INTEGRATION OF INFORMATION COMMUNICATION TECHNOLOGY IN TEACHING OF ENGLISH IN SECONDARY SCHOOLS IN NYAKACH SUB-COUNTY, KISUMU COUNTY, KENYA

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APRIL, 2016
DECLARATION

I confirm that this thesis is my original work and has not been presented for a degree in any other university/institution for certification. The thesis has been complemented by referenced works duly acknowledged. Where text, data, graphics, pictures or tables have been borrowed from other works – including the internet, the sources are specifically accredited through referencing in accordance with anti-plagiarism regulations.

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Technology Kenyatta University
DEDICATION

This work is dedicated to my loving parents the late Wellingtone Keboko and the late Agnes Asaji Keboko, to my spouse Albert, my children Kevin, Linda, Barbara, Don and Tony.
ACKNOWLEDGEMENT

I thank God the Almighty for granting me the ability to begin this study and bring it to a completion. My appreciation also goes to my supervisors, Professor John. N. Kimemia, and Dr. Adelheid M. Bwire, for the valuable and professional advice received from them since this was very instrumental towards the completion of this thesis. I thank my husband, Albert, who stood by me offering both moral and financial support throughout this period.
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# ABBREVIATIONS AND ACRONYMS

<table>
<thead>
<tr>
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<th>Description</th>
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<tbody>
<tr>
<td>BOM</td>
<td>Board of Management</td>
</tr>
<tr>
<td>CAL</td>
<td>Computer Aided Learning</td>
</tr>
<tr>
<td>CD-ROM</td>
<td>Compact Disk Read Only Memory</td>
</tr>
<tr>
<td>CD</td>
<td>Compact Disc.</td>
</tr>
<tr>
<td>DVD</td>
<td>Digital Versatile Disk</td>
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<tr>
<td>ELL</td>
<td>English Language Learners</td>
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<td>EMIS</td>
<td>Education Management Information Society</td>
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<td>GoK</td>
<td>Government of Kenya</td>
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<td>ICT</td>
<td>Information Communication Technology</td>
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<td>ISPS</td>
<td>Internet Service Providers System</td>
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<td>KCSE</td>
<td>Kenya Certificate of Secondary Education</td>
</tr>
<tr>
<td>LAN</td>
<td>Local Area Network</td>
</tr>
<tr>
<td>LCD</td>
<td>Liquid Crystal Display</td>
</tr>
<tr>
<td>MIC</td>
<td>Ministry of Information and Communication</td>
</tr>
<tr>
<td>MOEST</td>
<td>Ministry Of Education Science and Technology</td>
</tr>
<tr>
<td>NEPAD</td>
<td>New Partnership for Africa’s Development</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-Governmental Organization</td>
</tr>
<tr>
<td>NCF</td>
<td>National Curriculum Framework</td>
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<tr>
<td>O - Level</td>
<td>Ordinary level</td>
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<tr>
<td>PA</td>
<td>Parents Association</td>
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<tr>
<td>SCDE</td>
<td>Sub-County Director of Education</td>
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<tr>
<td>UNCST</td>
<td>Uganda National Council for Science and Technology</td>
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<tr>
<td>UNESCO</td>
<td>United Educational, Scientific and Cultural Organization</td>
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VCD : Video Compact Disk
VOIP : Voice over Internet Protocol
VSAT : Very Small Aperture Terminal
WSIS : World Summit on the Information Society
WWW : World Wide Web
ABSTRACT

The problem of this study was that, in spite of the enormous benefits of ICT in everyday life in and out of school, only few schools have embraced the use of ICT in teaching and learning. This study sought to investigate the extent to which teachers were using ICT in the teaching and learning of English in secondary schools in Nyakach Sub-County, Kisumu County. The study also sought to find out which ICT resources were available for the teaching and learning of English and to find out which areas of English teaching and learning these resources could be used. The study was both a quantitative and qualitative research in nature and adopted a descriptive survey design. Descriptive methods were employed in analyzing data using frequencies, percentages and means. Descriptive methods were preferred because they would enable the researcher to meaningfully describe the distribution of scores and measurements using statistics. The study used a combination of stratified, purposive and random sampling procedures. The sample of the study was drawn from the twenty two secondary schools in Nyakach Sub-County which had been given ICT facilities and the respondents were 7 principals of secondary schools, 16 teachers of English and 540 Form Three students. Questionnaires and observation schedules were used to get information from the respondents. Before the instruments were used for collecting data, a pilot study was conducted in two public secondary schools in Nyando Sub-County which had the same characteristics as the sampled schools. The theoretical framework used to guide the study was the Constructivism Theory associated with Bruner, J. Data collected was analyzed using the Statistical Package for Social Sciences (SPSS-Version 19.0). The findings showed that the use of ICT in the teaching and learning of English was still in the formative stage and faced various challenges. The available ICT resources were occasionally used in varied proportions to teach English. This study recommends that ICT be fully integrated in the education system; all teachers of English be trained in the use of ICT, school managers and other stakeholders be sensitized on the need to provide ICT facilities in the schools and lastly, intensive resource mobilization be put in place to enable schools acquire ICT resources.
CHAPTER ONE
INTRODUCTION

1.0 Introduction
This chapter examines the background information to the research problem, presents the statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, scope and limitation of the study, assumptions, theoretical framework, conceptual framework and operational definition of terms.

1.1 Background to the Study
Information Communication Technology covers any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form. These include computers, digital television, email, modems and internet and it mostly deals with how these different resources can combine and work with each other. Information Communication Technology resources can be divided into three groups:

- Information technology that uses computers which have become indispensable in modern society.

- Telecommunication technologies which include telephone (with fax) and the broadcasting of radio and television often through satellites.

- Networking technologies of which the best known is the internet extended to mobile phone technologies, voice over IP telephony (VOIP) satellite communication that is still in infancy.

In this study, ICT in education is taken to mean the use of digital ICT resources to all aspects of teaching and learning of English. The place of English in the Kenyan
education system is crucial. It is a medium of instruction. Students in the Kenyan secondary schools are expected to sit for a minimum of seven subjects at K.C.S.E. level. Out of these, English is one of the three compulsory subjects. Apart from German, French, Arabic and Kiswahili, all the other subjects are taught in English. This therefore means that for students to do well in school they should have a good grasp of the language of instruction, which is English. Knowledge in Information Communication Technology (ICT) is a prerequisite in this modern society where every sphere of our lives is controlled by technology. Information Communication Technology must be integrated in the English curriculum and in the methods used to teach it in order to produce students who are ICT literate and who can function in this twenty first century where technology permeates every sphere of life. Bingimlas (2009) is of the opinion that using ICT resources, especially computers, the internet and other related technologies in the classroom better prepares the learners for the work place where these equipment are used. Students who are able to use ICT effectively have a better chance of being absorbed in the current globalizing job market. It is because of this need to have an ICT literate population that the Government of Kenya (GOK) continues to invest in teaching and learning resources in these areas especially in secondary schools (MOEST, 2005).

Several scholars argue that using ICT in teaching gives the learners a chance to learn how to function better in this digital era. Yelland (2001) argued that the use of old methods of teaching does not prepare the learners for the job market where the knowledge of technology is required. She further argues that for institutions to claim to
be preparing their learners for life in the present century, they must use new technologies in their teaching. Her arguments are in line with Grimus (2000), who posits that when learners are taught ICT skills in primary schools they are in a better position to face new developments with better understanding.

There are several roles which ICT can play in the educational process. First, ICT has the potential to enhance learners’ achievement (Bransford et al. 2000). Secondly, a number of theorists and scholars agree that using ICT in the teaching process makes the learners knowledgeable, reduces face to face instruction and provide a learning environment where teachers can assist learners with special needs. In addition, use of ICT will motivate the learners and help them develop a favorable attitude towards learning.

Against this background, concerted effort is being put in place to embrace the use of ICT in education in several countries to reap the benefits of ICT integration. A review conducted by United Educational, Scientific and Cultural Organization UNESCO (2000) in ninety countries, classified countries in regard to different levels of ICT development. These classifications include countries with integrated ICT in education system, countries with national policies and master plans formulated and various ICT being applied and tested, and countries where efforts towards ICT integration and formulation of national policies have just begun. Again this does not reflect the specific achievements of ICT integration in education and these general classifications may leave out concerns of ICT integration. In Japan for example, education is provided according to collectively established frames of reference and there is little opportunity
for teachers to customize curriculum (Aoki et al., 2007). Teachers are thus unprepared for any changes that may be brought about by technology at schools. A Ministry of Education, Culture, Sports, Science and Technology survey revealed that more than 33% of teachers were unable to use a computer and less than 25% were able to provide computer instructions (Morris-Suzuki and Rimmer, 2003). The Japanese situation is in stark contrast as they have equipped the learners with the required skills to fit in the technological era thereby promoting lifelong learning by success in ICT adoption in education.

