

**HEAD TEACHERS' PREPAREDNESS FOR INTEGRATION OF
INFORMATION COMMUNICATION TECHNOLOGY IN
ADMINISTRATION OF PRIMARY SCHOOLS IN NAROK NORTH
SUB-COUNTY**

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DECLARATION

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

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DEDICATION

I dedicate this project to my wife, Jane Naeku Mainai and our beloved children; Isaac, Tentere and Simayio.

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ABBREVIATIONS AND ACRONYMS

CCK	Communications Commission of Kenya
EFA	Education for All
GoK	Government of Kenya
ICT	Information and Communication Technology
KESSP	Kenya Education Sector Support Program
KICD	Kenya Institute of Curriculum Development
MDGs	Millennium Development Goals
MoEST	Ministry of Education, Science and Technology
NACOSTE	National Council for Science and Technology
PTA	Parents Teachers Association
PTRs	Pupil Teacher Ratios
SDGs	Sustainable Development Goals
TSC	Teachers Service Commission
UNESCO	United Nations Educational, Scientific and Cultural Organization

ABSTRACT

The aim of this study was to examine the head teachers' preparedness for integration of information communication technology in administration of primary schools in Narok North Sub-County. Specifically, the study was set to assess the head teachers ICT training levels, establish the availability of ICT resources for use by head teachers, establish uses of computers by head teachers in administration as well as establishing attitudes of school head teacher towards integration of ICT. The study was propelled by the fact that primary schools' head teachers in Narok North Sub-County were not prepared to incorporate the use of ICTs resources at their disposal to administration of schools. There were also limited researches done in Narok North Sub-County on head teachers' readiness in the incorporation of ICT in educational management in primary schools. The study adopted descriptive research design where the aimed population consisted of 202 head teachers of the primary schools in Narok North Sub-County and 1212 primary school teachers. From the study it was established that head teachers' readiness for integration of information communication technology was influenced by head teachers ICT training levels, availability of ICT facilities, head teachers computer usage as well as school head teachers' attitude towards ICT integration. The study recommends that the government should provide funds to build and equip computer laboratories and libraries as well as sponsor in-service ICT training for school heads and teachers. The study revealed that, the training levels of head teachers in the utilization of ICT in public primary schools was minimal. The head teachers' attitude towards the utilization of computers in primary schools was positive and head teachers' levels of awareness in the use of computer as a suitable tool for administrative purposes was high. It was further recommended that head teachers be provided with professional opportunities in areas of computer technology through regular capacity building courses and workshops and teacher training institutions to evaluate how teacher trainees could be prepared to be computer literate. Suggestions for further study on the extent of the school's head teacher's readiness in ICT integration in education in the other sub-counties and the role of computer technology on general school administration should be carried out.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Technology is seen as a vital tool to be incorporated in education practices, it helps in developing capacities of students in the twenty first century (UNESCO ICT Competency Framework for Teachers, 2011). The necessity for economic and social development has been a justification for committing resources in educational reforms and incorporating Information Communication Technology (ICT) in educational systems (Kozma, 2005). Hawlerdge (1990) states that, almost all teachers and head teachers using computers in public schools in the developing countries never trained to do so during their initial training course and might have only been had a short in-service course related to information communication technology (ICT). Although it was evident that training and literacy in the use of ICT leads to effective usage of technology, very few primary school head teachers might have had earlier training to computer technology (Rodgers, 2003).

In the world over, the impact of the computer is experienced in many sectors of human development such as transport, commerce, industry, banking, information, communication, military, security, vote counting, mobile phones and satellite television transmission (Cairncross, 2001). There is a lot use of ICT in all daily human activities which are playing very important roles in nations' development. The high rate of growing impact of ICT has brought

about a revolutionary change in every feature of human life (Kamal & Qureshi, 2002). Undoubtedly, the world was progressively becoming an information society and heavily dependent on the use of ICT as a way of communication and transacting business (Senzige & Sarukesi, 2001).

African countries have only recently begun to show the macro-economic stability needed for educational development thus needs to use ICT is real than ever. It is against this backdrop, that one expects an increase in revenue allocations for education to keep pace with technological changes (Nduati & Bowman, 2005). In developing countries, nearly all head teachers and teachers making use of computers in primary schools never had training to do so during their initial training and might have only had a short in-service course related to computers training (Law & Chow, 2008; Komal, 2009

The National ICT Policy fixed firmly intent in the curriculum as a national priority and provided the impetus for the Ministry of Education to develop its sector policy on ICT in education. The ministry sped up and, in June 2006, introduced the National ICT Strategy for Education and Training. The ministry was given the role to lead the monitoring and evaluation of the strategy's implementation, to guided by overall government policies on education and ICT including specific education strategic documents for implementing its mandate, and global goals such as Education for All (EFA) and the Millennium Development Goals (MDGs).

This role was carried out through a ministerial ICT committee that meets on monthly basis and reports quarterly on the progress. The committee was chaired by the Permanent Secretary with support of the ministry's ICT Unit. It had representatives from stakeholders involved in implementing the strategy and mobilizing resources such as donors, public and private sector partners. Another important part of the implementation of the strategy was the Kenya ICT Trust Fund formed in 2004, with the aim of leading ICT initiatives in education. It's role was to mobilize funds and in-kind resources for the purpose of setting up computer laboratories and provision of ICT materials, and monitoring of the implementation curriculum content in all Kenyan secondary schools in 4-5 years through various implementing agencies.

On the other hands, achieving national and international educational goals depends upon the use of an efficient education Management Information System (EMIS), which provides educational data and information for the purpose of measuring and guiding the performance of education systems. EMIS is a necessary tool for providing quality data and statistics enabling formulation of sound policies and decisions, creating evidence based plans for improvement, and conducting sector monitoring and evaluation. Rwanda Vision 2020 identified the strengthening of teacher development on Information and Communication Technology (ICT) rich environment as one of the main government priorities for the achievement of National socio-economic development goals (MINECOFIN, 2001). The government of

Rwanda was aimed at achieving this through the teachers' in-service training via the institutional programmes like Kigali Institute of Education that has launched ICT programmes to raise the ICT skills used by under-qualified teachers (Porter, 1993).

Flanagan and Jacobson (2003) stated that provision of ICT resources and development computer networks in schools was not enough for educational reforms. Therefore school administrators should understand challenges that limit integration of ICT and transform the knowledge into effective and efficient approaches of administration. Although it is evident that training and literacy in the use of ICT leads to effective usage of technology, very few primary school head teachers might have had earlier training in computer technology (Higgins, Beauchamp & Miller, 2007). Thus head teachers must change their way of thinking, organizing, planning, deploying, inspiring and rewarding performance. Without a shift in orientation, administrators are likely to end up being disappointed with the technology project.

This study mostly looks into the significance of ICT in the development of an education system as well as the system for better management of the information at the school level. It also attempts to determine the head teachers' preparedness for integration of ICT in administration of primary schools in Narok North Sub-County, Narok County, Kenya; specifically to establish the availability of ICT resources for use in administration, to evaluate

the attitudes of school head teachers towards integration of ICT; to evaluate the usage of ICT and to establish the ICT skills used in administration of primary schools in Narok North Sub-County.

1.2 Statement of the Problem

In spite of the importance of ICT usage in the education, the head teachers and class teachers in Narok North Sub-County, Narok County rarely use ICT resources in planning, enhanced decision making, record keeping, communication and effective resources management. From 1980s use of ICT has been a compulsory and a must to be incorporated in education in the developed countries. The value of ICT use in schools has therefore led to a contribution mostly acknowledged in the workplace and at home, demonstrating that ICT is a vital helping tool that can be no longer be disregarded in the running of schools in Kenya. It is amidst this favourable gesture that the Government of Kenya has not only embraced ICT but also encouraged the application of ICT in the administration of primary schools in Kenya (Dawes, 2010).

Research revealed that Head teachers are not prepared to make real use of ICTs at their disposal; still are doing manual working: writing letters, staff notices, advertisement of vacancy post, procurement, finance, personnel management and students data, hence weak integration and usage in administration management of and learning. In addition most Schools are

facing a number of challenges including: frequent power disruptions, security, storage, inadequate connectivity and network infrastructure. However, in Kenya schools rarely use ICT to manage the output or to raise teacher productivity levels or to reduce expenses through analyzing income and expenditures (Chang'ach & Sang, 2012). The study was to find out the position of head teachers' readiness in the integration of ICT in running of schools of primary schools in Narok North Sub-County, Narok County.

1.3 Purpose of the Study

The study was intended to investigate the head teachers' preparedness for integration of ICT in running of public primary schools in Narok North Sub-County.

1.4 Objectives of the Study

The study was guided by the following objectives:

1. To determine the head teachers' ICT training levels for used in by head teachers in administrative tasks in primary schools in Narok North Sub-County.
2. To establish the available ICT resources that can be use by head teachers in administrative task in primary schools in Narok North Sub-County.
3. To determine attitudes of school head teacher towards integration of ICT in administration of primary schools in Narok North Sub-County.

