INTEGRATING INFORMATION AND COMMUNICATION TECHNOLOGY IN PUBLIC SECONDARY SCHOOL ADMINSTRATION IN KIBWEZI SUB – COUNTY, MAKUENI COUNTY, KENYA

By

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A Research Project Submitted in Fulfillment for the Award of the Degree of Master of Education in Educational Administration
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2016

DECLARATION

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

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DEDICATION

This work is dedicated to my husband Joseph Kyondo, my loving children: Dennis and Sylvia and my parents. Mr. and Mrs. James Musau Mailu.

ACKNOWLEDGEMENT

I am indebted to my supervisors, Dr. David Mulwa and Dr. Mattemu Kithyo. I am also indebted to Dr. Kauti, Director SEKU Mtito – Andei campus. I also acknowledge Kithasyu Secondary School Fraternity and Kibwezi Printers.

ABSTRACT

The purpose of this study was to assess integrating ICT in public secondary school administration in Kibwezi Sub County of Makueni County. The study was guided by the following objectives: to assess the state of ICT infrastructure in public secondary school administration in Kibwezi sub county, to determine the level of ICT integration in Public secondary school administration in Kibwezi Sub county, to assess the influence of ICT infrastructure on ICT Integration in secondary schools administration in Kibwezi sub county, to investigate the challenges facing ICT integration in public secondary school administration in Kibwezi Sub county, Makueni county. The study used descriptive survey design. The target population for this study was all the 60 Principals in the sub county, 420 HODs, and 240 class teachers. The study sample was selected using simple random sampling. Data was collected from a sample of 210 respondents composed of 17 Principals, 125 Heads of departments and 68 class teachers. Data was collected through questionnaires and was analysed using descriptive and inferential statistics. The findings revealed that public schools lacked adequate computers for administrative purposes. Majority of the Principals 14(82.4%) never used ICT in entertainment and to motivate teachers, 9(52.9%) never used ICT in comparing materials presented in different media. It was also found that majority of the Heads of departments 63(50.0%) used ICT in processing and analyzing administration data once or twice a week. Majority of the principals, Heads of Departments and Class teachers 114(56%) strongly agreed that ICT improves general administration activities. On the challenges faced in integrating ICT in secondary school administration it was found that Principals acquired computers through purchasing, government sponsorships, parents' contribution and through donations of stakeholders to the school. The study concluded that there is low integration of ICT in secondary school administration which is caused by challenges such as internet connectivity, lack of electricity, low government funding on ICT and lack of computer skills by the personnel concerned. The recommended that the government should equip schools with necessary ICT infrastructure, ensure that secondary schools are supplied with electricity. The study suggested that since the study was carried out in Kibwezi sub – county similar studies should be conducted in other areas to compare the results.

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ABBREVIATION AND ACRONYMS

FDSE	Free Day Secondary School Education
FRSS	Fast Response Survey System
GOK	Government of Kenya
HODs	Heads of Department
ICT	Information Communication Technology
KESSP	Kenya Education Sector Support Programme
MOEST	Ministry of Education Science and Technology
MOE	Ministry of Education
NACOSTI	National Commission of Science and Technology and Innovations.
NCET	National Council For Educational Technology
NCES	National Centre For Education Statistics
NGFL	The National Grid For Learning.
OECD	Organization for Economic Co – operation Development
OET	Office of Educational Technology
PA	Parents Association
SPSS	Statistical Packages for Social Sciences
U.K	United Kingdom

UNESCO	United Nations Education Scientific and Cultural Organization.
USA	United States of America

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

According to United Nations Education Scientific and Cultural Organization (UNESCO, 2002), education helps to mitigate poverty and its effects by developing human capital consequently increasing the level of social and private benefits. Education reform efforts in less industrialized countries have aimed at making education an effective vehicle for national development (Abagi & Odipo, 1997). Information and communication Technology is now at the centre of education reform efforts that involve its use in coordination with changes in curriculum, teacher training, pedagogy and assessment (Kozma, 2006). Information Communication Technology (ICT) is an effective tool that if integrated successfully forms a key pillar of education training (Tomer & Kumari, 2005). The integration of ICT into virtually all aspects of the economy and society is creating a digitally enabled economy that is responsible for generating economic growth and prosperity (Bollou, 2006). Maguire (2003) further notes that the ICT sector has the potential to generate economic development and create pathway into the knowledge economy.

According to Ng, Miao, & Lee (2006), one of the prerequisite for economic and social development is education and the government of the day is pressured into providing education to all its citizens irrespective of the availability of various resources. At the same time, globalization and the shift to a ‘knowledge – based economy, requires that existing educational

institutions develop individuals the ability to transform information into knowledge and to apply that in a dynamic cross – cultural context and ICT's are a means for meeting these twin challenges. ICT offers both challenges and promises for social and economic development and this is nowhere more apparent than in the world's poorest countries.

The adoption of ICT into the practice of education is not something that began with the emergence of the new digital technologies; technologies such as radio, telephone and television have been and are still being used at present; what is new are the many ways that they can be combined and mixed with the new technologies which mainly consider use of computers (Farrel, 2007).In Kenya, the government recognizes the positive effect of ICT in making the country a middle level economy as is envisaged in Kenya Vision 2030. Efforts to implement ICT are schools were first initiated by publishing Sessional Paper No. 1 of 2005 where ICT was given prominence (GoK, 2005). The idea was to equip public secondary schools with ICT infrastructure and integrate it in existing school curriculum. Gray & Smith (2007) observes that the twenty – first century principal administrations face numerous challenges emanating from technology. Information and communication Technologies are increasingly used and viewed as important in all spheres of operation including education.

According to Zainally (2008), ICT provides several facilities and possibilities for educational administrators to perform their tasks. Although ICT use in secondary school administration in Kenya and Kibwezi Sub County in

particular appears to be a new concept and a complex change, there is an urgent need to update the complexity of challenge to provide guidance for those who must deal with it (Fullan, 1993). This study was aimed at assessing ICT integration in secondary school administration in Kibwezi sub – county.

1.2 Statement of the Problem

The Ministry of Education (MoE) put in place the national ICT policy and E – government strategy that provides guidelines for transformation of Kenya into a digital society (MoE, 2005). It is in line with this policy that sessional paper No. 1 of 2005 was developed, where it recognized that an ICT literate workforce is the foundation on which to develop a knowledge – based economy. In June 2006 the MoE came up with the national ICT strategy for education and training which was based on the vision that ICT is a universal tool in education and training (MoE, 2006). The MoE further developed Kenya Education Sector Support Programme (KESSP). Many of the studies that have been carried out on ICT Integration are either on integration of ICT in Teaching and learning or in preparation of curriculum materials (Laaria, 2013; Mboya, 2008). Recently studies on ICT integration in educational administration have emerged in various parts of the world USA, Malyasia (Balsandran, 2006; Langamia, 2005). However there is very little about the same in Kenya and specifically in Kibwezi sub – county. This study set out to assess ICT integration in secondary school administration in Kibwezi sub-County.

1.3 Purpose of the study

The purpose of this study was to assess ICT integration in secondary school administration in public schools in Kibwezi Sub-county, Makueni County.

1.4 Objectives of the study

The objectives of the study were:-

i. To assess the state of ICT infrastructure in Public secondary school administration in Kibwezi sub – county.
ii. To determine the level of ICT integration in Public secondary school Kibwezi Sub – county.
iii. To assess the influence of ICT infrastructure on ICT Integration in public secondary school administration in Kibwezi Sub-county.
iv. To investigate the challenges facing ICT integration in secondary school administration in Kibwezi Sub – county, Makueni County.

1.5 Research questions and Hypothesis

This study was guided by the following research questions and hypothesis.

1.5.1 Research Questions

i. What is the state of ICT infrastructure in public secondary school administration in Kibwezi Sub-county?
ii. What is the level of ICT integration in Public secondary school in Kibwezi sub - county?
iii. What challenges are faced in ICT integration in public secondary school administration in Kibwezi sub – county?

1.5.2 Research Hypothesis

The hypothesis for this study was:-

Ho_1 There is no association between ICT infrastructure and ICT integration in public secondary school administration in Kibwezi Sub – county.

1.6 Significance of the Study

The findings of the study may help the government in education understand the challenges faced by administrators in integration of ICT in school administration. The findings would be used to formulate the appropriate policies. The school administration would also use the findings in making decisions on the type of ICT infrastructure to acquire as well as the technical support necessary for adoption in school administration. It will also add to the existing body of knowledge about integration of ICT in secondary school administration.

1.7 Limitations to the Study

The attitude and willingness of the respondents to respond to the questionnaires was a challenge. This was addressed through assurance of confidentiality and emphasis on the significance of the study. The diversity and the extensity of the sub-county which makes the schools to be far apart was also a limitation. This was addressed by co-ordination through the principals for co-operation and assistance in the data collection.

1.8 Delimitations to the Study

The study was delimited to public secondary schools in Kibwezi Sub-county,

Makueni County. It was also delimited to principals, HODs and class-teachers. The study was also delimited to ICT infrastructure, levels of ICT integration, influence of ICT infrastructure on ICT integration and challenges facing ICT integration; poor infrastructure, poor budgeting, lack of ICT knowledge and skills.

1.9 Assumptions of the Study

The researcher assumed that all respondents would appropriately understand the questions and give appropriate answers. The attitude of the stakeholders was positive and would appropriately respond to the questionnaire. The researcher also assumed that the respondents gave true reflection of what the situation was at the ground.

1.10 Definition of Significant Terms

Information Communication Technology (ICT) refers to skills/apparatus /programs/physical Infrastructure (computers, internet, source of power) that may be used to enhance education management practices.

Administrators refer to those involved in the day to day running of secondary School duties. (The Principal, Deputy Principal, Heads of departments and class teachers.

Integrate refers to incorporate ICT in to secondary school administration.

Administration refers activities that one undertakes in the day to day running of an organization in order to achieve the organizational goals.