In America, the government is rapidly adopting new and better training technologies. Digital technologies are seen as a way to developing a nation that gives the Americans the best and costs less but giving the required results. The development of the National Information Infrastructure and the increase of computers at home and at work are offering new opportunities for distributed (on-line) learning. Advances in networking technology and telecommunication are revolutionizing the availability and speed of information access over the internet and other networks (UNESCO, 2000).

The national ICT strategy for education and training policy paper of 2006 has provided a framework on which ICT integration in education can follow and on which progress made can be evaluated. Nearly all the secondary schools in Kenya have computers but very few have the required ICT connectivity. Those schools that have ICT connectivity were aided by well wishers; private sectors and the government (Ayere et al. 2010). It has been difficult to develop ICT infrastructure in primary schools, the major obstacle
being lack of internet connection. According to the “ICTs in Education Option Paper”, there has been limited penetration of telecommunication infrastructure in rural areas.

The Education Management Information Society Survey which was done between 2003-2004 showed that about three quarters of secondary schools and many primary schools were not connected to telephone networks. To improve on the sharing of learning materials, there is need to improve on the networks. Other alternative networks like the wireless systems cannot be used in schools because of the high cost of installation. Few learning institutions can access high speed data and communication systems; moreover schools in the rural areas cannot access wireless technology such as Very Small Aperture Protocol (VSAT) to access internet.

The national ICT strategy for education and training policy paper of 2006 recognizes that Kenya lags far behind in ICT integration in learning in schools. It further recognizes that in developed countries, integration of ICT in education has been compulsory since the 1980s and this has not been the case in developing countries like Kenya where integration of ICT in education is still in the formative stages. The Government of Kenya (GOK) has indicated in various documents the important role that ICT plays in education. Kenya put in place a National ICT Policy in January 2006, a policy whose major objective was to ensure the availability of ICT services, which were reliable. The government, in the policy, also advocated for the introduction and use of ICT in schools in order to improve the quality of teaching and learning, (MIC, 2006).
1.2 Statement of the problem
The steady use and development of ICT has had a great impact on people’s lives including how education is delivered. The GOK acknowledges the fact that ICT plays a major role in making education accessible, relevant and equitable. The Ministry of Education policy on ICT is to integrate ICT into education and training institutions so as to prepare the learners for the future technological knowledge based economy. Although the Government, Private sectors, Non-Governmental Organizations and individuals have donated ICT facilities to schools and opened training opportunities for teachers in the use of ICT facilities in order to improve on education delivery, the use of ICT in the teaching and learning of English in Nyakach Sub-County still lags behind. This study therefore sought to investigate to what extent teachers have integrated ICT in the teaching and learning of English in secondary schools in Nyakach-Sub-County, Kisumu County.

1.3 Purpose of the study
The study aimed at establishing the extent of ICT integration in the teaching of English in secondary schools in Nyakach Sub-County. The researcher also intended to establish the ICT resources used in the schools for teaching English and which areas of English could be taught using these ICT resources.
1.4 Objectives of the Study
The study was guided by the following three objectives:

a) To find out the extent of ICT use in the teaching and learning of English among teachers and students in secondary schools in Nyakach Sub-County.

b) To establish which ICT resources were available for the teaching and learning of English.

c) To find out which areas of English learning and teaching these resources were used.

1.5 Research Questions

a) To what extent is ICT used in the teaching and learning of English among teachers and students in secondary schools in Nyakach Sub-County?

b) Which ICT resources are available for the teaching and learning of English?

c) Which areas of English teaching and learning are these resources used?

1.6 Significance of the study
The findings of the study could provide useful information to various stakeholders in the education sector. The study would enlighten the teachers on the importance of integration of ICT in instruction of English. It would further provide the status of the resources and ICT integration in the teaching and learning of English in Nyakach Sub County.

Secondly, these findings could inform the MOE, BOM and PA on the state of ICT in schools and this could help in further provision and maintenance of these facilities. The
study would be important to curriculum developers in formulation of future policies in respect of developing more training opportunities for teachers on ICT and instruction. Finally, the study would inspire other scholars to conduct research in this field so as to fill the gaps which might be exposed by this study.

1.7 Scope of the Study
The study confined itself to investigating the level of integration of ICT in the teaching and learning of English among teachers and students in selected schools in Nyakach Sub-County, Kisumu County. The study was limited to a small sample of schools that were selected and 540 form three students, 15 teachers of English and 7 principals from the sampled schools. It was limited to investigating the extent of ICT integration.

1.8 Limitations of the Study
The researcher had no control over the information the respondents chose to give or withhold thereby presenting a limitation in adequacy of information obtained. The study was also limited by inadequacy of time since the secondary school syllabus is congested and the students would not fill in the questionnaires at the time the researcher wanted, this required rescheduling and visiting the schools when the students were free. This slowed down the process and made the research costly.

1.9 Assumptions of the Study
a) The sampled schools had ICT resources.

b) The researcher would be allowed to view the ICT facilities in the schools under investigation.
c) The respondents would willingly give the required information.

1.9 Theoretical Framework

The study was guided by the Constructivism Theory associated with Bruner, J (1966). According to the constructivists, people create their own understanding of the world through undergoing experiences and internalizing these experiences, learning requires that the learners be encouraged to use active methods which include experiments and inquiry using authentic data. Constructivism changes the way the teacher instructs the learners. The teachers’ main role is to direct learners so that they construct ideas and not reproduce mere facts. According to constructivism the teacher should provide situations where learners are confronted with problems so that they can formulate answers thereby testing their knowledge, drawing conclusions and getting answers and in the process creating an environment for collaborate learning (Ultanir, 2012). The teacher should guide the learners to realize that the activities they are undertaking are helping them arrive at a better understanding of their problems. By looking at the tasks given critically and using their chosen strategies, students become expert learners as they learn how to learn on their own. Constructivism theory ties with this study as it shows that the use of ICT in the teaching and learning of English helps learning become learner-centred. The learners look for information on their own and practice what they have learnt using ICT resources. The learners are able to manipulate the ICT resources and in doing this practically they do not easily forget what they learn.
According to Bruner (1966), a theory of teaching should look at: the learners’ views towards learning, how the materials to be learnt are structured to allow the learners grasp them easily, and the best methods to present what is to be learnt and how reward and punishment are meted out. This calls for positive attitude from the learner and the teacher, use of right methods and right resources. This will lead to the desired outcome.

The teacher can find the process of teaching easier if the teacher has the knowledge of ICT. According to Mbagwana and Tani (2008), when ICT resources are used in teaching, the learners become motivated, they go out and look for more information, information which they can easily access through ICT resources.

According to constructivism, for education to take place, there must be action. Knowledge and ideas will only be attained when learners get experiences that are meaningful to them. These experiences do not occur in isolation but when learners work together as in a classroom manipulating resources thereby building their knowledge together and building team spirit. For learning to occur, the learner must be an active participant, for knowledge must be sought and not just accepted. The learner must engage in activities so that this knowledge can be realized (Kirk, 2013). By using ICT the learner becomes involved in the learning process by manipulating the ICT resources as guided by the teachers.

Information Communication Technology can help students learn by allowing them construct knowledge. Constructivist principals emphasize learner-centered activities which allow the learner to arrive at answers. Computer based applications support these
approaches to learning. Learners can simulate various situations and in thus doing become creative. Problems that are posed as the learners read through materials in the internet help in deep inquiry and problem solving (Kozma, 2005). Information Communication Technology enriched classroom change classroom dynamics, the class becomes more active, and there is increased classroom interaction. Students learn to cooperate and work as a team thus building team spirit which encourages peer-support learning which is encouraged for better learning. When computer-aided instructions designed for individual learning at different levels of education are used, learners are in a position to work at their own pace and get feedback without being coerced and hence evaluate their own performance (Frankel and Wallen, 1990).