4. To determine uses of computers by head teachers in administration of primary schools in Narok North Sub-County.

1.5 Research Question

The following questions guided the researcher in undertaking the study:

1. What were the head teachers ICT training levels on computer literacy in Narok North Sub-County?
2. What ICT resources are available for use by head teachers in administrative tasks in primary schools in Narok North Sub-County?
3. What computer tasks are performed by head teachers in administration of primary schools in Narok North Sub-County?
4. What were school head teacher attitude towards integration of ICT in primary schools in Narok North Sub-County?

1.6 Significance of the Study

It was hoped that the findings of this study may be useful and can be adopted by the Ministry of Education in putting in place mechanism that enhance an effective capacity building of head teachers for effective use of computers in school management. The ministry may also find useful in addressing the barriers to integration of ICT in primary school. The KICD may also adopt some recommendations from the study in the upgrading of the curriculum content to promote a smooth implementation process. The findings of this study may also enhance the adoption of the government policy on ICT in

primary schools in the country. It may also impact on the existing body of knowledge in ICT that assist the Teachers Service Commission in building capacity of head teachers on the use of Teacher Management Information System (TMIS) which started operational in July 2016.

1.7 Limitations of the Study

The study was conducted in the selected schools from the targeted population of primary schools in Narok North Sub-County only due to financial and time constraints. The restriction to the number of public primary schools is done through sampling based on the records to be requested from the county education office. ICT is a wide topic and cannot be researched thoroughly within the stipulated time. The researcher was not able to carry out the study on competence, access, and cost benefit analysis on the implementation of ICT in the schools' administration.

1.8 Delimitations of the Study

The study was conducted in public primary schools which directly funded by the government in the form of free primary education funds as well as receive teachers employed by Teachers' Service Commission. The study was delimited to public primary schools funded by the government in Narok North Sub-County. The study delimited itself to Narok North Sub-County in Narok County for a more conclusive study. The study only looked at two aspects

which were the status and hindrance to integration of ICT in educational administration.

1.9 Basic Assumptions

The following assumptions were made.

1. The study is carried out with the assumption that ICT could be used to improve efficiency in administration of schools by the Head teachers in Narok North Sub-County.
2. The study assumed that positive attitudes towards ICT and correct ICT skills set among school administrators could enhance integration of ICT in administration of public primary schools in Narok North Sub-County.
3. The study also assumed that the respondents provided true and honest responses to the questions in the research instruments in Narok North Sub-County.

1.10 Definition of Significant Terms

Information and communication implies to the technologies and tools that people use to process, share, source, and distribute information through the use of the use of computers and computer technology (Maki, 2008).

Attitude refers to perception by head teachers towards the use of ICT.

Awareness is 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.

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 head teachers work.

Preparedness implies the readiness to use the knowledge, skills and attitude to be acquired during training or studies and the competence in the use of computers.

Primary School refers to an institution where lower level of education i.e. from standards 1 to 8 takes place in accordance to the Education Act cap 211 of the Laws of Kenya

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.

1.11 Organization of the Study

This study was organized into five chapters; Chapter one is the introduction which consists to the background of the study, statement of the problem, purpose to 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 consisted of literature review on the indicators of preparedness to use computers such as skills acquired to use computers, head teachers attitude towards the use of computers, literacy levels of head teachers and challenges, theoretical and conceptual framework.

Chapter three dealt 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 covered on data analysis techniques and interpretation and chapter five looked on the summary of the study findings, conclusions and recommendations, and also provided suggestions for further areas of study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviewed literature related to the topic under study on the sub-headings concept of ICT in education, computer usage in teaching and management, availability of ICT resources, importance of ICT policies, attitudes of towards integration of ICT integration in education, availability of ICT technical support, challenges facing ICT use in primary schools, summary of the literature review, theoretical framework and conceptual framework.

2.2 ICT Skills level Among the Head Teachers

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). According to the surveys; many in-service teachers in primary schools in Kenya have minimal ICT literacy hence poor integration of ICT ability. Computer for schools Kenya and to a small extent schoolnet Kenya and KTTC conducted ICT foundations and integration workshop for teachers' insets, (Nzive 2013). This probably explains why very few schools administrators are computer literate. Major ICT capacity building conferences for teacher training and schools build on any available structures to deliver ongoing professional development for teachers were necessary. The goal of these trainings should not be the initial skills but development of pedagogical and

administrative abilities to address its application in the running of schools (Ali, 2015).

2.3 Availability and Access of ICT Resources

Physical mobilization and access to ICT infrastructure should be the first step towards realization of technology accessible in all schools. Collins (1996) defined infrastructure as the physical equipment such hardware and software that enables a network to function. These include: hardware costs, software costs, connectivity costs services costs which include maintenance and technical support, infrastructure utilities costs like electricity consumption, furniture, security and insurance.

Agaba (2005) studied electronic library resources and submitted that most of the people interviewed has not utilized ICT resources and have mentioned that they had not accessed to the computer services at one time. Some indicated that they don't know what ICT resources were, and hence could not use them. Others mentioned that lack of ICT facilities to use and lack of time are limitations to access to these resources. Some of them were completely unaware of the resources and therefore they require training. Although these resources are scarce in our schools due to cost constraint of acquiring and establishment, many teachers and school administrators are not equipped with the skills of using the technological resources (Champman & Mahlck, 2004).

Decision to adopt a new technology in schools will depend on various infrastructures 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 availability electricity connections from the mains power supply to schools poses a challenge to integration of ICT use for administration in public primary schools. Equally, studies done in other countries in Europe and some parts of Africa shown that school head teachers and teachers require facilitation with appropriate necessary infrastructure in order to maximize the application of ICT in their teaching and administrative tasks (Makinia, 2014)

2.4 Attitudes of Head Teachers towards ICT Integration

According to Waugh (1997), most educators in developing countries during the late 1990s were not competent to use computers in education. Pascopella (2001) further noted that globally, most teachers are not competent to integrate ICT meaningfully into learning materials and this may be the reason why schools do not appear to be serious exploit the resources. These barriers include but are not limited to lack of appropriate software, time for training and the use of ICTs, technical support, competence to use ICT, lack of follow up for new skills, technical faults with ICT equipment and lack of differentiated training. Literature indicated that teachers were already overburdened and when they were confronted with factors such as these, they tend to avoid all together so that they are not burdened further (Hew and Brush,

2007). Robertson (1996) studied the snapshot of ICT skills of teachers in a secondary school ahead of their receiving personal computers and realized that majority of the teachers remained unsatisfied with the gap between potential of computer use and quality of in-service training on the use of ICT in general.

Head teachers have been pointed out in literature as vital tools in the integration of ICT in teaching and administrative tasks. They were expected to adopt and utilize ICT resources appropriately in their teaching and administrative roles hence implement the changes expected in pedagogy. However as Dawes (2001) noted, that these potentials may not necessarily easily be realized since problems arises when teachers are expected to perform tasks which they are don't understand. Some studies have further shown that successful implementation of ICT depended mostly on the ICT competence staff in the integration of ICT into instruction and administration. Research revealed that there were several obstacles that teachers face in the course of implementing ICT integration, the major among them was the teachers themselves.

Most teachers believed that ICT knowledge and skills have the ability to improve classroom learning and enhance efficiency, an almost equal number of them still cannot maximally use achieve optimum results (Old-field, 2010). Further Studies indicate that investing in new ways of learning and administration is not the same as investment in technology and infrastructure,

the later is of great significance. As pointed out by Ofsted (2001, 2002), there is need for teacher motivation through ICT training and enhance resources accessibility to develop their teaching and administrative practice. If there will be no proper mechanisms of doing so and taking into account the teachers own theories on teaching and administrative roles which are recipes for integration, then much desired change will most likely be limited (Mumtaz, 2000).

In addition to this studies show that another major impediment was the teachers' reluctance to abandon their existing pedagogical methods which Rodgers (2002) viewed as obstacles to teacher development process in the classroom use of ICT than even limited resources. Bingimlas (2009) believe that the importance of ICT in the future of education cannot be underestimated; therefore identifying the hindrances to the use of these technologies in schools would be an important step toward improving the teaching and administrative standards.

2.5 Computer Usage in Teaching and Management

The personal willingness of school head teachers to integrate ICT in administration is crucial for a school to be developing technologically (Johnstone & Woudbury, 2003). If adopted effectively, ICT skills in teaching and administration practices can result to high performance standards in schools. ICT is an ever growing tool and leading to advance innovations which has continuously impacted on all aspects of learners' lives; learning,

socializing, playing and researching. The digital age has transformed the way young people communicate, network, seek help, access information and learn.

Information and Communication Technology plays an important role in supporting powerful, efficient pedagogical and administrative activities in education sector. It was specified that ICT skills can be used right from administration of students to management of school resources (Maki, 2005). The twenty first century has witnessed enormous advancements in technology which has led to advance developments in the administrative system in education. Cost effective technology combined with the flexible learning and administrative activities were essential to enhance effectiveness and efficiency (Dawes, 2010).

Computers can be used extensively in administration of primary schools to increase educational performance. Computers can be used for effectively use in the following educational areas; general administration, library system, payroll and finance, student data management, inventory management, and students personal record keeping (Best, 2003). As a part of strategy, many challenges in school administration could be overcome through the proper maximum utilization of ICT technologies. The head teacher needs to be prepared, if not computer literate by attending to part time computer classes in order to acquaint with the knowledge of ICT.

