PREPAREDNESS OF THE HEADTEACHERS IN THE USE OF INFORMATION COMMUNICATION TECHNOLOGY IN PUBLIC PRIMARY SCHOOLS IN BONDO DISTRICT, KENYA

Oulo Isaiah Okeyo

A Research Project Submitted in Partial Fulfillment of the Requirement for the Award of Masters Degree of Education in Educational Administration.

University of Nairobi

2013
DECLARATION

This research project is my original work and has not been presented for a degree in any other university

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Oulo Isaiah Okeyo

This research project has been submitted for examination with our approval as university supervisors

___________________

Dr. Daisy Matula
Lecturer
Department of Administration and Planning
The University of Nairobi

___________________

Dr. Rosemary Imonje
Lecturer
Department of Administration and Planning
The University of Nairobi
DEDICATION

This research project is dedicated to my mother Sofia Magambo, my wife Lucy and children, Nancy, Jane, Sophie, Idda and Grace.
ACKNOWLEDGEMENTS

This project would not have to completion without the Grace of the Almighty God. I am very grateful to my supervisors, Dr. Matula and Dr. Imonje for their effort to ensure that this research attains the required standards for examination. I am also very grateful to my wife Lucy Atieno for her continued encouragement and support.

I wish to thank the headteachers of the public primary schools who allowed me to research on their ICT literacy, and teachers who willingly accepted to participate in the research, Bondo district Education office for their permission and all who assisted but not mentioned.

Many thanks also go to friends and church members who have always encouraged me to move ahead with academic endeavours. Special thanks go to the staff of Uloma Bondo primary school for their unwavering support, understanding, perseverance and stepping in my absence to offer their valuable knowledge to the pupils. May this study inspire others by the Grace of God.
The purpose of this study was to investigate the preparedness of headteachers in the use of information communication Technology in public primary schools in general school administration. The study set out to investigate the training levels of headteachers in the use of computers in public primary schools. Secondly, the study determined the headteachers attitude towards the use of computers in public primary schools.

Thirdly, the study investigated the extent to which public primary schools’ headteachers perceived computer technology to improve their effectiveness and efficiency as school administrators. Finally, the study sought to identify the strategies of headteachers put in place to enhance the use of computers in public primary schools.

The study applied a descriptive survey design and data was collected through the use of questionnaires and observation schedule. The findings revealed that, there are very few ICT literate headteachers. All headteachers and teachers had a positive attitude towards the use of computers in public primary schools.

All headteachers accepted their awareness of computer being a suitable tool for administrative purposes. Further revelation was that, majority of the headteachers had made recommendation and proposals to the Ministry of Education and Non-governmental organizations to be trained on computer usage and some of the headteachers had registered with computer training institutions to acquire computer literacy as some of their strategize to enhance the use of computers in public primary schools. Based on the findings, it was concluded that headteachers are not prepared in the use of Information Communication Technology.

The study revealed that, the training levels of headteachers in the use of ICT in public primary schools is low, the headteacher’s attitude towards the use of computers in public primary schools is positive and headteachers levels of awareness in the use of computer as a suitable tool for administrative purposes being high.

The study recommended that the government should step in and upgrade the ICT infrastructure such as computer laboratories and internet connectivity. The study also recommended that the current ICT programmes should be revised to ensure that it is geared towards the pedagogical value of ICTs instead of just equipping the headteachers, teachers and learners with basic ICT skills.

It was further suggested that headteachers be provided with professional opportunities in areas of computer technology through regular capacity building courses and workshops. Teacher training institutions to evaluate how teacher trainees could be prepared to be computer literate. Further research on the extent of the schools management support in ICT integration in education in the district and the role of computer technology on general school administration should be carried out.
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<tr>
<td>BCDFC</td>
<td>Bondo Constituency Development Fund Committee</td>
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<td>DDC</td>
<td>District Development Committee</td>
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<td>DEB</td>
<td>District Education Board</td>
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<td>DEO</td>
<td>District Education Office</td>
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<tr>
<td>EFA</td>
<td>Education for All</td>
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<td>ERICK</td>
<td>Educational Resources Information Center Kenya</td>
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<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
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<tr>
<td>ICTiEA</td>
<td>Information and Communication Technology in Educational Administration</td>
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<td>ICTs</td>
<td>Information and Communication Technologies</td>
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<td>KNEC</td>
<td>Kenya National Examinations Council</td>
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<td>Ministry of Education</td>
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<td>Parents Teachers Association</td>
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<td>SMCs</td>
<td>School Management Committees</td>
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<td>TSC</td>
<td>Teachers Service Commission</td>
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CHAPTER ONE

INTRODUCTION

1.0 Background to the Study

Education plays a vital and special role in the economic, cultural, scientific and social development of a nation. The primary education is considered the foundation in a child’s life hence act as a bridge of knowledge across different sections of life, dealing more with various development factors. The emergence of knowledge based society, pupils and adults learning in cyber cafes and emerging issues in the world as it is becoming the global village puts more pressure on how computers should be used in all learning institutions. World over people are facing higher competition hence this global competition is based on knowledge acquisition. Duderstadt (1977) states that people must acquire new knowledge, learn new technologies and develop new skills to realize quality of life.

World Bank (1995), states that the emergence of a global knowledge based on economy being accompanied by increasing willingness by governments to invest in education. In this case the World Bank is helping countries to get into Information and Communication Technologies (ICT’s) so as to contribute to education goals and reduce poverty.

Kamal (2009) noted that with the advent of computers and technological advances like the internet, the face of education World over has changed, be it at school education, higher education, teachers training or distant education, the use of technology in some form or the other is prevalent.
There are advantages of technology being used to support student learning and to foster positive changes in schools, predictions that computers would revolutionize public education have not materialized. Flanagan and Jacobson (2003) states that installing computers and networks in schools is insufficient for educational reforms. Therefore school leaders should have an awareness on obstacles that limit information and communication technology (ICT) integration and translate the knowledge into effective approaches of leadership.

The government of India made significant progress in achieving the goals of using ICT in public schools. The government has come up with the policy framework based on the use of ICTs and focused initiatives such as the ICT@schools Scheme geared towards making opportunities available to students and school administrators for developing their ICT skills at the school level. Thus school administrators use ICTs to aid the teaching learning process and in general school administration such as; admission procedures, storing of official and student records, grades in examination, fees and scholarships, educational planning and decision making among others (Chuttur, 2009). Manipur, one of the poor states in India, there are atleast twenty computers in the schools. These available computers are utilized properly in school administration hence the work of school administrators have become faster, accurate and easier than before (Workman, 2007).

Hawlerdge (1990) states that, almost all teachers and headteachers using computers in public schools in the developing countries never trained to do so during their initial training and might have only had a brief in-service course relating to computers.
Rwanda Vision 2020 identifies the strengthening of teacher development in an Information and Communication Technology (ICT) rich environment as one of the top government priorities for the achievement of National socio-economic development goals (MINECOFIN, 2001). The government of Rwanda is striving to achieve this through the in-service of teachers via the institutional programmes such as Kigali Institute of Education that has launched ICT programmes to upgrade the skills on computer use of the under-qualified teachers (Workman, 2007).

According to Bargozzi and Warshaw (1992) new technologies such as personal computers are complex and an element of uncertainty exists in the minds of decision makers with respect to the successful adoption of them, people form attitudes and intentions toward trying to learn to use the new technology prior to initiating efforts directed at using them. Attitude towards usage and intentions to use may be ill-formed or lacking or else may occur only after preliminary striving to learn to use the technology evolve. Thus, all that are involved in education sector should strive to foster positive attitude towards the use of ICT in education sector as a whole not necessarily at the school levels.

National Council for Science and Technology (2010) stated that, providing teachers and other educational professionals with access to and use of ICT is one key component to developing the necessary human capital which the education sector requires for the wide adoption of technology. Teachers as multipliers of knowledge are the key agents in
respect to education change and innovation in education. Each teacher trained in the use of ICT is capable of sharing that knowledge among teachers themselves and the learners within and without their learning institutions, therefore there is change, systems have to acknowledge the benefits of computers in education and there are changes in the entire teaching and learning process, Government systems have acknowledged the benefits and there are enough examples to illustrate that technology based – education is here to stay with the traditional methods. The current focus with all stakeholders is to ensure that technology is used effectively to address issues that schools and government are grappling with problems related to pupil motivation, participation, absenteeism, drop outs and gender bias to name a few.