1.10 Conceptual Framework
The researcher developed own conceptual framework to predict the relationship between the variables as presented in figure 2.1

![Conceptual Framework Diagram]

**Figure 1.1: Conceptual Framework**
In this study, the researcher investigated the extent of ICT integration in the teaching and learning of English. The researcher also looked at ICT resources available for the teaching and learning of English and lastly looked at which areas of English teaching and learning these resources could be used and the contributions of each variable in learning of English. The relationship between the variables in the study is as presented in figure 1.1.

1.11 Operational definition of terms

**Curriculum**: Curriculum refers to all the organized activities a pupil undergoes in the school. The term is used to refer to all the experiences secondary students attain in the course of learning English as a subject.

**Multi media**: An approach to information presentation on computer which uses dynamic images of graphic or sounds, texts, still and moving images which can be used in teaching English.

**Information Communication Technology**: The application of modern electronic equipment in the learning of English.

**Integration**: The use of digital equipment and other learning resources in the teaching of English.

**Internet**: The global communication network enabling computers to share information in an electronic form.

**Pedagogical Knowledge**: The methods and application of these methods in the teaching of English in secondary schools.
CHAPTER TWO
LITERATURE REVIEW

2.0 Introduction
This chapter reviews literature related to this study thus giving an exhaustive understanding of how ICT has been integrated in different places narrowing it down to secondary schools and to English as a subject. The chapter looks at the background review of ICT integration, ICT resources and how these resources could be utilized in lesson delivery in the teaching and learning of English. A literature review brings out the results of other studies related to the present one and shares it with the readers (Frankel and Wallen, 1990). A literature review also relates the study to the larger, ongoing dialogue in the literature about a topic, filling gaps and extending prior studies. It also provides a framework for establishing the importance of the study, as well as a benchmark for comparing results of a study with other findings. A literature review also helps to sharpen and define understanding of existing knowledge in the problem area, providing a background for a research project and makes the reader aware of the correct status of the issue and it often helps to narrow a problem. The areas reviewed in this chapter include, ICT integration, ICT resources, ICT resources used in teaching English and Related studies.

2.1 ICT Integration
Most educational institutions agree that they have to move with the times which requires that the learners have knowledge and skills in technology which are required in today’s society in order to achieve a thriving economy. To survive in this fast moving technological society where every sphere of life is controlled by technology, the learners
must be armed with the right tools to become productive members of the society; members who have both critical and analytical tools (Kozma, 2005). According to Cheah and Koh (2001), facts alone have become less important; to know how to use these facts is what is of importance. Therefore, learners must know how to: get information, determine if the information found is relevant and determine if this relevant information is accurate. Kozma (2005) argues that for economic and social changes to take root, ICT must be incorporated in our everyday life. Justifications in the educational reforms and ICT investments have been derived from the ever growing need for economic and social development. Kelles-Viitanen (2003) also points out that developing countries noted that ICT is not only important in economic and social development but also in politics and cultural integration. According to her, ICT is rapidly changing the way people do things, for example, transact businesses, and communicate and how people receive and send information. Information Communication Technology has transformed the education sector considerably. The UNESCO Ministerial Declaration (2000) gave room for the specific focus of applying ICT for development, with coordinated and urgent actions nationally, regionally and even globally.

Examples of countries with developed educational ICT systems are Singapore, Australia, and South Korea. These countries have some characteristics in relation to educational ICT which include; classrooms with computers and other ICT tools; increasing online delivery of education; the ratio of student/computer is high; availability of internet services in all schools; when the curriculum is revised, it ensures nationwide ICT integration. Countries like China, Thailand, Japan, Malaysia, the
Philippines and India have systems where national ICT policies and set goals have been formulated with various ICT integration strategies constantly being applied and tested (although ICT is not fully integrated in the education system). There is a great variation in these characteristics but some common features exist like the development of national ICT policies in education and the establishment of goals and objectives for introducing ICT in various aspects of education (Kozma, 2005).

The World Bank Survey on ICT and Education in Africa indicates a steady increase in the use of ICT in education (Glen and Shafika, 2007). Developing skills, knowledge and understanding of the proper use of ICT prepares students to become literate users of technology in their everyday working environments. The Koech Report, Republic of Kenya (1999) noted that with the rapid technological development, lifelong education was the only way the citizen of a country could remain active and match the pace of the world’s rapidly changing technology. In view of this, the commission noted that the institutions which could provide this service were poorly equipped and lacked books, journals and internet facilities.

ICT in India has a long history (Government of India 2012). The Indian constitution, adopted in 1950 stated that all children should receive basic education up to the age of fourteen. The struggle to achieve this basic commitment began immediately. Information Communication Technology has become indispensable and every sphere of people’s lives is affected by it. In the 21st century ICT plays an important role, for one to be abreast with what is happening globally, knowledge in the use of ICT is mandatory.
The Indian government announced 2010-2020 as the years of innovation. For innovation to take place, reasoning and thinking skills are required. These skills are got in education. Currently, many countries have shown interest in ICT and many have embraced it in their educational sectors. In India as in other countries, the major contribution of ICT to education is that learning materials can now be easily accessed. Students and teachers can access e-books, past papers, sample examination papers and get professional updates from experts on a given field of education.

In Africa, ministries are identifying institutional responsibilities at national levels and starting to encourage collaborative efforts on a regional basis. This is done as the need for digital learning materials relevant to the local curriculum is becoming more urgent as ICT is introduced into the teaching process at all levels. Organizations have come up to help in realizing the dream of making Africa ICT compliant. The World Summit on the Information Society (WSIS) has the objective of building an all-inclusive information society and the promotion of use of ICT. The organization has the objective of looking at the upcoming challenges at all levels. The objectives are to be realized in 2015 which among others are, establishing community access points which link learning institutions with ICT; adapting all primary and secondary curriculums to meet the challenges of information society. The main aim of the plan is to make sure that everyone gets the required skills and knowledge to maximize the benefits of the information society (The World Summit on the Information Society, 2005).

New partnership for Africa Development (NEPAD) was initiated to look into the
challenges facing African countries and it identified ICT infrastructure as a major area of action for inducement of condition for continued development. In 2003, NEPAD fronted efforts towards bridging the differences in the application of ICT between Africa and the developed world. It identified six areas of high concern and one of these was NEPAD e-schools programme. The aim of this programme was to ensure that ICT was integrated into the educational system both at the secondary and primary levels so that there could be an improvement in the accessibility, equitability and quality of education among all its members. In Africa, the policy makers have fronted technology, technical knowledge in computer as a cure to the myriad of problems that ail it. Information Communication Technology is viewed as an avenue to solving problems in education which include shortages of teachers, low achievement, high dropout rates, lack of opportunities and resources (NEPAD, 2005).

African ministers of Education meeting held at the 1st African Ministerial round table on ICT for Education, Training and Development in Nairobi on June 1st 2007 stressed in their communiqué that ICTs were a key solution that will help all African countries meet their needs in rural and under-served areas and bring education to their citizens rapidly and cost effectively. They also stated that to achieve this goal, hundreds of thousands of teachers require ICT skills. The World Bank Survey of ICT and Education in Africa (2002) shows a growing interest in the use of ICT in education (Glen & Shafika, 2007). Developing skills, knowledge and understanding of the proper use of ICT prepares students to become literate users of technology in their everyday working environments.
The Rwanda government singles out ICT as a chief player towards its achievement of 2020, which focuses on the creation of a modern and prosperous country which is united with worthwhile principles. This was said by its Minister of Education, (Murenzi, 2009). The government released its first National Information and Communication Infrastructure (NICI) plan which was an integrated ICT-led socio-economic development policy and plan for Rwanda. Harrison (2005) noted that the plan was aimed at developing ICT in the nation between 2001 and 2005. The first phase, completed in 2005 paved way for the second phase which was expected to end in 2010, this second phase stressed the use of ICT in education as one of its major objective among its ten objectives having built on the achievements of phase one. According to Rubagazi et al. (2007), the scarcity in computer equipment supply experienced in many developing countries, case in point Rwanda, can be interpreted to mean that there is a greater chance of schools not using the ICT resources as they should be used.

