INFORMATION COMMUNICATION TECHNOLOGY (ICT) AND MANAGEMENT OF PRIMARY SCHOOLS IN OGEMBO DIVISION GUCHA DISTRICT KENYA

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And Administration

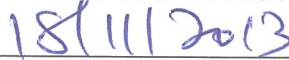By

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DECLARATION A

"This Thesis is my original work and has not been presented for a degree or any other academic award in any university or institution of learning."

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18/11/2013

Date

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ABSTRACT

The study was concerned with Use of Information communication Technology (ICT) in themanagement of Primary Schools in Ogembo Division Gucha District kenya. The study was guided by 4 objectives; Determining the profile of the respondents, the level of Use of ICT, The level of management functions and the relationship between Use of ICT and Management functions of Primary school administrators in Ogembo Division, Gucha District. The study applied a co relational survey design using quantitative approach to derive meaning from quantitative data generated. The main research instrument used to obtain data during the study was a four point Likert scale questionnaire researcher made to suit the objectives of the study. Data collection was guided by the research questions and objectives. A total of 80 respondents were used. Results from the study and analysis showed that there was a significant relationship between use of ICT and management of primary schools. Revelations from the study further indicated that there is low level of knowledge and use of ICT among the primary school administrators. The study further recommended that the government should organize refresher courses on use of ICT for the current primary school administrators as it also makes ICT courses compulsory to teacher trainees.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the study

1.1.1 Historical Perspective

The art and practice of management has been used for many centuries to plan, organize, lead and control people and other resources. Designing and building such huge public works projects as the Great Wall of China, the pyramids of Egypt, and the aqueducts that provided water to the cities in the Roman Empire required an Understanding of management. For a long time, the performance of organizations has to a large extent depended on how their resources are allocated and their ability to adapt to changing conditions. Successful organizations have known how to manage people and resources efficiently to accomplish organizational goals and to keep those goals in tune with changes in the external environment, such as those brought about by technology, legislation, and competitors, Luis and David (2002). Kathryn et al.(1998) Contend that Information systems in some form were in existence long before today's technology was even dreamed of, they say that the use of automated information processing became common at the end of the 19th century. Lous and David (2002) further assert that by the 1960s,with the advent of affordable information technology, information systems had undergone material changes. They have continued to evolve as technology developed.

Today, ICT allow greater use of information through the firm much as it comes with new challenges. Technology has improved operations including productivity, efficiency and customer responsiveness. Bartol and Martin (1998).

Ukwegbu, (2005). Never in human history has such a revolution been witnessed in which digital data has transformed the way we communicate in our homes, offices, market places, hospitals, churches, sports arena, legal environments and more importantly schools or educational concerns. It is on this note that the government of Thailand had to put ICT as top project on display such that the project was at the three-day state information and communication technology week to show the public the progress that was being made in developing new electronic services (Jowssey, 2008). Severalother nations of the world have placed so much importance on the use of ICT in their administrative affairs. For instance, e-filing has become the best solution in tax administration in Ghana (Boakye & Banini, 2007); web services and e-services enable the Revenue Department to provide successful eservices to the public in England (kennewell, Parkinson & Tanner, 2007). ICT has also shaped African schools and classrooms (Mbangwana, 2007). ICT also had brought about organizational change in Italian manufacturing firms during 1995-2003 (Giuri, Torrisi & Zinovyeva, 2008).

1.1.2 Theoretical Perspective

Theoretically, this study was underpinned by Boulding's (1956) Systems Theory, Which stipulates that organizations can be visualized as systems.

A system is a set of interrelated parts that operate as a whole in pursuit of common goals. According to Boulding, the said theory maintain that an organizational system has four major components; inputs which are the various human, material, financial, equipment and informational resources required to produce goods and services. Transformation processes are the organization's managerial and technological abilities that are applied to convert inputs into outputs. Outputs are the products, services and other outcomes produced by the organization. Feedback is the information about results and organizational status relative to the environment. In the context of this study, ICT adoption, as an element of the system is hypothesized to be crucial in the process of ensuring efficiency and effectiveness of administrators through planning, leading, organizing and controlling

1.1.3 Conceptual perspective

Whereas Management is the process of getting things done through others, in this study, it is construed as involving planning, organizing, leading and controlling UNESCO (2002) defined information and communication technology (ICT) as the range of technologies that are applied in the process of collecting, storing, editing, retrieving and transfer of information in various forms. ICT could, therefore, be understood as all those electronic devices that are used in broadcasting telecommunication and all other electronically mediated information gathering and dissemination processes. These include radio sets, television sets, audio tape players, video players, projectors, the software

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and hardware which are used in the teaching and learning processes. There seems to be a consensus in literature that the difference between administrators, teachers, and students of Nigerian school and those of other world class schools, is the civilization in latter institutions and the exposition of their administrators, teachers, and students to world class ICT experiences (Okhiria, 2007). The ICT impact in the area of communication is so strong that changes are already occurring in the examination bodies in the country. Today, the Joint Admissions and Matriculation Board and Nations Education Certificate Examinations results can be checked online; obtaining and filling of post University Matriculation Examination aptitude tests for university admissions is through online with the use of scratch cards. ICT materials offer fresh hope for quick release of results of evaluation of instructional outcomes for supervision of schools. Thus the era of long-waited result is over with ICT presence (Bassey, 2006). Writing on ICT as a facilitator and aid to teaching and learning, Otakhor (2007) argued that the introduction of ICT facilities in secondary schools could spur learning attractiveness and hence its effectiveness. For instance, the automatic spelling and grammar function in the ICT system enables teachers and students to see their spelling errors and the options from which to choose. In addition, the use of educational application of software helps the students to work easily, makes their writing easier, and improves efficiency of teaching-learning process and helps them improve more professionally (Ibadin, 2008).

The World Bank (2007) report emphasized the pertinent role of the teacher in the effective utilization of this new global innovation and practice. It opines that it is not the presence of technology itself that

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stimulates significant changes inside a school. That without the involvement of the teacher and staff most students may not take full advantage of all available potential on their own. Thus in Nigeria, new ICT related tools can make institutions and workers more productive, enhance skills and learning, improve governance at all levels, and make it easier for the poor to access services and make their voices heard (Abid, 2004).

Indeed, it has been established that power and influence flow to those who know more and have access to better information (Longe & Ajabi, 1990). Yusuf (2005) also maintained that modern organization's ability to achieve results and the decision making effectiveness of contemporary managers is no longer dependent on just the quality of the manager, but more importantly is the function of the quality of information and communication channels feeding and transmitting their actions. In (2001), Telem conducted a study in school 4 in Hougang, North Zone of Singapore in June of the same year, and found out that ICT helped in streamlining administrative processes in the area of communication. Previously, teachers used to refer to big log books to know which rooms were available for booking and who booked same and for how long, but with ICT, they could see the schedule for an entire month and know who booked them and which date the rooms may be vacant. In addition ICT was found a very important tool for information dissemination as it helped communicate whatever information was available to the staff the moment they logged –in as they read, know, and acted. Telem (2001) concluded that ICT was effective in eradication of distortion, duplication of information thus enhancing effective communication.

Also, Obeng (2004) was of the opinion that the use of internet and intranet, besides reducing administrative cost also reduces administrative inconveniences because the same information on the internet can be sent to all departments without having to do it individually. Instead of sending notices of meeting for instance, to lectures or those concerned, this can be done online. Communication both within and outside departments can be greatly enhanced by the use of internet, intranet and extranet. Nickels, McHugh and McHugh (2002) however warned that electronic communication can never replace human communication for creating enthusiasm and espirit de corps. That efficiency and productivity can become so important to a firm that people are treated like robots. Computers are tools not a total replacement for workers. Computers should aid creativity by giving people more freedom and time. Anamuah-Mensah (2009) observed that the use of computer-mediated communication is of great gain both at work places and business ventures. Anamuah-Mensah reported also that the use of computer applications is useful in accounting and finance, financial control, sales and marketing and manufacturing. Also, Kalusopa (2005) conducted a study on the challenges of utilizing information communication technologies (ICT) for the small-scale farmers in Zambia.

To achieve the aim of the study, Kalusopa carried out in survey of information needs of small-scale farmers in two selected provinces, in order to establish and prioritize their information needs. The findings included weak human capital and technical infrastructure, lack of clear national information policy and lack of a coordinated agricultural information support system for small-scale farmers anchored on ICTs.

This pointed to the necessity of using ICTs in organizations for effective communication and on members of that organization, which schools are not left out.

1.1.4 Contextual Perspective

The Ministry of Health in Kenya (2003) enumerated the significance of using ICTs in health sector to include improving access to health services, improving quality, improving efficiency in both management and technical through reliable information dissemination systems, improving collaboration by proving support to overall planning and sector assessment process, and improving funding by proving a broadcast facility for marketing the health sector. All these are evident of organizational administrative effectiveness via the use of ICTs. Hook (2004) found that in Kenya, the use of ICTs enhanced the transformation of leaning outcomes for the gifted and talented. With ICTs, teachers were able to teach, communicate, maintain good records and evaluate these groups of children with high level of potentialities in them. The use of ICTs has dramatically increased the speed of communication in organizations (FMLINK, 2006). In line with this, Freedman (2009) reviewed that primary school curriculum in Kenya and recognized the usefulness of ICT as essential to a modern concept of literacy and to effective communication which are within language, oracy and literacy. In (2009)) Etudor-Eyo, Etuk, and Azewena found that there is high level of utilization of ICT by school administrators in Nairobi province schools. Due to the high level of utilization of ICT by teachers in Italy, the minimum ratio of teacher/students is now 1/50, while the mean value is about 1/30. All

technical, vocational secondary schools are connected to the internet, while the percentage of general secondary schools is about 90% and in primary and lower secondary schools the percentage is 75% (Marcheggiano, Fichera, Mayer, Roncallo and Ronchi, 2001). All reforms which are now affecting the school have brought about fundamental, wide-ranging changes in the administrative secretarial staff

work. In (2000), an increase in competition for scarce resources and the decrease in the public's trust in higher education practices were observed and government resulted in unprecedented demands for campuses to demonstrate their effectiveness and efficiency. Heck, Johnsruad and Rosser (2000) found that campuses responded with a host of institutional data ranging from retention and graduation rates to faculty workload studies to job and career placement records. One possible consideration, the performance of administrators well provided needed and appropriate information about the functioning of the institution. In Japan, it was reported that project management and implementation is enhanced through ICTs utilization (World Summit on the Information Society: Geneva 2003 – Tunis 2005). Hence it is hoped that ICT could enhance high administrative effectiveness in secondary schools, especially in the area of communication.