Moreover, for those who are ICT compliant there was need to be integrated the skills learned to their daily routine administrative work. However, many studies revealed that there is a growing demand for incorporating of ICT into administrative activities in primary schools. The management of the school curriculum is an important component of school leadership and as such school leaders need to be conversant with the information required in leading their schools. Curriculum and teacher management practices that head teachers and teachers can enhance by use of ICT include curriculum delivery, timetabling, student attendance records, students contact details, preparation of schemes of work, development of lesson plans, student assessment progress records and reports, preparation of tests and examinations, allocation of teaching and learning resources, and staff performance records.

Harasim (2000) stated that the most available options for effective use of ICT is linked to communication networks like emails and website browsing. It is therefore imperative that every teacher should be aware of the expansive opportunities that the internet provides as a tool of curriculum implementation. Global networks such as the internet provide access to online databases and archives, libraries, as well as to thousands of special interest forums on topics ranging from humanities to sciences.

2.6 Educational policies on ICT

Information and Communication Technology (ICT) is a precondition required by developing countries for their economic success in development. The ability of developing nations to thrive in a global economy depended on the nation's objectives on ICT policies and their ability for proper implementation of such policies. However, previous studies have shown that most of the developing nations such as Nigeria are yet to embrace fully the application of ICT in socio-economic and political life of the people (Browery, 1995; Anie, 2007). Countries that have exploited the potential of Information and Communications Technologies (ICTs) have attained significant levels of social and economic development. In addition, they are rapidly transforming into information and knowledge-based economies.

The Government of Kenya therefore, recognizes have taken seriously the ICT integration has taken a step to develop a national ICT policy based on the Economic Recovery Strategy for Wealth and Employment Creation (2003-2007). The policy documents in the education sector have given more attention to areas of ICT access, quality, equity and relevance at all levels.

According to Ministry of Education Report (2006), it stated that the ICT strategic plan considered and proposed that ICT places a major role in the realization of educational objectives of the nation. The ministry moved quickly and in June 2006, introduced the National ICT Strategy for education

and Training. This policy for the education sector consisted of the following components: ICT in education policy, digital equipment, connectivity and network infrastructure, access and equity, technical support and maintenance, harnessing emerging technologies, digital content, integration of ICT in education, training (capacity-building and professional development) and research and development.

In addition, ICT has played great role in management and support to implementation of Free Primary Education (FPE) and to address emerging issues such as; overcrowding in the classrooms, increased Pupil Teacher Ratios (PTRs) particularly in densely populated and semi-arid areas, shortage of teachers on certain subjects or areas, and relatively high cost of learning and teaching materials.

2.7 Concept of ICT in Education

ICT is often used as an extended meaning for information technology (IT) but it is usually a more general term that stresses the role of unified communications and the integration of telecommunications, computers, middleware and necessary software, storage and audio-visual systems, which enable users to create, access, store, transmit, and manipulate information. Basically, ICT consists of IT, telecommunication, broadcast media and all the other types of audio and video processing and transmission and network based control and monitoring functions (Howe, 2010).

Thus, it supports all the activities involving information. ICT is based on the notion that using ICT involves matching it to one's purposes of which it requires a rationale for using it. A useful concept of ICT depends on the local culture and particular ICT available and how it is configured and managed. In education, Information and Communication Technology (ICT) is the use of a collection of computers targets in the administration, teaching and learning processes. These electronic tools allow learning, problem solving and higher order collaborative thinking to take place. Electric boards, audio cassettes, video, television, computers, among others are use (Witfelt, 2000). The application of ICT knowledge to the learning and administration process in the education sector in Kenya is still in its early stage.

2.8 Challenges Facing ICT Use in Primary Schools

While ICT use continues to grow in Europe, America and Asian countries, African states still a lag behind in their implementation processes and that continues to widen the digital knowledge gap. In a recent study, Kiptalam et.al (2010) observed that in African countries access to ICT facilities is a major challenge facing them, with comparative ratios of one computer to 150 students compared to the ratio of 1:15 students in the developed countries. Unfortunately, in many of these African countries, there is lack of well trained teachers with a low levels of teachers' ICT skill and knowledge and has been recognized as major barrier in the implementation of ICT in schools (Dzidonu, 2010).

For successful adoption of ICT policies and skills in schools, there should be comprehensive pre-service and in-service training courses in order to equip teacher trainees with the required skills as well as competences necessary for better performance in schools. A study by Higgins, & Moseley (2011) revealed that inability of teachers to understand reasons why they should acquire and use ICT in teaching and administration is a reducing progressive adoption of ICT in schools. Unfortunately, many teachers' training institutions in Africa continue to teach more about what is ICT rather than teaching how to use it during teaching and learning in classroom as well as in school administration. For efficient effective implementation of ICT in schools, there should be adequate and highly trained ICT skilled personnel. Where such skilled personnel are missing, it would be next to impossible to fully implement the ICT technologies in schools.

Generally, many researches showed that ICT has penetrated many public sectors which include banking, transportation, communications, and medical services but in the Kenyan educational system it is still lagging behind. Furthermore, a recent report by the National Council for Science and Technology (NACOSTE, 2010) indicated that ICT skills use in Kenyan classrooms is still in its early phases, and concluded that the perceptions and experiences of teachers and head teachers do play an important role in the use of computers in Kenyan classrooms.

2.9 Summary of Literature Review

Having reviewed the literature on the indicators of preparedness of head teachers 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 nations, ICT usage is still limited and not maximized to increase computer literacy. She contends that the present ICT curriculum merely deals with teaching about computers and not how computers can be used to improve the teaching and school administration roles. Thus there is need to establish the extent of readiness of head teachers to use ICT resources in public primary schools in Narok North Sub-County.

2.10 Theoretical Framework

In this study The Technology Acceptance theory is applied. Its proponent was Fred Davis in 1989. This was an information systems theory that modeled how technology users come to accept and use it. The model suggested that when a new technology is presented to the users, a number of critical factors influence their decision and how they will use it (preparedness), notably: Perceived usefulness (PU) defined by Fred Davis (1989) as the extent to which a person believes that using and manipulating a particular system would improve his or her job performance.

Perceived ease of use defined by Davis (1989) as the extent to which a person believes that using and manipulating a particular new technology would be free from exertion. For our study the head teachers' preparedness in the utilization of ICT in primary schools will be enhanced by improved teaching and administrative jobs performance and would use little effort when using ICT technique in their teaching, learning and administrative tasks. It has been noted that criticism 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).

2.11 The Conceptual Framework

Figure 2.1 Conceptual framework showing the preparedness of head teachers in the use of ICT in public primary schools.

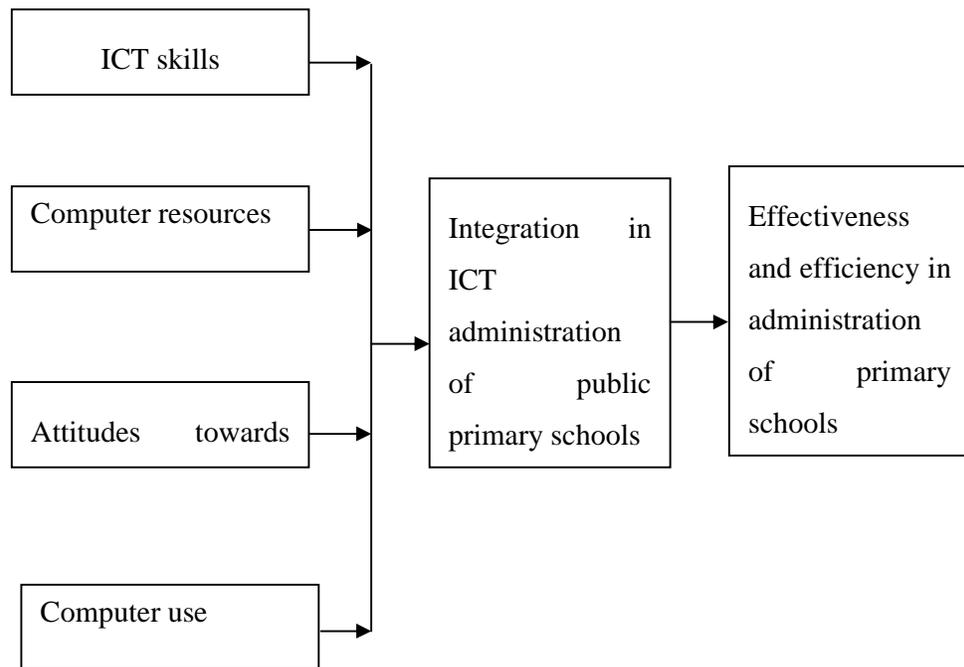


Figure 2.1: Conceptual Framework

According to Orodho (2005), a conceptual framework is a model of in which a researcher presents the relationship between variables in the study and shows relationships diagrammatically. In this study on head teachers preparedness for integration of ICT in administration of public primary schools needs the Independent variables to facilitate data processing, production of accurate reports in good time. Due to the repetitive nature of the information needed time and again, many hours of human labour are saved by use of ICT because of the storage and retrieval ability of the computer hence their work becomes

more efficient. The study conceptualizes that, if schools integrate ICT in administration by investing in computer resources, ICT skills, ICT technical support and positive attitudes towards ICT, then efficiency would be achieved in running of primary schools in Narok North Sub-County, Narok County, Kenya

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines the methods that were used for the study and adopted the following structure: research design, target population, sample size and sampling procedures, study locality, research instruments, validity and reliability of instruments, data collection procedures, data analysis techniques and ethical issues.