According to Nepad – E – Schools demonstration project (2005 to 2006) attempts to set basic ICT infrastructures in public primary schools in Kenya is negligible. This is so due to lack of computers, low computer literacy level among teachers, fear by the school administrators that computers require high level personnel to operate, lack of electricity in schools, high cost of computers, fear by teachers that they will be rendered useless if computers are brought into classrooms and lack of initiative by community leaders who does not give computer purchase and installation in schools a priority. Therefore, it is imperative for the Kenya Government to allocate enough resources to mitigate such hindrance. This can be done in collaboration with development partners through donor funding and other non-governmental organizations.
Training and literacy in the use of IT leads to effective usage of technology. However, very few primary school headteachers might have had earlier training to computer technology (Rodgers, 2003). This might be a reason for the reluctance of school administrators to embrace the benefits of educational technologies due to the fact that most of school administrators received their education at a time when IT or rather computers were not yet incorporated into the educational fields and they may have limited experience with technologies (Yushau 2006).

Ministry of Education ICT strategy for Education and Training (2006) noticed that a major challenge for technology leaders is to support teachers as they explore and experiment with diverse ways to integrate technology into meaningful, challenging and authentic ways across the curriculum. Mwololo and Waema (2005) indicated that head teachers need to develop skills in using computers for teaching, solving problems, making decisions and interacting in order to enhance pedagogical methods. Thus efforts towards ICT change is almost everyone’s job in the organization causing employees at all levels meaningful opportunities to acquire the skills needed to meet the desired ICT outcomes.

Headteachers have not been prepared by the Government for their new role as technology leaders and have therefore struggled to develop the human and technical resources necessary to achieve ICT outcomes in their schools. Ouya and Mweseli (2006) states that very few head teachers in public primary schools have themselves used computers in meaningful ways with pupils and therefore lack the requisite pedagogical vision and experience to guide teachers. Thus head teachers must change the way they think,
organize, plan, deploy, inspire and reward performance. Without a shift in orientation, administrators are likely to end up being disappointed with the technology project.

According to Bondo District Development Plan 2008 – 2012, Information Communication Technology is an important sub-sector in the development of the district. Thus the number of the government offices connected to internet services as at 2008 include: District Commissioner’s office, The District Development office, Finance Department and the District Education office. There are also quite a number of institutions offering ICT courses. These include the Bondo Teachers Training College, Nyamonye Institute of Technology, Bondo ACK and Xtream Institute of Technology. Despite the fact that the process of ICT integration is a combination and coordination of separate and diverse elements to a more complete whole, Bondo district’s ICT integration process is still far from complete i.e. area education offices which serve teachers, head teachers and parents are lacking some of the basic ICT facilities and teachers who are supposed to use the ICT services have limited technological knowledge while computers are considered to aid in administrative processes and tasks such as coordinating, communicating, influencing, decision making and evaluation among others.

The contextual facts from Bondo District Education Office indicates that there are 128 public primary schools, there is no seminar or workshop on the use of computers that has ever been conducted or organized for the head teachers through the office of the DEO, only two (2) schools namely Ndhere and Usenge primary schools have received donations of computers from Microsoft Organization and there is no record showing computer literacy level of head teachers within the said district. Given that computer
usage in public primary schools is a matter of serious concern in the view of the importance of education to the community and the nation at large.

Given that TSC and KNEC compels the head teachers to register KCPE candidates online and download the TSC teachers’ establishment form from their website. It is against this background that the study intended to establish the preparedness of head teachers for the use of computers in public primary schools in Bondo district, but little has been done on the role of computers technology on primary school headteachers administration and their preparedness to use computers to improve effectiveness of primary school headteachers administrative tasks. It is against this background that the study is set to establish the preparedness of headteachers to use computers in public primary schools in Bondo district.

1.2 Statement of the Problem

There is need to improve the quality of school administration and teaching/learning in public primary schools and computer is perceived as a necessary tool for this purpose. In the ICT policy of 2006, the government has made effort to integrate ICT in education. To achieve this objective, the Ministry should employ strategies such as; improving ICT infrastructure in schools, equipping education institutions with ICT equipment and to develop the capacities of education managers among other strategies. In view of the above government’s intentions, headteachers being managers should hold competencies and positive opinion on the need to embrace computer technology in their organizational management. Varied computer software gives primary headteachers a wide range of options on helping them to perform different administrative tasks on a daily basis. Some
primary schools in Bondo district have received donated computers through initiatives of Microsoft organization and personal donations by able community members. Available research shows that the primary school headteachers must understand and make use of technology available (Haddad, 2005). Little has been done on the role of computer technology on headteachers administration in primary schools, particularly in rural areas such as Bondo district thus might be an impediment to the readiness of headteachers in the use of computers in general school administration. Hence this study intended to establish the preparedness of headteachers in the use of ICT in public primary schools in Bondo district.

1.3 Purpose of the Study

The purpose of the study was to investigate the preparedness of headteachers in the use of computers in public primary schools in Bondo District.

1.4 Objectives of the Study

Objectives of the study were:

i) To establish the training levels of headteachers in the use of computers in public primary schools.

ii) To examine headteacher’s attitude towards the use of computers in public primary schools.

iii) To establish the level of awareness in the use of computer as a suitable tool for administrative purposes.
iv) To determine strategies put in place to enhance preparedness of headteachers in the use of computers in public primary schools.

1.5 Research Questions

Research questions of the study were:

i. What are the training levels of headteachers in the use of computers in public primary schools?

ii. What are the headteacher’s attitude towards the use of computers in public primary schools?

iii. To what extent do public primary schools headteachers perceive that computer technology improves their effectiveness and efficiency as school administrators?

iv. What are the strategies put in place to enhance preparedness of headteachers in the use of computers in public primary schools?

1.6 Significance of the Study

The findings of this study may provide useful data and information to Bondo Constituency Development Fund Committee (BCFC) as the committee is investing a lot of money in its ICT infrastructure thus will know the needs and importance of providing computers in public primary schools in the district.

The Ministry of Education (MOE) may use the findings of the study to develop a policy in the use of computer in school management. The school management committee (SMC) and Parents Teachers Association (PTA) being decision makers and managers of
public primary schools will be able to realize the value of using ICT in school administration hence see the need to equip schools with more ICT related equipment for both instruction and administrative tasks in schools. The Teachers Service Commission (TSC) may find the findings useful in hiring computer literate Teachers for administrative posts.

1.7 Limitations of the Study

Only a few number of schools and headteachers were sampled out for the study because the results got may not be the same would it be that all schools in Bondo district were involved in the study given that the ICT sector is highly dynamic and may change in a short span of time. The restriction of the number of schools sampled was solved through the District Education Office by requesting the records of schools that may have received ICT related equipment either through Ministry of Education or through donations by community members and other organizations.

1.8 Delimitations of the study

This study was carried out in public primary schools in Bondo District. The study was confined to public primary schools, private institutions which have somehow integrated computers in their school administration, thus were not taken into consideration. This is because they are in different levels of computer use in school administration, thus the finding may remain not to sum up the reflection of the situation on the preparedness of headteachers to use computers in public primary schools in Bondo District.
1.9 Basic Assumptions

The following assumptions were made:

i. That the preparedness of the head teachers for the use of computers in public primary schools can enhance administrative tasks and pupil support services.

ii. That headteachers have a role to play in school ICT in public primary schools.

iii. That there are a number of factors that affect the use of computers to enhance school administration in public primary schools in Bondo district.

1.10 Definition of significant terms

**Attitude** refers to headteachers perception towards the use of information communication technology

**Awareness** refers to the state or ability to perceive, feel and be conscious of the use of computer technology.

**Education For All (EFA)** refers to the ability that people can access education, acquire skills, attitudes and knowledge to enable them solve basic problems in life.

**E-learning** refers to teaching and learning that is facilitated under computer mediated environment

**Head teacher** refers to a person who is a teacher by training and employed by Teachers Service Commission and entrusted by appointment with the overall administration and supervision of a public primary school in accordance to Cap 212 of the Laws of Kenya
Information communication Technology (ICT) refers to equipment such as computers, televisions and digital cameras that are used to support headteachers work.