Secondary school refers to a post primary institution where pupils are given instructions form one to form four.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviewed the related Literature, under the following subheadings; Global and regional perspective of ICT integration in secondary school administration, ICT integration in secondary school administration in Kenya, ICT infrastructure in secondary school administration, Influence of ICT infrastructure on ICT integration in secondary school administration and challenges facing ICT integration in secondary school administration i.e. Poor infrastructure, poor budgeting, ICT knowledge and skills. It also covers theoretical frame work and conceptual frame work.

2.2 Global and Regional perspective of ICT Integration in secondary school administration.

A related study by Pflaum (2004) on ICT use at Springdale High school in Ohio in the USA found out that the school had plenty of computers, but did not have teachers who were ready to use them or an administrator committed to technology. Moyle (2006) observes that many school leaders however are unsure of how data can be used to inform their work, what decisions concerning technologies should make or what type of decisions require their direct oversight. This study was used to find out whether these results apply in the Kenyan situation.

According to Balsandran (2006) school effectiveness has always been the central issue in Malaysian education system as the sector consumes

approximately 33% of the national budget. The Ministry of Education strongly emphasizes instructional leadership by defining the mission of the school and developing vision for the school. This study was to find out whether the situation in Malaysia is duplicated in Kenya. In Malaysia a study conducted by University Science Malaysia (GAID), 2009, brought to light that successful diffusion of ICT may be due to perceived administrative and technical support on the use of technology. In this study a few issues were said to affect the integration effectiveness such as the existence of a sense of value of information Communication and Technology's benefits and the expectation that its use will lead to success.

There has been a high level of investment in information and communications technology (ICT) in education over a prolonged period of time throughout the 'developed world' (Twining, 2002). Interest in ICT in education in England stretches back to at least the mid-1960s, when the original National Council for Educational Technology was first formed (NCET 1975). At this time the main focus was often on further and higher education rather than on schools. Later there was expansion to the schools starting with secondary then primary schools through government funding. Twining (2002) outlines some of the policies employed by government in England in order to meet the government targets for ICT in education. Funding was made available for; The National Grid for Learning (NGfL), connecting every school in the country to the internet; providing additional computer equipment for every school; training every teacher in state schools in the United Kingdom (UK) to make effective use of ICT as a tool to support teaching: cutting bureaucracy in schools

through the use of ICT and setting up of a number of Centres of Excellence for IT and High Technology training and Skills Challenge projects. United States of America (USA) also has a long history about technological innovation revolutionizing education in the US since the mid-1800s, starting with the introduction of text books and moving through technologies such as film, radio, television and computers (Kent and McNergney, 1999). This study analyses the Kenyan policy on ICT to its implementation level.

The use of computers in school level education in the US started in the sixties (Hasselbring, 1986). The first national educational technology plan, Getting America's Students Ready for the 21st Century: Meeting the Technology Literacy Challenge, was developed including four key goals for educational technology: giving all teachers in the nation the training and support they needed to help students learn using computers; all teachers and students were to have modern multimedia computers in their classrooms; every classroom to be connected to the information superhighway and making effective software and on-line learning resources an integral part of every school's curriculum.

Inappropriate planning, lack of training, insufficient budget and shortage of resources are some of the reasons why technology integration has not been successful in some parts of the world (Butzin, 1992; Cafolla & Knee, 1999; Dias, 1999; Office of Educational Technology [OET], 1995). Due to the huge potential of ICT impact on education, factors that influence the successful integration in school are studied in depth. Researches like Bennet (1996) and Fullan (1993) have recognized leadership as an important element in the

school's success. With the vast amount of accessible technologies, school administrators could solve a wide range of educational problems, learning goals can be identified succinctly and ways can be determined by collaborating with others. A large range of student population could be catered to and a multitude of administrative tasks can be completed successfully (Office of Educational Technology [OET], 1995).

On the importance of ICT for Africa's future in exhibitions and conferences, Mboya (2008) states that as Africans, we have a once lifetime opportunity to bridge the gap that has held us back from the global market place….(p 32). According to Langamia (2005) South Africa has a well developed internet infrastructure in business and academia, and its degree of connectivity places it in the top 25 in the world. This study was used to find out the level at which Kenya is. Mdlongwa (2012) states that ICT was introduced in South African schools in the 1980s, mostly in private schools and well resourced government schools. Democratization in 1994 has led to the Department of Basic Education stepping up to the introduction of ICT into the curriculum as well as school administration. According to the Department of Education, (2004) a White Paper was released to guide the process among others the White Paper seeks to; provide connectivity to enhance teaching and learning and provide the relevant support services such as pedagogical, curriculum, assessment, management and administration. Microsoft foundation had an agreement with the National Department of Education to provide free software to South African schools for a period of five years.

2.3 ICT Integration in Secondary School Administration in Kenya

Like many other countries in the world Kenya developed National ICT policy in 2006, giving priority to ICT. The ICTs in Education Sessional Paper one (MoE, 2005), discusses the ways in which Information Communication Technologies (ICTs) can be leveraged to support and improve delivery of quality education for all Kenyans. It provides a comprehensive range of potential technologies to improve learning, teaching and management. It is intended to enable the Government of Kenya to plan appropriate ICTs in education interventions as they move forward with the comprehensive Kenya Education Sector Support Programme (KESSP).

For successful integration of ICT in secondary school administration there has to be proper planning at the school level. This is because the school is expected to provide the necessary ICT resources for the teachers. An ICT integration plan provides a detailed blueprint of the steps and methods needed to translate the school ICT vision into reality (Afshari, Bakar & Wong, 2009). A plan is a guide to action not a substitute for it; the existence of a written ICT plan and strategy does not guarantee the comprehensive use of ICT in schools, nor does the absence of an ICT plan necessarily equate to the lack of ICT integration in a given school (Bryderup and Kowalski, 2002). This study was aimed at investigating whether secondary schools in Kibwezi have an existing ICT plan. School leadership plays an important role in leading change initiatives, providing vision and objectives as well as professional development initiative in using ICT to bring about pedagogical changes

(Schiller, 2003). While effective leadership is one of the key variables that determine the success of an educational institution, strategic leadership is needed in long term sustainability of improvements (Davis, 1999).

The principal as a learning leader, specifically can impact multiple areas of the school setting such as ICT integration (Gay & Airasian, 2009). Effective leadership is essential when implementing school improvement initiatives (Rutledge, 2009). According to Brannigan (2010) leadership is one of the several critical components in successful integration of ICTs in school administration. Makewa, Meremo, Role & Role (2013) found out that school principals need to be positive in order to support reasonable change that affect overall school administration and performance. They advised that, since the principals are the key actors in the process of reform and redefinition, governments should work with them.

The locus of leadership influence the degree to which ICT integration can become embedded in educational institutions as well as the role of leadership and imprint it on minds of teachers has been attributed to lack of leadership capacity (Moyle, 2006). As a result today's schools principals must not only manage the day to day activities of a school but also to focus on how students learn performance standards evidence based decision making and continuous improvement. As mentioned by Farrel (2007), although teachers were identified early as playing an important role in the success of technology implementation, nevertheless the role of the school administrators were often overlooked.

Becker (1993) contends that leadership is even more critical for the successful integration of ICT in schools today than it was before. According to Hope and Stakenas (1999), there are three roles played by the school Principal namely the role model, instructional leader and visionary role. Principals function as a role model when computer technology is applied to administrative and managerial task. As an instructional leader they facilitate teachers' integration of computers in Teaching and Learning. In the form of a visionary role they envisage a context for technology in school and are able to comprehend how learning can be restructured to empower teachers.

2.4 Effect of ICT infrastructure on secondary school administration.

Schools have to be equipped with the necessary ICT infrastructure in order to provide the next generations with the needed tools and resources for access and use and to attain the expected skills (Gulbahar and Guven, 2008). Schools are equipped with different kinds of technological infrastructure and electronic resources available; hardware, software and network infrastructure must be available to integrate ICT in education (Afshari, Bakar & Luan, 2009). Mumtaz (2000) states that many scholars proposed that the lack of funds to obtain the necessary hardware and software is one of the reasons teachers do not use technology in their classes and administrative work. Efficient and effective use of technology depends on the availability of hardware and software and the equity of access to resources by teachers, students and administrative staff. This study aimed to investigate whether the same problem was replicated in Kibwezi Sub County.

Use of ICT in teaching and learning must be accompanied by a corresponding change in curriculum. Tin (2002) explains that proper integration of ICT may require substantial pedagogical component in the IT curriculum of any teacher education program. He cautions that teaching ICT as an isolated discipline is not an effective way to encourage the use of ICT in learning and administration. Clearly, the curriculum must be adapted or re-designed so that it is ready for ICT integration. This shows a big gap between the traditional teaching methods and use of print content and the modern methods of using the ICTs and soft copies of curriculum materials. There is a need to develop original educational content, adapt existing content, and convert print-based content to digital media. This is not only technical but also time consuming for the teachers.

2.5 Influence of ICT infrastructure on ICT Integration in secondary school Administration

According to Krishnaven and Meenakumari (2010) ICT provides several facilities and possibilities for educational administrators to do their tasks and communication and information systems could change the very nature of education, allowing information to be transferred , stored , retrieved and processed by almost all who work, study or interact with a given institution. This study was aimed at investigating whether the same could apply to Kibwezi sub – county.

While some people view the use of ICT in education in negative ways (Truceno, 2008; Yelland, 2001), ICT is perceived as a positive influence by

many in the global education field. According to Peeraer & Petergem (2011) ICT benefits in (several ways: improves management and administration of school for example if helps in time tabling , record storage, secretarial work like typing staff meeting minutes, examinations and letters. This study was aimed at investigating whether these results also applied in secondary schools in Kibwezi sub-county.

Further, ICT has potential advantages which assist the world to develop, to decrease the technological gap between the developed and emerging countries and to reduce poverty, as well as facilitate communication (The World Bank, 2008; Tin, 2003). ICT facilitates management processes such as meetings and training sessions (World Bank, 2003). While ICT is about enhancing teaching, learning and administration processes, it also provides a forum for communication and interacting socially, thinking critically and building a life long culture (Lee, 2008). Higgins & Moseley (2011) observes use of ICT could improve performance and management, improves impact on school as a whole, and develop significance skills in the marginalizes communities (hence helping in liberation and their transformation).