3.2 Research Design

The study adopted a descriptive survey which is intended to produce statistical information about aspects of education that interests the policy makers and educators. Descriptive survey is a method of collecting information by administering a questionnaire to or interviewing a sample of individuals sampled for the study (Orodho, 2003). A descriptive research design therefore allows the researcher to elicit the respondents' opinions, views and attitudes on the subject in a more elaborate way in order to establish the findings of the study. Descriptive survey is suitable since the study sought to evaluate and assess the preparedness of primary schools head teachers in integrating ICT into the school curriculum. Given that in this study questionnaires were administered to a sample of teachers and head teachers in Narok North Sub-County, this design is the most appropriate for the study.

3.3 Target Population

The target population for the study consisted of head teachers and teachers in 202 public primary schools in Narok North Sub-County, Narok County. These respondents were chosen due to their day to day active contributions in school administration. The information attained from literature review is helpful in understanding of the different stakeholders involved in the project, who will be the targeted. There are 202 head teachers and 1212 teachers in the Narok North Sub-County. All the teachers and the head teachers in these schools formed the study's target population. Sampling is done using cluster random sampling thus the Sub-County is divided into the following eleven educational zones; Ilmashariani, Nkoban, Olchorro, Ole Sankare, Melili, Mosiro, Suswa, Nairragie Enkare, Enabelbel, Olorropil and Olpusimoru. The information is requested from TSC Sub-County Office in Narok.

3.4 Sample Size and Sampling Procedure

Orodho (2010) defined a sample as a small part of a large targeted population which is thought to be a representative of the larger population. According to Mugenda and Mugenda (2008), stated that 10% of accessible population was enough for a descriptive study. Two hundred and two primary schools in Narok North Sub-County were sampled out. The names of schools from each zone is folded and put in a box. The folded papers were mixed and picked per zone, three schools were picked from each zone hence the teachers and head

teachers whose schools names were picked and included as respondents of the study.

The study employed stratified sampling and simple random sampling techniques to select the require sample. Simple sampling technique was used to select the participants from groups of head teachers and teachers. Simple random sampling was used to opt for head teachers and teachers who participated in the study from the chosen schools. Simple random sampling method ensured that each member or participant of the target population had an equal and independent chance of being included in the sample. Thirty-three head teachers and one hundred and sixty-five teachers were selected representing 16.33% and 13.61% of the total head teacher and teacher population were respectively picked to form the sample.

Table 3.1: Population and Sample Percentage

	Population	Sample	Percentages
Head teachers	202	33	16.33%
Teachers	1212	165	13.61%

Source: TSC Office, Narok North (2016)

3.5 Research Instruments

The research objectives formed the basis from which the research instruments were constructed. In data collection, the researcher used questionnaires for

teachers and for head teachers in schools were sampled. Two sets of questionnaires were administered to respondents to ensure validity, avoid response and information bias ensure reliability and accuracy of information derived from the data collection (Oppenheim, 1992).

3.5.1 Validity of the Instrument

This study used content validity which was used to a measure of the extent to which data validity particular concept (Churchill 1979). The schools that were involved in the piloting stage were excluded from the main study. Consultations and discussions with the supervisors is done to establish content validity.

3.5.2 Reliability of the Instruments

Kothari (2004) stated that an instrument is reliable if it produces consistent results over a period of time. Test-re-test reliability method is used to determine consistency of the questionnaires administered. Pre-test is done through piloting in one public primary school, thus Pearson's product moment correlation coefficient formula(r) is used.

$$r = \frac{\sum xy - (\sum x)(\sum y) / N1}{\sqrt{[\sum x^2 - (\sum x)^2 / n] [\sum y^2 - (\sum y)^2 / n]}}$$

X = Scores from test one.

Y = Scores from test two

N = The number of respondents.

The correlation coefficient obtained is 0.849 for head teachers' questionnaire and 0.981 for teachers' questionnaire. A correlation coefficient, which may range -1.00 to +1.00, shows the size and direction of a relationship between two sets of scores. The larger the absolute value of the number, the stronger the relationship whether it is positive or negative (Kahn & MacGarvie, 2016).

3.6 Data Collection Procedures

Authority to conduct research was sought from the University Of Nairobi and from the National Council for Science and Technology (NACOSTE) where a research permit was obtained. Consent to carry out the research in Narok North Sub-County was obtained from the Sub County Director of Education Office. The permit copies were presented to the Sub-County Commissioner, Sub-County Education officer, Teachers Service Commission Deputy Director and head teachers of public primary schools to be sampled in Narok North Sub-County. The sampled head teachers were given questionnaires to fill.

3.7 Data Analysis Techniques

Analysis of data started with checking of the accuracy of the raw material to be gathered, usefulness, and completeness. Quantitative data derived from the demographic sections of the questionnaires and other closed questions were analyzed using descriptive statistics that include the use of percentages and frequencies. Qualitative data was generated from the open ended questions in the research instrument and was organized into themes and patterns,

categorized through content analysis and tabulated. The data was computed using the statistical package for social sciences (SPSS) into descriptive data. It was the computational process of discovering patterns in large data sets involving methods at the intersection of artificial intelligence, machine learning, statistics, and database systems.

3.8 Ethical Issues

According to Mugenda & Mugenda (2008) ethical considerations are important for any research. In this study, the research ethics were reviewed by an Ethics Board from the University of Nairobi to ascertain ethical guidelines for conducting the research such that ethical values were not violated. Such issues included the proper conduct of the researcher during the research process, avoidance of plagiarism and fraud, avoidance of physical and psychological harm to the respondents, confidentiality and privacy of the information obtained from the respondents, obtaining voluntary and informed consent from the respondents and dissemination of the findings are the values which were strictly adhered to. An informed consent is sought from all the respondents so that the respondents participate freely and voluntarily. The information which collected were treated with confidentiality and used for the purpose of the study only.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter dealt with the analysis, presentation and interpretation of the data and discussions based on the objectives the study. The study sought to investigate the head teachers' preparedness for integration of information communication technology in administration of primary schools in Narok North Sub-County. The interpretations for this chapter are based on each of the objectives and questionnaire that guided this study. Presentation is done using tables, charts and graphs. The analysis is based on the predefined objectives and aimed at answering the research questions. The chapter begins with questionnaire return rate, demographic information of head teachers and teachers, followed by presentation and discussions of research findings based on the research question.

4.2 Response Rate

The respondents involved were the head teachers, teachers, class eight pupils and Sub-County director of education. They returned the questionnaires as tabulated in Table 4.1.

Table 4.1: Instrument Return Rate

Respondents	Sampled size	No. collected	Return rate %
Head teacher	33	25	75.7%
Teachers	165	100	61%

Table 4.1 shows that the average questionnaire return rate is well above 80% which according to Mugenda and Mugenda (2003) is an acceptable proportion and can be termed adequate for analysis.

4.3 Demographic information

4.3.1 Demographic data of head teachers and teachers

The demographic data of head teachers and teachers is based on their gender, age, highest academic qualification, professional experience and period of serving in the current school. Respondents were asked to indicate their gender. Responses are summarized and presented in Figure 4.1.

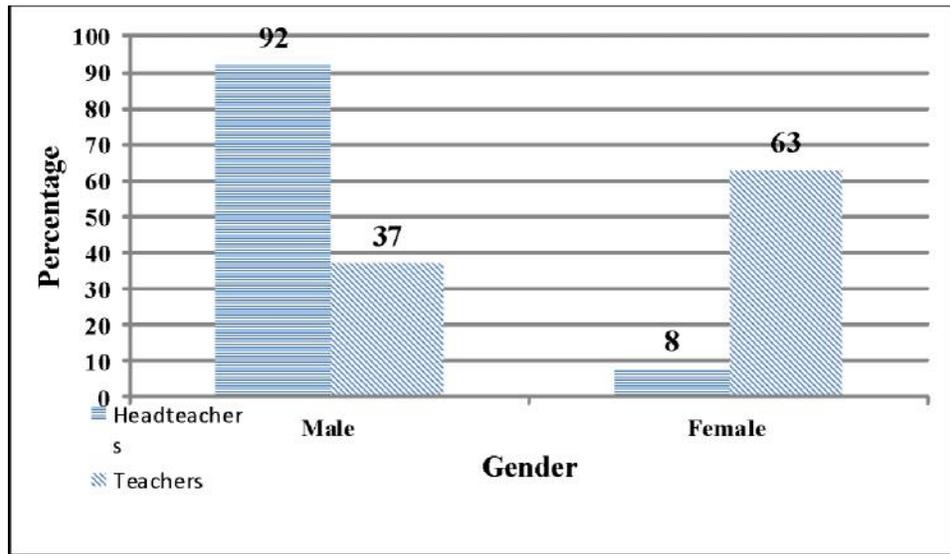


Figure 4.1: Gender of head teachers and teachers

Findings in Figure 4.1 show that 92% of the head teachers were male and 63% of the teachers were female. This shows majority of schools in Narok North Sub-County are dominated by male head teachers and female teachers. The study sought to establish the age of school heads and teachers. Responses are summarized and presented in Figure 4.2.