Information Technology (IT) refers to the art of managing and processing information using computer technology, computer hardware, software and accessories that are used to accomplish a task.

Preparedness refers to readiness to use the skills, knowledge and attitude one has acquired during training or studies and is competent to use computers.

Public Primary School refers to an institution where lowest level of education i.e. from standards 1 to 8 takes place, funded and staffed by the Kenya government in accordance to the Education Act cap 211 of the Laws of Kenya

Pupils Support Services refers to services or activities which pupils get in a school such as tuition, teaching/learning materials, guidance and counseling among others

Strategies refers to the high level plan to achieve one or more goals preferably the goals of using ICT in public primary schools

Training levels refers to acquisition of knowledge, skills and competencies by using computers as a result of the teaching of vocational or practical skills.

Universal Primary Education is the basic education given at the primary school level

1.11 Organization of the Study
This study was organized in five chapters. Chapter one is the introduction which consists of the background of the study, statement of the problem, purpose of the study, objectives
of the study, research questions, significance of the study, limitations of the study, delimitations of the study, basic assumptions, and definition of significant terms and organization of the study. Chapter two consists of literature review on the indicators of preparedness to use computers such as skills acquired to use computers, headteachers attitude towards the use of computers, literacy levels of headteachers and challenges, theoretical and conceptual framework Chapter three deals with Research methodologies where topics discussed include research design, target population, sample size and procedures, research instruments, validity and reliability of instruments and data collection and data analysis. Chapter four deals with data analysis, interpretation description, and discussion of the findings. Chapter five consists of summary, conclusions, recommendations of the study and suggestions for further research.
CHAPTER TWO

LITERATURE REVIEW

Introduction

The literature review was done through relevant renown journals retrieved from various authoritative websites, data bases such as Educational Resources Information Centre (ERIC), relevant books, newsletters and other relevant materials.

The areas identified were; ICTs in primary schools in Kenya, competencies required for the effectiveness and efficient use of computers on school administration and teaching – learning process, level of computer literacy among the headteachers, benefits of using computers in education and factors affecting the use of computers in school administration in educational institutions.

2.1 ICTs in primary schools in Kenya

Hawkings (2004), in Ten Lesson for ICT and Education in the developing world noted that, while many ministries of Education around the world have made the commitment to computerize schools, few have developed coherent strategies to fully integrate the use of computers as pedagogical tools in the classroom. Educational institutions are required to develop an ICT strategy that incorporates the goals of the institution and how this will be met using ICTs, provide a supporting framework for the development of ICT in the institution and outline how the full potential of ICT is to be exploited to support all aspects (Chesenga, 2006)
2.2 Headteachers’ attitude towards the use of computers in schools

According to Waugh and Handler (1997), most educators in developing countries during the late 1990s were not competent to use computers in education. Pascopella (2001) further notes that, globally, most educators are not competent to integrate application of software meaningfully into learning content of a learning area, and this may be the reason that schools do not appear to be exploiting the opportunities offered by ICTs. Robertson (1996) studied the snapshot of IT skills of teachers in a secondary school prior to their receiving personal computers. He realized that majority of teachers remained unsatisfied with the gap between potential of computer use and quality of in-service training in the use of IT in general. The findings highlighted the need for adequate and careful teacher training on the gadgets which are supposed to be used in the classroom setting. Coral (2011) suggests that training in educational ICT should not only be confined to acquiring computer literacy skills but should extend to using ICTs as a means to enable educators to change the way they teach. IPS(2003) notes that teacher training on ICT use in school administration and teaching – learning process must focus on the following key areas:

- Basic ICT literacy dealing with software and hardware applications and not necessarily being connected to teaching and learning.
- Basic ICT literacy but in relation with or in support of teaching and learning activities.
- Use of ICT in teaching specific subjects in the classrooms, the internet as a pedagogical innovation and use for collaborative activities, trouble shooting and school / classroom management.
Kadijevick (2002) has identified four issues as critical to proper and effective use of computer technology in schools. Top among them is computer attitude, followed by software selection, a proper utilization direction and web-based professional and development teachers. Similarly, in his meta-analysis of the factors that are instrumental in promoting the use of computer aided learning, Griffin (1988) found that teacher attitude towards computer is an important factor related to the teacher’s role towards the effective use of computers in education. According to Yushall (2006), indeed, previous correlation studies have long forecasted that the use of computers in education would very much depend on how real teachers integrate the stated factors in everyday activities. Therefore, the question of teacher attitude towards the use of computers in school is central to any successful use of computers in education (Yuen, 2001). Studies have also shown that computer anxiety, lack of confidence and lack of enjoyment influence both the acceptance of computers and their use as a teaching and learning tool (Gressard and Loyd 1986). The need to disabuse the minds of teachers from such fears and replace these misconceptions with confidence building measure is ever more paramount.

2.3. Training levels of Headteachers in the use of computers

Among the strategic objectives to build ICT capacity for Kenyan education sector is to ensure that all players in the education sector and other stakeholders, i.e. the Kenya Power have ICT skills and vision (GOK 2006b). Decision to adopt a new technology in schools will depend on various infrastructure, one of which is the availability of electricity power in public primary schools due to the fact that computers require electricity power for their functionality. Lack of electricity connection from the mains
power supply to schools pose a challenge to ICT use in public primary schools. Equally, studies done in the United Kingdom, the Netherlands, Malaysia and South Africa corroborate the fact that school educators and administrators require facilitation with appropriate computer facilities and related infrastructures in order to optimize the application of ICT in their teaching and administrative engagements (Visscher, 2003, Mentz and Mentz, 2003 and Tearle 2004).

There is need for personal education in computer technology and the need to promote computer literacy for both learners and instructors within educational institutions in Kenya (Chisenga, 2006). However, there has been little information related to headteachers level of literacy in basic computer operations and the extent to which ownership of a computer and frequency of use of computers either jointly or individually product headteachers literacy in basic operations in Computer. It becomes crucial to provide information along this line inorder to be able to make recommendations that will promote computer literacy among headteachers in Bondo district. This certainly will encourage the use of computers in teaching learning and school administration in schools in Kenya.

2.4 Strategies to enhance use of computers in public primary schools

2.4.1 Attitude

Brooks (1999) stated that, many educators perceive computers as just another burden, commenting on the lack of awareness among teachers of the potential offered by computers in the education context and noted that educators have tended in consequence to confine the possibilities of computer use to word processing and e-mail. Pascopella
(2001) observed that some educators felt that, computers served only a recreation function, with learners being allowed, for instance, to play games after computing work. This attitude led to under utilization of computers in education. Potosky and Bobko (2001) demonstrated that computer training has a positive impact on computer attitudes. Lack of positive attitudinal change and limited computer literacy leads to problems of technophobia and personal reluctance to switch from traditional methods of school administration and teaching to technology oriented approaches.

2.4.2 Training in ICT use

According to Mugenda (2006), research on the use of ICT in different educational setting over the years, invariably identify as a barrier of success, the inability of teachers and other staff on how they cause ICTs to help them work better. Various ICT competencies must be developed through education system for ICT integration to be successful. He further noted that the relations between teachers’ skills in using computers, their pedagogical thinking and their self-reported practices are not matching. Thus only a small percentage of teachers had adequate technical computer skills. School Net Africa (2003) capture this challenge and noted that most newly qualified teachers coming out of African teacher training institutions today have only limited exposure to ICT and almost no actual training on how to incorporate ICT into their teaching practice. Therefore there is need to develop ICT curriculum for teachers undergoing training so as to equip them with the desired ICT knowledge, skills and attitudes thus promoting the ICT use in both instructional and administrative tasks after getting employment in public primary schools. For those teachers who are already employed the government should come up with an in-
service programme to induct all teachers on how to use ICT in teaching/learning process and school administration.

2.4.3 Level of awareness in the use of computers in school administration

Cuban (1993) noted that placement of computers within the reach of teachers and within supportive school cultures was very important so that teachers and learners can improve their ICT potential. Sheingold and Hadley (1990) study observed that, teachers worked in schools where hardware and access to resources were twice the average on ICT use, were comfortable with technology and used computers for many purposes. Gunter (2001) noted that, without access to ICTs in pre-service teacher training institutions, there is no way teachers will implement ICT integration effectively. SAIDE (2003) report indicated that, the key problem in use of computers in teaching and learning is not that teachers did not want to use them but the researcher found out that teachers did not use computers for a range of reasons including; ICT resource provision was poor, internet connection was unavailable or unreliable, arrangements were not made to ensure sufficient access to school computers for either teacher or their learners, and that teachers lacked knowledge on how to browse on the web.