1.2 Statement of the Problem

Use of ICT has unquantifiable advantages such as facilitating creation, storage, transfer and application of organizational knowledge (Turban et al2000). However, use of ICT by primary school Administrators in Kenya has consistently been characterized by low quality (e.g. see

Gakibayo,2001; Nsobya,2002 and Wakanyasi 2002). In particular, ethnographic observation suggests that Head teachers and their deputies do not use even basic ICT. For example they rely on services in secretarial bureaus instead of word processing their work (Njiraine,2000).. The said administrators hardly use the internet, which the schools offer for free Obeng (2004). This failure to use ICT by the said administrators leads to several undesirable outcomes such as waste of funds by the Ministry of Education on under utilized or even un utilized facilities (Njiraine,2000). Also, given that the current corporate organizations and governments need employees who are good at ICT usage, the said administrators stand a risk of being laid off (Kasozi 2002).

Factors related to poor administration have to be unearthed if the problem is to be addressed. While there could be several factors related to the problem, according to Boulding's 1956 systems theory, use of ICT may have a profound effect on the general effectiveness of the management of an organization. Hence the need for this study to appraise the relationship between the four functions of management, namely planning, organizing, leading and controlling and use of ICT by the said administrators.

1.3 Purpose of the Study

The purpose of this study was; To establish the relationship between the quality of the four management functions and use of ICT by Head teachers and their deputies in Ogembo Division Gucha District.

1.4 Objectives

The specific objectives of the study were;

    (i) To determine the profile of the respondent in respect to Sex, Age, Level of education and administrative Experience

    (ii) To establish the level of use of Use of ICT by Primary School administrators in Ogembo Division

    (iii) To investigate the quality of management functions of Primary School administrators in Ogembo Division

    (iv) To establish the relationship between Use of ICT and management functions of Primary School administrators in Ogembo Division

1.5 Research Questions

    (i) What is the profile of my respondents in respect to age, sex, level of Education and Administrative experience

    (ii) What is the level of Use of ICT by primary school administrator in Ogembo Division?

    (iii) What is the quality of management functions of primary school administrators in Ogembo Division?

    (iv) What is the relationship between the use of ICT and management functions of Primary school administrators in Ogembo Division?

1.6 Hypotheses

Ho (i) There is no significant relationship between Use of ICT and quality of Management functions of Primary School administrators in Ogembo Division.

1.7 Scope

1.7.1 Geographically

The study concentrated on primary schools in Ogembo Division, Gucha District which is located about 30 kilometers to the south of Kisii Town –Kenya .

1.7.2 Content scope

The study focused on investigating the quality of use of ICT, herein conceptualized as basic applications software and internet facilities and its relationship with four management functions namely; planning, organizing, leading and controlling. The head teachers, their deputies and teachers of primary schools in Ogembo served as respondents.

1.7.3 Time scope

The study was conducted between January and August 2013

1.7.4 Theoretical scope

The study was underpinned by bouldings' 1956 systems theory.

1.8 Significance of the Study

The study findings could help;

The Ministry of Education Kenya ; from the findings, they may identify how Use of ICT affects management practices in Ogembo Division primary schools and hence be in a position to adjust staff training on the use of ICT so as to positively influence management practices in the Division.

Students; they may benefit from the improved management levels incase their school administrators learn from the findings of this study.

Researchers; theoretically, the study results will also prompt more researchers in the area having contributed to literature and methodology of such future studies.

School administrators; the study findings may enable them know the level of use of ICT as well as the significance of use of ICT in management practices in their schools

1.9 Operational Definition of Terms

Information Communication Technology (ICT) – refers to use of Basic applications software and internet facilities.

Management- the process of planning, organizing, leading and controlling organizational resources so as to realize its goals and objectives

Primary schools - The a schools that provides the first eight basic education

Administrators – those who exercise the management functions in the schools

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Concepts, Opinions, Ideas from Authors/ Experts

Independent Variable

ICT

Dependent Variable

Management of primary schools

Application Software
  Word processing
  Spreadsheet
  Database Management
  Graphics
  Desktop Publishing
  Statistical/research data analysis

Internet facilities
  Email
    World wide web (surfing)
    Bulletin board services, mailing
lists And discussion groups
    Computer conferencing
    Video conferencing
    Electronic journals/newsletters
    Electronic databases
    On-line library catalogs

+ → Planning in primary schools

+ → Organizing in primary schools

+ → Leading in primary schools

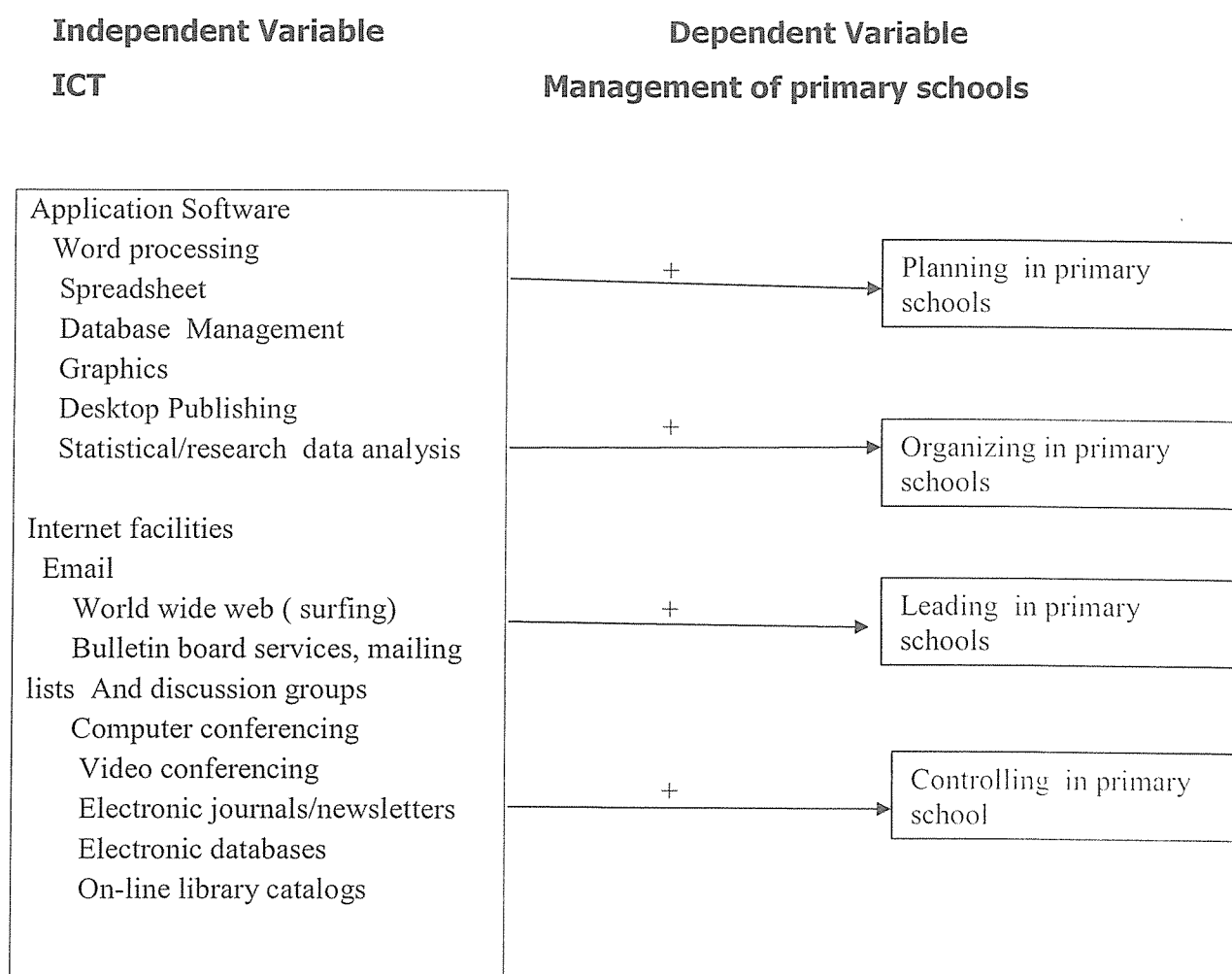+ → Controlling in primary school

Figure 2.1 Conceptual framework relating use of ICT to management

As is evident in figure 2.1, use of ICT, positively influences all aspects of management functions considered.

Information and communications technology, (ICT)

ICT, is often used as an extended synonym for information technology (IT), but is usually a more general term that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), intelligent building management systems and audio-visual systems in modern information technology. Kennwell et.al (2007). ICT consists of all technical means used to handle information and aid communication, including computer and network hardware, communication middleware as well as necessary software. In other words, ICT consists of IT as well as telephony, broadcast media, all types of audio and video processing and transmission and network based control and monitoring functions. Kalusopa (2005). The expression was first used in 1997 in a report by Dennis Stevenson to the UK government and promoted by the new National Curriculum documents for the UK in 2000. *ICT* is often used in the context of "ICT roadmap" to indicate the path that an organization will take with their ICT needs. Ibadin (2008).