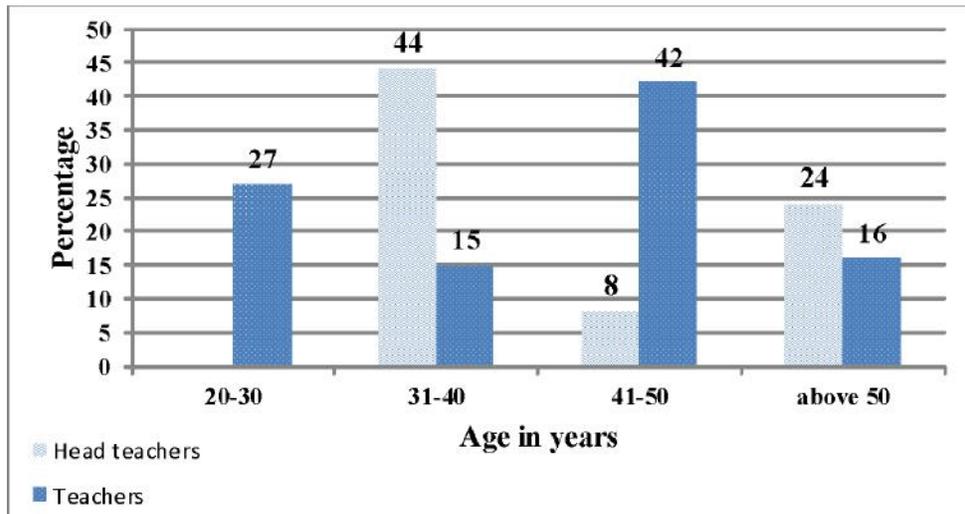


Figure 4.2: Age of head teachers and teachers

Findings in Figure 4.2 shows that 44% of the head teachers were aged between 31-40 years and 42% of the teachers were aged between 41-50 years. This shows that the head teachers and teachers were relatively old to understand the head teachers' preparedness for integration of information communication technology in administration of public primary schools.

The head teachers and teachers were asked to indicate their level of education. Responses are summarized and presented in Figure 4.3.

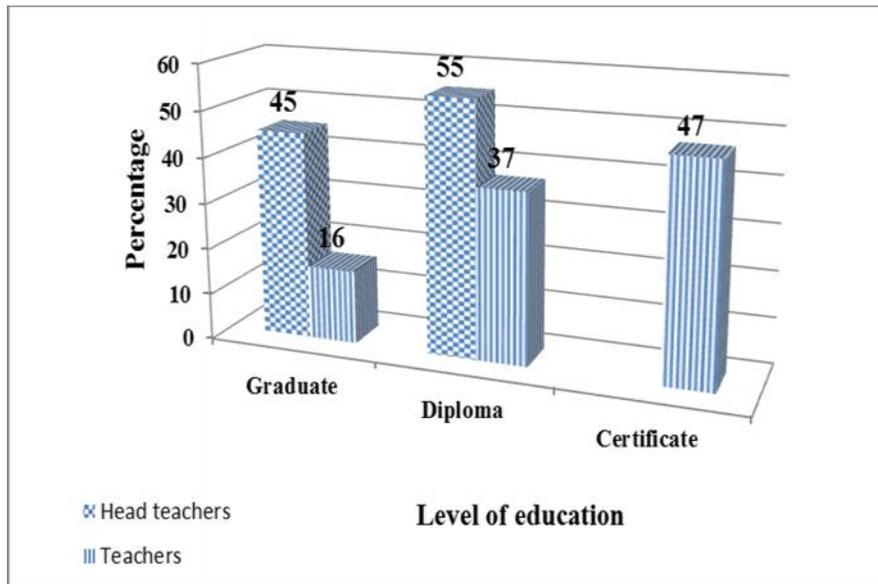


Figure 4.3: Head teachers' and teachers' level of education

Findings in Figure 4.3 show that 45% of the head teachers had attained undergraduate degree in education and 37% of the teachers had attained diploma. This shows that the head teachers were well educated to take up school leadership and the teachers in Narok North Sub-County public primary schools have the required professional qualifications for their job.

Respondents were asked to indicate the number of years they have served as head teacher or teacher. Responses are summarized and presented in Figure 4.4.

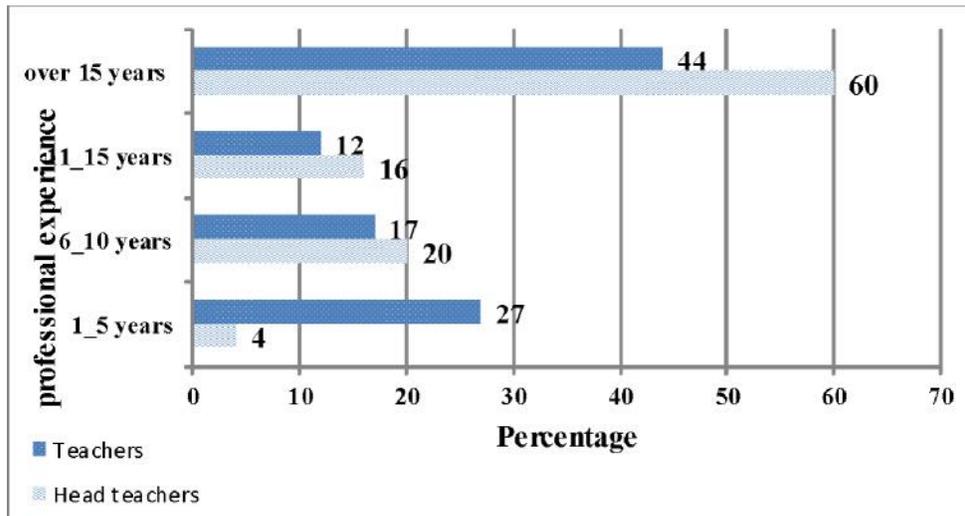


Figure 4.4: Professional experience

Findings in Figure 4.4 show that 60% of the head teachers have been in the teaching profession for more than 15 years and 44% of the teachers have been in the profession for over 15 years. This shows that the head teachers and teachers were in a position to understand head teachers' preparedness for integration of information communication technology in administration of public primary schools in Narok North Sub-County due to the number of years they have been in the teaching profession. Figure 4.5 shows teachers and head teachers' period of working in the current school.

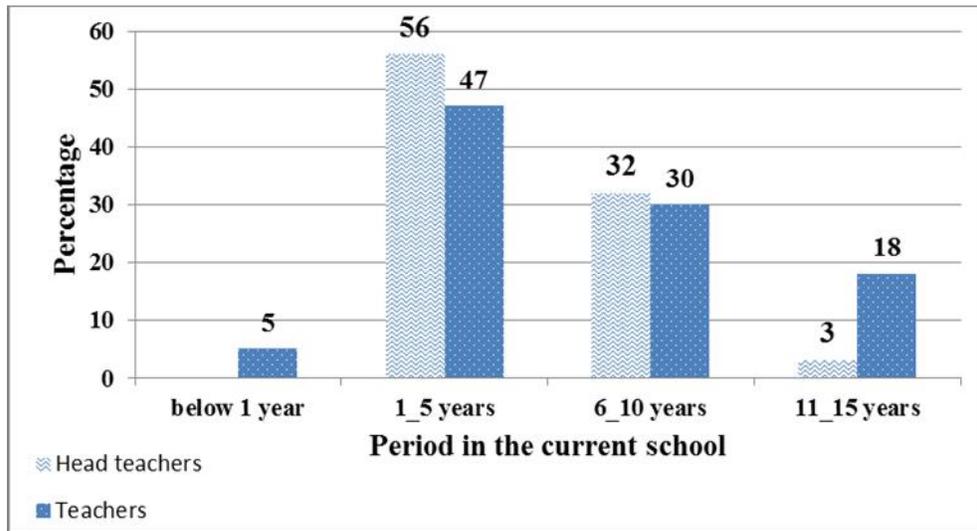


Figure 4.5: Period of working in the current school

Findings in Figure 4.5 show that 56% of the head teachers have served in the current school for between 1-5 years and 47% of the teachers have served in the current school for between 1-5 years. This shows that the head teachers and teachers have served in the current schools long enough to understand head teachers' preparedness for integration of information communication technology in administration of public primary schools in Narok North Sub-County.

4.4 Head teachers' training levels

The first objective of the study is to investigate the primary schools head teachers ICT training levels. Respondents were asked whether they had ever attended training on ICT. Responses are summarized and presented in Table 4.2.

Table 4.2: ICT training

Responses	Frequency	Percentage
Yes	23	92.0
No	2	8.0
Total	25	100

Findings in Table 4.2 show that all head teachers had attended training on ICT where they were taught basic computer skills which included Microsoft word, excel, power point, access, publisher, email and internet. This implies that head teachers were trained in ICT and differs with Higgins, Beauchamp & Miller (2007) who said that very few primary school head teachers might have had earlier training in computer technology.

Respondents were asked whether the training is relevant to their current line of work. Responses are summarized and presented in Table 4.3 below.