The Burundi Country Profile quotes its infrastructure specifically roads and electricity as the main dangers towards the growth of ICT in the country. This report however, indicates that rehabilitation processes involving infrastructure and soliciting of donors have also been adopted as measures of improving the ICT sector. It was also noted that the country lacked a clear policy for ICT as an agent of accessing quality education as is indicated in the reports of Novatech and Info-Dev (Hare, 2007). This report shows that there is a lack of documentation indicating the use of ICT in public secondary schools. It also highlights various factors hindering the public use of ICT in Burundi; main being the lack of an education policy stressing on the use of ICT, meaning the ICT plans
are not well documented in the government’s development plans; hence, lacks nationalistic outlook, focus and resources.

The report further observes that the access and availability of ICT is still a fantasy because a high concentration of the population is in the rural areas whereas a high percentage of ICT infrastructures are found around Bujumbura the capital city. Also, availability of ICT is costly to most people. The report reveals that there is lack of trained teachers with ICT skills and there is also lack of awareness contributing to lack of interest and enthusiasm relating to adoption of ICT in the classroom. Moreover, ICT has not been prioritized as a major part of the education sector by the government. This therefore results in the available resources being channeled towards more basic parts of the education which include buying textbooks and the building of classrooms (Hare, 2007).

In Uganda, the educational ICT is similar in various ways to other African countries. The New Partnership for Africa’s Development (NEPAD) e-schools initiative is an effort which has been made to integrate ICT into the school curricular. Such efforts have shown the recognition of the significance of ICT in the education sector. Logistical and developmental challenges have made ICT in schools to be less practical and common. This has been noted in schools that even when there is availability of computers, they are often used for specific course and by certain personnel. This limits teachers and students from accessing these ICT-related areas of learning. To arrive at economic developmental goals, East African countries were keen on embracing technology as the
use of ICT in developed countries showed positive results and this brought urgency in the African countries to embrace technology. Minshi-Majanja (2007) cites technology as an undeniable force towards national development. Shortly afterwards, there was an introduction and use of ICT which were not organized as noted by (Waema 2005). As the new millennium began, most East African countries formulated ICT policies with the help of donors to combat the mushrooming problems. Ochuodho and Matunga (2004) refer to the first of these reforms as “Draft National Informatics Policy” in Kenya.

The Ugandan government has an ICT policy constructed upon four major principles. Firstly, the policy sets a framework of curriculum and teacher training to facilitate and guide the development of ICT, focused on benefiting the nation fully. This is seen from the point of view that ICT policy cannot be completed in one phase because of lack of finances. The second principle is based on balancing between the ICT application and computer science. This principle focuses on providing opportunities for developing computer application skills to the majority while giving ways to develop expertise to the minority with interest in the subject at the same time. The minority will be the personnel required for installation and maintenance of the networks and equipment.

The third principle explains that the main target should be on the curriculum, teachers and learners and not on the availability of the equipment. The final principle focuses on equitable distribution of ICT resources. The ministry wants the use of ICT to be integrated in many schools in the country to the citizens. UNCST (2002) opines that
ICT resources should be devolved to citizens. Coordination between different strands in the policy is key to the ICT policy. Also the players in the implementing bodies must cooperate for success to be realized. For instance, teachers should be trained in accordance with the curriculum standards before introducing ICTs to institutions. Moreover, the trainers should be guided effectively. This enables them to develop sufficient ICT skills and how to incorporate them in their areas of specialization.

Moreover, designing of the ICT curriculum should be in a manner that is pragmatic in provision of relevant policies for ICT education. For the policies to remain relevant to the needs and the global changing trends in ICT, close monitoring and evaluation should be enacted. Ongoing debates on whether students are taught about, with or through ICT have been experienced. In Uganda for example, the ICT policy recognizes that it is more important what is done with ICT rather than having ICT itself (Uganda MOEST Draft Policy, 2005). The policy further notes that the strategies resulting from the provision of the ICT equipment may easily cause misuse of technology. The policy thus suggests the Ministry of Education should encourage using technology in supporting teaching. This can be done by either using these technologies with the students or providing teaching materials. The policy further observes that there should be the introduction of computer awareness into the training of primary teachers in phases to equip newly qualified teachers with sufficient ICT skills. Once some elementary ICT skills have been got at the primary school, this will help learning of computer application skills in the secondary sector much easier.
The paper states that this is to be realized through the incorporation of the study of Computer Studies as a subject to be taught in schools having adequate ICT facilities and to be assessed at Ordinary level. The paper also suggests that many teachers should be brought to schools having sufficient ICT skills and vast experience in order to exploit the use of ICT in lesson preparation and organization of learning materials. In doing this, the quality of education is improved and laying of basic foundations for future ICT use is achieved in both primary and secondary levels.

After several years of trying to set up an ICT policy, the Kenyan ICT policy was finally set up in 2006 with the chief aim of improving the living conditions of the Kenyans by making sure that there were available, accessible, efficient, reliable and affordable ICT services as envisaged in the ICT Education Option paper (Kenya, MOEST, 2005). There are a variety of innovations in ICT to help in quality education delivery and curriculum. There is also a considerable level of technology delay in educational institutions. Most institutions use outdated systems and hence unable to take advantage of the educational varieties of emerging technologies. There are several challenges facing access and use of ICT in Kenya and these include high level of poverty amongst the citizenry that hinder access to ICT facilities, poor rural electrification and frequent power disruptions. In areas where there is electricity, high costs of internet provision, costs associated with ICT equipment, inadequate infrastructure and support hinder the application of ICT. The current study aims at finding out the extent of ICT use in the teaching and learning of English in secondary schools in Nyakach Sub-County.
Due to the enormous increase in primary school enrollment, there has also been an increase in demand for the secondary schools. The MOEST has continuously shown great concern for the efficiency of education provision in secondary schools, which have shown poor performance in core subjects. Information Communication Technology is critical in the academic development of secondary school students because at this age, the students need to concentrate on a particular subject area, developing greater critical thinking and language proficiency. The combining elements of ICT make it possible for students to clearly isolate and analyze assumptions, present ideas and take part in projects with peers both nationally and internationally (Kenya, MOEST, 2005).

2.2 ICT Resources

Literature on ICT resources was reviewed in terms of; Computer, The Internet, PowerPoint, Email, Mobile Phone, Instant messaging (IM), Chat, Television and Radio.

2.2.1 Computer

A computer is an electronic device that works under special set of instructions called programmes to transform user input through processing into desired output for the computer user. Computers are often seen as tools that can be used to get diverse educational ends similar to the way that textbook, laboratory equipment, curricular, or other educational technologies can be used to enhance education. Since the dawn of technology, computers have proved to be the most multi-faceted teaching aids available. With technology like digital video presenters, power point presentations and educational software, teachers are now able to quickly and accurately enlarge many physical visual
aids, create and edit information on slides and can ultimately provide the students with information in a faster and more comprehensive way.

With computers, teachers can readily prepare their teaching materials without wasting a lot of valuable time. This is because once lesson materials are prepared on a computer; it has the ability to store these materials in the same site for so long as the teacher wants. Even where changing the material is necessary due to the differences in the students, it is still much easier to edit than create totally different teaching material. The use of computers allows the learners to interact amongst themselves as they work. The learning of a language requires a lot of interaction; therefore, when learners are exposed to computers the language game, drills and debates help the learners acquire fluency in their everyday speech. The talking dictionaries found in computers help the students to correct pronunciation (Ivers, 2003).

2.2.2 The Internet
The internet is an international network of computers through which information is shared between computer users. The internet can also be defined as an interconnection of computers or a network of computers that are connected either physically-through cables- or non-physically i.e. through wireless technologies such as Bluetooth or infrared. The internet is an information carrier- a medium- which links information users to providers. It has pedagogical potential. The internet is perhaps the most transformative technology in history. It is just at the peak of being tapped to transform education. There is a lot of educational material on the internet, as many scholars,
researchers and publishing companies have posted their materials online. It is now common practice to access valuable information from the internet. Teachers of English can use the internet to explore and exploit English in ways that were not possible before.

2.2.3 PowerPoint
A computer even without the internet connection is also useful in the development of teaching aids. It helps a teacher to explain complex ideas in an interactive way using digital presentation software such as Microsoft PowerPoint or Apple Keynote. Such software allows teachers to prepare texts, images, movie clips and sounds to use during lessons. Unlike chalkboards, digital presentations are flexible allowing the teacher to let the learners view what they desire. PowerPoint can be used by both teachers and students. It can be used by teachers to explain concepts that are abstract to the learners. With power point, the teacher can employ various teaching strategies. It is a tool that can motivate the learners because of its novelty, (MOEST, 2006). Power point, with its versatile uses in education, has proved to be one of the best media provided by the computer (Barasa et al.2011). Teachers of English can use PowerPoint to teach parts of speech, Genres of Oral Literature or Family Trees using slides which can be saved to be used during another lesson.