2.6 Challenges facing ICT Integration in Secondary School Administration.

According to Gray & Smith (2007) the adoption and use of the ICTs in education institutions in developing countries remains very limited despite a decade of large investments in information and communication technologies.

Kenya like other developing countries struggles with high levels of poverty and this has an effect on the adoption and access to ICT (OECD, 2004).This study sought to find out whether the same was replicated in Kibwezi Sub County.

The initial aim to introduce ICTs in education was primarily for developing ICT skills, the focus has over times shifted to leverage ICTs to address issues of quality to improve teaching and learning especially at secondary and post secondary levels, however, availability and use of ICTs at various levels is still patchy. According to Kenya ICT survey (2007) many teachers perceive that adoption of ICT in the school will lead them jobless. This study was aimed at finding whether teachers in Kibwezi Sub County have the same perception.

2.6.1 Poor Infrastructure

An important variable of ICT integration in secondary school administration is availability of ICT infrastructure. In a related study Kidombo (2009) revealed that inappropriate access to technology infrastructure is a factor in the effective technology integration process. The study reveals substantive correlation between technology, access and use. Poor infrastructure remains a major obstacle in many developing states (Harris, 2004). For example according to Makewa et al (2013:54), a survey in the USA by the National Centre for Education Statistics (NCES), in 2000 using the Fast Response survey system (FRSS) revealed that 99% of full time regular public school teachers had access to computers or the internet somewhere in their schools. This is a dream in many developing countries such as Kenya. It is estimated

that less than one percent of people in Africa use or have access to the internet (Bigum 2000). This study investigated access to ICT infrastructure such as the internet in Kibwezi sub – county.

According to Bigum (2000) the figure of 139 students per computer is given for world participants. Listed in order of rank aspects that inhibit schools from acquiring computers are an absence of electricity, lack of funding, insufficient building space, lack of available and trained staff and poor security. In Malawi, where most technology infrastructure is government controlled, very low levels of infrastructure for use of ICTs are found and many government departments have themselves not yet acquired computers.

2.6.2 Poor Budgeting for ICTs

According to Farrel (2007) schools do not budget adequately the use of ICTs and instead dedicate their ICT budgets to the purchase of computers and soft ware only. Farrel (2007) further states that the cost of installation, maintenance and expansion remain hidden unlike in the commercial sector where the capital costs of a PC represent only one fifth of the yearly cost of running that PC. Costs include teacher training, and additional advisory and technical staff as support, both in the technological of pedagogical fields.

2.6.3 Lack of ICT knowledge and Skills on school administration

Teacher professional development is a crucial component of the educational improvement (Tin, 2002). Thus the teacher pre-service and in-service training in ICT is a must for proper integration of ICT in the education system in any

country. Teachers need to be prepared to empower students with the advantages technology can bring. More to this the teacher is responsible for establishing the classroom environment and preparing the learning opportunities that facilitate students' use of technology to learn, and communicate (UNESCO, 2008).

Research findings have revealed that most teacher training courses focused on basic computer operations rather than advanced computer skills and subject-specific pedagogical applications (Tin, 2002). Use of new technologies requires new teacher roles, new pedagogies, and new approaches to teaching and learning. Before teachers have developed the ability to achieve all of the above, they must have a comfortable level of ICT skills. Unless teachers are functioning at a comfortable level of ICT skills and knowledge, they will be unable to use ICT as a primary tool for teaching and learning across the curriculum. Teachers need to be competent and confident users of hardware and software, to understand how to organize the classroom to structure learning tasks so that IT resources become a necessary and integral part of learning rather than an add-on technical aid teaching becomes a process to initiate, facilitate, and sustain students' self-learning and self-actualization; therefore, teachers should play a role as a facilitator who supports students learning (Watkins, 2009).

The focus of teaching is to arouse students' curiosity and motivation to think, act, and learn. The change from the traditional chalk and talk pedagogy to new modes of pedagogy within secondary schools might introduce much

uncertainty which tend to induce teachers' anxiety and cause them to feel frustrated in work. Hence many teachers have been found to offer stiff resistance to change involving technology intervention, technology integration and technology incorporation (Albirini, 2007). Preparing students for real life in our technological and diverse world requires that teachers embed ICT in significant learning experiences (Bernhardt, 2000).

Because of poor maintenance and insufficient skills to diagnose system problems and swap parts, there are many out-of-commission machines which could easily be re-activated and used. The problem of technical expertise is two faceted. In the first place, there are not enough people qualifying or attaining ICT specialist skills at the speed at which the technologies are adopted. Secondly, the problem of brain-drain whereby the few experts opt for better paying jobs overseas (Minishi - Majanja, 2007). Having technical staff available also allow them to provide assistance to students in using software applications, when they are not engaged in servicing the technology.

2.7 Identification of the Research Gap

The above reviewed literature presents studies carried out in different parts of the globe, on matters pertaining to integrating ICT in secondary school administration. These studies have been carried out in other countries, but only a few studies have been carried out in Kenya. In Kibwezi Sub – county for instance no study has been carried out on the same issue. This study aims to fill the missing knowledge gap on ICT integration in secondary school

administration in Kenya, with the information and data obtained from public secondary schools in Kibwezi sub – county.

2.8 Theoretical framework

The study was based on Rogers' theory of diffusion of innovations. The theory seeks to explain how, why, and at what rate new ideas and technology spread through cultures (Rogers, 2003). Integration of ICT in educational administration is a new idea. Innovation diffusion research has attempted to explain the variables that influence how and why users adopt a new information media such as the internet. The diffusion of information and communication technology hardware, software, and services turns out to be a powerful driver of growth, having an impact on worker productivity (Bollou, 2006). Robinson (2009) observes that, instead of focusing on persuading individuals to change, the theory sees change as being primarily about the evolution or "reinvention" of products and behaviors so they become better fits for the needs of individuals and groups.

Rodgers (2003) argues that potential adopters of a technology progress over time through five stages in the diffusion process. First they must learn about the innovation (knowledge); second they must be persuaded over the value of the innovation (persuasion); thirdly they must decide to adopt it (decision); fourthly, the innovation must be implemented (implementation) and finally, the decision must be reaffirmed or rejected (confirmation).

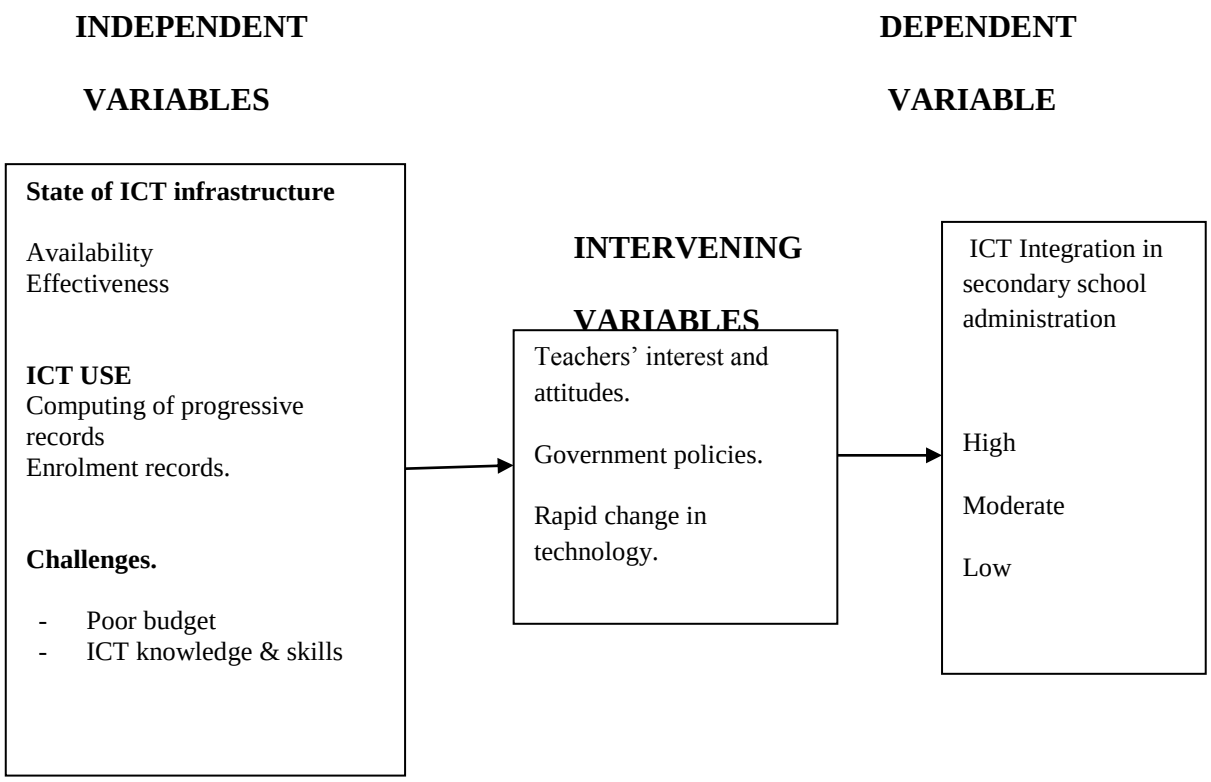
The adoption or rejection of innovations is characterized by; the relative advantage, compatibility, simplicity, trial-ability and observation. Therefore,

the understanding and utilizing diffusion networks can aid strategy aimed at quickly inducing system-wide change (Orr, 2003; Robinson, 2009; Sahin, 2006). Given that the education stakeholders are aware of the ICT innovations across the world, the rate of adoption is still very low and especially in the developing states. Rogers' diffusion of innovations theory is the most appropriate for investigating the adoption of technology in higher education and educational environments (Parisot, 1995). Given the relative advantage of ICTs in education sector, the study assessed the integration of ICT in educational administration in public secondary schools in Kibwezi Sub-County. The Rogers model applies to this study because the study integrates a new concept to the existing application.

2.9 Conceptual Framework

A conceptual framework showing the relationship of variables for the study is shown below in figure 1.