Table 4.3: Relevance of ICT training

Responses	Frequency	Percentage
Yes	23	92.0
No	2	8.0
Total	25	100

Findings in Table 4.3 show that 92% of the respondents said that the training is relevant to their current line of work. This implies that the head teachers have experienced the benefits of ICT and concur with Old-field (2010) that majority of teachers believe that ICTs have the ability to improve classroom learning.

The research also sought to find out the head teachers proficiency in the most common computer packages. Responses are summarized and presented in Table 4.4 below.

Table 4.4: Head teachers' proficiency in computer packages.

Computer Packages	Very Good%	Good%	Average %	Poor%	Very poor%
Microsoft word	4.0	8.0	52.0		
Microsoft Excel	24.0	28.0	48.0		
Microsoft PowerPoint	8.0	24.0	44.0	12.0	12.0
Microsoft Access	16.0	16.0	48.0	8.0	12.0
Microsoft Publisher	12.0	20.0	32.0	24.0	12.0
Email& Internet	20.0	12.0	40.0	16.0	20.0
Quick Book	8.0		16.0	56.0	20.0
Photoshop	16.0	4.0	24.0	40.0	16.0
Page Maker	8.0	4.0	56.0	56.0	16.0

Findings in Table 4.4 show that 52% of the respondents had an average proficiency in Microsoft word, 48% on Microsoft excel, 44% on Microsoft power point and 48% on Microsoft access. Head teachers had poor proficiency in publisher, quick books, photoshop and page maker. This shows that although the head teachers were trained on ICT, their proficiency in some computer packages is poor. This finding concurs with Law & Chow, (2008) and Komal (2009) that in developing countries, almost all teachers and head teachers using computers in public primary schools never trained to do so during the initial training and might have only had a brief in-service course relating to computers.

Table 4.5: Teachers' use of computers

Location	Frequency	Percentage
In school	13	13
During pre-service teacher training	25	25
At school as a teacher	2	2
At home	20	20
Never	40	40
Total	100	100

Teachers were also asked to indicate where they first used a computer. Responses are summarized and presented in Table 4.5.

Findings in Table 4.5 show that 40% of public primary teachers in Narok North Sub-County have never used a computer. This implies that the teachers do not have ICT skills and the finding concurs with Higgins, Beauchamp & Miller (2007) that although it is evident that training and literacy in the use of ICT leads to effective usage of technology, very few primary school teachers might have had earlier training in computer technology.

Table 4.6: relationship between training levels and integration of ICT

Model	Coefficients ^a			T	Sig.
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta		
(Constant)	2.100	.230		9.134	.000
Microsoft Word	-.845	.180	-1.839	-4.687	.000
Microsoft Excel	1.217	.226	2.219	5.381	.000
Microsoft PowerPoint	.009	.226	.020	.038	.971
Microsoft Access	.072	.174	.181	.415	.685
Microsoft Publisher	-.516	.148	-1.353	-3.478	.004
Email & Internet	-.091	.084	-.251	-1.082	.298
QuickBooks	-1.173	.219	-2.784	-5.358	.000
Photoshop	-.296	.106	-.821	-2.806	.014
Maker	1.585	.298	3.658	5.325	.000

a. Dependent Variable: Do you have computers in your school

The results in Table 4.6 indicate that training on Microsoft word, excel, publisher quick books and page maker had a significant ($p < 0.05$) effect on ICT integration in public primary schools.

4.5 Availability of ICT resources for administration

The second objective of the study is to assess the facilities available of ICT use head teachers in administration. Respondents were asked whether their school had computers. Responses are summarized and presented in Table 4.7.

Table 4.7: Availability of computers

Responses	Frequency	Percentage
Yes	24	29.2
No	101	80.0
Total	125	100

Findings in Table 4.7 show that 80.8% of the respondent indicated that they do not have computers in their schools. This shows that public primary schools in Narok North Sub-County do not have computers and the finding concurs with Kiptalam et.al (2010) that access to ICT facilities is a major challenge facing most African countries, with a ratio of one computer to 150 students against the ratio of 1:15 students in the developed countries.

Head teachers were asked whether they have been allocated a computer in their office. Responses are summarized and presented in Table 4.8 below.

Table 4.8: Allocation of head teacher computer

Responses	Frequency	Percentage
Yes	3	12.0
No	3	12.0
Not applicable	19	76.0
Total	25	100

Findings in Table 4.8 show that 12% of the head teachers were provided with a computer. This shows a shortage of computers in public primary schools in Narok North Sub-County and also concurs with Champman & Mahlck (2004) that ICT facilities are scarce in schools due to cost constraints of acquiring and establishment. The researcher also sought to assess other equipment available for administrators. Responses are summarized and presented in Table 4.9.

Table 4.9: Other ICT equipment available for administrators

Equipment	Available		Not available	
	F	%	F	%
Printers	2	8.0	2.3	92.0
Telephone	4	16.0	21	84.0
Scanners			25	100
Fax			25	100

Findings in Table 4.9 show that all respondents indicated that their schools did not have scanners and fax and only a few had telephone and printers. This shows that ICT facilities in public primary schools in Narok North Sub-County are scarce and the finding also concurs with Champman & Mahlck , (2004) that ICT facilities are scarce in schools due to cost constraint of acquiring and establishment.

Table 4.10: Relationship between availability of ICT resources and integration of ICT in public primary schools.

Model	Coefficients ^a				t	Sig.
	Unstandardized Coefficients		Standardized Coefficients			
	B	Std. Error	Beta			
Constant)	.136	.394			.346	.732
he head teacher been allocated a computer in his/her office	.864	.207	.657		4.181	.000

.. Dependent Variable: Do you have computers in your school

4.6 Uses of computers by head teachers in administration

The third objective of the study is to assess the uses of computers by head teachers in administration. Head teachers were asked to indicate how they utilize computers. Responses are summarized and presented in Table 4.11 below.

Table 4.11: Utilization of computer

Utilization of computer	Yes		No	
	F	%	F	%
For pupils computer lab	1	4.0	24	96.0
For administration work	6	24.0	19	76

Findings in Table 4.11 shows that the few computers that were available in Narok North Sub-County public primary schools were used for administration work which included maintaining students' records, maintenance of staff records and maintenance of school resources records. Findings also show that there was only one school that had a computer laboratory for pupils and few computers were available for administration work. This shows that the majority of schools do not have computer laboratories for pupils. The finding concurs with (Maki, 2005) that technology can be used right from student administration to various resource administration in education institutions.

Teachers were asked whether the use of computer can make them to be more effective. Responses are summarized and presented in Table 4.12 below.

Table 4.12: Influence of ICT on teacher effectiveness

Responses	Frequency	Percentage
Yes	100	100
No	-	-
Total	100	100

Findings in Table 4.12 show that all teachers agreed that use of computer can make them to be more effective although majority of them do not have ICT skills and they suggested that the head teachers should seek funds from the government to purchase computers and also recommend teachers for in-service training on computer skills. This shows that public primary schools in Narok North Sub-County would improve on teacher effectiveness if they embraced ICT. This concurs with Chang'ach & Sang, (2012) that ICT can be used to raise teacher productivity.

Teachers were also asked to indicate whether knowledge on the listed computer technology enables them to perform better as a teacher. Responses are summarized and presented in Table 4.13.

Table 4.13: Teachers use of computer technology

School physical facilities	Yes		No	
	F	%	F	%
Internet access	37	37	63	63
Word processing	35	35	65	65
Spread sheet	28	28	72	72
E-mail	27	27	73	73
Data bases	23	23	77	77

Findings in Table 4.13 show that the majority of the teachers were not able to use computer technology. This shows that the public primary schools in Narok North Sub-County are not well prepared to embrace ICT. This concurs with Old-field (2010) who stated that although the majority of teachers believe that ICTs have the ability to improve classroom learning, an almost equal number of them still find it difficult to understand ICTs' specific benefits or how it can be used so as to achieve maximum results.

Table 4.14: Relationship between use of computers by head teachers in administration and integration of ICT

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	1.453	.096		15.064	.000
Where did you first use a computer	.107	.027	.388	3.922	.000

a. Dependent Variable: Do you access a computer in your school

The results in Table 4.14 indicate that the uses of computers by head teachers in administration had a significant ($p < 0.05$) effect on ICT integration in public primary schools.

4.7 Attitudes of school head teacher towards integration of ICT

The fourth objective of the study is to establish the attitudes of school head teacher towards integration of ICT. Head teachers were asked whether their deputies were computer literate. Responses are summarized and presented in Table 4.15.

Table 4.15: Deputy Head teacher computer literacy

Responses	Frequency	Percentage
Yes	18	72
No	7	28
Total	25	100

Findings in Table 4.15 show that 72% of the head teachers indicated that their deputies were computer literate. This also differs with Higgins, Beauchamp & Miller, (2007) that very few primary school head teachers might have had earlier training in computer technology.

Respondents were also asked whether there are plans in place to have school administrators taught about ICT. Responses are summarized and presented in Figure 4.6.