Listed in order of rank, aspects that inhibit schools from acquiring computers are; absence of electricity, lack of funding, insufficient building space, lack of available and trained personnel, and poor security. For example, in Kenya, duties and taxes are levied on ICT products while value added tax is levied on ICT services making both expensive
(Waema, 2002). From the above difficulties the Kenya government should take a bold step to ensure easy and cheap access to computers and its related infrastructure.

2.4.4 **Provision of computers and other related infrastructure**

Culley (1986) states that people who have full access to computers become confident in their use. This makes the provision of computers and other related infrastructure a pre-condition to the successful use of IT in learning institutions.

The critical factors for success in an IT use environment (schools) will change with full implementation of computer usage in public primary schools, prior experience of using technology, the technological infrastructure, (i.e. computer laboratories, electricity power, supply of computers) and the head teacher will be the key elements in the success of the learning experience.

Ministry of Education and Teachers Service Commission can help teachers to achieve success by conducting a face to face session for familiarizing head teachers with the computers to help them overcome the issue of prior experience, construction of computer laboratories and supply computers to schools before the ICT policy is fully implemented in all public primary schools in Kenya and finally human resources should be committed to the ICT project and the teachers should be trained on how to use computers based on their attitudes towards technology, teaching subjects and their ability to control technology.
2.4.5 ICT Policy

Hawkins (2004), in Ten lessons for ICT and Education in the developing World notes that, while many ministries around the world have made commitment to computerize schools, few have developed coherent strategies to fully integrate the use of computers and pedagogical tools in classroom thus educational institutions are required to develop an ICT strategy that incorporates the goals of the institution and how this will be met using ICTs, provide supporting framework for the development of ICT in the institution and outline how the fully potential of ICT is to be exploited to support all aspects (Chisenga, 2006).

2.4.6 Funding for ICT investment in education

Cost is an important factor that guides the adoption and growth of ICT in a country hence preparedness. Most developing countries are constrained by resource scarcity. Even where the importance of ICTs is recognized, allocation for the development of ICTs is often inadequate (Mugenda, 2006). This implies that government should allocate enough funds for the funding of ICT development in education sector as this will expedite the awareness and preparedness of headteachers, teachers and learners in the use of the ICT in public primary schools. Moon (2004) states that many countries would over, strive to allocate more funds in their executions’ recurrent, expenditure such as Teacher’s salaries but will forget to allocate enough funds for educational innovations. This implies that the use of ICT in public primary schools in developing sub-Saharan countries is yet to be a dream, Kenya included:-
2.5 Summary of Literature Review

Having reviewed the literature on the indicators of preparedness of headteachers using computers in public primary schools on national basis, teachers as a group seem ill prepared to use computers in classroom and general school administration (SAIDE 2003). Murithi (2005) has argued that in Kenya like most developing countries ICT usage is still limited to computer literacy training. She contend that the present ICT curriculum merely deals with teaching about computers and not how computers can be used to transform the teaching – learning and school administration. Thus there was need to establish the extent of preparedness of headteachers to use computers in public primary schools in Bondo District.

2.6 Theoretical framework

In this study The Technology Acceptance theory is applied. Its proponent was Davis in 1989. This is an information systems theory that models how users come to accept and use technology. The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it (preparedness), notably:

Perceived usefulness (PU) defined by Fred Davis (1989) as the degree to which a person believes that using a particular system would enhance his or her job performance.

Perceived ease of use defined by Davis (1989) as the degree to which a person believes that using a particular system would be free from effort.
For our study the headteachers preparedness in the use of ICT in public primary schools will be enhanced by improved job performance and would use little effort when using IT in their teaching/learning and administrative tasks. Criticisms of Technology Acceptance Model as a theory include its questionable heuristic values, limited explanatory and predictive power, triviality, and lack of any practical value (Chuttur, 2009).

2.7 The Conceptual Framework

Figure 1 Conceptual framework showing the preparedness of headteachers in the use of ICT in public primary schools.

Source: Research, 2013
This study used the above conceptual framework to help focus on variables that includes; attitude, computer training, headteachers’ awareness indicates the preparedness of head teachers for the use of computers in public primary schools. The conceptual framework postulates that literacy level, attitude, computer training, computer availability are the indicators of the preparedness of headteachers to use computers in public primary schools.

The conceptual framework shows how different variables indicate the preparedness of headteachers to use computers in public primary schools.

The attitude of headteachers towards the use of computers is a very important indicator in that positive attitudinal change towards computers will propel headteachers towards acquiring skills and training in computer application on teaching – learning activities and school administration while negative attitude will discourage ambitions to use computers in public primary schools.

Strategies on how to implement ICT policy both at the national and institutional levels is paramount in the preparedness of using ICT to achieve the appropriate use of computer technology. Thus this depends largely on the management/administrative support and structures put in place to support the development of the ICT outcomes and capacities by headteachers.
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction
This chapter explains the method applied in carrying out this research project. It covered the following areas; research design, target population. Sample and sampling procedures, research instruments, validity and reliability of instruments, data collection and data analysis techniques.

3.2 Research design
The design selected for the study was descriptive survey. Descriptive survey is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals (Orodho, 2003). The design is used when collecting information about people’s attitudes, opinions, habits or any of the variety of education or social issues (Orodho and Kombo, 2002). Given that in this study questionnaires were to be administered to a sample of headteachers in Bondo district, this design would be the most appropriate for the study.

3.3 Target Population
The target population for the study consisted of pupils, support staff, teachers and headteachers in 128 public primary schools in Bondo district, Siaya County. These respondents were chosen due to their day to day active contributions in school administration.
3.4 Sample size and sampling procedures

Borg and Gall (1989) define a sample as the representative of a population from which the sample has been drawn from those variable that are relevant to the research being conducted. 128 public primary schools in Bondo district were sampled out. Sampling was done using cluster random sampling thus the District was divided into seven educational zones that is Aila, Maranda, Amoyo, Nango, Nyamonye and Usenge. The names of schools from each zone were folded and put in a box. The folded papers will be mixed and picked per zone, two schools will picked from each zone hence the pupils, support staff, teachers and headteachers whose schools names were picked were included as respondents of the study.

3.5 Research instruments

In order to explore preparedness of headteachers in the use of computers in public primary schools in Bondo District, the data was collected using questionnaires and observation schedule. The questionnaires were for both the teachers and headteachers thus through the questionnaires, the research questions developed by the researcher were answered. The questionnaires covered the following areas; demographic information, attitude towards the use of computers in public primary schools, computer literacy level of headteachers, infrastructure and access to computers in public primary schools and challenges faced by head teachers for the use of computers to support general school administration.

The observation schedule had four sections, namely; ICT infrastructure put in place in schools, access to computers for both teachers and learners, use of computers in school
administration by headteacher and teachers and use of computers in school for teaching and learning. The observation schedule was chosen as it offers the researcher an opportunity to observe and interact with other members of the school community.

The choice of this instrument is due to the fact that it gathers data over a large sample, information can be collected from diverse regions and confidentiality is upheld. All these conditions befit this study that seek to investigate preparedness of headteacher to use a computer in a whole district and also observation schedule was used.

3.6.1 Validity of the instrument

This study used content validity. Content validity is a measure of the degree to which data is collected using a particular concept (Borg and Gall, 1989). Test-retest was done and the items that failed to measure the variable that they were designed to measure were modified and others discarded. The schools that were used for the piloting were excluded from the main study. Consultations and discussions with the supervisors were done to establish content validity.