Figure 1: Conceptual Framework



The integration of ICT in secondary school administration is assumed to be determined by independent variables such as availability of ICT infrastructure, challenges which are shown in figure 1 above. The intervening variables include attitude of stake holders and rapid change in technology, while the dependent variable is ICT integration in secondary school administration. It was assumed that if these intervening variables such as change in technology were not there then the ICT integration would be high.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This section discusses how the research was carried out to obtain information necessary to cover specific objectives. This chapter is organized into the following sub – topics: research design, target population, sample size and sampling procedures, research instruments, data collection, methods of data analysis and presentation.

3.1 Research Design

The design for this study used descriptive survey design. This type of design usually seeks to find answers to the questions generated from the statement of the problem. According to Orodho (2009) research design refers to the procedures selected by a researcher for studying a particular set of questions or hypothesis; this includes the researcher's choice of quantitative or qualitative methodology, and how, if at all, casual relationships between variables or phenomena are to be explored. Using this design the researcher attempted to find answers to questions by analyzing the variables that relate to ICT integration in secondary school administration in Kibwezi sub – county.

3.2 Target population

According to Borg & Gall (1989) target population is a set of people or objects the researcher wants to generalize the results of the research. The target population for this study was all 60 principals from the sub – county, 420 HODs, and 240 class teachers in the 60 secondary schools in Kibwezi sub –

county. There are 6girls schools, 6 boy's schools, 20 mixed boarding schools and 28 mixed day schools. In the sub – county. (DEO's office Kibwezi Sub County Jan. 2015).

3.3 Sample size and Sampling procedures

According to Orodho (2001) sampling is a process of selecting a number of individuals or objects from a population such that the selected group contains representatives of characteristics found in the entire group. Mugenda & Mugenda (1999) recommend a representative sample of 10 – 30%, for descriptive survey design.

3.3.1 Sampling procedure

A sample of 18 schools was selected. Stratified and simple random sampling was used in this study. This was a representative of 30%. Mugenda & Mugenda (1999) recommend a representative sample of 10 – 30% for descriptive survey research. The schools were stratified into 4 categories as girls boarding, boys boarding, Mixed boarding/day and Mixed /Day. A total of 18 schools were picked using simple random sampling technique from each category as follows:- 2 girls' boarding , 2 boys' boarding, 8 Mixed day and 6 Mixed Boarding/day. From the 18 schools 6 HODs and 4 Class teachers per school were randomly selected making a total of 126 HODs and 72 class teachers. All the 18 principals from the selected schools were purposively chosen.

Table 3.1: Sampling Matrix

Category of population	Total population	Sampling procedure	Sample
Principals	60	Purposive	18
HODs	420	Random sampling	126
Class teachers	240	Random sampling	72
TOTAL	**720**		**216**

3.4 Research Instruments

The study utilized questionnaires as the instrument of data collection. The questionnaires were structured and contained both open and closed ended items.

3.4.1 Questionnaires

In this study questionnaires were used for data collection. Kiess & Bloomquis (1985) observes that questionnaires offer considerable advantage in administration and presents an even stimulus potentiality to large numbers of people simultaneously and provides the investigation with an easy accumulation of data. Gay (1992) maintains that questionnaires give respondents Freedom to express their or opinion and also to make suggestions. To obtain the necessary information, the researcher developed three sets of questionnaires namely: The Principal's questionnaire, The HOD's

questionnaire and the Class teacher's. All these contained both open and closed ended items.

3.5 Validity of the Instrument

Validity is a measure of how well a test measures what it is supposed to measure (Orodho, 2008). To validate the research instrument the questionnaires were tested in two pilot schools in the neighboring Makindu Sub – county. Validity was established through close consultation and expert judgment of the supervisors who are experts in the field; they also verified the validity of the research instruments used in the study. The pilot study was to assist in identifying the problems that respondents encountered in the process of answering the questions put to them. From the piloted questionnaire ambiguous items were modified.

3.6 Reliability of the instrument

Reliability is the measure of the degree to which a research instrument yields consistent results after a repeated trial (Mugenda & Mugenda 1999). Test – retest technique involved administering the same group within two weeks. Reliability correlation coefficient was calculated using the Pearson Coefficient. The Pearson value obtained for the principal's, HOD's and class teacher's questionnaire was 0.72, 0.76 and 0.81 respectively which was acceptable.

3.7 Data Collection Procedure

The researcher obtained an introductory letter from South Eastern Kenya University. After which a research permit was sought and obtained from National Commission of Science and Technology and innovation (NACOSTI). Permission was then sought from the County Director of Education then the Sub – county Director of Education Kibwezi Sub – County. The researcher visited all the respondents to administer the questionnaires.

3.8 Data Analysis Techniques

This study employed descriptive statistics to analyse the data obtained. Gay (1992) asserts that descriptive survey data is commonly represented through use of frequency, graphs, pie – charts and frequency tables, graphs. Data from the field was collected, cleaned, coded and recorded. It was analysed using Statistical Package for Social Sciences (SPSS). Descriptive statistic was used to analyse the quantitative data obtained. This specifically included percentages and frequency counts. The qualitative data obtained in this study was analysed by organizing it into similar themes and tallying the number of similar responses. The results of data analysis were presented using frequency distribution tables.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

This study investigated ICT integration in secondary school administration in Kibwezi Sub-county, Makueni County, Kenya. The study assessed the state of ICT infrastructure in public secondary school administration in Kibwezi sub – county, determined the level of ICT Integration in Public secondary school administration in Kibwezi Sub – county, assessed the influence of ICT infrastructure on ICT integration in public secondary school administration in Kibwezi sub-county and investigated the challenges facing ICT integration in public secondary school administration in Kibwezi Sub - county. This chapter presents the findings of this study under these themes and demographic attributes of the principals, heads of departments and class teachers. It also discusses those findings in line with the views that had been advanced earlier in the study in the literature review.

4.2 Response rate

In this study, data was collected from a sample of 17 principals, 125 heads of department and 68 class teachers. One principal, one HOD and four class teachers did not return the questionnaires as presented in Table 4.1.

Table 4.1 Questionnaires return rate

Respondent	Returned	Unreturned
Principals	17(94.4%)	1(5.6%)
Head of departments	125(99.2 %)	1(0.8 %)
Class teachers	68(94.4%)	4(5.6%)
Total	**210(97.2)%**	**6(2.8%)**

Table 4.1 revealed that the returned questionnaires were 97.2%. This implies that there was a good follow up of the questionnaires and that the researcher had a good rapport with the respondents.

4.3 Demographic Information for the respondents

The demographic information of the respondents was based on gender, age, academic qualifications, and the duration they had served in the current school.

4.3.1 Gender distribution of respondents

The gender distribution for the respondents was presented in Table 4.2.

Table 4.2: Gender Distribution

Respondents	Male	Female
Principals	9(52.9%)	8(47.1%)
Head of departments	75(60%)	50(40%)
Class teachers	36(53%)	32(47%)
Total	**120(57%)**	**90(43%)**

Table 4.2 revealed that 57% of the respondents were male while 43% were female. This shows that there was good gender balancing among the respondents hence the study gave findings which represents opinion from both gender.

4.3.2: Age distribution of respondents.

The age distribution of respondents is presented in table 4.3.

Table 4.3: Age distribution of respondents

Age	Principals	Head of departments	Class teachers
20 – 25 years	0(0%)	15(12%)	8(11.8%)
26 – 30 years	0(0%)	15(12%)	27(39.7%)
31 – 35 years	0(0%)	21(18%)	16(23.5%)
36 – 40 years	2(11.8%)	25(20%)	8(11.8%)
41 – 50 years	14(82.4%)	30(38%)	7(10.3%)
Above 50 years	1(5.9%)	0(0%)	2(2.9%)
Total	**17(100%)**	**125(100%)**	**68(100%)**

Table 4.3 revealed that majority (82.4%) of the principals were 41 – 50 years, heads of departments were 41 – 50years (38%) while class teachers were 26-30 years (39.7%). This means all the respondents were mature enough to integrate ICT in their schools.

4.3.3: Academic level of respondents

The academic level of respondents is presented in table 4.4.

Table 4.4: Academic levels of respondents

Academic	Principals	Head of departments	Class teachers
Masters	13(76.5%)	15(12%)	12(17.6%)
Degree	4(23.5%)	98(78.0%)	52(76.5%)
Diploma	0(0%)	12(10.0%)	4(5.9%)
Total	**17(100%)**	**125(100%)**	**68(100%)**

Table 4.4 shows that majority (76.5%) of the principals had masters as their highest level of education, most (78%) and 76.5% of head of departments and class teachers respectively had degrees. This shows that they all had the required education to teach in secondary schools and integrate ICT.

4.3.4: Duration of stay in the current school

The duration of stay in the current school is presented in table 4.5.

Table 4.5: Duration of stay in the current school

Years	Principals	Head of department	Class teachers
Below one year	0(0%)	20(16.0%)	6(8.8%)
1-5 years	6(35.3%)	54(44.0%)	24(35.3%)
6 -10 years	8(47.6%)	43(34.0%)	14(20.6%)
11 – 15 years	2(11.5%)	5(4.0%)	12(17.6%)
More than 15 years	1(5.3%)	3(2.0%)	12(17.6%)
Total	**17(100%)**	**125(100.0%)**	**68(100%)**

Table 4.5 shows that majority of principals (47.6%), head of departments (44.0%) and class teachers (35.5%) had stayed in the current station for 6 -10 years, 1-5 years and 1- 5 years respectively. This means they had an experience which would help them give reliable information about ICT integration.

4.4 The state of ICT infrastructure in public secondary school administration

The first objective for this study was to assess the state of ICT infrastructure in secondary schools in Kibwezi sub – county. The principals, heads of departments and class teachers were posed with items that sought the same. Data was presented in the preceding section.

4.4.1 Number of computers.

The researcher sought to establish the number of computers in the school. When principals were asked to indicate the same, their responses were presented in Table 4.6.

Table 4.6: Principals responses on the number of computers in the school

Responses	Frequency	Percent
None	4	23.5
Below 5 computers	5	29.4
6-10 Computers	1	5.9
11-15 Computers	5	29.4
15-20 Computers	2	11.8
Total	**17**	**100.0**

Table 4.6 shows about 53% of the schools had less than 5 computers. This seems to be a big embedment towards ICT integration since computers are the tools towards integration of ICT.

