18	11.5	6.5	42.2	3.7
70	41.5	28.5	812.2	19.5
38	37	1	1	-36
24	60.5	-36.5	132.2	2.2
5	11.5	-6.5	42.2	1.2

12	41.5	-29.5	870.3	20.9
97	36.5	60.5	3660.3	100.2
36	37	-1	1	0.02s

Key:
O= observed figure
E= expected figure
O-E= observed minus expected figures

In table 4.3.8. Chi-square was used to determine the significant difference between schools that use ICT in keeping school records and those that do not use ICT for record keeping. The result shows that X^2tab > X tab i.e. 43.21 > 7.815. Therefore, there is significant difference between administrators who keep records using ICT and their counterpart that do not use ICT in keeping records in Upper Basic Schools in Kano Metropolis.

4.3.9 RESEARCH HYPOTHESIS FIVE

There is no significant difference between students who utilize ICT in Upper Basic Schools and their counterpartsfrom schoolsthat do not utilize ICT.

Table 4.3.9 presents the analysis of difference between students who utilize ICT in sampled schools and their counterparts from the schools that do not utilize ICT

Variable	**SA**	**A**	**D**	**SDA**	**TOTAL**
students frequently utilize the available ICT facilities for learning	24 15%	49 32%	62 40%	15 10%	150
The school has Internet facilities for proper ICT usage	10	12	93	35	150
Total	34	61	155	50	300

NOTE; to get the expected figure we multiply the total raw score by the total column score and divide by grand total

Table 4.3.10therefore presents chi-square Table on difference between students who utilize ICT in Upper Basic Schools and their counterparts from schools that do not utilize ICT.

O	**E**	**O-E**	**$(o-e)^2$**	**(O-E)2\E**
10	17	-7	-49	2.9
12	26.5	18.5	342.2	12.9
93	77.5	15.5	-31.0	0.40
35	25	10	100	4
24	17	7	49	2.8
49	30.5	18.5	342.2	11.21
62	77.5	-15.5	-31.0	0.40
15	25	10	100”	4

Key:

O= observed figure

E= expected figure

O-E= observed minus expected figures

Table 4.3.11 presents the chi-square result which showed that there is significant difference between students that utilize ICT in Upper Basic Schools and students that do not utilize ICT in Upper Basic Schools, x=24.99 ^{x2}=7.815This can clearly be seen when $X > X^2$ tab reject Null Hypothesis therefore the Null hypothesis is rejected.

Summary of major findings

The data presented and analyzed in this chapter has enabled the researcher to arrive at the major findings of this study from the objectives of the study. The summary of the major findings of the study include the following;

1. Government should improve the availability, utilization and management of ICT in Upper Basic Schools in Kano Metropolis.
2. Government should organize seminars and workshops to teachers teaching ICT in Upper Basic School.
3. The qualification of teachers teaching ICT are (BSC)(NCE)and Diploma.
4. The upper Basic schools have well equipped computer rooms and internet services.
5. Students often utilize the available ICT in Upper Basic Schools in Kano Metropolis.

4.5 Discussions of the findings

The study has analyzed the availability, utilization and management ICT in Upper Basic Schools of Kano Metropolis.

During the course of the research, it was gathered that Upper Basic Schools in Kano Metropolis have availability of information and communication technology, the research is carried out to find out the availability utilization and management of ICT in Upper Basic Schools of Kano Metropolis and it was gathered that Upper Basic Schools have available ICT in the management of Upper Basic Schools in Kano Metropolis. However; its still yet fully committed ICT into administration of education. This study further revealed that education Qualification have significant effect or impact in teaching of ICT in Upper Basic Schools in Kano Metropolis. The result showed that schools with

qualified teachers in ICT have better student in ICT than schools who have normal teachers teaching ICT.

Furthermore, the study revealed that school administrators who manage their Schools records with the use of ICT are more effective, efficient; in school administration they are quicker in decision making processes because of the availability of records at hand.

The study went further to discuss that there is significant difference between schools who are better equipped with ICT and schools than those that are not equipped with ICT.

However, the study found out that although the Upper Basic Schools in Kano Metropolis are not yet fully integrated those schools having equipped with ICT facilities and internet services have better management services than school without such facilities.

. The study therefore opined that schools with equipped ICT facilities and internet access have better instructional advantages in classroom teaching and learning. Finally, the study discussed that schools with ICT facilities make their student to utilize their time in taking classes or lessons fascinating and robust for effective learning to take place.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

The chapter presents the summary, conclusion and recommendations that are consistent with the outcome of this study, it also provides suggestions for further study.

5.2 SUMMARY

The study was a survey on the availability utilization and management of ICT in Upper Basic Schools in Kano metropolis, Kano State Nigeria.

To achieve the main objective of the study, two sets of questionnaires were designed and standardized for principals and teachers for the aim of collecting data to achieve the objectives. The questionnaires have similar information but different in Questioning the questionnaire was distributed to six principals and 196 teachers out of which 5 principals filled and returned the questionnaire also 150 filled and returned the questionnaire respectively.

Data for the study was collected and analyzed using descriptive statistics of frequency distribution and percentages scores with chi-square used for testing the five hypothesis.

The findings of the study revealed that there is availability, utilization and management of ICT in Upper Basic Schools in Kano metropolis. However, the study revealed that information and communication technology is not yet fully integrated in Upper Basic Schools in Kano metropolis. Nevertheless, the study revealed that Upper Basic Schools administrators who manage their school record with the use of ICT have better management and are more effective and efficient.The study went further to discuss that there is significant diference between schools who are better equipped with ICT facilities

and internet services have better management services than schools without such facilities.

5.3 CONCLUSIONS

With reference to the study, it has been established that;

(1) there is availability, utilization and management of ICT in Upper Basic Schools in Kano metropolis.

(2) However, schools are not fully integrated with ICT.

(3) Inadequate skilled teachers with ICT knowledge.

(4) Inadequate equipped computer rooms with internet access.

(5) Also inadequate power supply are still major problems to be tackled if ICT will be fully functional and effective.

5.4. RECOMMENDATIONS FROM THE STUDY

Based on the findings of the research the researcher recommends the following:

1. government should improve ICT Education in School curriculum and administration.
2. Government should organize seminars and workshops to teachers of upper basic schools in Kano metropolis.
3. Principals should go for training and workshops on how to keep proper school record using ICT
4. Government should fully fund equipped computer rooms around the schools for proper utilization of ICT by both the staff and the student of the school 007A.
5. There is need to recruit teachers with Educational Background and Computer knowledge. For proper ICT teaching and learning

6. Government should improve the power supply of the schools so as to cover the recommended hours of teaching ICT practically.
7. There is need for the Government to provides a periodical workshop on ICT for the teachers.
8. Government should provide teachers with computer on loan basis since most of the teachers cannot afford buying a computer. This will help the teachers to keep record using computer.

5.4.1 RECOMMENDATIONS FOR FURTHER STUDIES

In the light of above findings and recommendations the following suggestions were made for further studies.

1. A similar study can be done in universities
2. A study can also be carried out on one impacts of availability, utilization and management of ICT in effective management of school.
3. A similar study can be done to examine the impacts of ICT on the management and keeping of school records for future reference.
4. A study can also be done to examine the difference between schools with ICT facilities and schools without ICT facilities in the management of the school.

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