The term *ICT* is now also used to refer to the merging (convergence) of audio-visual and telephone networks with computer networks through a single cabling or link system. There are large economic incentives (huge cost savings due to elimination of the telephone network) to merge the audio-visual, building management and telephone network with the computer network system using a single

unified system of cabling, signal distribution and management.Jowsesey (2005) This in turn has spurred the growth of organizations with the term ICT in their names to indicate their specialization in the process of merging the different network systems.

"ICT" is used as a general term for all kinds of technologies which enable users to create, access and manipulate information. ICT is a combination of information technology and communications technology. Igbafe(2002). In an increasingly interconnected world, the interactions among devices, systems, and people are growing rapidly. Businesses need to meet the demands of their employees and customers to allow for greater access to systems and information. All of these communications needs must be delivered in a unified way. By offering a scalable infrastructure, cloud computing models enable companies to work smarter through more agile and cost-effective access to technology and information. This unified platform reduces costs and boosts productivity across a business and beyond. Part of an information and communications technology roadmap should involve consolidating infrastructures, while providing added benefits to users in collaboration, messaging, calendaring, instant messaging, audio, video, and Web conferencing. Cloud computing is driving more efficient IT consumption and delivery and taking ICT to the next level. Etudor-yo, et al (2009).

According to a study done by Bartol,(1998). To cope with rising numbers of students, educationalists are rethinking teaching strategies to consider the potential of e-learning for academic delivery to an ever more diverse student population. However, there is a relative dearth of research

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examining the role of strategic management and organizational factors in Information and Communication Technology (ICT) and e-learning implementation. Thus educationists should analyses a theoretical rich picture of organizational ICT processes and e-learning in higher education.

David, (2002) maintains that The purposes of organizing while using ICT include but is not limited to determining the tasks to be performed in order to achieve objectives, dividing tasks into specific jobs, grouping jobs into departments, specifying reporting and authority relationships, delegating the authority necessary for task accomplishment, and allocating and deploying resources in a coordinated fashion. These resources are what make an organization function as a single cohesive entity. Physical assets, monetary, human resources, knowledge and technology are prime examples of resources that help build upon the foundation of the organization. Knowledge and technology in particular go more hand in hand during the organization processes of management.

In the view of Lous,(2002).With the introduction of Universal Primary Education (UPE), greater demand on teachers and the quality of primary education has increased. In order to address the need for quality primary education and the provision of additional resources for Kenya an primary teacher s, the Connectivity for Educator Development (Connect -ED) project was initiated in May 2000. The Connect -ED project is supported by the United States Agency for International Development (USAID) in close cooperation with Kenya's

Ministry of Education and Sports and within the framework of the U.S. Education for Development and Democracy Initiative Connect –ED is using technology to enable and enhance learning and teaching for primary educators through the creation of multifaceted approaches to integrating media and computer s in the Primary Teacher Colleges (PTC) classrooms. Connect-ED accomplished this by setting up Education Technology Centers thereby increasing access, avail ability, and provision of relevant and quality learning materials and support for teacher professional development. (Best, 1993).

In the view of Gakibayo,(2001) One of the greatest challenges in ICT use in education is balancing educational goals with economic realities. ICTs in education programs require large capital investments and developing countries need to be prudent in making decisions about what models of ICT use will be introduced and to be conscious of maintaining economies of scale. Ultimately it is an issue of whether the value added of ICT use offsets the cost, relative to the cost of alternatives. Put another way, is ICT-based learning the most effective strategy for achieving the desired educational goals, and if so what is the modality and scale of implementation that can be supported given existing financial, human and other resource.

Sustainability of ICT-enhanced educational projects

One aspect of development programs that is often neglected is sustainability. The long history of development aid has shown that too many projects and programs start with a bang but all too soon fade out with a whimper, to be quickly forgotten. This is true for many ICT-based educational projects as well. Foster (1998). In many instances, these

projects are initiated by third party donors such as international aid agencies or corporations and not enough attention is paid to establishing a mechanism by which the educational institution or community involved can pursue the project on its own or in partnership with other stakeholders after the initiating donor exits. But cost and financing are not the only barriers to sustainability. The sustainability of ICT-enabled programs has four components: social, political, technological, and economic. (Wakanyasi, 2000). Economic sustainability refers to the ability of a school and community to finance an ICT-enabled programme over the long term. Cost-effectiveness is key, as technology investments typically run high and in many cases divert funds from other equally pressing needs. Planners should look to the total cost of ownership and build lucrative partnerships with the community to be able to defray all expenses over the long term. The need to develop multiple channels of financing through community participation ties economic sustainability closely to social and political sustainability. Heck and Rosser (2002). Social sustainability is a function of community involvement. The school does not exist in a vacuum, and for an ICT-enabled project to succeed the buy-in of parents, political leaders, business leaders and other stakeholders is essential. Innovation can happen only when all those who will be affected by it, whether directly or indirectly, know exactly why such an innovation is being introduced, what the implications are on their lives, and what part they can play in ensuring its success. ICT-enabled programs must ultimately serve the needs of the community. Thus community-wide consultation and mobilization are processes critical to sustainability. In short, a sense of ownership for the project must be developed among all

stakeholders for sustainability to be achieved. Best and Khan (1993). Political sustainability refers to issues of policy and leadership. One of the biggest threats to ICT enabled projects is resistance to change. If, for instance, teachers refuse to use ICTs in their classrooms, then use of ICTs can hardly take off, much less be sustained over the long term. Because of the innovative nature of ICT-enabled projects, leaders must have a keen understanding of the innovation process, identify the corresponding requirements for successful adoption, and harmonize plans and actions accordingly, Tchombe and karsenti (2009)

Technological sustainability involves choosing technology that will be effective over the long term. In a rapidly changing technology environment, this becomes a particularly tricky issue as planners must contend with the threat of technological obsolescence. At the same time, there is the tendency to acquire only the latest technologies (which is understandable in part because these are the models which vendors are likely to push aggressively) generally, however, planners should go with tried and tested systems; stability issues plague many of the latest technologies. Again, the rule of thumb is to let the learning objectives drive the technology choice and not vice versa, the latest technologies may not be the most appropriate tools for achieving the desired educational goals. When making technology decisions, planners should also factor in not just costs but also the availability of spare parts and technical support. Boakye and Banini (2007)

Challenges in the use of ICT

Although valuable lessons may be learned from best practices around the world, there is no one formula for determining the optimal level of ICT integration in the educational system. Significant challenges that policymakers and planners, educators, education administrators, and other stakeholders need to consider include educational policy and planning, infrastructure, language and content, capacity building, and financing Agaba (2003).The implications of ICT-enhanced education for educational policy and planning. Attempts to enhance and reform education through ICTs require clear and specific objectives, guidelines and time-bound targets, the mobilization of required resources, and the political commitment at all levels to see the initiative through. Some essential elements of planning for ICT are listed below. A rigorous analysis of the present state of the educational system. ICT-based interventions must take into account current institutional practices and arrangements. Bartol and et.al (1998) Specifically, drivers and barriers to ICT use need to be identified, including those related to curriculum and pedagogy, infrastructure, capacity-building, language and content, and financing.

The specification of educational goals at different education and training levels as well as the different modalities of use of ICTs that can best be employed in pursuit of these goals. This requires of the policymaker an understanding of the potentials of different ICTs when applied in different contexts for different purposes, and an awareness of priority education needs and financial and human resource capacity and constraints within the country or locality, as well as best practices around

the world and how these practices can be adapted for specific country requirements.

The identification of stakeholders and the harmonizing of efforts across different interest groups. The piloting of the chosen ICT-based model. Even the best designed models or those that have already been proven to work in other contexts need to be tested on a small scale. Such pilots are essential to identify, and correct, potential glitches in instructional design, implement ability and effectiveness. The specification of existing sources of financing and the development of strategies for generating financial resources to support ICT use over the long term, Best (1993).

The infrastructure-related challenges in ICT-enhanced education

A country's educational technology infrastructure sits on top of the national telecommunications and information infrastructure. Before any ICT-based programme is launched, policymakers and planners must carefully consider the following: In the first place, are appropriate rooms or buildings available to house the technology. In countries where there are many old school buildings, extensive retrofitting to ensure proper electrical wiring, heating/cooling and ventilation, and safety and security would be needed. Donneli (1987)

Another basic requirement is the availability of electricity and telephony. In developing countries large areas are still without a reliable supply of electricity and the nearest telephones are miles away. Experience in some countries in Africa point to wireless technologies (such as VSAT or Very Small Aperture Terminal) as possible levers for

leapfrogging. Although this is currently an extremely costly approach, other developing countries with very poor telecommunications infrastructure should study this option, Hook (2004).

Policymakers should also look at the ubiquity of different types of ICT in the country in general, and in the educational system (at all levels) in particular. For instance, a basic requirement for computer-based or online learning is access to computers in schools, communities, and households, as well as affordable Internet service. In general, ICT use in education should follow use in society, not lead it. Education programs that use cutting-edge technologies rarely achieve long term success:

It is cheaper and easier, to introduce a form of technology into education, and keep it working, where education is riding on the back of large-scale developments by governments or the private sector. Television works for education when it follows rather than precedes television for entertainment; computers in schools can be maintained once commercial and private use has expanded to the point where there is an established service industry, Hook (2004)

Challenges related to financing the cost of ICT use

One of the greatest challenges in ICT use in education is balancing educational goals with economic realities. ICTs in education programs require large capital investments and developing countries need to be prudent in making decisions about what models of ICT use will be introduced and to be conscious of maintaining economies of scale. Ultimately it is an issue of whether the value added of ICT use offsets the cost, relative to the cost of alternatives. Put another way, is ICT-based learning the most effective strategy for achieving the desired educational

goals, and if so what is the modality and scale of implementation that can be supported given existing financial, human and other resource

Planning and use of ICT

Universities currently face urgent demands to facilitate both lifelong learning and widening participation in an era of increasing global competition combined with cost reductions. To cope with rising numbers of students, educationalists are rethinking teaching strategies to consider the potential of e-learning for academic delivery to an ever more diverse student population. However, there is a relative dearth of research examining the role of strategic management and organizational factors in Information and Communication Technology (ICT) and e-learning implementation. This chapter analyses a theoretical rich picture of organizational ICT processes and e-learning in higher education HE. (Bartol, 1998).