4.4.2 Functioning of the computers

The researcher further sought to establish whether the computers were functional. The responses were presented in Table 4.7.

Table 4.7 Responses on whether school computers were functional

Respondents	Strongly agree		Agree		Undecided		Disagree		Strongly disagree	
	F	%	F	%	F	%	F	%	F	%
Principals	2	11.8	3	17.6	3	17.6	3	17.6	6	35.3
Head of department	12	10	33	26.0	15	12.0	5	4.0	60	48.0
Class teachers	18	26.5	16	23.5	4	5.9	8	11.8	22	32.4
Total responses	**32**	**16%**	**52**	**25%**	**22**	**11%**	**16**	**8%**	**88**	**42%**

Data shows that majority (42%) of the respondents strongly disagreed that most of the computers in their schools are functional. These includes 48.0%, heads of department, 35.3% principals and 32.4% class teachers. However, the study also shows that 26.5% of class teachers, 11.8% of principals and 10.0% of head of department had strongly agreed that computers in the schools were functional. This shows that most of the respondents were not satisfied with the state of the ICT infrastructure since the computers are the key tools for ICT integration. This agrees with Mumtaz (2000) who argued that most of the schools could not acquire new computers and computer software due to lack of funds. This is why most principals were not using the computers in their administration as the computers were not able to support current software.

4.4.3 Internet Connectivity

To examine whether schools were connected to the internet, Principals, Heads of departments and Class teachers were asked to indicate whether their schools had internet connectivity. The results are presented in table 4.8

Table 4.8 Responses on whether the schools had internet connectivity

Respondents	**Yes**		**No**	
	F	**%**	**F**	**%**
Principals	8	47.1	9	52.9
Head of department	40	32.0	85	68.0
Class teachers	19	27.9	49	72.1

Majority of Principals 9 (52.9%), majority of heads of departments 85(68.0%) and majority of class teachers 49(72.1%) indicated that their schools were not connected with internet. This implies that the school could experience problems in ICT as they could not be in a position to research education materials, display their results online and communication could be difficult due to lack of internet connection.

4.4.4 Power Supply

The researcher further sought to examine whether school had insufficient or irregular power supply.

Table 4.9 Responses on whether school had insufficient or irregular power supply.

Respondents	Strongly agree		Agree		Undecided		Disagree		Strongly disagree	
	F	%	F	%	F	%	F	%	F	%
Principals	3	17.6	3	17.6	2	11.8	5	29.4	4	23.5
Heads of departments	38	30.4	10	8.0	2	1.6	35	28.0	40	32.0
Class teachers	18	26.5	2	2.9	6	8.8	18	26.5	24	35.3

Data shows that 5(29.4%) of principals disagreed that they had insufficient or irregular power supply, 38(30.4%) of head of department strongly agreed with the statement while 24(35.3%) of class teachers strongly disagreed that they had insufficient or irregular power supply.

4.5 Level of ICT integration in public secondary school administration

The second objective for this study was to determine the level of ICT Integration in Public secondary school administration in Kibwezi Sub – county, Makueni County. Findings on the same item are presented in the following section: The researcher sought to establish the main use of the Computers by principals, head of department and class teachers. The responses were presented in Table 4.10

Table 4.10: Main use of computers in schools

Use	Frequency	Percentage
Typing materials	105	50%
Browsing internet	44	21%
Internet communication	30	14%
Research	20	10%
Keeping records	11	5%
Total	**210**	**100%**

Tables 4.10 revealed that, majority (50%) of schools use the computers for typing materials only. These materials include; examinations, letters, and memos among others. This was followed by browsing (21%) and internet communication (14%) implying less use of internet in most of the schools. The least use on ICT was record keeping (5%) implying most schools are still relying on the old methods of information keeping where files were mostly used. Further the researcher required the principals HoDs and class teachers to indicate the frequency of use of ICT. The responses were presented in Table 4.11.

Table 4.11 Frequency of principals' use of ICT

ICT applications	Everyday		Once or twice a week		Once or twice a month		Never	
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**
To find information on administration	2	11.8	5	29.4	4	23.5	6	35.3
To develop administration skills and strategies	2	11.8	2	11.8	5	29.4	8	47.1
Compare materials presented in different media	0	0	2	11.8	6	35.3	9	52.9
Process and analyze administration data	2	11.8	4	23.5	4	23.5	7	41.2
Individualized interaction with the teachers	2	11.8	0	0	6	35.3	9	52.9
Deliver educational resources to teachers	2	11.8	0	0	6	35.3	9	52.9
Entertainment to engage and motivate teachers	0	0	1	5.9	2	11.8	14	82.4
Provide self guided materials to teachers to support learning	2	11.8	0	0	8	47.1	7	41.2
Mean responses	**2**	**11.8**	**2**	**11.8**	**6**	**35.3**	**7**	**41.2**

Table 4.11 shows that majority (41.2%) of principals never used ICT in their administration. This was followed by those who used ICT once or twice a month (35.3%). Majority (82.4%) of principals never used ICT in entertainment to engage and motivate teachers while (52.9%) of principals never used ICT to develop administration skills and for strategies and Individualized interaction with the teachers. However 47.1%) of principals used ICT once or twice a month in providing self guided materials to teachers to support learning and to develop administration skills and strategies. 35.3% of principals never used ICT to find information on administration, in interacting with the teachers and in delivering educational resources to teachers. This shows that principals offered stiff resistance to change involving technology intervention, technology integration and technology incorporation.

When Heads of Department were asked to indicate their use of ICT, they responded as Table 4.12.

Table 4.12: Distribution of Head of Department according to Frequency of use of ICT

ICT applications	Everyday		Once or twice a week		Once or twice a month		Never	
	F	%	F	%	F	%	F	%
To find information on administration	10	8.0	20	16.0	23	18.4	72	57.6
To develop administration skills and strategies	15	12.0	23	18.4	30	24.0	58	45.6
Compare materials presented in different media	8	6.4	28	22.4	8	6.4	81	64.8
Process and analyze administration data	3	2.4	12	9.6	63	50.4	47	37.6
Individualized interaction with the teachers	8	6.4	10	8.0	25	20.0	82	65.6
Deliver educational resources to teachers	12	9.6	10	8.0	18	14.4	85	68.0
Entertainment to engage and motivate students	5	4.0	5	4.0	18	14.4	97	77.6
Provide self guided materials to teachers to support learning	18	14.4	5	4.4	25	20.0	77	61.6
Mean responses	**10**	**7.9**	**14**	**11.3**	**26**	**21.0**	**75**	**59.8**

Table 4.12 shows that majority (59.8%) of head of departments never used ICT in their departmental management. However this percentage is higher than that for Principals which stands at 41.2%. Most of the areas where ICT was never applied included; entertainment to engage and motivate students (77.6%), deliver educational resources to teachers and Individualized interaction with the teachers each with (68% and 65.6%). However it was noted that majority (50.4%) of the Head of departments were using ICT to process and analyze administration data once or twice per month.

Table 4.13 Distribution of class teachers according to frequency of use of ICT

ICT applications	Everyday		Once or twice a week		Once or twice a month		Never	
	F	%	F	%	F	%	F	%
To find information on administration	2	2.9	4	5.9	16	23.5	46	67.6
To develop administration skills and strategies	2	2.9	14	20.6	12	17.6	40	58.8
Compare materials presented in different media	2	2.9	10	14.7	28	41.2	28	41.2
Process and analyze administration data	0	0.0	8	11.8	6	8.8	54	79.4
Individualized interaction with the teachers	4	5.9	4	5.9	16	23.5	44	64.7
Deliver educational resources to teachers	4	5.9	14	20.6	8	11.8	42	61.8
Entertainment to engage and motivate students	0	0.0	8	11.8	6	8.8	54	79.4
Provide self guided materials to teachers to support learning	0	0.0	8	11.8	20	29.4	40	58.8
Mean responses	**2**	**2.6**	**8**	**12.9**	**14**	**20.6**	**44**	**63.9**

The mean responses in Table 4.13 show that majority (63.9%) of class teachers never used ICT in their school work. This percentage is higher than for the principals and Head of departments. Majority of these (79.4%) never used ICT in analyzing administrative data which includes processing students' results. This was followed by 67.6% who never used ICT to find information on administration. However 41.2% of the class teachers used ICT to compare materials presented in different media once or twice per month.

The results agrees with Pflaum (2004) who argued that though some schools have had some computers, they did not have teachers who were ready to use them or an administrator committed to technology. Makewa et al (2013) also argued that school principals need to be positive in order to support reasonable change that affect overall school administration and performance. Since the principal is the key actor in the process of reform and redefinition, they should encourage teachers to work with computers. Moyle (2008) observes that many school leaders however are unsure of how data can be used to inform their work, what decisions concerning technologies should make or what type of decisions require their direct oversight. According to Truceno (2005) the adoption and use of the ICTs in education institutions in developing countries remains very limited despite a decade of large investments in information and communication technologies.

The researcher further sought to establish the mean difference between the use of ICT and integration in secondary school administration by testing the hypothesis.

A mean difference between responses on level of ICT integration in secondary school administration was carried out. Since this is about comparison between means, ANOVA was deemed the right statistical tool. The responses were presented in Table 4.14.

Table 4.14 ANOVA Mean difference between level of ICT integration

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.437	1	0.609	21.474	0.014
Within Groups	9.982	209	0.113		
Total	12.419	210			

Table 4.14 revealed that the ANOVA results are F (1, 209) = 21.474, p< 0.05). We do therefore reject the hypothesis and conclude that there is a significant difference between mean responses level of ICT integration and integration in secondary school administration.

4.6 Influence of ICT infrastructure on ICT integration in secondary school administration

The third objective of this study was to assess the influence of ICT infrastructure on ICT integration in secondary school administration. To achieve this objective, the respondents were required to indicate their opinion concerning the given statements on a 5- Likert scale where; SA-Strongly Agree, A - Agree, U – Undecided, D -Disagree, and SD- Strongly Disagree.

Table 4.15 Influence of ICT infrastructure on ICT integration in secondary school administration.