2.2.4 Email
This is a store and forward method of writing, sending, receiving and saving messages over electronic communication systems via a computer and/or mobile phone. This learning resource can help learners in the practice of writing short messages and on checking on the spelling of words (MOEST, 2006).
2.2.5 Mobile Phone
Mobile phones play a significant role in education as a tool of instruction. Teachers can use mobile phones to share information about the process of teaching. Today, teachers are able to access the internet using mobile phones therefore making it possible for them to download unlimited information for the purpose of instruction (Barasa et al., 2011). Research studies on the versatile use of mobile phone for a range of different teaching and learning processes have been carried out worldwide. Ekanayake (2009) argues that because of their wide range of use such as spontaneous, personal, informal, contextual, portable and pervasive and the functions such as talk, text, still camera, video, radio and the internet, mobile phones could completely change the way teaching and learning is done. Despite the potential benefit of cell phones in the teaching and learning process, their use in Kenyan secondary schools could be hampered due to the fact that students are not allowed to carry them to schools (Koh and Lee, 2008). However, schools could buy some cell phones that could be used solely for learning purposes.

2.2.6 Instant messaging (IM)
Using mobile phones, the learners can type short messages to one another. Students write and learn how to write short messages and read replies from others. This sharpens their skills in writing and in the process they learn spelling of words as the mispelt words will be corrected automatically (Ivers, 2003).

2.2.7 Television and Radio
These two ICT resources have been widely used since the 1920s (radio) and the 1950s
With the coming of computers and Internet, it is possible to listen to live and recorded radio as well as watch TV programmes. Transmitting recorded radio and TV programmes over the internet is referred to as Personal On Demand (POD) broadcasting. This technique has a unique feature in that programmes can be saved then downloaded for later listening (UNESCO, 2007). The computer makes it possible for the teacher to earmark specific programmes according to subject, topics and date, among other things (Kavagi, 2010).

With the introduction of universal, free, and compulsory access to primary education in 2003, Kenya has witnessed an immediate increase of 1.3 million students (MOEST, 2006). This growth has created an accumulating demand for access to secondary education. Population growth of learners versus the available teachers is overwhelming. To reach the many students, teachers have to find other instructional tools other than the conventional ones to reach the learners fast and efficiently. The large number of students’ enrolment affects all school in Kenya and this study focuses on establishing which ICT resources are available for the teaching and learning of English in secondary schools in Nyakach Sub-County.

2.3 Areas of English teaching and learning where ICT resources can be used
Information Communication Technology tools enable teachers to access new information allowing them to keep abreast with a lot information which would have been otherwise difficult to come across. Apart from getting new information, the teachers can engage in discussions with other teachers, create learning materials and at
the same time keep learners’ records; these resources can be used by the teacher both at home and in school. These ICT tools also help learners in getting new information, engage in peer learning, create their own materials and also help in collaborate learning. These are resources that students may benefit from in the classroom because they may not have them at home (Ivers, 2003).

The aim of a good language teacher is to teach his students to communicate successfully. The students should have a direct and natural contact with the language being learned. This means that the learners should learn the second language, as far as conveniently possible, in the same kind of way in which the learner acquired the first language. This calls for varied approaches to the teaching of language.

In Kenya, English is the language of instruction in all subjects in the secondary school except French, German, Arabic and Kiswahili. Proficiency in English is a prerequisite if a student is to perform well in other subjects in the curriculum. As a language, English enables a leaner to think clearly and logically, to form opinions correctly and make proper decisions in the study of other subjects in the secondary school. It is therefore imperative for the learners to have a good and sound knowledge of English which can be strengthened by the use of ICT among other teaching resources.

The use of the internet allows people to interact and the exchange of data and ideas. Students can communicate with other students via the internet or communicate with teachers and various experts in various fields around the world. Of the many merits of
the internet, one is that it allows the learners to get information which might not be got anywhere else. The learners can therefore read extensively and intensively to develop their skills in reading. This will also encourage active engagement and connection to the real-world context. It encourages the learners to look for facts and also read for pleasure. The internet often provides monitored discussion forums and chat room opportunities for learners to post their artwork or stories, games, pen pal clubs, interactive stories, or other activities of interest to students. This encourages creativity and learners can use this opportunity in posting their stories and involve themselves in chats which will increase their pronunciation and confidence in the speaking of the English language.

Email provides students with opportunities to practice their communication skills, write for special audience and engage in meaningful activities. Through e-mail, students can learn about students from different parts of the world thus enhancing their cultural awareness as they work in various projects together.

Video conferencing is another way which the teacher of English can exploit to create interesting classroom instruction. Teachers can use a computer to send and receive video, audio and text in real time over the internet. Information Communication Technology can help students learn by allowing them create knowledge. Constructivist proponents stress on the use of inquiry, looking at problems critically and then reflecting on them to arrive at decisions. Computer based applications support these approaches to learning. Learners can simulate various situations and in thus doing this they become creative. Problems that are posed as the learners read through materials in the internet help in deep inquiry and problem solving. Information Communication Technology
enriched classroom change classroom dynamics. There is increased classroom interaction. Students learn to cooperate and work together thus nurturing their capability to function in team-work contexts and reinforcing their interest in peer-supported learning which is encouraged for better learning. When computer-aided instructions designed for individual learning at different levels of education are used, learners are able to do their work at their own speed and get feedback and hence evaluate their performance. Teachers can also interact with learners even when away from class through email. Teachers can send questions and other assignments to learners when both parties are away from class (Mahapatra, 2005).

Computers can be used in combination with DVDs and CDs to prerecord information such as speeches, short stories and poems and these can be availed to students to listen to and watch. This will increase their listening skills. When computers are used in conjunction with world space equipment, radio programmes and broadcasts can be received in schools to be used by students in learning various skills. Information Communication Technologies like videos, television and multimedia computer software that combine text, sound and colourful images to produce original formats of materials to engage learners in their study. Likewise interactive radio combines songs, sound effects, dramatization, comic play and other modes of performance to make the learning process enjoyable to the learners. The internet connectivity provided by the networked computer motivates the learners by providing a variety of services and an opportunity for interaction globally, giving room for online participation.
It can also be noted that students who are learning English as their first language can benefit from ICT in a multiple of ways as it accommodates their needs by providing animations, video and graphics to demonstrate different concepts, as well as clear audio to model correct pronunciation and to repeat sound and words. Teachers can use ICT equipment like the radio cassettes, DVD discs, mobile phones, VCD discs and so many others to pre-record their lessons. For example, in teaching pronunciation, the teacher need only pronounce the word once in front of the class and then use the pre-recorded sounds to let the learners practice. This will enable the learners internalize the correct pronunciation, (Ivers, 2003). The current study focuses on finding out which areas of English learning and teaching these ICT resources can be used.

Integrating ICT in the learning process helps the learners to improve in their language skills and further more they become ICT literate thus fitting in the 21st century fold which calls for the use of technology in many fields. English language learners (ELL) can use wireless laptops to communicate with mentoring partners. As a learning tool ICT makes learning more appealing to the students. Learners and teachers are no longer limited to text books and resources in the library to teach English. Today, the teacher of English has more resources to refer to, resources which are both reliable and up to-date located far beyond the walls of the classroom (Barasa et al. 2011).

According to Mahapatra (2005), computers have the advantage above other ICT resources in that they can be used by individuals to do their own work, the teachers act as guides. The computer will never chastise students when they are less than perfect,
while pointing out the mistakes the computer will forever be congratulating the learner on their accomplishments and encouraging them to proceed further. The computer will adapt to the need of the students, repeat what has not been understood, furthermore, it will not tire in giving direction to the student who has missed out on a point. Learners can always go back and review parts of a lesson not understood. When computers are used, the learners learn at their own pace because they will only move to the next level once they have mastered a given area. No student is affected by the rate of learning of another student.

Individualized computerized instructions enable students to seek assistance in an area of study not understood properly by them. They can also highlight their lack of understanding of a particular topic continuously until the problem is completely resolved without fear of embarrassment among their peers. The computer can pinpoint the exact mistake after request and it can go on to give different explanations and context of use thereby presenting the student with multiplicity of usage. The computer therefore ensures that learning is presented in a wide form of understanding and clear language. The computer will recognize students’ weaknesses through constant evaluation and assessment.