Soft systems methodology (SSM) is applied to argue that, since institutional settings, organizational vision, strategy and top-level support are, arguably, critical to the success (or failure) of e-learning initiatives, these organizational factors should equally be considered in planning for the implementation of integrated uses of ICT and e-learning. Academic programmes are set in particular contexts within university environments. Numerous factors impinge on e-learning implementation, including the roles of tutors, learners, courses, and the processes used to integrate teaching-related ICT. This chapter provides a theoretical rich picture of these processes at both programme and faculty level to confirm prior research on the implementation of Information System (IS) projects,

demonstrating that institutional issues such as strategic thinking and top-level sponsorship are key factors in successful outcomes. (Bartol,1998).

The Ministry is committed to utilizing the following multi-prong strategies to ensure that the objectives of ICT in education are achieved. The preparation of sufficient and up-to-date tested ICT infrastructure and equipment to all educational institutions ,The roll-out of ICT curriculum and assessment and the emphasis of integration of ICT in teaching and learning , The upgrading of ICT knowledge and skills in students and teachers , Increased use of ICT in educational management , The upgrading of the maintenance and management of ICT equipment in all educational institutions.

Education Management Information System is a component of ICT in the Ministry of Education and Sports, it provides quality education statistics in a timely, cost-effective and sustainable manner. EMIS provides the education statistics and pupil details among others. After the procurement of computers, printers and accessories each district has hardware and software installed and is to carry out data gathering from schools for processing through ED, Assist application Software which is used in EMIS. District officials have already benefited from computer training in the use of EMIS. Computers were procured and distributed to all districts and municipalities. At the Ministry not all the offices are connect ed on the network and are able to use the internet and e-mail ser vices as well as to access resources on the network. (Luis, 2002). The Ministry suspended plans to network all districts and the centre to enable information flow from districts to the centre (Ministry of Education and Sports) and vice versa, at the same

time. This enables districts to make comparative analysis among themselves.

Organizing and use of ICT

The organizing function of management deals with activities that result in the formal assignment of tasks and authority and a coordination of effort. Management staffs the work unit, trains employees, secures resources, and empowers the work group into a productive team. Organizing is the managerial function of arranging people and resources to work toward a goal. David, (2002) Puts it that The purposes of organizing include but are not limited to determining the tasks to be performed in order to achieve objectives, dividing tasks into specific jobs, grouping jobs into departments, specifying reporting and authority relationships, delegating the authority necessary for task accomplishment, and allocating and deploying resources in a coordinated fashion.

These resources are what make an organization function as a single cohesive entity. Physical assets, monetary, human resources, knowledge and technology are prime examples of resources that help build upon the foundation of the organization. Knowledge and technology in particular go more hand in hand during the organization processes of management. (David, 1998). School Net is a national network of professional educators and schools whose vision is to transform Kenya educational system from an Industrial model (learning by assimilation) to a knowledge-based model to prepare the youth of Kenya a to effectively enter a Global Economy based on Knowledge, Information and Technology).

According to Njiraine (2000), In 1993, Kenya undertook a comprehensive reform of its primary education system. The reform redirected the function of primary teacher s colleges focusing mainly on improving the quality and equity of primary education in Kenya. This requires the colleges to provide continuous professional development to teachers through refresher courses, helping teachers improve their effectiveness as well as make and use instructional aids among other things. All these functions need adequate support ranging from effective training to consistent access to updated information, knowledge and resources. (Nsobya, 2002).

With the introduction of Universal Primary Education (UPE), greater demand on teachers and the quality of primary education has increased. In order to address the need for quality primary education and the provision of additional resources for Kenya an primary teacher s, the Connectivity for Educator Development (Connect -ED) project was initiated in May 2000. The Connect -ED project is supported by the United States Agency for International Development (USAID) in close cooperation with Kenya's Ministry of Education and Sports and within the framework of the U.S. Education for Development and Democracy Initiative Connect –ED is using technology to enable and enhance learning and teaching for primary educators through the creation of multifaceted approaches to integrating media and computer s in the Primary Teacher Colleges (PTC) classrooms. Connect-ED accomplished this by setting up Education Technology Centers thereby increasing access, avail ability, and provision of relevant and quality learning materials and support for teacher professional development. (Best, 1993).

Use of ICT and leading and Controlling as a management functions.

As one of the four functions of management, leading can be both extremely important and challenging. Along with planning, organizing and controlling, all managers will execute these four functions of management. From managing a local store to managing a large corporation, every manager will perform each of the functions at some point in their jobs. Niwe (2000). A manager should strive to become an inspiration to the rest of the employees. Employees will follow a manager because the manager is the boss. However, a manager that is an inspiration means that employees follow that person because they believe in what the manager is doing and they are trying to help the company achieve its goals. Nsobya, (2002). States that finding ways to inspire employees means coaching them and motivating them to succeed as integral parts of the company. This can be achieved through; National Curriculum Development Centre worked with International Development Research Centre to come up with the Curriculum Net project to develop, test and implement a mechanism for curriculum integration and delivery for primary and secondary schools in Kenya via Communication networks using computer related tools. In relation to the mandate of NCDC and its functions, the Curriculum Net Project was conceived to influence both the practice and policy of Education. Notable to mention is that whereas these initiatives had made tremendous strides in school connectivity, teacher training and promotion of global learning, none had ever attempted content development -online format, to supplement the current campus learning system of the

curricula of Kenya. This necessitated development of local content that is relevant to the learner and Kenyan approved National Curriculum hence creating an added value.(Kasozi, 2002).

Thus the difference with Curriculum Net was it intended to enable students, educators and educational administrators to develop appropriate competencies to effectively use ICTs in the teaching and learning process. The ultimate goal of this project is to accelerate the participation of schools, teachers and learner s in the use of ICT in teaching and learning process. The project supports all educators, and students who foster the use of ICT in teaching and learning process. (Niwe, 2000).

Controlling consists of measuring performance, comparing it to objectives, implementing necessary changes, and monitoring progress. Many of these issues involve feedback or identifying potential problems and taking corrective action. Organizations may use specific approaches to detect and correct significant variations or discrepancies in the results of planned activities. The development of computer-based information systems presents alternative to the traditional vertical hierarchies in existence since the 1850s, by providing the managers with high quality, timely, relevant and relatively complete information which enhances control in an organization. Horizontal information flows are now viable, supplanting the flow of information from one department up to management layers and then back down to other departments through other layers. Management control and decision making can be made easily with fewer layers of staff, as a result, as departments are now able to share information directly with each other.

School Administration

The administration of primary schools has had achievements over the years, However, despite all these achievements, the quality of primary education under some other vital consideration has not improved up to the expected level. A report published by the Campaign for Popular Education in 2001, showed that around 98 percent of primary students could not obtain the level of competence determined by the National Curriculum Textbook Board (NCTB). The drop out rate in primary education is also high (48%). A number of problems exist in the administration and management of primary education that are hindering improvement of education quality as well as the quality of service to the students.

Transparency International Kenya (TIK) has been working for improving primary education service over the last few years, working with school authorities and the administration for improving local level services. From the feedback and experiences of work at the school level TIK realized that while some limited degree of change is possible within the capacities and resources, since a number of issues are linked with the high policy making level, only local level initiatives are not sufficient to improve the primary education services. In this context TIK has conducted this diagnostic research to identify the nature and extent of problems, irregularities and corruption existing in this sector. In this study both primary and secondary sources of data have been used. The secondary information has been collected from different published books, reports and documents. Primary data were collected through 59 in-depth key informant interviews, 29 focus group discussions and 17 case studies.

Management Problems

Lack of field level work experience: The officials in management positions often do not have field level work experiences. As a result they cannot often appreciate the problems prevailing in the field level. Lack of initiatives for promotion of administrative officials: No initiative has been taken over the last decade for promotion of administrative officials. This inspite of prevailing vacancies which include 57 percent vacant positions of district primary education officer, 29 percent positions of assistant district primary education officer, 20 percent positions of kenyan primary education officers and 13 percent positions of assistant Kenya primary education officer. Shortage of staff: The allocated positions in the administration of primary education are 9,092, of which 20.7 percent positions (1,880) are vacant, which is another reason for administrative efficiency.

2.1 Theoretical Review

The theory adopted for the study was Boulding's (1956) Systems Theory. Which stipulates that organizations can be visualized as systems. A system is a set of interrelated parts that operate as a whole in pursuit of common goals. According to Boulding, the said theory maintain that an organizational system has four major components; inputs which are the various human, material, financial, equipment and informational resources required to produce goods and services. Transformation processes are the organization's managerial and technological abilities that are applied to convert inputs into outputs. Outputs are the products, services and other

outcomes produced by the organization. Feedback is the information about results and organizational status relative to the environment.

Review of Related Literature

Bassey, (2006) Writing on ICT as a facilitator and aid to teaching and learning, Otakhor (2007) argued that the introduction of ICT facilities in secondary schools could spur learning attractiveness and hence its effectiveness. For instance, the automatic spelling and grammar function in the ICT system enables teachers and students to see their spelling errors and the options from which to choose. In addition, the use of educational application of software helps the students to work easily, makes their writing easier, and improves efficiency of teaching-learning process and helps them improve more professionally (Ibadin, 2008).