Statement	SA	A	U	D	SD	Total
ICT improve general administration	114(56%)	50(23%)	5(2%)	29(14%)	12(6%)	**210(100%)**
ICT stimulates creativity.	75(36%)	48(23%)	5(2%)	47(23%)	35(17%)	**210(100%)**
ICT reduces personal interaction between administrators and their staff.	58(28%)	17(8%)	13(6%)	57(28%)	65(32%)	**210(100%)**
ICT use in schools can relieve administrators of routine duties.	49(23%)	13(6%)	13(6%)	66(31%)	69(33%)	**210(100%)**
ICT can be used successfully with activities which demand creative activities.	71(35%)	63(31%)	11(5%)	50(25%)	11(5%)	**210(100%)**
Use of ICT facilitate communication between schools and stakeholders.	83(42%)	47(23%)	9(4%)	51(25%)	15(7%)	**210(100%)**
Use of ICT facilitate easy record keeping.	67(33%)	91(45%)	7(3%)	31(15%)	11(5%)	**210(100%)**
Integration of ICT improve administrators critical thinking.	71(34%)	43(21%)	13(6%)	48(23%)	35(17%)	**210(100%)**

Table 4.15 shows that majority of the respondents 114(56%) strongly agreed that ICT improves general administration activities; majority of Principals, HODS and Class teachers 71 (35%) strongly agreed that ICT can be used successfully with activities which demand creativity. Majority of respondents 83 (42%) also strongly agreed that use of ICT facilitates easy communication between schools and other stakeholders. The findings are in agreement with study by Zarman, et al (2011) which reported that, when used appropriately, ICT can help strengthen the importance of education to increasing networked society.

Majority of respondents 66(31%) disagreed and 69(33%) strongly disagreed with the statement that ICT use can relieve administrators of routine duties. Further, the respondents strongly disagreed with the statement that use of ICT almost reduces personal interaction between administrators and their staff. The researcher further sought to establish if there is significant association between infrastructure and ICT integration in secondary schools administration by testing the hypothesis;

H_0: There is no significant association between ICT infrastructure and integration secondary schools administration.

H_1: There is a significant association between ICT infrastructure and integration secondary schools administration.

This hypothesis was tested using Chi-square test which is the best tool for testing association between independent and dependent variable. The results were presented in Table 4.16.

Table 4.16 Chi-square results for infrastructure and ICT integration in secondary school administration

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	71.200a	3	.000
			.000
Likelihood Ratio	70.066	3	.000
Linear-by-Linear Association	69.124	1	
No of Valid Cases	210		

Table 4.16 revealed that the (χ^2= 71.20, $p < 0.05$). We do therefore reject the hypothesis and conclude that there is a significant association between ICT infrastructure and ICT integration secondary schools administration. This means that the schools with ICT infrastructure have a high likelihood of adopting ICT in their administration. The results indicated that ICT infrastructure has a positive influence in secondary school administration.

4.7 Challenges facing ICT integration in secondary school administration.

The fourth objective was to investigate the challenges facing ICT integration in secondary school administration. The researcher posed questions to Principals, Head of Departments and Class teachers on the same item. First the principals were required to indicate how they acquired their computers. The responses were presented in Table 4.17.

Table 4.17 Principals responses on how they acquired computers

Responses	Frequency	Percent
Do not have computers	5	29.4
Direct purchases through parents contribution	6	35.3
Through government sponsorships	5	29.4
Donation of stakeholders to the school	1	5.9
	17	**100.0**

Table 4.17 shows that, 35.3% of principals acquired computers through purchasing (parents contribution) 29.4% of principals through government sponsorships 5.9% of the principals acquired computers though donations of stakeholders to the school. This shows the reasons why the adoption and use of the ICTs in education institutions is limited, as the burden is put to the parents.

Asked to indicate the estimate budget of ICT in the school, the principals responded as table 4.18

Table 4.18: Principals responses on estimate budget of ICT in the school

Ksh	Frequency	Percent
No budget	7	41.2
150,000	1	5.9
100,000	5	29.4
50,000	2	11.8
20,000	1	5.9
10,000	1	5.9
Total	**17**	**100.0**

Table 4.18 shows that majority (41.2%) of the principals did not have any budget on ICT in their schools. This shows that no funds were allocated for ICT infrastructure and that was the reason why integration was low. However 29.4% of principals had an estimate budget of Ksh. 100,000 on ICT, 5.9% of principals had a budget of Ksh. 10,000 and 150,000 each. The principals further added that they financed the budget though parents' fees, administration cost vote heads and through tuition account. They further revealed that ICT budget was financed by PA funds and government funds and from the school operation account. This agrees with Farrell (2007) who indicated that schools do not budget adequately the use of ICTs, which includes the purchase of computers and software. Twining (2002) also argued that there has been a high level of investment in information and communications technology (ICT) in education over a prolonged period of

time throughout the ‘developed world’ Inappropriate planning, lack of training, insufficient budget and shortage of resources are some of the reasons why technology integration has not been successful in the some parts of the world.

The researcher further sought to examine whether the government grants any extra funds for the ICT education at the school. Table 4.19 tabulates principals, head of department and class teachers’ responses.

Table 4.19: Responses on whether the government grants any extra funds for the ICT

Respondents	**Yes**		**No**	
	F	**%**	**F**	**%**
Principals	2	11.8	15	88.2
Head of department	25	20.0	100	80.0
Class teachers	14	20.6	54	79.4

Majority (88.2%) of principals, majority (80.0%) of head of department, majority (79.4%) of class teachers indicated that the government does not grant any extra funds for the ICT education at the school while (11.8% of principals, (20.0%) of heads of department, (20.6%) of class teachers indicated that the government grants extra funds for the ICT education at the school while asked whether teacher(s) were given a chance to learn how to integrate ICT into their administrative practices, they responded as Table 4.20

Table 4.20 Responses on whether the teacher(s) were given a chance to learn to integrate ICT in to their administrative practices.

Respondents	Yes		No	
	F	%	F	%
Principals	8	47.1	9	52.9
Head of department	53	42.0	72	58.0
Class teachers	30	44.1	38	55.9

Majority (52.9%) of principals, majority (58.0%) of head of department and majority (55.9%) of class teachers indicated that teacher(s) were not given a chance to learn to integrate ICT into their administrative practices.

The study further revealed that ICT was not fully utilized in research class room teaching, video- conferencing, sending online results to parents in financial management and communication. It was also indicated that ICT was not fully utilized in administration, browsing, examination processing, assignments preparation, entertainment and motivating students, in E-learning, teaching and co-ordinating activities in the schools. Class teachers' suggested that computer to be among the examinable subjects in the curriculum in their schools.

The researcher sought to establish the expertise of principals in Computer programmes. Table 4.21 tabulates their responses.

Table 4.21: Principals expertise on ICT (Computer Programmes)

Computer programmes	Very good		Good		Average		Weak		Poor	
	F	%	F	%	F	%	F	%	F	%
Basic computer parts and functions (opening, closing and saving files, opening and renaming files, etc.)	4	23.5	9	52.9	1	5.9	2	11.8	1	5.9
Using PowerPoint for presentations in the classroom for a variety of administration areas	2	11.8	4	23.5	4	23.5	5	29.4	2	11.8
Using publisher software to create a class newsletter and student publications	1	5.9	2	11.8	3	17.6	3	17.6	8	47.1
Use of E-Mail for working together with other tutors and teacher trainees on issues related to administration	1	5.9	6	35.3	4	23.5	4	23.5	2	11.8
Developing productivity tools such as tests and mark sheets	1	5.9	5	29.4	6	35.3	3	17.6	2	11.8
Searching the Internet for good multimedia lessons, activities and resources as well as pedagogical issues	2	11.8	3	17.6	4	23.5	6	35.3	2	11.8

Majority (52.9%) of principals were good in basic computer parts and functions (opening, closing and saving files, 29.4% of principals were weak in using PowerPoint for presentations in the classroom for a variety of administration areas. Data further shows that 35.3% of principals were good in

using of E-Mail for working together with other tutors and teacher trainees on issues related to administration, the same number of principals were average in developing productivity tools such as tests and mark sheets and were weak in searching the internet for good multimedia lessons, activities and resources as well as pedagogical issues. 8(47.1%) of principals were poor in using publisher software to create a class newsletter and students publications. The frequency at which the principals used technology would be as a result of inappropriate access to technology infrastructure which was a factor in the effective technology integration process.

Table 4.22 presents head of department responses on the same item.

Table 4.22: Head of department expertise on ICT

ICT programmes	Very good		Good		Average		Weak		Poor	
	F	%	F	%	F	%	F	%	F	%
Basic computer parts and functions (opening, closing and saving files, opening and renaming files, etc.)	37	29.6	33	26.4	10	8.0	3	2.4	42	33.6
Software applications-MS Office, MS Word, Excel, PowerPoint, Internet and E-Mail, Graphics and drawing, Databases and data entry, Desktop publishing, Video production and editing	6	4.8	20	16.0	25	20.0	24	19.2	50	40.0
Using PowerPoint for presentations in the classroom for a variety of administration areas	11	8.8	24	19.2	10	8.0	25	20.0	55	44.0
Using Publisher software to create a class newsletter or teachers newsletter and students publications	5	4.0	7	5.6	25	20.0	30	24.0	58	46.4
Use of E-Mail for working together with other tutors and teacher trainees on issues related to administration	13	10.4	9	7.2	28	22.4	25	20.0	50	40.0
Developing productivity tools such as tests and mark sheets	8	6.4	35	28.0	17	13.6	10	8.0	55	44.0
Searching the Internet for good multimedia lessons, activities and resources as well as pedagogical issues	14	11.2	15	12.0	28	22.4	13	10.4	55	44.0

Table 4.22 shows that 33.6% of head of department were poor in basic computer parts and functions (opening, closing and saving files, opening and renaming files, etc.), 40.0% of head of department were poor in Software applications-MS Office, MS Word, Excel, PowerPoint and in use of E -Mail for working together with other tutors and teacher trainees on issues related to administration. Data further shows that 44.0% of head of department were poor in using PowerPoint for presentations in the classroom for a variety of administration areas, developing productivity tools such as tests and mark sheets and in searching the Internet for good multimedia lessons, activities and resources as well as pedagogical issues while 46.4% of head of department were poor in using Publisher software to create a class newsletter or teachers newsletter and students publications.