When computers are used for instruction, there is no time a learner feels ignored or left behind, if a concept is not clearly understood, the computer will repeat it until the learner gets it, only then will new material be introduced. With speech synthesis that today’s computer have, they can begin anywhere, even at the elementary level and teach
students to read at the pace that is appropriate for each individual learner. Computers provide remedial lessons for individual learners who have not grasped some concepts. All students whether poor, average or bright will benefit from the use of computers as a learning resource because of individualized teaching provided by it (Ivers, 2003).

Researching through the internet can be likened to a library that goes on forever. Resources surround the learners and teachers wherever they look. The internet provides students with opportunities to conduct various research activities, contact line sites, pursue their own special interest and interact with students from all over the world. Email, video-conferencing, and classroom web pages are some of the ways the internet can be used to facilitate shared learning experiences (Ivers, 2003).

The internet brings information resources from all over the world into the classroom. Bransford et al (2000). Stated that what people know now about learning provides important guidelines for uses of technology that can help students and teachers develop the competencies needed for the twenty-first century. Information Communication Technology can be a versatile tool in the learning process. They continue to assert that several studies have reviewed the literature on ICT and learning. In summary, according to them, ICT use has an enormous chance to improve teacher learning and learner success.

According to Pelgrum and Plomp (2002) investments in ICT are on the increase because their use allows learners achieve more. In Kenya, a National ICT Policy to guide in the
integration of ICT in the teaching and learning process has been set up by the government. The Ministry of Education was given the mandate to oversee this implementation.

According to the constructivism learning approach, the use of ICT increases the learners’ creativity. Through discovery they can create educational materials which can enhance learning, (Gee 2011). The learners have to discover knowledge by searching for it; and this can be done using ICT resources such as the internet. Constructivism requires the learner to be autonomous, capable and creative. By using ICT resources the learner through the guidance of the teachers become active learners who work on their own. This learner centred approach can improve both teaching and learning quality.

2.4 Related Studies
A study carried out by Boit et al. (2010) was done to evaluate the implementation of ICT to support learning, teaching, school administration and use of E-communication between cooperating rural schools in Western Kenya under the Rotary project. The objective of the study was to find out whether the students were able to apply common computer software like emailing, browsing and word processing. This study also further sought to find out the manner in which IT training was incorporated into the timetable in the named schools in order to improve ICT learning. The study was carried out in two selected rural schools namely: Anin secondary school (Keiyo County) and Cheplaskei secondary school (Uasin Gishu County). A case study research design was adopted for this study where interviews, observation and open-ended questionnaires
including document analysis were used to collect qualitative data.

The respondents included the principals, ICT experts, BOM, PA, teachers and students. The findings indicated that the two schools had to an extent integrated the use of ICT technology; the schools were found to have a suitable environment which could promote and maintain the implementation and use of ICT. The surrounding community was highly encouraging while the school administration and the whole school fraternity were receptive to the idea of ICT implementation. This was shown by the high level of willingness to embrace new innovations and methods of learning, there were also government policies, like the school IT policy which were also enacted to provide material support towards the project. Tireless dedication by the education officials also acted to make these schools model centres of learning to be used by surrounding schools. It was also noted that the application and use of ICT in learning was minimal. However, students had been taught the primary skills in computer use including surfing the net, use of word processing and emailing. They could therefore interact with their colleagues both locally and internationally without supervision (Hennessy et al. 2005).

Furthermore, the students could now apply the new learnt skills in searching for new information from the internet. It was also reported that students spent about 2-3 hours a week in computer labs. The learners also reported that they were able to look up for information on their own from the internet and not as before when they had to group around a student who had the knowledge in a given area of a subject. Half of the teachers in the two schools said they could use ICT resources confidently in giving
instruction and in class management. It was however noted that for ICT resources to be of benefit to the two schools, various barrier had to be overcome. These barriers could be overcome by: getting educational software to improve instruction and the learning outcome, increasing the ICT resources to enable the teachers and learners have more contact hours with the learning tools, teachers to be trained in the use and also be sensitized on the importance of ICT. When the teachers are familiar with the use of ICT resources, they will have confidence while using them and they will be motivated too and this will go a long way in enhancing their teaching strategies for better results.

A study carried out by Hennessy et al. (2005) on Teacher perspective on integrating ICT into teaching, examined the use of ICT by secondary school teachers of English, Mathematics and Science subjects and how they had begun to integrate ICT into mainstream classroom practice in English schools. Specifically, the objective of the study was to investigate how these forms of digital technology were being used to carry out already familiar activities more quickly, reliably, broadly, productively, interactively and how such use may be reshaping these activities. It drew on an analysis of 18 focus-group interviews with subjects in these fields.

The above study noted that the use of ICT had begun to help in making easy existing problems and bringing in changes in the ways subjects were delivered. The teachers of English agreed that the use of ICT improved their presentation and helped the learners in getting correct spellings. Learners could use the ICT tools imaginatively and in the process explore the many ways in which language can be used. According to some
teachers, using ICT mainly the email and word processing opened new avenues for the learners to learn new methods of letter writing. Information Communication Technology was seen as complementing the present methods of teaching and not replacing them. About 50% of the teachers of English feared to integrate ICT in their teaching. They feared that the text-books might be rendered irrelevant and some of the teachers had no tangible reason for their fear of using ICT. It was therefore concluded that the importance of ICT as a teaching tool had not yet taken root in the teaching of English in the two schools. The enthusiasm with which the project had been received was a sign that the implementation was under way. The stakeholders in the two schools were positive towards the new venture and the government’s policy on integration of ICT into the learning also supported the introduction of this venture.
CHAPTER THREE
RESEARCH METHODOLOGY

3.0 Introduction
This chapter describes the research design, research area, target population, sampling procedure, sample size, research instruments, data collection procedure, logistical and ethical consideration and data analyses.

3.1 Research Design
The design adopted in this study was the descriptive research. The descriptive research design was appropriate for this study since it was a fact finding with an intention of arriving at the truth. Neuman (2000) observes that using this design, one is able to describe events as they are at that time. The study was a descriptive survey in that it was concerned with investigating to what extent ICT had been integrated in the teaching and learning of English in secondary schools and it sought to gather information about people’s perceptions on an educational issue. This is in line with Lokesh (1988)’s assertion that descriptive survey studies usually collect detailed descriptions of existing phenomena with the purpose of employing data to justify current conditions and practices or make more informed plans for improvement. Survey studies are made use of in investigations of phenomena in their natural setting (Koul, 1984).

3.2 Location of the Study
Nyakach Sub-County is one of the sub-counties in Kisumu County. It was curved out from the wider Nyando Sub-County, which is located along the shores of Lake Victoria. Nyakach Sub-County lies between latitude $0^\circ 00$ (the Equator) and $0^\circ 25$ south and
between longitude 34°45 east and 35°21 east. It borders Nyando Sub-County to the north, Rachuonyo North Sub-County to the south and Kisumu East Sub-County to the west and Kericho Sub-County to the east. The Sub-County covers an area of 358.6 km², including 71 km² of the lake water surface. The Sub-County is made up of three divisions namely: South, North and West Nyakach.

The Sub-Country was chosen because it is new. In addition, the new wave of ICT development in most secondary schools, the government and many NGOs have provided schools with ICT facilities to be used in teaching and learning within the Sub-County. The researcher therefore investigated the extent of integration of ICT resources in the Sub-County.

3.3 Target Population
The target population of the study comprised all the principals of the 45 public secondary schools, all the 132 teachers of English and all the 3104 form three students from the schools in the Sub County.

3.4 Sampling Procedure and Sample size
According to Mugenda and Mugenda (1999), when determining the sample size, it must be kept manageable. This would allow the researcher get detailed data at a cost which is manageable in terms of finance, time and human resources. Stratified, purposive and simple random sampling techniques were adopted in this study. The 22 schools which had been given ICT resources were purposively sampled and then stratified sampling was used to get the schools to take part in the study. This was done to make sure that all
categories of schools: County, Sub County, Boys, Girls, Mixed and Day were represented in the sample. Simple random sampling was employed to get the 7 schools to take part in the study. The principals of the sampled schools were purposively selected to participate in the study as respondents. Simple random sampling was further used to select the teachers of English and 30% of Form Three student from each participating school to be respondents making a sample of 540 students. According to Ary et al. (1972), a study sample of 10-20% is acceptable in descriptive research.