The World Bank (2007) report emphasized the pertinent role of the teacher in the effective utilization of this new global innovation and practice. It opines that it is not the presence of technology itself that stimulates significant changes inside a school. That without the involvement of the teacher and staff most students may not take full advantage of all available potential on their own. Thus in Nigeria, new ICT related tools can make institutions and workers more productive, enhance skills and learning, improve governance at all levels, and make it easier for the poor to access services and make their voices heard (Abid, 2004).

Indeed, it has been established that power and influence flow to those who know more and have access to better information (Longe & Ajabi, 1990). Yusuf (2005) also maintained that modern organization's ability to achieve results and the decision making effectiveness of

contemporary managers is no longer dependent on just the quality of the manager, but more importantly is the function of the quality of information and communication channels feeding and transmitting their actions. In (2001), Telem conducted a study in school 4 in Hougang, North Zone of Singapore in June of the same year, and found out that ICT helped in streamlining administrative processes in the area of communication. Previously, teachers used to refer to big log books to know which rooms were available for booking and who booked same and for how long, but with ICT, they could see the schedule for an entire month and know who booked them and which date the rooms may be vacant. In addition ICT was found a very important tool for information dissemination as it helped communicate whatever information was available to the staff the moment they logged –in as they read, know, and acted. Telem (2001) concluded that ICT was effective in eradication of distortion, duplication of information thus enhancing effective communication.

Also, Obeng (20004) was of the opinion that the use of internet and intranet, besides reducing administrative cost also reduces administrative inconveniences because the same information on the internet can be sent to all departments without having to do it individually. Instead of sending notices of meeting for instance, to lectures or those concerned, this can be done online. Communication both within and outside departments can be greatly enhanced by the use of internet, intranet and extranet. Nickels, McHugh and McHugh (2002) however warned that electronic communication can never replace human communication for creating enthusiasm and espirit de corps. That efficiency and productivity can

become so important to a firm that people are treated like robots. Computers are tools not a total replacement for workers. Computers should aid creativity by giving people more freedom and time.

Anamuah-Mensah (2009) observed that the use of computer-mediated communication is of great gain both at work places and business ventures. Anamuah-Mensah reported also that the use of computer applications is useful in accounting and finance, financial control, sales and marketing and manufacturing. Also, Kalusopa (2005) conducted a study on the challenges of utilizing information communication technologies (ICT) for the small-scale farmers in Zambia. To achieve the aim of the study, Kalusopa carried out in survey of information needs of small-scale farmers in two selected provinces, in order to establish and prioritize their information needs. The findings included weak human capital and technical infrastructure, lack of clear national information policy and lack of a coordinated agricultural information support system for small-scale farmers anchored on ICTs. This pointed to the necessity of using ICTs in organizations for effective communication and on members of that organization, which schools are not left out.

The Ministry of Health in Ghana (2003) enumerated the significance of using ICTs in health sector to include improving access to health services, improving quality, improving efficiency in both management and technical through reliable information dissemination systems, improving collaboration by proving support to overall planning and sector assessment process, and improving funding by proving a broadcast facility for marketing the health sector. All these are evident of organizational

administrative effectiveness via the use of ICTs. Hook (2004) found that the use of ICTs enhanced the transformation of leaning outcomes for the gifted and talented. With ICTs, teachers were able to teach, communicate, maintain good records and evaluate these groups of children with high level of potentialities in them. The use of ICTs has dramatically increased the speed of communication in organizations (FMLINK, 2006). In line with this, Freedman (2009) reviewed that primary school curriculum and recognized the usefulness of ICT as essential to a modern concept of literacy and to effective communication which are within language, oracy and literacy.

In (2009)) Etudor-Eyo, Etuk, and Azewena found that there is high level of utilization of ICT by school administrators in the Akwa Ibom state. Due to the high level of utilization of ICT by teachers in Italy, the minimum ratio of teacher/students is now 1/50, while the mean value is about 1/30. All technical, vocational secondary schools are connected to the internet, while the percentage of general secondary schools is about 90% and in primary and lower secondary schools the percentage is 75% (Marcheggiano, Fichera, Mayer, Roncallo and Ronchi, 2001). All reforms which are now affecting the school have brought about fundamental, wide-ranging changes in the administrative secretarial staff work.

In (2000), an increase in competition for scarce resources and the decrease in the public's trust in higher education practices were observed and government resulted in unprecedented demands for campuses to demonstrate their effectiveness and efficiency. Heck, Johnsruad and Rosser (2000) found that campuses responded with a host of institutional data ranging from retention and graduation rates to faculty workload

studies to job and career placement records. One possible consideration, the performance of administrators well provided needed and appropriate information about the functioning of the institution. In Japan, it was reported that project management and implementation is enhanced through ICTs utilization (World Summit on the Information Society: Geneva 2003 – Tunis 2005). Hence it is hoped that ICT could enhance high administrative effectiveness in PRIMARY schools, especially in the area of communication.

Gaps in Literature Review

Several past researchers have had interest in Use of ICT in institutions of higher learning contexts. For example, Njiraine (2000) assessed Utilization of internet facilities at Jomo Kenyatta Memorial library, University of Nairobi and United States International University In Africa Library, while Gakibayo (2001)'s study was on Use of Internet In Mbarara University of Science and Technology. Wakanyasi (2002) dwelt on capacity utilization of ICT in Nkumba University. Niwe (2000) assessed the potentials of Internet as a tool for meeting information needs of academic staff in Makerere University, while Zziwa (2001) studied utilization of computers in management of students' records in Makerere University, whereas Agaba (2003) studied utilization of electronic information Resources by academic staff of Makerere university. However, none of those studies was on the Ogembo Division context, and none directly attempted to relate Use of ICT to any factors which gaps the proposed study attempted to fill.

Contextually, whereas many studies have been carried out as pertains to ICT adoption and management, these studies were done elsewhere and none has been carried out in Gucha district, a gap which this study sought to fill. Furthermore, whereas studies have been carried out that relate ICT adoption and other variables, none has been done that directly attempts to relate ICT adoption to the very management functions examined in this study, hence a content gap bridged by this study. This study also filled a theoretical gap since it employed a unique theory-Bouldings 1956 systems theory whereas other studies on ICT adoption have always used other theories such as Rodgers' 1957

CHAPTER THREE

METHODOLOGY

3.1 Research Design

The study took a descriptive co relational survey design and cross sectional survey design. The use of Co relational design was justified because the study aimed at investigating the relationship between two variables; ICT and administration of Primary Schools.

3.2 Research Population

Ogembo Division has 40 primary schools and 80 school administrators. The target population in the study was constituted by 80 or so primary school administrators, majorly consisting of the Head teachers and their deputies who participate in the day today running and administration of the primary schools.

3.3 Sample size and sampling procedure

All the 80 primary school administrators were selected to participate in the study. Since the study used all the Primary school administrators in the division, thus purposive sampling procedure which is universal in nature.

Table 1: Respondents of the study

Category	Population	Sample
Headmasters	40	40
Deputies	40	40
Total	80	80

3.4 Research Instrument

The study used one researcher made, Self Administered (SAQ) for soliciting respondent's views. The SAQ started with a main title; then an introductory or covering letter which had sections A-B. Section A helped classify respondents by category (e.g. by Age, Sex, Level of Education, etc). Section B (i) was on the independent variable that is Use of ICT, operationalize as use of basic personal computer applications software and internet facilities. Section B (ii) was on Management Practices, operationalized as planning, organizing, leading and controlling. To ease administration, almost all questions in the instrument were closed ended, that is had options given.

3.5 Validity

Validity was ensured by checking the Questionnaires according to the variables of the study against the research questions. To prove the validity of the data collection instruments, the number of relevant question were divided by the total number of questions and the outcome was above optimal. The following scale was used; (Adopted from Dr. handy, 2007)

$$V = RQ / TQ = (27 / 36) = 0.75$$

Where V=Validity

RQ=Relevant Question

TQ= Total number of Questions

The number of relevant questions divided by the total number of questions was 0.75 which is above 0.5 hence valid.

3.6 Reliability

To establish the reliability of the questionnaire, the researcher used the method of expert judgment, which is recommended by Gay(1992) as the best method for reliability (Kimbowa,2006). To affect this, after constructing the questionnaire, the researcher contacted the supervisor and two other experts, to ensure the reliability and validity of the research instruments. The researcher then made necessary adjustment to ensure the questionnaire was made to the advice of the experts. Pre-testing of the Questionnaires was then done: The researcher did this by going to the field and administering the questionnaires to 6 potential respondents who would not participate in the final study, this tested the content, language and response format of the questionnaire. This was achieved by using a pre test method of questionnaires. This was done by administering the instruments to 5 potential respondents who were not selected for the study. This was meant to test the content, language and response format of the questionnaires.

3.7 Data Analysis

The study used quantitative data analysis; the researcher used tabulation (frequencies and percentages) to analyze the profile of respondents. Similarly, mean and standard deviation was used to analyze the quality of management functions. Mean and standard deviation were also used to analyze levels of use of ICT. Correlation analysis using Pearson's product correlation coefficient was used to analyze the relationship between management functions and use of ICT. The statistical package for social science (SPSS version 13) was used in the analysis of data. The following mean range were used to arrive at the mean of the individual indicators and interpretation:

Mean Range	Response Mode	Interpretation
3.26-4.00	Strongly agree	Very satisfactory
2.51-3.25	Agree	Satisfactory
1.76-2.50	Disagree	Fair
1.00-1.75	Strongly disagree	Poor

3.8 Data Gathering Procedures

Before the administration of the questionnaires

1. An introduction letter was obtained from the College of Higher Degrees and Research for the researcher to solicit approval to conduct the study from respective heads of primary schools.
2. When approved, the researcher secured a list of the qualified respondents from the school authorities in charge and selected

through systematic random sampling from this list to arrive at the minimum sample size.

3. The respondents were explained to about the study and were requested to sign the Informed Consent Form (Appendix 3).
4. Reproduced more than enough questionnaires for distribution.