3.6.2 Reliability of the instruments

Kothari (2004) states that an instrument is reliable if it yields consistent results over a period of time. Test-re-test reliability method was used to determine consistency of the questionnaires administered. Pre-test was done through piloting in one public primary schools, thus Pearson’s production moment correlation coefficient formula(r) was used.
$$r = \frac{n(\Sigma xy) - (\Sigma x)(\Sigma y)}{\sqrt{[n\Sigma x^2 - (\Sigma x)^2][n\Sigma y^2 - (\Sigma y)^2]}}$$

Where:

- $n$ = number of pairs of scores
- $\Sigma xy$ = sum of the products of paired scores
- $\Sigma x$ = sum of $x$ scores
- $\Sigma y$ = sum of $y$ scores
- $\Sigma x^2$ = sum of square $x$ scores
- $\Sigma y^2$ = sum of square $y$ scores

3.7 **Data collection procedures**

The administration of the research instruments for data collection was done by the researcher both at the pre-testing stage and the main study. A research permit was obtained from National Council for Science and Technology. A copy of the permit was presented to the District Commissioner, District Education officer, Teachers Service Commission Deputy Director and sampled headteachers of public primary schools in Bondo district. The sampled headteachers were given questionnaires to fill which were collected on a later date agreed upon by both the researcher and the respondents.

3.8 **Data analysis techniques**

Analysis of data started with checking of the gathered raw data for accuracy, usefulness, and completeness. Quantitative data derived from the demographic sections of the...
questionnaires and other closed questions were analysed using descriptive statistics that included the use of percentages and frequencies. Qualitative data generated from the open ended questions in the research instrument were organized into themes and patterns, categorized through content analysis and then tabulated. The data was computed using the statistical package for social sciences (SPSS) into descriptive data.
CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter presents analysis and findings from the data collected through the use of two questionnaires and an observation schedule. It focused on the questionnaire return rate, demographic information of the respondents, presentation, interpretation and discussion of findings. The presentation of findings was done based on the objectives and the research questions of the study.

4.2 Questionnaire return rate

There were two sets of questionnaires. One of the questionnaires went to the headteachers of public primary schools sampled out for the study and another one went to the teachers of the same schools.

All the twelve headteachers (100%) returned the questionnaires. All the twelve teachers (100%) returned the questionnaires.

4.3 Demographic information of respondents.

The study sought personal information from the respondents as follows:

**Gender of headteachers**

The headteachers were asked to indicate their gender. Their gender distribution is as indicated in table 4.31.
Data in table 4.3.1 indicates that there were eleven (91.7%) males respondents and one female. Majority of the headteachers were males, this data indicates that headship in public primary schools in Bondo district is male dominated implying that there is gender disparity in public primary school administration hence more female teachers should be promoted to headship than males to get gender parity in school administration.

### 4.3.2 Age of the headteachers

The headteachers were asked to indicate their age this is because age is a factor in school administration maturity as those who are of many years in age are mature administrators. The distribution of the headteachers by age is as shown in table 4.3.2.

<table>
<thead>
<tr>
<th>Age bracket</th>
<th>Frequency (F)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>36-40 years</td>
<td>1</td>
<td>8.33</td>
</tr>
<tr>
<td>46-50 years</td>
<td>6</td>
<td>50.00</td>
</tr>
<tr>
<td>Over 55 years</td>
<td>5</td>
<td>41.67</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
Table 4.3.2 revealed that, majority of headteachers were within 46-50 years, 41.67 percent were over 55 years and only 8.33 percent was within the age bracket 36-40 years. This indicates that public primary schools in this district are managed by mature headteachers.

4.3.3 Professional qualifications of the headteachers

To find out the professional qualifications of the headteachers, the headteachers were asked to indicate the same. Table 4.3.3 represents the data.

<table>
<thead>
<tr>
<th>Professional qualifications</th>
<th>Frequency (F)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.Ed</td>
<td>1</td>
<td>8.33</td>
</tr>
<tr>
<td>Dip</td>
<td>9</td>
<td>75.00</td>
</tr>
<tr>
<td>PI</td>
<td>2</td>
<td>16.67</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.3.3 indicated that majority of headteachers are diploma graduates, 16.6 percent are PI and 8.33 percent reported to have a masters degree in education, hence this reveals that, public primary schools are managed and administered by headteachers who have the relevant professional qualifications and can therefore adapt to the use of information communication technology in public primary schools if given opportunities and access to IT facilities.
These findings also indicated that public primary schools are managed and administered by headteachers who have the relevant professional qualifications and can therefore adapt to the use of information communication technology in public primary schools.

4.3.4 Respondents experience as headteachers in the whole of their teaching career

The respondents were also asked to indicate their experience as headteachers in the whole of their teaching career. The findings are presented in table 4.3.4.

Table 4.3.4 Respondents’ experience as headteachers in the whole of their careers

<table>
<thead>
<tr>
<th>Experience in years</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-10 years</td>
<td>1</td>
<td>8.33</td>
</tr>
<tr>
<td>11-15 years</td>
<td>5</td>
<td>41.67</td>
</tr>
<tr>
<td>Over 20 years</td>
<td>6</td>
<td>50.00</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.3.4 established that majority of respondents had served for the longer period of time that is over 20 years, 41.7 percent had experience of 11-15 years and 8.33 percent had experience of 6-10 years. This indicates that public primary schools are headed by headteachers with vast and varied experience. Experience as a headteacher has influence on how individuals respond to the innovation and preparedness in the use of ICTs in public primary schools’ administration. The table shows that there are experienced headteachers in public primary schools. Therefore, the headteachers are able to understand the challenges in preparedness in the use of ICT in schools.
4.3.5 Headteachers ICT Training

To establish whether the headteachers are trained in the use of ICT, they were asked to indicate whether trained or not trained in the use of ICT. The findings are summarized in table 4.3.5.

Table 4.3.5: Headteachers training levels in the use of ICT

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency (f)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>No</td>
<td>9</td>
<td>75</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>100</td>
</tr>
</tbody>
</table>

The data presented in table 4.3.5 established that nine headteachers were not trained in the use of ICT. Only three headteachers responded that they are trained in the use of ICT. Training levels in the use of ICT reveals the individual’s preparedness in the use of ICT as this was to establish the level of training the respondents had achieved in the use of the same in public primary school hence their preparedness in the use of ICT in their schools. Thus the data reveals that majority of headteachers (75%) are not trained in the use of ICT hence not prepared in the use of ICT in public primary schools.

4.3.6 Areas of training in ICT use

The respondents were asked to indicate areas of training in the use of ICT. Only three headteachers (25%) responded that they were trained in basic computer literacy not necessarily linked to teaching while the nine headteachers (75%) could not respond as
they had indicated that they had not trained in the use of ICT in public schools. This shows that majority of headteachers (75%) had no basic computer literacy hence are not prepared in the use of ICT in public primary schools in Bondo district.

4.3.7 Attitude towards the use of computers in public primary schools

In order to establish the attitude of the respondents towards the use of computers in public primary schools, the respondents were asked to indicate if they; strongly Agree, Agree, Undecided, Disagree or Strongly Disagree to the statement given as summarized below: SA, A, U, D, SD.
Table 4.3.7 Headteachers responses on their attitude towards the use of computers in public primary schools

<table>
<thead>
<tr>
<th>Statement</th>
<th>Response</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computers can help me learn things more easily</td>
<td>SA</td>
<td>5</td>
<td>41.7</td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>7</td>
<td>58.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Positive</strong></td>
<td><strong>12</strong></td>
<td><strong>100</strong></td>
</tr>
<tr>
<td>2) Computers are difficult to use</td>
<td>A</td>
<td>2</td>
<td>16.7</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>7</td>
<td>58.3</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>3</td>
<td>25.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Positive</strong></td>
<td><strong>12</strong></td>
<td><strong>100</strong></td>
</tr>
<tr>
<td>3) Knowing how to use computers will help me do well as a headteacher and in my career as a teacher</td>
<td>SA</td>
<td>7</td>
<td>58.3</td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>5</td>
<td>41.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Positive</strong></td>
<td><strong>12</strong></td>
<td><strong>100</strong></td>
</tr>
<tr>
<td>4) Computers when used in schools will improve educational activities</td>
<td>SA</td>
<td>6</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>6</td>
<td>50</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Positive</strong></td>
<td><strong>12</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
The results from table 4.37(1), (2), (3) and (4) indicated all headteacher had a positive attitude towards the use of computers in public primary schools. This was reflected by large percentage (58.3%) agreeing that computers can help them learn things more easily, knowing how to use computers will help them do well as a headteacher and their careers as a teacher thus improve educational activities and public schools administration. A positive attitude implies the respondents’ acceptance that computers can be used to enhance school administration.

### 4.4. Extent to which public primary school headteachers are aware in the use of computers as suitable tools for administrative purposes.