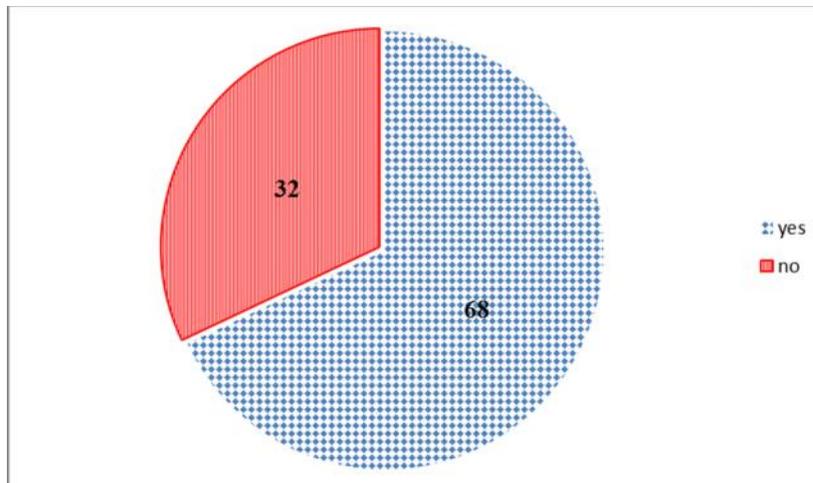


Figure 4.6: Plans to have school administrators taught about ICT

Findings in Figure 4.6 show that 68% of the head teachers said that there are plans in place to have school administrators taught about ICT. This shows that public primary schools in Narok North Sub-County are making preparations for integration of information communication technology. This concurs with Browery (1995) and Anie (2007) findings that most of the developing nations are yet to embrace fully the application of ICT in socio-economic and political life of the people. Respondents were further asked to indicate the sponsors of ICT training. Responses are summarized and presented in Table 4.16.

Table 4.16: Sponsors of ICT training

Responses	Frequency	Percentage
Board of management	7	28.0
Ministry of education	18	72.0
Total	25	100

Findings in Table 4.16 show that 72% of the head teachers said that the government is the major sponsor of ICT training in preparation for integration of ICT in public primary schools. This shows that the government is willing to help the administration of public primary school to integrate ICT. The study also sought to establish the schools' attitude towards the use of computers in the listed tasks. Responses are summarized and presented in Table 4.17.

Table 4.17: Schools' attitude towards the use of computers

Statement	Like using computers %	Do not like using computer %	Don't know %
Registration of new pupils in your school?	56	8	36
Records of class attendance?	36	24	40
Preparation of pupils' report forms?	48	12	40
Discipline records of pupils in your school?	36	24	40
Preparation of schemes of work and lesson notes?	48	12	40
Preparation of record of work and teachers' notes?	48	12	40
Maintenance of library records (issuing books to pupils)	48	12	40
Maintenance of teachers' attendance records?	48	16	36
Maintenance of teachers leaves application?	52	12	36
Keeping teachers' performance records?	64		36
Issuance of receipts for money paid?	40	24	36
Preparation of workers payrolls?	40	24	36
Fixed assets inventory?	40	16	44
Preparation of school income and expenditure statements?	48	8	44
Maintenance of school suppliers records (textbooks and stationery)	48	8	44
Preparation of community speeches?	12	40	48
Preparation of SMC speeches?	24	32	44

Findings in Table 4.17 show that a majority of public primary schools in Narok North Sub-County have a positive attitude towards the use of computers as they indicated their willingness to like using computers in performing various tasks like registration of new pupils, preparation of pupils' report forms, preparation of schemes of work and lesson notes, preparation of records of work and teachers notes, maintenance of library records (issuing of books to pupils), maintenance of teachers' attendance records, maintenance of teachers leaves applications, keeping teachers performance records, preparation of schools income and expenditure statement and maintenance of school suppliers records which shows their preparedness in ICT integration. This differs with Ang'ondi (2013) that teachers avoid integration of ICT.

Table 4.18: Relationship between schools' attitude towards the use of computers and integration of ICT

Model	Coefficients			T	Sig.	
	Unstandardized Coefficients		Standardized Coefficients			
	B	Std. Error	Beta			
(Constant)	1.976		.694		2.847	.010
Is your deputy head teacher computer literate	.448		.278	.471	1.615	.122
Are your subject Head of departments computer literate	-.091		.270	-.099	-.335	.741
Are there plans in place to have school administrators taught about ICT skills	.037		.279	.028	.134	.895
Do you have a Computer School Management Systems	-.371		.330	-.235	1.122	.275

a. Dependent Variable: Do you have computers in your school

The results in Table 4.18 indicate that attitudes of school head teacher towards integration of ICT had no significant effect ($p > 0.05$) on ICT integration in public primary schools.

CHAPTER FIVE
SUMMARY OF FINDINGS, CONCLUSIONS AND
RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the major findings of the study and conclusions which attempt to give answers to specific questions that were investigated. It also presents recommendations for possible actions and suggestions for future research.

5.2 Summary of the Study

Findings established that all public primary schools head teachers had attended training on ICT as indicated by all respondents and the training is relevant to their current line of work as indicated by 92% of the respondents. The ICT skills that the head teachers were proficient in included Microsoft word as indicated by 52%, Microsoft excel as indicated by 48%, Microsoft power point as indicated 44% and Microsoft access as indicated by 48% of the respondents. Further findings established that majority of teachers in Narok North Sub-County have never used a computer a factor that hinders integration of ICT in public primary schools. This differs with Higgins, Beauchamp & Miller (2007) that very few primary school head teachers might have had earlier training in computer technology.

The findings revealed that public primary schools in Narok North Sub-County do not have ICT facilities as indicated by 80.8% of the respondents whereby only 12% of the head teachers had access to a computer which is used for administrative purposes like analyzing results. It also showed that other equipment which included printers, telephone, scanners and fax were not available for school administrators. This concurs with Champman & Mahlck (2004) that ICT facilities are scarce in schools due to cost constraints of acquiring and establishment.

Findings established that few computers that were available in Narok North Sub-County public primary schools were used for administration work which included maintaining pupils' records, maintenance of staff records and maintenance of school resources records as indicated by 24% and for pupils' computer lab as indicated by 4% of the respondents. Findings also established that computer can make teachers to be more effective in their curriculum activities although majority of them were not able to use computer technologies like internet access, word processing, spreadsheet, email and data base. Teachers suggested that they need in-service training on basic computer skills to prepare them for ICT integration in public primary schools. This concurs with Old-field (2010) that although the majority of teachers believe that ICTs have the ability to improve classroom learning, an almost equal number of them still find it difficult to understand ICTs' specific benefits or how it can be used so as to achieve maximum results.

The findings revealed that public primary schools in the study area had positive attitude towards integration of ICT whereby there are plans in place to have school administrators taught about ICT as indicated by 68% of the head teachers which is sponsored by the Ministry of Education. Respondents also indicated willingness to like using computers in performing various tasks which shows their preparedness in ICT integration. This differs with Ang'ondi (2013) that teachers avoid integration of ICT.

5.3 Conclusions

It is concluded that public primary schools head teachers in Narok North Sub-County were trained on basic computer basic packages although their proficiency in some computer packages is poor. Therefore, head teachers need refresher training in ICT in preparedness to integrate ICT in public primary schools. A majority of the teachers lack ICT skills and this hinders integration of ICT in public primary schools.

The study also established that public primary schools in Narok North Sub-County do not have ICT facilities. Only one school has computers for pupils and three schools have computers for head teachers. The schools also lack basic ICT equipment like printers and telephones. Computers help in saving time, enhancing good record keeping of schools activities and also making teachers efficient in the work. Availability of ICT facilities help teachers and

head teachers to practice and perfect their ICT skills which will make integration of ICT in public primary schools easier.

It is also concluded that few computers were available in Narok North Sub-County public primary schools which were used for administration work including analysis of exam results and keeping school records. It is also established that a majority of teachers in the study area do not know how to use a computer hence the need for training them in preparedness for integration of ICT in public primary schools.

The study established that public primary schools in Narok North Sub-County had positive attitude towards integration of ICT. The deputy head teachers as well as the head teachers were computer literate. The schools in collaboration with the Ministry of Education and Boards of Management have plans to train the school administrators and teachers on ICT in preparedness to integrate ICT in public primary schools. The schools' staff also indicated willingness to use computers in their offices showing that they are prepared for integration of ICT in schools

5.4 Recommendations

Based on the findings of this study the following recommendations were made which aimed at improving head teachers' preparedness for integration of

information communication technology in administration of public primary schools in Narok North Sub-County as well as countrywide.

Policy makers should carry out a feasibility study to establish the ICT training needs of head teachers and also allocate funds for refresher courses of teachers.

The school administrators should seek funds from the government to build and equip computer labs and also purchase other ICT equipment like scanners, photocopying machines and printers. This would help them run the school effectively and also perfect their ICT skills.

The school heads should organize in-service ICT training for teachers to equip them with skills in preparedness for ICT integration.

The school administrators should organize seminars to train non-teaching staff on benefits of ICT so that they have a positive attitude towards ICT integration

5.5. Suggestions for further study

- i. Given the scope and limitations of this study, the researcher recommends the following as areas for further studies: A study on head teachers' preparedness for integration of information communication technology in administration of public primary schools should be carried out in other counties for comparison purpose.