Table 4.23: Class Teacher's expertise on ICT

ICT programmes	Very good		Good		Average		Weak		Poor	
	F	%	F	%	F	%	F	%	F	%
Basic computer parts and functions (opening, closing and saving files, opening and renaming files, etc.)	5	7.4	40	50.9	2	3.9	1	1.5	20	29.4
Software applications-MS Office, MS Word, Excel, PowerPoint, Internet and E-Mail, Graphics and drawing, Databases and data entry, Desktop publishing, Video production and editing	4	5.9	14	20.9	7	10.3	20	29.4	23	33.5
Using PowerPoint for presentations in the classroom for a variety of administration areas	1	1.5	3	4.4	10	14.7	21	30.9	33	48.5
Using Publisher software to create a class newsletter or teachers newsletter and students publications	1	1.5	4	5.9	8	11.8	10	14.7	45	66.1
Use of E-Mail for working together with other tutors and teacher trainees on issues related to administration	2	2.9	4	5.9	11	16.2	20	29.4	31	45.6
Developing productivity tools such as tests and mark sheets	6	8.8	8	11.8	8	11.8	16	23.5	30	44.1
Searching the Internet for good multimedia lessons, activities and resources as well as pedagogical issues	8	11.8	10	14.7	12	17.6	10	14.7	28	41.2

Table 4.23 shows that 50.9% of teachers were good in basic computer parts and functions (opening, closing and saving files, opening and renaming files.) This percentage is higher than that of the Heads of departments which was at 26.4%. 33.8% of Class teachers were poor in software applications – Ms word, excel, power point and in use of email. 66.1% of the teachers were poor in using publisher software to create a class news letter or teacher news letter and students publications. This is an indication that the teachers lacked knowledge on skills about ICT.

The study found out that the schools faced challenges of lack of appropriate skills and knowledge about ICT, lack of ICT literate staff and lack of funds to hire ICT experts. There were no ICT equipment and those available had high cost of maintenance and high cost of electricity. There was network problem in the region hence making it difficult for staff to use internet facilities. This implies that poor infrastructure remains a major obstacle in many developing states.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

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

5.2 Summary of the findings of the study

The purpose of this study was to assess ICT integration in public secondary school administration in Kibwezi Sub-county, Makueni County, Kenya. The study was guided by four research objectives; to asses the state of ICT infrastructure in public secondary school administration, to determine the level of ICT integration in Public secondary school Kibwezi Sub – county; to assess the influence of ICT infrastructure on ICT Integration in public secondary school administration in Kibwezi Sub-county; to investigate the challenges facing ICT integration in secondary school administration in Kibwezi Sub – county, Makueni County.

In this study, data was collected from a sample of 17 principals, 125 head of department and 68 class teachers. The study found that most secondary schools (53%) had less than 5 computers. This seems to be a big embedment towards ICT integration since computers are the tools towards integration of ICT.

The study also found that, majority of respondents 52.9% of principals reported that their schools were not connected to the internet. 42% of the

respondents also strongly agreed that their computers were functional. Further the study revealed that there is a significant association between ICT infrastructure and ICT integration in secondary schools administration (χ^2= 71.20, $p < 0.05$).

The study also revealed that majority that is 50% of schools used the computers for typing materials only. These materials includes; examinations, letters, and memos among others. This was followed by browsing (21%) and internet communication (14%) implying less use of internet in most of the schools. The least use on ICT was record keeping (5%) implying most schools are still relying on the old methods of information keeping where files were mostly used. The study also revealed that majority (41.2%) of principals never used ICT in their administration, 54% of head of departments never uses ICT in their departmental management and 64.6% of class teachers never used ICT in their school work. The ANOVA results are F (1,100) = 21.474, $p< 0.05$). which implied that there is a significant difference between mean responses on use of ICT and integration in secondary school administration.

The study established that 35.3% of principals acquired computers through purchasing using parents' contribution. It was also established that majority (41.2%) of the principals did not have any budget on ICT in their schools. This shows the reason why the integration of ICT was low. However 29.4% of principals had an estimate budget of Ksh. 100,000 on ICT, 15.9% of principals had a budget of Ksh. 10,000 and 50,000 each. Majority (52.9%) of principals, majority (58.0%) of head of department and majority (55.9%) of class teachers

indicated that teacher(s) were not given a chance to learn to integrate computers into their administrative practices. Majority (52.9%) of principals were good in basic computer parts and functions (opening, closing and saving files, Majority of class teachers (50.9%) were good in basic computer parts. So functions (opening, closing and saving files).This percentage was higher than that of heads of departments which was at 26.4% majority class teachers 29.4% of principals were weak in using PowerPoint for presentations in the classroom for a variety of administration areas.

5.3 Conclusions from the study

Based on the findings of this study, the researcher concluded that; many schools did not have adequate number of computers, there was lack of internet connectivity, schools have insufficient or irregular power supply. This was because there is high cost of hardware and software and that many schools have very old computers. This was an impediment towards implementation of ICT in secondary schools. The researcher also concluded that many schools use the computers for typing materials only. These materials include; examinations, letters, and memos among others. This implies that there is less use of internet in most schools. It was finally concluded that, the challenges facing adoption of ICT in many schools includes; lack of enough computers, lack of computer knowledge among many principals and teachers, lack of internet connectivity and lack of power among others.

5.4 Recommendations from the study

Based on the findings of this study, the researcher made the following recommendations.

i. The schools should have a clear policy for the implementation of ICT infrastructure for administrative purposes.

ii. The government should ensure that secondary schools are supplied with electricity.

iii. The schools should have policies put in place on school staff development both the teaching and non teaching staff.

iv. The government should support the use of ICT in school administration and provide the schools with financial means and equipment.

5.5 Suggestion for further research

The purpose of this study was to assess ICT integration in secondary schools administration in public schools in Kibwezi Sub-county, Makueni County, Kenya. Further research can be done on the following;

i. The impact of the application of Information Communication Technology on the performance of public secondary schools in Kenya.

ii. The impact of using computer-assisted learning in achieving learning objectives in specific subjects.

iii. Investigate the role of the school managers' attitude in influencing sustainability of secondary school ICT integration.

iv. The role of Quality Control and Standards directorate in implementing the National ICT Strategy for Education.

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APPENDICES

APPENDIX A: LETTER OF TRANSMITTAL

South Eastern Kenya University

Mtitio Andei Campus

Department of educational

Administration and Planning

P.O. Box 170-90200,
Mtitio Andei.

The Principal

_____

Dear Sir/Madam,

RE: REQUEST FOR DATA COLLECTION.

I am a student from the South Eastern Kenya University undertaking a research study on Integrating Information Communication Technology in secondary school administration in public schools in Kibwezi Sub-county, Makueni County.

I am kindly requesting for your assistance in collecting data from your school for Masters in Educational Administration and Planning. The co-operation of your teachers, Heads of Departments and Class teachers will highly be appreciated.

Thanks for your co-operation.

Annastasia Ndunge Musau
STUDENT
South Eastern Kenya University

APPENDIX B

PRINCIPAL'S QUESTIONNAIRE

This questionnaire aims at getting your opinion on the ICT integration in secondary schools administration in public schools in Kibwezi Sub-county, Makueni County You do not have to write your name as your identity will remain confidential. Answer all the questions by indicating your choice by a tick (√) where appropriate or fill in the blank spaces.

Section A: Demographic Information

1. Please indicate your gender

Female ( ) Male ( )

2. Kindly indicate your age in years

20 – 25 years ( ) 26 – 30 years ( )

31 – 35 years ( ) 36 – 40 years ( )

41 – 50 years ( ) Above 50 years ( )

3. What is your academic qualification?

Masters ( ) B/Ed Degree ( ) Diploma ( )

'O' Level ( )

4. For how many years have you been teaching?

Below one year ( ) 1-5 years ( )

6 -10 years ( ) 11 – 15 years ( )

More than 15 years ( )

5. For how long have you been a Principal in this school?

Below one year ( ) 1-5 years ( )

5 -10 years ( ) 11 – 15 years ( )

6. Category of the school

Extra County ( ) County boarding /day ( )

Sub District County boarding/ Day ( )

Section B: ICT infrastructure on public secondary school administration

7. How many computers do you have in your school?

Below 5 computers ( ) 6-10 Computers ( )

11-15 Computers ( ) 5-20 Computers ( )

More than 20 computers ( )

8. Is your school connected to the internet?

Yes ( ) No ( )

9. Please indicate your level of agreement or disagreement by ticking (٧) the appropriate response using the following key.

SA -Strongly Agree A - Agree U - Undecided D -Disagree

SD- Strongly Disagree

Statement	SA	A	U	D	SD
My school has adequate number of computers					
My school lacks internet connectivity					
My school has insufficient or irregular power supply					
My computers are functional					

Section C Levels of ICT integration in public secondary school administration

10. What is the main use of ICT?

Browsing ( ) Research ( )

Analysis of examinations ( ) Issuance of books ( )

Preparation of teaching- learning materials ( )

Recording class attendance ( )

Preparation of Assignments and tests ( )

11. Does your school have ICT policy and plan?

Yes ( ) No ( )

Yes ( ) No ( )

12. Indicate the frequency at which you use the following applications:

Application	**Everyday**	**Once or twice a week**	**Once or twice a month**	**Never**

To find information on administration				
To develop administration skills and strategies				
Compare materials presented in different media				
Process and analyze administration data				
Individualized interaction with the teachers				
Deliver educational resources to teachers				
Entertainment to engage and motivate teachers				
Provide self guided materials to teachers to support learning				

Section D: Influence of ICT infrastructure on ICT integration in public secondary school Administration.

13. Please indicate your level of agreement or disagreement by ticking (٧) the appropriate response using the following key.