This section of analysis tried to establish the extent to which the public primary school headteachers are aware of computers and its related infrastructure as suitable tools for administrative purposes. Relevant questions from the headteachers and teachers questionnaires and the comments from the observation schedule were sought and analysed as shown in the table below.

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency (F)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>12</td>
<td>100</td>
</tr>
<tr>
<td>Agree</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Disagree</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
4.4.1 Establishment of Headteachers level of awareness in the use of computers as a suitable tool for administrative purposes.

The headteachers were asked to indicate whether they are aware of the use of computers in school administration and stated the advantages of using computers in school administration. Their responses were as follows. All the twelve (100%) indicated that they were aware of computers being a suitable tool for administration, stating its advantages that, it can be used to keep the school inventory, admission, evaluation and examination, and financial records among others, as with the use of computers all records required can be retrieved with the click of a mouse, unlike going through voluminous files stored in a cupboard. The foregoing information on headteachers awareness in the use of computer as a suitable tool for administrative purposes indicated that the headteachers in public primary schools are looking forward for the day either country or central governments will supply computers to schools as this will enhance their administrative activities and their preparedness in their use.

4.5 Strategies put in place by headteachers to enhance the use of computers in public primary schools

This section of analysis tried to determine the strategies put in place by headteachers to enhance the use of computers in public primary schools. Suitable and relevant questions from the headteachers, teacher’s questionnaires and observation schedule were sought and analysed as shown in table 4.5.
Table 4.5 Strategies put in place by headteachers to enhance the use of computers in schools

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Frequency (F)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written proposal</td>
<td>9</td>
<td>75</td>
</tr>
<tr>
<td>Workshops</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Seminar</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Seek donations</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
<td><strong>75</strong></td>
</tr>
</tbody>
</table>

Table 4.5 indicated that majority of the headteachers had written proposals to NGOs given that these organizations respond faster than the government agencies when it comes to capacity building on new techniques concerning professional needs. The researcher suggest that Government should come fast to address the ICT needs of headteachers, teachers and pupils to be technology compliant hence, to improve both teaching learning and school administration in public primary schools.

4.5.1 Capacity building in the use of computers in public primary schools.

The headteachers and teachers were to indicate the strategy they put in place to enhance the use of computers in public primary schools. Out of twelve respondents, nine headteachers (75%) had written a proposal to non governmental organizations especially Plan Kenya to come up with a capacity building induction to both school management committee members and headteachers of those schools on the need to incorporate computers as basic administrative tools. This if done the school management committee being incharge of finances in the schools will see the need of acquiring a lap top to be used in keeping school records.
4.5.2. ICT Training and Acquisition of basic skills in computer use and application

The respondents were asked to indicate their training levels in the use of ICT. Their responses were as follows:

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency (F)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trained</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>Not trained</td>
<td>9</td>
<td>75</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>100</td>
</tr>
</tbody>
</table>

The headteachers and teachers were asked to indicate whether they are trained to use computers or not. The data in table 4.5.2 showed that only three headteachers (25%) were trained and nine (75%) were not trained. They were given an option for stating their future plans in use of computers in their administrative duties, the nine (75%) of those who had not trained responded in their suggestions that they were to undertake computer training to enable them register Kenya Certificate of Primary Education candidates on line as required by the examination and evaluation agency. These results do not correspond with the findings by Edie (2001) who asserts that teachers who have confidence in their ICT skills use ICTs in presentations of lessons as these resources add immediacy and currency to lessons, enlivens the classroom environment and enhances learner engagement.
4.6. Responses from the teachers questionnaire

This section is based on the questions that were in the teachers’ questionnaire. Most of the analysis in this section however, shows combination of various related items. The purpose of this section is to indicate how preparedness headteachers in the use of ICT in public primary schools influence the general access to computer knowledge by the teachers.

4.6.1 Demographic information of the teachers

This section describes the gender, age, professional qualifications and experience of the respondents as teachers in that current public primary school.

4.6.2 Gender of the teachers

In order to find out the gender of the teachers they were asked to indicate their gender. Table 4.6.2 Represents the data.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency (F)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>11</td>
<td>91.7</td>
</tr>
<tr>
<td>Female</td>
<td>1</td>
<td>8.3</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>100</td>
</tr>
</tbody>
</table>

Findings from table 4.6.2 established that 91.7% of the respondents were males while 8.3% were females hence there was gender imbalance in the study. This indicates that most of the public primary schools in Bondo district are male dominated hence female
teachers should be given higher opportunities during teacher recruitment to achieve gender parity in public primary schools.

4.6.3 Age of Teachers

Teachers were asked to indicate their age bracket as shown in table 4.6.3 below

<table>
<thead>
<tr>
<th>Age bracket</th>
<th>Frequency (F)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>31-35 years</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>36-40 years</td>
<td>2</td>
<td>16.7</td>
</tr>
<tr>
<td>41 – 45 years</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>51-55 years</td>
<td>3</td>
<td>25</td>
</tr>
<tr>
<td>55-60 years</td>
<td>1</td>
<td>8.3</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>100</td>
</tr>
</tbody>
</table>

Data in the table 4.6.3 indicates that 25% of the teachers were in the age bracket of 31-35 years. 25% were in the bracket of 41-45 years and 51-55 years. 16.7% were in the bracket of 36-40 years while only 8.3% was in the bracket of 55-60 years. Majority of the teachers were therefore above 40 years. This implies that, majority of teachers are mature enough to face both professional and technological challenges that may beget the preparedness of teachers in the use of ICT in public primary schools.
4.6.4 Professional qualification of the teachers

Teachers were asked to indicate their current and highest professional qualifications. This could enable the study to establish the relationship between academic qualification and computer literacy as those teachers who pursued higher professional qualifications in the recent years might have had computer training as most of the higher learning institutions have incorporated ICT learning in their academic curriculum.

Their responses are shown in the table below:

<table>
<thead>
<tr>
<th>Professional qualification</th>
<th>Frequency (F)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bed.</td>
<td>2</td>
<td>16.7</td>
</tr>
<tr>
<td>Dip</td>
<td>6</td>
<td>50.0</td>
</tr>
<tr>
<td>P1</td>
<td>4</td>
<td>33.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

From the table 4.6.4 it is revealed that 6 teachers out of all the respondents were Diploma in Education holders. Four teachers were P1 trained and two were Bachelor of Education holders. The presence of many diploma teachers (50%) show that the highest percentage of respondents had basic skills in teaching presumably obtained from teacher education for them to prepare young Kenyans in a changing global especially in the era of ICT.
4.6.5 **Respondent’s experience as teachers in the whole of their career.**

The respondents were asked to indicate their experience as teachers in the whole of their career. This could indicate the valuable experience that would enable the teachers to adopt ICTs in teaching and learning in classroom environments. The findings are presented in the table below.

**Table 4.6.5. Respondents experience as teachers in the whole of their career.**

<table>
<thead>
<tr>
<th>Experience in years</th>
<th>Frequency (F)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5 years</td>
<td>1</td>
<td>8.3</td>
</tr>
<tr>
<td>6-10 years</td>
<td>2</td>
<td>16.7</td>
</tr>
<tr>
<td>11-15 years</td>
<td>1</td>
<td>8.3</td>
</tr>
<tr>
<td>16-20 years</td>
<td>3</td>
<td>25.0</td>
</tr>
<tr>
<td>Over 20 years</td>
<td>5</td>
<td>41.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The findings in table 4.6.5 established that majority of teachers had a teaching experience of over 20 years, 25 percent had experience of 16-20 years, 16. percent had teaching experience of 6-10 years, 8.3 percent had experience of 11-15 years and only 8.3 percent had an experience of upto 5 years. This shows that most of the teachers are experienced enough to prepare pupils for future responsibility including adoption of ICT use in schools.
4.6.6. Teachers computer usage information

The respondents were asked to indicate whether they have access to a computer in their schools. Their response was as in the table 4.6.6. below

<table>
<thead>
<tr>
<th>Response</th>
<th>Frequency (f)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>2</td>
<td>16.7</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>83.3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

From the findings in table 4.6.6 its evident that ten teachers 83.3% had no access to computers in their schools. Only two teachers 16.7% could access computers in their school. This indicates that majority of teachers in public primary schools in Bondo district had no access to computers hence their preparedness in the use of ICT in those schools are in doubt. This shows that despite considerable increase in ICT facilities in other sectors, there is a considerable technology lag in educational institutions.