Table 3.1 Sample Size

<table>
<thead>
<tr>
<th>Category</th>
<th>Population</th>
<th>Sample</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schools</td>
<td>22</td>
<td>07</td>
<td>30.0</td>
</tr>
<tr>
<td>Principals</td>
<td>22</td>
<td>07</td>
<td>30.0</td>
</tr>
<tr>
<td>Teachers</td>
<td>52</td>
<td>16</td>
<td>30.0</td>
</tr>
<tr>
<td>Students</td>
<td>1754</td>
<td>540</td>
<td>30.2</td>
</tr>
</tbody>
</table>

Source: SCDE’s Office Nyakach (2012).
3.5 Research Instruments
Questionnaires and observation schedules were used in this research. There were three questionnaires which were completed by the principals, teachers of English and Form Three students. The researcher carried out four observations in the selected schools and noted the use of ICT resources during the instruction process.

3.5.1 The Questionnaire
Kerlinger (1986) asserts that a questionnaire gives the respondents ample time to think out the answers to give and it is also effective when using a large sample. There were three questionnaires: the principals, the teachers of English and the students’ questionnaires. Each questionnaire contained two parts. The first part dealt with background information of the respondents, while the second part dealt with the use of ICT resources by the respondents. The respondents were further to state different skills acquired through the use of ICT.

According to Kothari (1991), using questionnaires is cheap even when the population is large and scattered. Secondly, the interviewer cannot interfere with the answers the respondents give as the questionnaires are filled in the absence of the researcher. Thirdly, the respondents have enough time to give out their responses and in their own words. Using questionnaires allow the researcher to reach respondents who are not easily approachable. Lastly, samples can be made use of and thus the results can be made more dependable and reliable. Using the questionnaire also has disadvantages in that not all questionnaires are returned. Questionnaires can only be used if the respondents are literate and ready to participate in the study. Once the researcher has
sent out the questionnaires, the researcher does not have any control over them. Some of
the answers given by the respondents may be ambiguous or some parts may be left
unanswered altogether, this makes interpretation difficult. Lastly, it is not easy to tell
whether the respondents who filled in the questionnaires are a true representative of the
whole.

A slanting likert scale was used to measure the perceptions of the respondent towards
the use of ICT resources in the teaching or learning of English. The respondents were
asked to rate certain given statements on a five point scale. The likert scale was chosen
because it permits measurements of relativeness of different aspects of the study on a
single scale. It is also easy to construct, more reliable and objective (Kothari 1991).

3.5.2 Observation Schedule
According to Kothari (1991), the merits of this method is that if observation is carried
out effectively there is no fear of the research being bias, there is no subjectivity.
Secondly, what the researcher observes is what is actually happening at the given point.
The results are not controlled by the past or future behavior of the respondents. Thirdly,
this method does not require the willingness of the respondent to participate in the study
and therefore it is not as demanding as using the questionnaire or interview schedule.
Finally, this method is best suited for those respondents who are not in a position to give
answers verbally due to some reasons. On the other hand, this method is expensive and
the information provided can be limited. Unforeseen problems may sometimes interfere
with the observation rendering what has to be observed not coming out clearly. Lastly,
at times, data might not be collected effectively because some subjects are not open to
direct observation. The researcher observed the ICT resources available in the selected
schools. The information collected by observation was used to confirm the data obtained
through questionnaires. Areas that were examined included physical facilities such as
the library and IT rooms. There were also four observations of lessons in progress in
each school in order to identify the use of ICT resources employed by teachers during
instruction. There were two observation guides, one to check on the physical resources
and the other to confirm the usage of these resources in the teaching and learning of
English.

3.6 Pilot Study
A pilot study was done before the instruments were used for collecting data; this was
done in two schools in Nyando Sub-County, Kisumu County, Kenya. These schools had
the same characteristics as the ones sampled: one Girls Boarding and one Mixed Day.
During the pilot study, items that were found to be ambiguous and not clearly framed
were revised accordingly. To establish the reliability of the questionnaire a test-retest
method was used. This was done by giving the questionnaire twice to same group within
an interval of two weeks. The responses were calculated using Pearson product-moment
correlation coefficient \((r)\). A correlation-coefficient of 0.05 or at 5% was considered
high enough for the instrument to be said to be reliable to the study.

3.7 Validity and Reliability of the Research Instruments

3.7.1 Validity
Validity is the degree to which the results obtained from the analysis of the data actually
represent the phenomena under study. Validity is therefore concerned with how accurately the study is a true reflection of the variables, and then inferences based on such data will be accurate and meaningful. The instruments were rated in terms of how efficiently they sample significant aspects of the purpose of the study. In order to determine the content validity of the research instruments, the researcher discussed the contents in the research instruments with the supervisors to check whether the questions in the questionnaires and items in the observation schedule could elicit the expected responses for the study, if they measured what it was supposed to measure or not. The inputs which included suggestions, advices and clarifications were all incorporated in the development of the instruments.

The content validity was also determined by carrying out a pilot study in two secondary schools in Nyando Sub-County. A test is valid if the content selected and included in the questionnaire or observation schedule are relevant to the variable being investigated (Mugenda and Mugenda, 1999).

3.7.2 Reliability
Reliability is the ability of a test to consistently yield the same results when repeated measurements of the same object are taken under the same conditions. The reliability of the questionnaires was determined by test-retest reliability method. Two teachers of English and twenty students of a girls’ school, and a mixed day school were asked to respond to the questionnaires. After two weeks the researcher administered the questionnaire to the same respondents. From these two sets of responses the
computation of correlation coefficient 0.07 was obtained which was higher than 0.05 or at 5% which was considered high enough for the instruments to be said to be reliable to the study.

3.8 Data Collection Procedure
The researcher self-administered the questionnaires to the respondents. The researcher gave ample time to the respondents and agreed on the day and time for completion of questionnaire by the students and the teachers. The respondents were informed about the intention of the research, its potential to the wider society and of their right to choose to participate or not. Soon after completion of filling in of the questionnaires, the observation was done by the researcher. She sat in the class and observed the lessons in progress. The IT room and the library were visited to see which ICT resources were available.

3.9 Ethical Consideration
Before administration of the research instruments to the respondents, the researcher got a research permit from the Ministry of Education through Kenyatta University. The researcher also reported her intention to conduct the study to the Sub-County Commissioner and Sub-County Director of Education, (SCDE) Nyakach Sub-County. The researcher personally went to the sampled schools and explained to the principals the purpose of the study. The researcher made appointments with the principals to get an appropriate time to administer the questionnaires without interfering with the schools’ learning programmes.
3.10 Data Analysis
Data was coded and cleared ready for analysis. The Statistical Package for Social Sciences (SPSS Version 19.0) was used to analyze the data producing descriptive statistics in form of mean, pie charts and bar graphs representing percentages of responses and therefore identifying the importance of different factors in the integration of ICT in the teaching of English in secondary school.
CHAPTER FOUR
DATA PRESENTATION, ANALYSIS, INTERPRETATION AND DISCUSSION OF FINDINGS

4.0 Introduction
This chapter presents the results, analysis, interpretation and discussion of the research findings. The study had three objectives which were to: investigate the extent to which selected secondary schools in Nyakach Sub-County had embraced ICT in their teaching and learning of English, establish which ICT resources available were used for the teaching of English in secondary schools. The study also sought to find out which areas of English could be taught using these ICT resources.

4.1 Response rate
The study targeted three categories of respondents namely: the principals, teachers of English and Form Three students. However, the researcher was unable to find all the teachers of English and the students; table 4.1 shows the study response rate.

Table 4.1: Study response rate

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Targeted</th>
<th>Obtained</th>
<th>Response rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>%</td>
</tr>
<tr>
<td>Principals</td>
<td>07</td>
<td>07</td>
<td>100.0</td>
</tr>
<tr>
<td>Teachers of English</td>
<td>16</td>
<td>15</td>
<td>93.8</td>
</tr>
<tr>
<td>Students</td>
<td>540</td>
<td>498</td>
<td>92.2</td>
</tr>
<tr>
<td>Total</td>
<td>563</td>
<td>520</td>
<td>92.4</td>
</tr>
</tbody>
</table>
As presented in table 4.1, the study targeted 07 principals from the 07 schools and managed to get the views of all of them and this was a response rate of 100%. On the side of the teachers of English, the study targeted 16 teachers and managed to get the views of 15 teachers which translated to a response rate of 93.8%. The study targeted 540 Form Three students but managed to get the views of 498 students which was a response rate of 92.2%.