During the administration of the questionnaires

1. The respondents were requested to answer completely and not to leave any part of the questionnaires unanswered.
2. The researcher and assistants emphasized retrieval of the questionnaires within five days from the date of distribution.
3. On retrieval, all returned questionnaires were checked if all were answered.

After the administration of the questionnaires

The data gathered was collated, encoded into the computer and statistically treated using the Statistical Package for Social Sciences (SPSS).

3.9 Ethical Considerations

To ensure confidentiality of the information provided by the respondents and to ascertain the practice of ethics in this study, the following activities were implemented by the researcher:

1. The respondents and schools were coded instead of reflecting the names.
2. Solicited permission through a written request to the concerned officials of the primary schools included in the study.

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3. Requested the respondents to sign in the *Informed Consent Form* (Appendix 3)
4. Acknowledged the authors quoted in this study and the author of the standardized instrument through citations and referencing.
5. Presented the findings in a generalized manner.

3.10 Limitations of the Study

In view of the following threats to validity, the researcher claimed an allowable 5% margin of error at 0.05 level of significance. Measures were also indicated in order to minimize if not to eradicate the threats to the validity of the findings of this study.

1. *Extraneous variables* which were beyond the researcher's control such as respondents' honesty, personal biases and uncontrolled setting of the study.
2. *Instrumentation:* The research instruments on teaching strategies and language acquisition was self made. Therefore a validity and reliability test will be done to produce a credible measurement of the research variables.
3. *Testing:* The use of research assistants might have brought about inconsistency in the administration of the questionnaires in terms of time of administration, understanding of the items in the questionnaires and explanations given to the respondents. To minimize this threat, the research assistants were oriented and briefed on the procedures to be done in data collection.

4. *Attrition/Mortality:* Not all questionnaires were returned completely answered nor even retrieved back due to circumstances on the part of the respondents such as travels, sickness, hospitalization and refusal/withdrawal to participate. In anticipation to this, the researcher reserved more respondents by exceeding the minimum sample size. The respondents were also reminded not to leave any item in the questionnaires unanswered and were closely followed up as to the date of retrieval.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS

Description of respondents

Respondents in this study were primary school administrators from the 40 schools in Ogembo Division. Administrators in this study were described by sex, educational qualification and Administrative experience in terms of years spent in service. Table.4.1 shows the description of the administrators by sex;

Table 4.2: Respondents' background

Major category	Sub category	Frequency	Percentage (%)
Age	18-25	2	2.5
	26-30	3	3.8
	31-35 years	15	18.5
	36-40	15	18.5
	41-45	20	25
	46-50	25	31.3
	Total	80	100
Sex	Male	52	65
	Female	28	35
	Total	80	100
Levelof Education	Certificate	35	43.8
	Diploma	25	31.3
	Degree	16	20
	Masters	14	17.5
	Total	80	100
Experience	1-3	4	5
	4-6	18	22.5
	7-9	23	28.8
	Over 10 years	35	43.8
	Total	80	100

Source: Primary data, 2013

According to table 2, the administrators within the age bracket of between 18- 25 were the least in the division with a percentage of (2.5), followed by those who were within the age bracket of 26-30, who formed 3.8% , then those who were in the bracket of 31-35, who were equal to those who were in between 36-40. This was followed by those who were within the bracket of 46-50 who were 25% of the population. The percentage with the highest rating were those who were 46 years and above who were 31.3 %.

In terms of sex, most of the administrators were discovered to be men at 65%, where as women came second at 35%. As far as level of education is concerned, Certificate holders were found to be the majority at 43.8%, followed by diploma holders at 31.3% then degree holders at 20% and finally masters holders at 17.5 %

In as far as experience is concerned, those with over 10 years were the majority at 43.8%, followed by those who had been administrators for between 4-6, at a percentage of 22.5% and finally those with least experience were in the range of 1-3 years at 5%.

Description of the independent variable

The independent variable in this study was Use of ICT, broken into three components (interaction with ICT change agents and training, Application Softwares, and Internet Facilities). Each of these components was measured using various items in the questionnaire, as described below;

Table4.3: Level of ICT

Indicators of ICT change agents and training	Mean	Std. Deviation	Interpretation
your interaction with ICT began at your work place	3.49	.612	Very satisfactory
Much of your training in ICT came at secondary school level	3.12	.896	Satisfactory
you took a specialized training in ICT	3.12	.749	Satisfactory
Your primary school had ICT	2.84	1.175	Satisfactory
You got much training in ICT at primary level	2.57	1.221	Satisfactory
in your Tertiary institution, you got the knowledge you now use in ICT	2.42	1.339	Fair
the secondary school you attended had ICT	2.31	1.406	Fair
Your first interaction with ICT was at tertiary school level	2.24	1.244	Fair
you started interacting with ICT at home before joining school	1.05	.934	Poor
Total	**2.67**	**1.005**	**Satisfactory**
Aspects of Application software			
word processing	2.63	1.245	Satisfactory
Desktop Publishing softwares	2.10	1.289	Fair
Database management softwares	1.94	1.043	Fair
spreadsheet management softwares	1.94	1.043	Fair
Statistical and research data analysis softwares	1.90	1.195	Fair
Graphic softwares	1.73	1.009	Fair
Total	**2.18**	**2.687**	**Fair**
Indicators of internet facilities			
email/ surfing	3.49	.612	Very satisfactory
World Wide Web	3.12	.896	Satisfactory
Elective Journal/ Newsletter	2.84	1.175	Satisfactory
Electronic data bases	2.45	1.171	Fair
Bulletin board services	2.43	1.328	Fair
Video conferencing	2.31	1.406	Fair
Computer conferencing	2.24	1.244	Fair
Total	**2.67**	**1.583**	**Satisfactory**
Grand mean	**2.506**		**Satisfactory**

Level of ICT training and ICT change agents

The first component of the independent variable was level of training and ICT change agents of the school administrators, measured using 9 items in the questionnaire, with each Likert scaled between one to four, where 1=poor or not available at all; 2=fair ; 3=satisfactory ; and 4=very satisfactory. School administrators were required to rate the level of use of each of these aspect by ticking the right number in the box. Their responses were summarized using SPSS's means and standard deviations as indicated in table 3

ICT change agents and level of training

The means in table 3 indicate that the level of ICT change agent and training was fairly adequate (most means≈3). For example, their first interaction with ICT change agent was at primary school (2.84), their interaction with ICT began at work place (3.49), much of their training in ICT came at secondary school (3.12) and so on, were all rated as neither inadequate nor adequate. But some other aspects such as whether their firs change agent in use of ICT was at home before joining school (1.05), their meeting with the ICT change agent was at their secondary schools level (2.31), their first interaction With ICT change agent was at tertiary school level (2.24) and so on, were all rated inadequate. To get a summary on how administrators rated the level of change agents and training in ICT, an average index (training) was computed for all the 7 items in table 3, which turned out to have a mean index of 2.67, confirming that level of ICT training was rated as neither inadequate nor adequate (mean index≈3).

Level of use of application softwares

The second component of the independent variable was the use of application softwares, measured using 6 items in the questionnaire, with each Likert scaled between one to four, where 1=poor or not available at all; 2=fair ; 3=satisfactory ; and 4=very satisfactory. School administrators were required to rate the level of their level of use of each of these items by ticking the right number in the box. Their responses were summarized using SPSS's means and standard deviations as indicated in table 3 above;

The means in table 4 indicate that administrators in Ogembo division primary schools were inadequate (most means$\approx$2), which falls under inadequate on the Likert scale. For example Statistical and research data analysis softwares (mean=1.90), spreadsheet management softawares (mean=1.94), Desktop Publishing softwares (mean=2.10), Graphic softwares (mean=1.73), word processing (mean=2.10). However, only one aspect of application softwares was found to be fairly adequate in them, for example Word processing (mean=2.63). To get a summary picture on how administrators rated their level of use of application software, an average index (application software) was computed for all the 6 items in table 4, which turned out to have a mean index of 2.18, confirming that on average, level of use of application software in Ogembo division primary school administration is still inadequate.

Level of use of Internet Facilities

The third component of the independent variable was use of internet facilities by the school administrators, measured using 7 items in

the questionnaire, with each Likert scaled between one to four, where 1=poor or not available at all; 2=fair ; 3=satisfactory ; and 4=very satisfactory. School administrators were required to rate the level of use of each of these aspect by ticking the right number in the box. Their responses were summarized using SPSS's means and standard deviations as indicated in table 3above;

The means in table 3 indicate that level of and use of the internet facilities among the administrators in the Ogembo division schools were fairly adequate (most means$\approx$3). For example, email/ surfing (3.49), World Wide Web (3.12) But some other aspects such as Electronic Data Base (2.45), and Elective Journals (2.84), were all rated inadequate. To get a summary on how administrators rated Knowledge of and use of internet facilities in their schools, an average index (Internet) was computed for all the 7 items in table 3, which turned out to have a mean index of 2.67, confirming that Use of and knowledge of internet facilities were rated as regular (mean index$\approx$3).