4.6.7 Preparedness of headteachers in the use of ICT in public primary schools in Bondo district.

The study sought the views of teachers on preparedness of headteachers in the use of ICT in public primary schools in Bondo district. Their responses were as in table 4.6.7.
Table 4.6.7 Preparedness of headteachers in the use of ICT

<table>
<thead>
<tr>
<th>View</th>
<th>Frequency (F)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT be taught in teacher training colleges</td>
<td>12</td>
<td>100</td>
</tr>
<tr>
<td>ICT be done as a personal initiative</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Teachers were asked to give their views on preparedness of headteachers in their schools in the use of ICT. In table 4.6.7 all the respondents 100% suggested that, teachers have been leaving the universities and teacher training colleges without any much knowledge on how to use computer facilities both in classroom and administrative activities. Thus the government should support the upcoming and the existing teacher professional development initiatives to incorporate ICT training. This may also be done through incentives, i.e. promoting those teachers who are ICT literate, to attract teachers to undertake ICT training for those who are already practicing.
CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter discusses the summary, findings of the study, conclusions based on findings and presents recommendations and suggestions for further research.

5.1 Summary

The purpose of the study was to investigate the preparedness of the headteachers in the use of Information Communication Technology in public primary schools in Bondo district. Four research questions were formulated to guide in the study. Research question one aimed at investigating the training levels of headteachers in the use of computers in public primary schools. Research question two aimed at determining the headteachers attitude towards the use of computers in public primary schools. Research question three investigated to what extent do public primary schools headteachers perceive that computer technology improves their effectiveness and efficiency as school administrators. Research question four sought to identify the strategies of headteachers to enhance the use of computers in public primary schools.

Literature was reviewed on ICTs in primary schools in Kenya. Headteachers’ attitude towards the use of computers in schools, training levels of headteachers in the use of computer and strategies to enhance the use of computers in public primary schools.

The study applied a descriptive survey design. The target population was 128 public primary school headteachers in Bondo district. The sample consisted of 12 headteachers.
and 12 teachers from public primary schools in the said district. Data was collected through the use of questionnaires for headteachers, teachers and an observation schedule.

5.2 Findings

The findings revealed that:

There are very few ICT literate headteachers in the district. 75% of the headteachers are not computer literate as only 25% of headteachers are computer literate. Those are quite minimal proportions depending on administrative tasks to be undertaken. From the observation schedule all the 12 schools (100%) had no computers to be used by headteachers, teachers and pupils. Thus indicates that the training levels of headteachers in the use of computers in public primary schools are inadequate and therefore they need to be trained in the usage of computers.

All the headteachers and teachers had a positive attitude towards the use of computers in public primary schools 100% of headteachers and 100% of teachers consented their positive attitude through their responses. This shows that they all had a positive attitude towards the use of computers in public primary schools to enhance both administrative and teaching learning activities.

All the headteachers 100% indicated their awareness of a computer being a suitable tool for administrative purposes as it enables keeping the records on inventories, finance, admission and examinations among others. All agreed that computer will save their time they use in delving into the files when in need of any administrative records.
Majority of headteachers 75% had written. Proposals to Non-Governmental Organisations asking them to Organise Computer literacy inductions to all headteachers in Bondo district. 25% of headteachers had proposed to their school management committee members to allocate funds to buy laptops. 25% of headteachers had already registered in computer training institutions within the district. This shows that headteachers at their individual levels are determined to put in place the strategies to enhance the use of computers in public primary schools.

5.3 Conclusions

It was clear that the training levels of headteachers in the use of computers in public primary schools are wanting given that only a few had trained in computer usage due to the fact that headteachers did not rely on computers to accomplish their administrative tasks. Headteacher’s attitude towards the use of computers in public primary schools was found to be positive as majority of them believed that ICT had a positive role in their administrative and managerial duties. The level of awareness in the use of computer as a suitable tool for administrative purposes is both high and positive as headteachers are aware that computers can be used in storage of the administrative records such as finance, admission, examinations among others. The strategies put in place to enhance preparedness of headteachers in the use of computers in public primary schools was through proposal writing by headteachers to NGOs to organize capacity building workshops in the use of computers. This was a positive indication on the way forward for educational administration as we embrace new technology in the 21st century.
5.4 Recommendations

In light of the research findings, the researcher wishes to make the following recommendations:

1. Headteachers be provided with professional opportunities in areas of computer technology through regular capacity building courses, workshops and seminars.
2. The Ministry of Education should develop a policy to guide the use of computer in school administration and management to enable a standardized administration and management procedure in all public primary schools in the country.
3. Teacher training institutions (universities and other Teacher Training Colleges) should evaluate how teacher trainees who are future administrators could be prepared to be computer literate as headteachers agreed that computer technology improves their effectiveness and efficiency as school administrators.
4. Since no school had incorporated computer technology in their current administration program, it was recommended to be done given that most headteachers had written proposals to Non Governmental Organizations and had recommended the same to their schools’ board of Management as their administrative strategies towards the use of computers in public primary schools.

5.5 Suggestions for further research

- Further research could be done on the extent of the schools management support in ICT integration in education in the district.
- A study on the role of computer technology on general school administration.
- A similar research could be carried out in other rural district to compare notes.
REFERENCES


Davis, F.D. (1989). _Perceived usefulness, Perceived ease of use, and user acceptance of Information Technology._


IPS. (2003). teacher training on ICT use in education in Asia and the pacific overview from selected countries. Bankok UNESCO.


School Net Africa. (2004). Towards a Strategy on Developing African Teacher Capabilities in use of ICT.


APPENDICES
APPENDIX 1

TRANSMITTAL LETTER

UNIVERSITY OF NAIROBI
P.O. BOX 30197
NAIROBI

Dear Respondent,

RE: A QUESTIONNAIRE ON THE PREPAREDNESS OF HEADTEACHERS IN THE USE OF INFORMATION COMMUNICATION TECHNOLOGY (ICT) IN PUBLIC PRIMARY SCHOOLS IN BONDO DISTRICT, KENYA

I am a post graduate student from the University of Nairobi pursuing a Master of Education degree course. I request you kindly to fill the attached questionnaires as sincerely as possible. My research topic focuses on the preparedness of headteachers in the use of information communication technology (ICT) in public primary schools in Bondo district, Kenya. The information you give will be for the purpose of this study and your identity will be confidential

Yours faithfully

Oulo Isaiah Okeyo
M.Ed. Student
APPENDIX 2: HEADTEACHERS’ QUESTIONNAIRE

Dear respondents,

This questionnaire is designed to investigate the preparedness of headteachers for the use of computers in public primary schools in Bondo district, Siaya County. The information you give will be used for the purpose of the study only and identity kept confidential. Do not indicate your name or the name of your school. Please respond to all items in the questionnaire as honestly and correctly as possible.

Indicate your responses using a tick (√)

SECTION A: DEMOGRAPHIC INFORMATION

1. Please indicate your gender
   
   Female [ ] Male [ ]

2. Indicate your age
   
   26-30 years [ ] 31 – 35 years [ ]
   36-40 years [ ] 46-50 years [ ]
   51-55 years [ ] over 55 years [ ]

3. Indicate your highest professional qualification
   
   M.Ed [ ] B.Ed [ ] Diploma [ ] P1 [ ]
4. Indicate your experience as a headteacher in your teaching career

1-5 years [ ] 6 – 10 years [ ] 11-15 years [ ]
16-20 years [ ] over 20 years [ ]

5. Indicate your experience as a headteacher in this school

1-5 years [ ] 6-10 years [ ] 11-15 years [ ]
16-20 years [ ] over 20 years [ ]

6. Are you trained in ICT?

Yes [ ] No [ ]

7. If yes above, please indicate the area of training.

| Basic computer literacy not necessarily linked to teaching |   |
| Use of computer hardware and software but linked to teaching and learning |   |
| Use of computers for improving school administration |   |

8. The table below was designed to measure attitudes towards the use of computers in school administration. Please indicate your level of agreement or disagreement.