SA - Strongly Agree A- Agree U - Undecided D - Disagree SD- Strongly Disagree

Statement	SA	A	U	D	SD
ICT improve general administration activities					
ICT would stimulate creativity in administration					

Use of ICT almost always reduces personal interaction between administrators and their staff.					
ICT use in schools can relieve administrators of routine duties.					
ICT can be used successfully with activities which demand creative activities.					
Use of ICT facilitate easy communication between schools and other stakeholders.					
Use of ICT facilitate easy record keeping.					
Integration of ICT can improve administrators' critical thinking.					

Section D: Challenges facing ICT integration in secondary school administration.

14. How did you acquire computers?

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17. What is the estimate budget of ICT in your school?

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18. How do you finance the budget?

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19. Does the government grant any extra funds for the ICT education at your school

Yes ( ) No ( )

20. Are the teacher(s) is given a chance to learn to integrate ICT into their administrative practices?

Yes ( ) No ( )

21. In which areas do you think ICT is not fully utilized?

……

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22. Please rate your expertise in the use of the following

ICT Competencies	**Very Good**	**Good**	**Average**	**Weak**	**poor**
Basic computer parts and functions (opening, closing and saving files, opening and renaming files, etc.)					
Using PowerPoint for presentations in the classroom for a variety of administration areas					
Using Publisher software to create a class newsletter or teachers newsletter and students publications					
Use of E-Mail for working together with other tutors and teacher trainees on issues related to administration					
Developing productivity tools such as tests and mark sheets					
Searching the Internet for good multimedia lessons, activities and resources as well as pedagogical issues					

23. What challenges do you face in use of ICT.

……

……

Thank you for your participation

APPENDIX: C

HEAD OF DEPARTMENT QUESTIONNAIRE

This questionnaire aims at getting your opinion on the ICT integration in secondary schools administration in public schools in Kibwezi Sub-county, Makueni County You do not have to write your name as your identity will remain confidential. Answer all the questions by indicating your choice by a tick (√) where appropriate or fill in the blank spaces.

Section A: Demographic Information

1. Please indicate your gender

Female ( ) Male ( )

2. Kindly indicate your age in years

20 – 25 years ( ) 26 – 30 years ( )

31 – 35 years ( ) 36 – 40 years ( )

41 – 50 years ( ) Above 50 years ( )

3. What is your academic qualification?

Masters ( ) B/Ed Degree ( ) Diploma ( )

'O' Level ( )

4. For how many years have you been teaching?

Below one year ( ) 1-5 years ( )

6 -10 years ( ) 11 – 15 years ( )

More than 15 years ( )

5. For how long have you been a head of department in this school?

Below one year ( ) 1-5 years ( )

5 -10 years ( ) 11 – 15 years ( )

Section B: ICT infrastructure on secondary school administration

6. Is your school connected to the internet?

   Yes ( ) No ( )

7. Please indicate your level of agreement or disagreement by ticking (√) the appropriate response using the following key.

SA -Strongly Agree A - Agree U - Undecided D -Disagree SD-Strongly Disagree

Statement	SA	A	U	D	SD
My school has adequate number of computers					
My school lacks internet connectivity					
My school has insufficient or irregular power supply					
Our computers are functional					

Section C: Levels of ICT integration in secondary school administration

8. What is the main use of ICT?

   Browsing ( ) Research ( )

   Analysis of examinations ( ) Issuance of books( )

   Preparation of teaching- learning materials ( )

   Recording class attendance ( )

   Preparation of Assignments and tests ( )

9. Does your school have ICT policy and plan?

   Yes ( ) No ( )

10. Indicate the frequency at which you use the following applications:

Application	Everyday	Once or twice a week	Once or twice a month	Never
To find information on administration				
To develop teaching skills and strategies				
Compare materials presented in different media				
Process and analyze students' data				
Individualized interaction with the teachers				
Deliver educational resources to students				
Entertainment to engage and motivate students				
Provide self guided materials to students to support learning				

Section D: Influence of ICT infrastructure on ICT integration in secondary school Administration.

13. Please indicate your level of agreement or disagreement by ticking (ϒ) the appropriate response using the following key.

SA -Strongly Agree A - Agree U - Undecided D -Disagree SD- Strongly Disagree

Statement	SA	A	U	D	SD
ICT improve general administration activities					
ICT would stimulate creativity in administration					
Use of ICT almost always reduces personal interaction between administrators and their staff.					
ICT use in schools can relieve administrators of routine duties.					
ICT can be used successfully with activities which demand creative activities.					
Use of ICT facilitate easy communication between schools and other stakeholders.					
Use of ICT facilitate easy record keeping.					
Integration of ICT can improve administrators critical thinking.					

Section E: Challenges facing ICT integration in public secondary school administration.

14. Does the government grant any extra funds for the ICT education at your school

Yes ( ) No ( )

15. Are the teacher(s) given chance to integrate ICT into their administrative practices?

Yes ( ) No ( )

16. In which areas do you think ICT is not fully utilized?

……

……

……

……

15. Please rate your expertise in the use of the following

ICT Competencies	Very Good	Good	Average	Weak	poor
Basic computer parts and functions (opening, closing and saving files, opening and renaming files, etc.)					
Software applications-MS Office, MS Word, Excel, PowerPoint, Internet and E-Mail, Graphics and drawing, Databases and data entry, Desktop publishing, Video production and editing					
Using PowerPoint for presentations in the classroom for a variety of administration areas					
Using Publisher software to create a class newsletter or teachers newsletter and students publications					
Use of E-Mail for working together with other tutors and teacher trainees on issues related to administration					
Developing productivity tools such as tests and mark sheets					
Searching the Internet for good multimedia lessons, activities and resources as well as pedagogical issues					

Thank you for your participation

APPENDIX D

CLASS TEACHER'S QUESTIONNAIRE

This questionnaire aims at getting your opinion on the ICT integration in secondary schools administration in public schools in Kibwezi Sub-county, Makueni County You do not have to write your name as your identity will remain confidential. Answer all the questions by indicating your choice by a tick (√) where appropriate or fill in the blank spaces.

Section A: Demographic Information

1. Please indicate your gender

Female ( ) Male ( )

2. Kindly indicate your age in years

20 – 25 years ( ) 26 – 30 years ( )

31 – 35 years ( ) 36 – 40 years ( )

41 – 50 years ( ) Above 50 years ( )

3. What is your academic qualification?

Masters ( ) B/Ed Degree ( )

Diploma ( ) 'O' Level ( )

4. For how many years have you been teaching?

Below one year ( ) 1-5 years ( )

6 -10 years ( ) 11 – 15 years ( )

More than 15 years ( )

5. For how long have you been a teacher in this school?

Below one year ( ) 1-5 years ( )

5 -10 years ( ) 11 – 15 years ( )

Section B: ICT infrastructure on educational administration in secondary schools

6. Is your school connected to the internet?

   Yes ( ) No ( )

7. Please indicate your level of agreement or disagreement by ticking (٧) the appropriate response using the following key.

SA -Strongly Agree A - Agree U - Undecided D -Disagree SD-Strongly Disagree

Statement	SA	A	U	D	SD
My school has adequate number of computers					
My school lacks internet connectivity					
My school has insufficient or irregular power supply					
Our computers are functional					

Section C: Levels of ICT integration in secondary School administration.

8. What is the main use of ICT?

Browsing ( )

Research ( )

Analysis of examinations ( )

Issuance of books ( )

Preparation of teaching- learning materials ( )

Recording class attendance ( )

Preparation of Assignments and tests ( )

9. Does your school have ICT policy and plan?

Yes ( ) No ( )

10. Indicate the frequency at which you use the following applications:

Application	**Everyday**	**Once or twice a week**	**Once or twice a month**	**Never**
To find information on administration				
To develop teaching skills and strategies				
Compare materials presented in different media				
Process and analyze students data				
Individualized interaction with the teachers				
Deliver educational resources to students				
Entertainment to engage and motivate students				
Provide self guided materials to students to support learning				

Section D: Influence of ICT infrastructure on ICT integration in secondary school Administration.

13. Please indicate your level of agreement or disagreement by ticking (٧) the appropriate response using the following key.

SA -Strongly Agree A - Agree U - Undecided D -Disagree SD- Strongly Disagree

Statement	SA	A	U	D	SD
ICT improves general administration activities					
ICT would stimulate creativity in administration					
Use of ICT almost always reduces personal interaction between administrators and their staff.					
ICT use in schools can relieve administrators of routine duties.					
ICT can be used successfully with activities which demand creative activities.					
Use of ICT facilitate easy communication between schools and other stakeholders.					
Use of ICT facilitate easy record keeping.					
Integration of ICT can improve administrators' critical thinking.					

Section E: Challenges facing ICT integration in secondary school administration.

14 Does the government grant any extra funds for the ICT education at your school

Yes ( ) No ( )

15. Are the teacher(s) is given a chances and opportunities to learn to integrate ICT into their classroom practices?

Yes ( ) No ( )

16. In which areas do you think ICT is not fully utilized?

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Thank you for your participation

APPENDIX E

WORK PLAN

Activity Schedule	**July-Aug 2014**	**Sep - Oct 2014**	**Nov-Dec 2014**	**Jan-Feb 2015**	**Mar -Apr 2015**	**May -Jun 2015**	**July 2015**	**July 2015**	**Aug 2015**	**Sep 2015**	**Oct-Jan 2016**
Proposal development and improvement											
Proposal sub mission Proposal defense Proposal correction											
Piloting											
Data collection Data analysis Project writing											
Submission of Project and defense											
Project correction											
Final submission											

APPENDIX F

RESEARCH CLEARANCE CERTIFICATE

THIS IS TO CERTIFY THAT:
MS. ANNASTASIA NDUNGE MUSAU
of SOUTH EASTERN KENYA UNIVERSITY,
0-90138 makindu,has been permitted to
conduct research in *Makueni County*

on the topic: *INTEGRATING INFORMATION COMMUNICATION TECHNOLOGY IN SECONDARY SCHOOL ADMINSTRATION, KIBWEZI SUB - COUNTY*

for the period ending:
31st December,2015

Permit No : NACOSTI/P/15/8444/7122
Date Of Issue : 29th July,2015
Fee Recieved :Ksh. 1000

.....
Applicant's Signature

.....
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 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) 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

RESEARCH CLEARANCE PERMIT

Serial No. A 6000

CONDITIONS: see back page