Description of the Dependent Variable

The dependent variable in this study was quality of Management of primary schools, measured with four aspects namely, planning (measured by four items in questionnaire), organizing (measured by three items in the questionnaire), leading (measured by four items in the questionnaire) and controlling (qualitatively using four items in the questionnaire). Administrators were required to rate the extent to which they agreed with each of these four items, by ticking the right number in the box. Their responses were summarized using SPSS's means and standard deviations as indicated in table 1;

Table 4.4 : How administrators rated the level of management functions in Ogembo Division

Indicators of use of management	Mean	Std. Deviation	Interpretation
A1 planning			
A1.3 you have proper records of resources to be acquired in the future	3.43	.802	Very satisfactory
A1.2 you often suffer from the effect of contingencies	3.01	.507	Satisfactory
A1.4 you write down what should happen when in the school	2.85	.657	Satisfactory
A1.1 you have a monthly, quarterly and yearly plan of activities	2.46	.502	Fair
Total	**2.94**	**0.30179**	**Satisfactory**
A2 organizing			
A2.2 most school activities are done at the right place, at the right time with the right person	3.73	.447	Very satisfactory
A2.1 you have school activities done at their relevant departments	3.60	.494	Very satisfactory
A2.3 arrangement of school buildings and facilities is the best	2.21	.845	Fair
Total	**3.18**	**0.34489**	**Satisfactory**
A3 leading			
A3.3 when you give instructions/directives they are followed without much resistance	3.31	.656	Very satisfactory
A3.2 you think your staff and pupils believe in you	3.06	1.229	Satisfactory
A3.4 in your absence, school programs don't run smoothly	2.79	.930	Satisfactory
A3.1 you often serve as an example to your staff and pupils	2.30	.835	Fair
Total	**2.87**	**0.52283**	**Satisfactory**
A4 controlling			
A4.3 the parents often dictate what you do at school	3.27	.735	Very satisfactory
A4.4 you discipline both staff and students with ease	3.24	.766	Satisfactory
A4.2 you have a strong say on usage of school resources	3.18	.748	Satisfactory
A4.1 your pupils and staff leave school and come in at the right Time	3.12	.869	Satisfactory
Total	**3.20**	**0.71240**	**Satisfactory**
Grand total	**3.05**		**Satisfactory**

*Figures in bold indicate mean indices for the variable in question

The means in table.4 suggest that Administrators rated their management function levels as satisfactory for all the four dimensions of performance (mean indices =3). These means also indicate that Administrators rated controlling managerial function as highest with (mean index=3.20) followed by the organizing function (3.18). For example on the planning function, proper records of records to be acquired in the future, the administrators rated as the best with a mean of (mean ≈3.43).

Under organizing, most school activities are done at the right place, at the right time with the right person was ranked the best with a mean of 3.73. under leading, when they give instructions/directives they are followed without much resistance was ranked best (mean =3.31), and finally under controlling, parents controlling what administrators do at school ranked best (3.27). To get a summary picture on how the primary school administrators rated their management levels, an average index (management) was computed for all the four measures in table 4, which turned out to have a mean index of 3.05, confirming that the level of management is indeed fair in this division.

The Relationship between level of Use of ICT and level of management functions Administrators of primary schools

The purpose of this study was to establish whether Use of ICT is significantly correlated with administration of primary schools in Ogembo Division. This purpose was broken into four specific objectives as well as corresponding questions and hypotheses. Use of ICT was conceptualized into; interaction with ICT change agents and training, Application

Softwares, and Internet Facilities, where as management was herein conceptualized in to planning, organizing, leading and controlling. The adequacy of these aspects in each category was measured using means as shown in the tables above. In order to determine whether there was a significant relationship between the two variables, the study employed linear correlation coefficient to correlate the mean indices of the three aspects of use of ICT, results on this tests are shown on the table below;

Table 4.5: Relationship between administration and use of ICT

Category	Mean	Computed r-value	Critical value	Decision	Interpretation
Use of ICT	2.50			Significant	
Vs		0.56	0.000		Rejected
Administration					
	3.05				

The r' values in the table 5 indicate a positive relationship on the relationship between all aspects of use of ICT (r-'value >0), suggesting that the higher the level of use of ICT, the higher the administration levels and vise versa. Considering the fact that the sign. Value, in table 5, indicate a significant correlation between the two variables, (Sig. Values< 0.05) it is thus sufficient to base on these facts and declare thus the null hypothesis is rejected leading to a conclusion that Use of ICT significantly affects administration, measured in terms of management functions; Planning, organizing, leading and controlling. This further implies that the

higher the use of ICT in terms of Level of training, Use of internet facilities and Use of application softwares, the higher will be The level of administrative quality and vice versa .

The results further indicate that of all the Use of ICT aspects, use of Internet Facilities was found to be more significant contributor to wards management quality contributing over a lot towards variations in management. Use of internet facilities includes aspects like using electronic data base, video conferencing, emails and World Wide Web. This may be true because in spite of all other factors, if a manager in this 21st century is not compliant to internet usage, then even his expertise in other domains of management will go down. So the insufficiency of a managers' usage of internet facilities is likely to affect all other aspects of management there by aggravating the effect the use of ICT may have on Management practice.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND   RECOMMENDATIONS

5.0 Introduction

This chapter presents the summary of findings, conclusion, recommendation and suggestion for future research in line with study objectives and research questions.

5.1 Discussion

This study set out to find out the relationship between use of ICT and administration of Primary Schools in Ogembo division Gucha District. It was guided by four specific objectives, that included determining the profile of the respondents in respect to age, experience and level of education, establishing the level of Use of ICT in the Administration of Primary Schools, establishing the level of management functions and finding whether there is a significant relationship between use of ICT and management functions by primary school administrators in Ogembo Division, Gucha District.

This study revealed that the administrators within the age bracket of between 18- 25 were the least in the division with a percentage of (2.5), followed by those who were within the age bracket of 26-30, who formed 3.8% , then those who were in the bracket of 31-35, who were equal to those who were in between 36-40. This was followed by those who were within the bracket of 46-50 who were 25% of the population. The percentage with the highest rating were those who were 46 years and above who were 31.3 %. In terms of sex, most of the administrators

were discovered to be men at 65%, where as women came second at 35%. As far as level of education is concerned, Certificate holders were found to be the majority at 43.8%, followed by diploma holders at 31.3% then degree holders at 20% and finally masters holders at 17.5 %. In as far as experience is concerned, those with over 10 years were the majority at 43.8%, followed by those who had been administrators for between 4-6, at a percentage of 22.5% and finally those with least experience were in the range of 1-3 years at 5%.

In respect to objective 2, data analysis using SPSS's means and standard deviations revealed that; a) management functions of Primary Schools was just at a fair level (mean index=3.05); b) The management functions; i) planning (mean index = 2.94 or ≈3); ii) organizing at (mean index≈3.18); and iii) Leading (2.87) and controlling (mean index = 3.20 or ≈3).

As pertains objective three, Level of ICT training was found to be neither inadequate nor adequate with a mean of 2.67, level of use of application soft wares was found to be inadequate with a mean of 2.18. Where as level of use of internet facilities was rated as regular with a mean index of 2.67. These findings agree with a study in (2009) by Etudor-Eyo, Etuk, and Azewena found that there is high level of utilization of ICT by school administrators in the Nairobi province schools. Due to the high level of utilization of ICT by teachers in Italy, the minimum ratio of teacher/students is now 1/50, while the mean value is about 1/30. All technical, vocational secondary schools are connected to the internet, while the percentage of general secondary schools is about 90% and in primary and lower secondary schools the percentage is 75%

(Marcheggiano, Fichera, Mayer, Roncallo and Ronchi, 2001). All reforms which are now affecting the school have brought about fundamental, wide-ranging changes in the administrative secretarial staff work.

Results using Pearson's Linear Correlation Coefficient indicated a positive relationship on the relationship of all aspects of use of ICT and management. Planning as a managerial function is commonly used by majority of schools in Ogembo division compared to the other managerial functions. It was found that a few of the schools employ the use of computer and internet facilities. This was found to be as a result of the location the schools where the use of computers and internet are not fully operational. It was found that most of the schools employ a lot of paperwork in coordination the managerial functions except a few schools in the division. The findings of these study shows that controlling as a managerial function is also employed in schools in Ogembo Division, majorly to check on the students teachers performance and to minimize wastages within the schools. The other managerial functions like organizing and leading are not fully utilized in Ogembo division with only some schools heads conversant with these managerial functions theoretically.

A finding from this study shows that ICT is not fully operational in schools in Ogembo division. This was found to be as a result of low usage of computer and internet facilities by schools in the division. Some schools do not have electricity connection thus making these facilities difficult to use. In addition to this the funds allocated for building ICT capacity in the division was mismanaged resulting into a greater challenge. The low use of ICT can also be portrayed by the response that most of the

respondents interacted with ICT change agent at the place of work and at tertiary school level. This clearly shows how the use of ICT in management is wanting in this area.

It was also found that majority of the schools employed computer application softwares like word excel, and access in some cases to carry out the managerial functions in question. The other computer application softwares are not fully used and their usage varies from one school to another depending on the availability of the facilities and technical know how. As a result of this, most schools do not offer computer lessons due to lack of these facilities.

On the other hand findings of this study show that internet facilities are not used in the daily activities of schools in Ogembo division to facilitate managerial functions except the usage of e-mail facilities and World Wide Web for research purposes. Still this was found to be available in a few schools, as majority of the schools had no internet connection. It was also found that the poor usage of computer and internet facility has made linking ICT and managerial functions difficult in the management of schools in Ogembo division as these are mostly use in planning and controlling managerial functions to run and coordinate school activities.

The findings of this study agree with, Obeng (2004) who was of the opinion that the use of internet and intranet, besides reducing administrative cost also reduces administrative inconveniences because the same information on the internet can be sent to all departments without having to do it individually. Instead of sending notices of meeting for instance, to lectures or those concerned, this can be done online. Communication both within and outside departments can be greatly

enhanced by the use of internet, intranet and extranet. Nickels, McHugh and McHugh (2002) however warned that electronic communication can never replace human communication for creating enthusiasm and espirit de corps. That efficiency and productivity can become so important to a firm that people are treated like robots. Computers are tools not a total replacement for workers. Computers should aid creativity by giving people more freedom and time.