- ii. A replication of the study should be carried out incorporating more variables that hinder integration of ICT in public primary schools. These variables also include availability of technical support factors as well as availability of reliable power factors.

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APPENDICES

APPENDIX I: INTRODUCTION LETTER

University of Nairobi
Department of Educational Administration and Planning
P.O. Box 30197-00100
NAIROBI.
..... 2016

The Head Teacher

Dear Sir/Madam,

RE: RESEARCH

I am a post graduate student at the University of Nairobi, undergoing a master of education degree course in Administration and Planning Department. Currently, I am carrying out a research on **head teachers' preparedness for integration of information communication technology in primary schools in Narok North Sub-County** as part of my degree requirement.

Kindly assist to allow me to carry out the study in your school. The identity of the respondent will be treated with confidentiality while information will be used for the purpose of the study only.

I am looking forward to your cooperation.

Yours faithfully,

Jackson M. Shaa

APPENDIX II

QUESTIONNAIRE FOR HEADTEACHERS

This research is meant for academic purposes. Kindly answer all questions as honestly and precisely as possible. Responses to these questions will be treated as confidential. Please do not write your name or that of your school anywhere on this questionnaire. Put a tick where appropriate or fill in the required information in the space provided.

Part A: Personal Information

- 1) What is your gender? Male () Female ()

- 2) What is your age bracket?
20 – 30 years () 31 – 40 years () 41 – 50 years ()
51 – 60 years Over 60 years ()

- 3) What is your highest academic qualification?
Phd () M.ED ()

undergraduate () Diploma in education ()
Any other(please specify)_____

- 4) For how long have you been in the teacher profession?
 Below 1 year () 1 – 5 years () 6 – 10 years ()
 11 – 15 years () Over 15 years ()
- 5) For how long have you taught in your current station?
 Below 1 year () 1 – 5 years () 6 – 10 years ()
 11 – 15 years () Over 15 years ()
- 6) What is your school set up?
 a) Boys () Girls () Mixed ()
 b) Boarding () Day () Boarding and day ()

Part B: Availability of ICT resources for administration

- 7) Do you have computers in your school?
 Yes () No ()
- a) If yes, how many do you have in your school? _____

- b) If yes, how are they utilized? _____

- i) For pupils computer lab: Yes () No ()
 ii) For administration work: Yes () No ()

8) a) Has the head teacher been allocated a computer in his/her office?

Yes () No ()

b) If yes, who uses it?

Head teacher () Secretary () Both ()

9) What tasks do you use the computers to accomplish? List all.

10) Who else uses a computer for administrative work in your school? List all.

11) Which other equipment is available for administrators at your school?

Please tick.

Equipment	Available	Not available
Printers		
Telephone		
Scanners		

12) Do you have internet connection in your school?

Yes () No ()

If yes, which offices have been connected to the internet?

Part C: Attitudes of school head teacher towards integration of ICT

13) Is your deputy head teacher computer literate?

Yes () No ()

14) Are your subject Head of departments computer literate?

Yes () No ()

15) Are there plans in place to have school administrators taught about ICT skills?

Yes () No ()

If yes, who is the sponsor?

BOM () Ministry of Education ()

Donor () NGOs ()

16) Do you have a Computer School Management Systems?

Yes () No ()

If yea, are parents able to access it on the internet?

Yes () No ()

Statement	Like using computers	Do not like using computers	
Registration of new pupils in your school?			
Records of class attendance?			
Preparation of pupils' report forms?			
Discipline records of pupils in your school?			
Preparation of schemes of work and lesson notes?			
Preparation of record of work and teachers' notes?			
Maintenance of library records (issuing books to pupils)			
Maintenance of teachers' attendance records?			
Maintenance of teachers leaves application?			
Keeping teachers' performance records?			
Issuance of receipts for money paid?			
Preparation of workers payrolls?			
Fixed assets inventory?			
Preparation of school income and expenditure statements?			
Maintenance of school suppliers records (textbooks and stationery)			
Preparation of community speeches?			
Preparation of SMC speeches?			

17) The following are some of administrative tasks involving pupils' and teachers' in you school. By use of a tick, please indicate the schools' attitude towards the use of computers in the following tasks.

- 18) If you do not have a School Management System, what computer programs do you use? List all.

Part D: Availability of ICT technical support

- 19) Who advises on the computer equipment to be bought at the school?

Myself () BOM ()

Computer teacher () Hired technician ()

- 20) When the computer breaks down who repairs the computer?

Computer teacher () Hired technician ()

- 21) Who cleans the computer?

Myself () BOM ()

Computer teacher () Hired technician ()

- 22) Do you have a contract with any organization to service your computers?

Yes () No ()

Part E: ICT skills level among the administrator

23) Have you ever attended training on ICT?

Yes () No ()

a) If yes, which courses were you taught?

b) If yes, is training relevant to your current line of work?

Yes () No ()

24) The following is a list of the most common computer programs available in administration setting. Please tick your proficiency in the following computer packages:

Computer packages	Very good	Good	Average	Poor	Very poor
Microsoft Word					
Microsoft Excel					
Microsoft PowerPoint					
Microsoft Access					
Microsoft Publisher					
Email & Internet					
QuickBooks					
Photoshop					
Page Maker					
Others					

25) What challenges do you face when using ICT in administration of the school?

26) What strategies do you use to encourage the integration of ICT in administration at your school?

APPENDIX III

QUESTIONNAIRE FOR THE TEACHERS

This research is meant for academic purposes. Kindly answer all questions as honestly and precisely as possible. Responses to these questions will be treated as confidential. Please do not write your name or that of your school anywhere on this questionnaire. Put a tick where appropriate or fill in the required information in the space provided.

PART A: Demographic information

Please indicate your response by a tick ()

1) What is your gender? Male () Female ()

2) What age bracket are you?

26 – 30 years () 36 – 40 years ()

31-35 years () 41-45 years ()

51 – 55 years () 56-60 years ()

3) What is 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 () fv At home () Never ()

10) Does the use of knowledge on the following areas of computer
technology?

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 head teachers in the
use of ICT in public primary schools in Narok North Sub-County,
Narok County?

Thank you for your cooperation

APPENDIX IV
UNIVERSITY PERMIT



UNIVERSITY OF NAIROBI
COLLEGE OF EDUCATION AND EXTERNAL STUDIES
SCHOOL OF EDUCATION
DEPARTMENT OF EDUCATIONAL ADMINISTRATION AND PLANNING

Telegram: "CEES"
Telephone: 020-2701902
dept-edadmin@uonbi.ac.ke

P.O. BOX 30197
OR P.O. BOX 92 -00902
KIKUYU

November 7, 2016

OUR REF: UON/CEES/SOE/A&P/1/4

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

RE: SHAA JACKSON MAINAI – REG NO. E55/72245/2014

This is to confirm that **Shaa Jackson Mainai** is a Master of Education student in the department of Educational Administration and Planning of the University of Nairobi. He is currently working on his research proposal entitled "**Head Teachers' Preparedness for Integration of Information Communication Technology in Administration of Primary Schools in Narok North Sub-county**". He is specializing in Educational Administration.

Any assistance accorded to him will be highly appreciated

DR. JEREMIAH M. KALAI
CHAIRMAN
DEPARTMENT OF EDUCATIONAL ADMINISTRATION AND PLANNING



APPENDIX V

RESEARCH PERMIT

THIS IS TO CERTIFY THAT:
MR. JACKSON MAINAI SHAA
of UNIVERSITY OF NAIROBI, 1556-20117
NAIVASHA, has been permitted to
conduct research in Narok County
on the topic: HEAD TEACHERS'
PREPAREDNESS FOR INTEGRATION OF
INFORMATION COMMUNICATION
TECHNOLOGY IN ADMINISTRATION OF
PRIMARY SCHOOLS IN NAROK NORTH
SUB- COUNTY
for the period ending:
8th November, 2017

Permit No : NACOSTI/P/16/26506/14679
Date Of Issue : 8th November, 2016
Fee Received :Ksh 1000



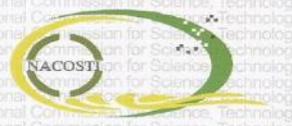
Jackson Mainai Shaa
Director General
National Commission for Science,
Technology & Innovation

CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.
2. Government Officer 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) hard copies and one (1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice



REPUBLIC OF KENYA



National Commission for Science,
Technology and Innovation

RESEACH CLEARANCE
PERMIT

Serial No. **11707**

CONDITIONS: see back page

APPENDIX VII

AUTHORIZATION LETTER



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349, 3310571, 2219420
Fax: +254-20-318245, 318249
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
when replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref. No. **NACOSTI/P/16/26506/14679**

Date:

8th November, 2016

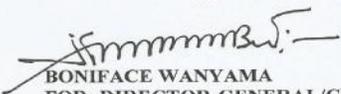
Jackson Mainai Shaa
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "*Head teachers' preparedness for integration of Information Communication Technology in administration of primary schools in Narok North Sub-County,*" I am pleased to inform you that you have been authorized to undertake research in Narok County for the period ending **8th November, 2017.**

You are advised to report to **the County Commissioner and the County Director of Education, Narok County** 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.


BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Narok County.

The County Director of Education
Narok County.

National Commission for Science, Technology and Innovation is ISO 9001:2008 Certified