SA – Strongly Agree  A- agree  U – Undecided  D-disagree  SD – Strongly Disagree
<table>
<thead>
<tr>
<th>Statement</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Computers can help me learn things more easily</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2  Computers are difficult to use</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3  Knowing how to use computers will help me do well as a headteacher and in my career as a teacher</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4  Anything that a computer can be used for, I can do just as well in another way</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5  Computers when used in schools will improve educational activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6  Computers will relieve teachers of their routine duties if introduced in school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
SECTION B: Infrastructure and Access to Computers

<table>
<thead>
<tr>
<th>Item</th>
<th>Available</th>
<th>Not available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interment facilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radio</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer(s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Printer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity power</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10(i) Do you have computer laboratory in your school?

Yes [ ] No [ ]

(ii) If yes, above how many computers are there in the laboratory?______

11(i) Do teachers have access to computers in your school?

Yes [ ] No [ ]

(ii) If yes, how many are computer literate?______

SECTION C: Challenges to preparedness of headteacher for the use of computers in Public Primary Schools in Bondo District, Siaya County.

12(a) The following is a table of potential challenges to the use of computers in public primary schools in Bondo district, Siaya county. Please indicate whether you consider each as an obstacle as; not a challenge, a minor challenge or a major challenge.
<table>
<thead>
<tr>
<th>Potential challenge</th>
<th>Not a challenge</th>
<th>A minor challenge</th>
<th>A major challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient number or lack of computers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers’s lack of computer knowledge and skills</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of technical assistance from the government</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non availability of electricity power in schools</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of interest by teachers on computers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of support from school management committee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cost of computers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>too prohibitive</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Lack of government policy on the use of computers in public primary schools</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b) Please list any other challenges encountered apart from those listed above

........................................................................................................................................

13. What possible recommendations would you make towards increasing the preparedness of headteachers for the use of computers in public primary schools in Bondo District?

........................................................................................................................................

Thank you for your cooperation
APPENDIX : 3 QUESTIONNAIRE FOR THE TEACHERS

Dear respondent,

This questionnaire is designed to investigate the preparedness of headteachers in the use of information communication Technology (ICT) in public primary schools in Bondo district, Kenya. The information you give will be used for the purpose of the study only and identity kept confidential. Do not indicate your name or the name of your school. Please respond to all items in the questionnaire as honestly and correctly as possible.

PART A: Demographic information

Please indicate your response by a tick (✓)

1. Indicate your gender  Male [ ]  Female [ ]

2. Indicate your age bracket
   36 – 40 years [ ]  26-30 years [ ]
   31-35 years [ ]  41-45 years [ ]
   51 – 55 years [ ]  56-60 years [ ]

3. Indicate your highest academic qualification
   PhD [ ]  MA [ ]  M.Ed. [ ]  B.Ed [ ]
   Dip. [ ]  P1 [ ]

4. How many years have you served as a teacher
   1 – 5 years [ ]  6-10 years [ ]  11-15 years [ ]
   16 – 20 years [ ]  over 20 years [ ]
5. How many years have you served in this school?

   Below 1 year [ ] 1-5 years [ ] 6 – 10 years [ ]
   11-15 years [ ] 16-20 years [ ] Over 20 years [ ]

**PART B : Computer usage information**

6. a) Do you access a computer in your school? Yes [ ] No [ ]

   b) If yes, where do you access computer facilities?

      Internet Yes [ ] No [ ]
      E-mail Yes [ ] No [ ]
      Word processing Yes [ ] No [ ]
      Spreadsheet Yes [ ] No [ ]
      Data bases Yes [ ] No [ ]
      Power point Yes [ ] No [ ]
      Publishing software Yes [ ] No [ ]

7. a) Do you use computer daily in your professional work? Yes [ ] No [ ]

   b) If yes, how many hours per week do you use computer for school administrative tasks?

      1-5 hrs [ ] 6 – 10 hours [ ] 11-15 hours [ ]
      16-20 hrs [ ] 21-25 hours [ ] 26 – 30 hours [ ]

8. When did you start using a computer? ____________________________
9. Where did you first use a computer?

In school [ ]  During pre-service teacher training [ ]

At school as a teacher [ ]  At home [ ]  Never [ ]

10) Does the use of knowledge on the following areas of computer technology enable you perform better as a teacher?

Internet access Yes [ ]  No [ ]

Word processing Yes [ ]  No [ ]

Spreadsheet Yes [ ]  No [ ]

E-mail Yes [ ]  No [ ]

Data bases Yes [ ]  No [ ]

11) In your opinion, do you believe that the use of computer can make you a more effective teacher?

Yes [ ]  No [ ]

12) What are your suggestions on the preparedness of headteachers in the use of ICT in public primary schools in Bondo district.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

Thank you for your cooperation
### APPENDIX 4: OBSERVATION SCHEDULE

<table>
<thead>
<tr>
<th>Area of Observation</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infrastructure put in place</strong></td>
<td></td>
</tr>
<tr>
<td>- Availability of computers</td>
<td></td>
</tr>
<tr>
<td>- Availability of computer laboratory</td>
<td></td>
</tr>
<tr>
<td>- Availability of Electricity Power</td>
<td></td>
</tr>
<tr>
<td><strong>Access to computers</strong></td>
<td></td>
</tr>
<tr>
<td>- Teachers’s access to computers</td>
<td></td>
</tr>
<tr>
<td>- Headteacher access to computer</td>
<td></td>
</tr>
<tr>
<td>- Learners’ access to computers</td>
<td></td>
</tr>
<tr>
<td><strong>Use of computers in school administration</strong></td>
<td></td>
</tr>
<tr>
<td>- Use of computers by class teachers</td>
<td></td>
</tr>
<tr>
<td>- Use of computers by deputy headteacher</td>
<td></td>
</tr>
<tr>
<td>- Use of computers by headteacher</td>
<td></td>
</tr>
<tr>
<td><strong>Use of computers in school for teaching and learning</strong></td>
<td></td>
</tr>
<tr>
<td>- Use of computer by pupils</td>
<td></td>
</tr>
<tr>
<td>- Use of computers by school secretary</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 5 : LETTER OF AUTHORIZATION

REPUBLIC OF KENYA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telephone: 254-020-2213471, 2241349, 254-020-2673550
Mobile: 0713 788 787 , 0735 404 245
Fax: 254-020-2213215
When replying please quote
secretary@ncst.go.ke

Our Ref: NCST/RCD/14/013/653

Isaiah Okeyo Oulo
University of Nairobi
P.O.Box 30197-00100
Nairobi

Date: 9th May, 2013

RE: RESEARCH AUTHORIZATION

Following your application dated 29th April, 2013 for authority to carry out research on “Preparedness of the Headteachers in the use of Information Communication Technology in Public Primary Schools in Bondo District, Kenya.” I am pleased to inform you that you have been authorized to undertake research in Bondo District for a period ending 30th June, 2013.

You are advised to report to the District Commissioner and District Education Officer, Bondo District before embarking on the research project.

On completion of the research, you are expected to submit two hard copies and one soft copy in pdf of the research report/thesis to our office.

DR. M. K. RUGUTT, PhD, HSC.
DEPUTY COUNCIL SECRETARY

Copy to:

The District Commissioner,
The District Education Officer,
Bondo District
APPENDIX 6: RESEARCH PERMIT

This is to certify that:

Prof./Dr./Mr./Mrs./Miss/Institution
Isaiah Okeyo Ouko

of (Address) University of Nairobi
P.O.Box 30197-00100, Nairobi

has been permitted to conduct research in

Bondo
Nyanza
District
Province

on the topic: Preparedness of the
Headteachers in the use of Information
Communication Technology in Public
Primary schools in Bondo District, Kenya.

for a period ending: 30th June, 2013.

Research Permit No: NCST/RCD/14/013/653
Date of issue: 9th May, 2013
Fees received: KSH. 1,000

Applicant’s Signature

Secretary
National Council for Science & Technology

CONDITIONS

1. You must report to the District Commissioner and
the District Education Officer of the area before
embarking on your research. Failure to do that
may lead to the cancellation of your permit.

2. Government Officers will not be interviewed
without prior appointment.

3. No questionnaire will be used unless it has been
approved.

4. Excavation, filming and collection of biological
specimens are subject to further permission from
the relevant Government Ministries.

5. You are required to submit at least two (2)/four (4)
hound copies of your final report for Kenyans
and non-Kenyans respectively.

6. The Government of Kenya reserves the right to
 modify the conditions of this permit including
its cancellation without notice.

GPK60553att10/2011

(CONDITIONS—see back page)