The findings further corroborates Anamuah-Mensah (2009), who observed that the use of computer-mediated communication is of great gain both at work places and business ventures. Anamuah-Mensah reported also that the use of computer applications is useful in accounting and finance, financial control, sales and marketing and manufacturing. Also, Kalusopa (2005) conducted a study on the challenges of utilizing information communication technologies (ICT) for the small-scale farmers in Zambia. To achieve the aim of the study, Kalusopa carried out in survey of information needs of small-scale farmers in two selected provinces, in order to establish and prioritize their information needs. The findings included weak human capital and technical infrastructure, lack of clear national information policy and lack of a coordinated agricultural information support system for small-scale farmers anchored on ICTs. This pointed to the necessity of using ICTs in organizations for effective communication and on members of that organization, which schools are not left out.

5.2 Conclusions

The study concluded that most administrators in Ogembo Division are between the age of 46-50, most of them are male, certificate holders form the majority and most of them have over ten years of experience

The second objective of this study was to establish the level of use of ICT in the division of study for which it was concluded that there is a fair level of use of ICT.

The third objective of this study was to investigate the level of management function in Ogembo Division Gucha district, for which it was found out from the study that the administrators rated their management practice level as fair with a mean of 3.05 .

From the final objective which was aimed at finding the relationship between Use of ICT and quality of Management. It was also concluded that indeed there is a strong significant relationship between use of ICT and management practices. the administrators' knowledge of and use of ICT indeed positively impacts on how they perform the planning, organizing, control and leading as managers in schools, as per this sample.

5.3 Recommendations

Basing on the findings of the second, third and fouth objective/hypothesis, the researcher recommends that if management practices are to be improved in Ogembo Division, then It is important for the administrators of schools in Ogembo division to fully understand the importance of ICT in management. They have to make good use of computer and internet facilities provided to them by the ministry of

education and the NGOs around to enhance learning and management of their schools. The administrators of schools without computers and internet facilities should not sit back but make requisition to the government on the need to have computers and internet facilities to aid learning and management in their schools.

Apart from the provision of these facilities, the ministry should ensure that the administrators and the teachers are trained enough to exploit the importance of ICT in management and learning enhancement. The administrators should take a personal initiative of organizing workshops within the schools and organize on the job training on the uses of ICT in management. On the other hand, the government through the ministry of education should ensure that training programs are organized for administrators of these schools and they be supervised to ensure that the training needs are achieved after the training.

Apart from introducing the use of ICT to administrators, it should be extended to the students as well. This will orient them on the use of ICT in their early academic life starting from primary level not like it has been reported where majority of the administrators knew a bout use of ICT in management at their work places. The early orientation on the use of ICT will facilitate learning as well and will reduce on the training cost and learning time.

Areas for further research

There is still need to carryout research on the use of ICT to enhance learning in schools, with focus on computer application softwares and internet facilities. Further research can be done on the perception or

attitude of students and administrators on the use of ICT in schools, as learning in most cases is influenced by attitude.

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APPENDICES

Appendix I

Transmittal letter

KAMPALA INTERNATIONAL UNIVERSITY

Ggaba Road - Kansanga
P.O. Box 20000, Kampala, Uganda
Tel: +256 - 414 - 266813 / +256 - 772 - 32256
Fax: +256 - 414 - 501 974
E-mail: admin@kiu.ac.ug
Website: www.kiu.ac.ug

APPENDIX 1 A

TRANSMITTAL LETTER

COLLEGE OF HIGHER DEGREES A ND RESEARCH (CHDR)
KAMPA LA INTERNA TIONA L UNIVERSITY

Dear Sir/Madam,

RE: INTRODUCTION LETTERFOR MR MECHA ONDIEKI NICHOLAS REG. NO MED/20169/112/DF, TO CONDUCT RESEARCH IN YOUR INSTITUTION

The above mentioned candidate is a bonafide student of Kampala International University pursuing a Masters Degree in Educational Management and Administration

He is currently conducting a field research for his thesis entitled *"Information Communication Technology (ICT) and Management in Primary Schools in Ogembo Division Kenya"*

Your institution has been identified as avaluable source o information pertaining to his research project. The purpose of this letter then is to request you to avail him with the pertinent information he may need.

Any data shared with him will be used for academic purpose only and shall be kept with utmost confidentiality.

Any assistance rendered to him will be highly appreciated.

Yours truly,

Dr. V Kayindu

H.O.D

CHDR, KIU

Appendix II

CLEARANCE FROM ETHICS COMMITTEE

Date _____

Candidate's data

Name_____

Reg.#_____

Course _____

Title of study

_____

_____

_____

Ethical review checklist

The study reviews considered the following

Physical safety of human subjects

Psychological safety

Emotional security

Privacy

Written request for author of standardized instrument

Coding of questionnaire/ anonymity/ confidentiality

Permission to conduct the study

Informed consent

Citations/ authors recognized

Results of ethical review

Approved

Conditional (to provide the ethics committee with corrections)

Disapproved / Resubmit proposal

Ethics committee (Name and Signature)

Chairperson _____

Members _____

Appendix III

INFORMED CONSENT

I am giving my consent to be part of the research study of Mr. Mecha Ondieki Nicholas that will focus on Use of ICT and management of primary schools in Ogembo Division Kenya. I shall be assured of privacy, anonymity and confidentiality and that I will be given the option to refuse participation and right to withdraw my participation any time.

I have been informed that the research is voluntary and that the results will be given to me if I ask for it.

Initials:_____

Date_____

FACE SHEET;

Code#.........   Date received by

respondents.........

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APPENDIX IV

FACE SHEET

KAMPALA INTERNATIONAL UNIVERSITY
COLLEGE OF HIGHER DEGREES AND RESEARCH
MASTERS PROGRAM

Dear respondent,

Greetings!!

I am a student at Kampala International University (KIU). I am undertaking a research study on **use of ICT and Management of Primary schools in Ogembo Division Gucha District Kenya** as a partial fulfillment of the requirements for the degree of master in education. As I pursue to complete this academic requirement, may I request your assistance by being part of this study? Your responses will be used for research purpose only and your identity kept confidential.

Kindly provide the most appropriate information as indicated in the questionnaires and please do not leave any item an answered. Any data from you shall be for academic purposes only and will be kept with utmost confidentiality.

May I retrieve this questionnaire in 1 week after you have received it? Thank you very much in advance.

Yours faith fully

....

APPENDIX V

QUESTIONNAIRE

Section A

Background Information.

Instruction

Place a tick (✓) in the most appropriate box and fill in the blank spaces accordingly.

1. Initials.(Optional) ....

2. Age

18-25 ( )   26-30 ( )   31-35 ( )   36-40 ( )   41-45 ( )   46-50( )

3. Sex

Male ( )   Female ( )

4. Level of Education

Below certificate ( ) Certificate ( ) Diploma ( ) Degree ( )

Others (specify)..

6. For how long have you served as an administrator?

1-3 years ( )   4-6 years ( )   7-9 years ( )   Over 10 years ( )

Section B

(Tick where applicable)

Response Mode	Rating	Interpretation
Strongly Agree	4	Very adequate
Agree	3	Adequate
Disagree	2	Inadequate
Strongly disagree	1	Very inadequate

B1	Level of ICT	1	2	3	4
	Application softwares				
1	Word processing software (Ms word, word perfect)				
2	Spreadsheet management softwares (Ms excel, Lotus				
3	Data base management softwares (Ms access, data base)				
4	Graphics softwares(Corel draw Desktop publishing softwares (PageMaker, Ventura)				
5	Statistical and research data analysis softwares (SPSS)				
	Internet facilities				
6	e-mail (surfing)				
7	World wide web				
8	Bulleting board services.				
9	Computer conferencing				
10	Video conferencing				
11	Elective journal/newsletter				
12	Electronic database				
13	On-line library catalog.				
	Interaction with ICT change agent				

14	At home before joining school					
15	At primary school level					
16	At secondary level					
17	At tertiary school level					
18	At place of work					
	ICT Training					
20	At primary school level					
21	At secondary school level					
22	At tertiary school level					
	Planning					
23	you have a monthly, quarterly and yearly plan of activities					
24	you often suffer from the effect of contingencies					
25	you have proper records of resources to be acquired in the future					
26	you write down what should happen when in the school					
	Organizing					
27	you have school activities done at their relevant departments					
28	most school activities are done at the right place, at the right time with the right person					
29	arrangement of school buildings and facilities is the best					
	Leading					
30	you often serve as an example to your staff and pupils					
31	you think your staff and pupils believe in you					

32	when you give instructions/directives they are followed without much resistance					
33	in your absence, school programs don't run smoothly					
	Controlling					
34	your pupils and staff leave school and come in at the right Time					
35	you have a strong say on usage of school resources					
36	the parents often dictate what you do at school					
37	you discipline both staff and students with ease					

THANKS FOR YOUR RESPONSE

CURRICULUM VITEA

NAME   :   MECHA ONDIEKI NICHOLAS
DATE OF BIRTH   :   1966
GENDER   :   MALE
NATIONALITRY   :   KENYAN
ID   :   9148538
MARITAL STATUS   :   MARRIED
CELL PHONE   :   +254720951341
LANGUAGE   :   ENGLISH, KISWAHILI

ACADEMIC QUALIFICATION

YEAR	QUALIFICATION	UNIVERSITY / COLLEGE
2011-2012	MED	KAMPALA INTERNATIONAL UNIVERSITY
2008-2010	BED	KAMPALA INTERNATIONAL UNIVERSITY
1992-1994	P1	TAMBACH TEACHERS COLLEGE
1983-1986	KCE	TENDERE SECONDARY SCHOOL
1975-1982	CPE	KIMAI PRIMARY SCHOOL.

WORKING EXPERIENCE

1994-1996 TEACHER MOGAMBI PRIMARY SCHOOL

1997-1999   DEPUTY HEADTEACHER BOMBABA PRIMARY SCHOOL

2000-2003   D/ HEADTEACHER ITARE PRIMARY SCHOOL

2009-DATE   HEADTEACHER KINENI PRIMARY SCHOOL

REFEREES

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