4.2 Demographic characteristics of the respondents
This section presents the demographic characteristics of the respondents involved in the study. This section is therefore divided into three subsections based on the respondents in the study. The subsections are the principals, teachers of English and the students.

4.2.1 Demographic Characteristics of the principals
This section presents the demographic characteristics of the principals involved in the study. The demographic characteristics that were explored were gender, age, highest academic qualification, subjects taught, teaching experience and training in ICT use. The researcher chose to explore these demographic characteristics because of their importance in explaining the variable under study.

a) Gender distribution of the principals
Out of the 7 principals who participated in the study, 57.1% were female and 42.9% were male. This shows that the study involved the views of both male and female principals and was therefore inclusive.
b) Age of the principals

The distribution of the principals based on age was as presented in table 4.2.

Table 4.2: Age of the principals

<table>
<thead>
<tr>
<th>Age of the principals</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>41-50</td>
<td>2</td>
<td>28.6</td>
</tr>
<tr>
<td>&gt;50</td>
<td>5</td>
<td>74.1</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

From table 4.2 all the principals were over 41 years of age. A total of 28.6% were aged between 41 and 50 while 71.4% were above 50 years of age. This could be a possible indicator that headship was associated with higher ages. As managers and policy makers, they are likely to have developed quality improvement measures; adopted team building and being involved in academic activities to enable them implement the new innovation.

c) Academic qualifications of the principals

Academic qualifications of respondents was an important attribute in this study. The findings on principals’ academic qualifications were as presented in table 4.3.
Table 4.3: Highest academic qualifications of the principals

<table>
<thead>
<tr>
<th>Academic qualifications</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diploma</td>
<td>2</td>
<td>28.6</td>
</tr>
<tr>
<td>Bachelors’ Degree</td>
<td>3</td>
<td>42.8</td>
</tr>
<tr>
<td>Masters’ Degree</td>
<td>2</td>
<td>28.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

On academic qualifications, 28.6% of the principals were Diploma holders, 42.9% with Bachelor Degree and the remaining 28.9% had Masters’ Degree as the highest academic qualifications. The corresponding percentages are captured in table 4.3. From these findings it is clear that all the principals were trained and were therefore able to understand and articulate strategies that could improve implementation of ICT integration in their schools.

a) Subjects taught by Principals

The researcher was interested in the subjects taught by the principals, the findings were as presented in figure 4.3

![Figure 4.1: Subjects taught by Principals](image)
From figure 4.3, out of the 7 principals who participated in the study, 42.9% were teachers of Science, 28.9% were teachers of Humanities, 14.3% were teachers of Mathematics/Geography and 14.3% were teachers of English/Literature.

b) Principals’ teaching experience

The study sought the teaching experience of principals involved in the study. The responses were as presented in table 4.4.

Table 4.4 Teaching experience

<table>
<thead>
<tr>
<th>Years of experience</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-15</td>
<td>1</td>
<td>14.3</td>
</tr>
<tr>
<td>16-20</td>
<td>3</td>
<td>42.9</td>
</tr>
<tr>
<td>21-25</td>
<td>1</td>
<td>14.3</td>
</tr>
<tr>
<td>&gt;25</td>
<td>2</td>
<td>28.6</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td>100</td>
</tr>
</tbody>
</table>

c) Level of ICT literacy

The researcher sought information on the ICT literacy levels among the principals.

The findings were as presented in figure 4.2.

Figure 4.2: The ICT literacy proportion of the principals
As presented in figure 4.2, 28.6% of the principals who participated in the study had ICT training while 71.4% had no training in ICT. Literacy in use of ICT is important because it gives the principals an edge over the other teachers and they could act as mentors to the other teachers in their schools.

4.2.2 Demographic characteristics of the teachers of English

a) Gender distribution of the teachers

Out of the 15 teachers of English who were involved in the study, 53.8% were male and 46.2% were female. This shows that study involved both male and female teachers therefore the study was not biased.

b) Age of the teachers

Table 4.5: Age distribution of the teachers

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Frequency</th>
<th>Percentage%</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-29</td>
<td>6</td>
<td>40.0</td>
</tr>
<tr>
<td>30-34</td>
<td>4</td>
<td>26.7</td>
</tr>
<tr>
<td>35-39</td>
<td>3</td>
<td>20.0</td>
</tr>
<tr>
<td>40-45</td>
<td>2</td>
<td>13.3</td>
</tr>
<tr>
<td>46-49</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>&gt;50</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>100</td>
</tr>
</tbody>
</table>
The study found that 40% of the teachers were aged between 25 and 29 years, 26.7% were aged between 30 and 34, 20% of the teachers were aged between 35 and 39 years and 13.3% were aged between 40 and 45. There were no teachers of English aged above 46 years. Most teachers of English were young, therefore were able to embrace new innovations like ICT with ease.

c) Academic qualification of the teachers

![Pie chart showing academic qualifications of teachers]

**Figure 4.3 Teachers’ highest academic qualification**

In the exploration of the academic qualification of the teachers, 13.3% were Diploma holders, 73.3% were Bachelors’ Degree holders and 13.3% were Masters’ degree holders. The above information is represented in figure 4.3. A teacher’s qualification determines how effective the teacher can be in teaching. Trained teachers are armed with the requisite skills and knowledge in their areas of specialization. Allison (1997) opines that skills and knowledge are essential for the successful implementation of any technology.
d) Subject taught

Of the 15 teachers of English who were involved in the study, 13.3% were teachers of English and Kiswahili and the remaining 86.6% were teachers of English and Literature. The teaching of English Language and Literature were integrated as a single subject at secondary level.

e) Teachers’ teaching experience

Table 4.6: Teachers’ teaching experience

<table>
<thead>
<tr>
<th>Teaching Experience (Years)</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1</td>
<td>2</td>
<td>13.3</td>
</tr>
<tr>
<td>1-5</td>
<td>9</td>
<td>60.0</td>
</tr>
<tr>
<td>6-10</td>
<td>1</td>
<td>6.7</td>
</tr>
<tr>
<td>11-15</td>
<td>1</td>
<td>6.7</td>
</tr>
<tr>
<td>16-20</td>
<td>2</td>
<td>13.4</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>100</td>
</tr>
</tbody>
</table>

The sampled teachers of English had varied years of teaching experience as captured in table 4.6. Two of the teachers had less than one year experience in teaching English 60% teachers had between 1 and 5 years experience in teaching English, 6.7% of the teachers
had between 6 and 10 years’ experience in the teaching of English, 6.7% of the teachers had between 11 and 15 years of experience in teaching English, and 13.3% of the teachers had between 16 and 20 years’ experience English. This shows that most of the teachers of English had an experience of 1 and 5 years in the teaching of English.

f) Teachers’ ICT training

The level of ICT skills among teachers were as presented in figure 4.4.

![Figure 4.4: Teachers trained in ICT](image)

From figure 4.4, out of the 15 sampled teachers of English, 80% had been trained in ICT while the remaining 20% had not accessed any training in ICT. This shows that most of the teachers of English had received training in ICT and as had been observed earlier, most of them were relatively young and new in the profession. This shows that knowledge in the use of ICT is taking root especially among the new teachers. Therefore, they are in a better position to utilize the ICT facilities in teaching English.
4.2.3 Demographic characteristic of students

a) Gender composition of students

The study had the views of 498 students. Out of the sampled students, 57% were female while the remaining 43% were male. These findings show that there were a more or less equal proportion of male and female in the study and therefore the study was not bias.

b) Age distribution of students

On the age distribution of the sampled students, the research finding was summarized in the figure 4.5. The mode was found to be 17 years.

Figure 4.5: Age distribution of students
c) **Categories of School that the Students Came From**

The study had interest in the categories of schools that data was collected from.

The results were as presented in figure 4.6.

![Figure 4.6: Distribution of school categories](image)

The analysis shown in figure 4.6 revealed that 80.1% of the interviewed students came from County schools with the remaining 19.9% from Sub-County schools. This finding shows that more County schools were given ICT facilities than the Sub-County schools.

On the types of schools, the findings were as presented in figure 4.7.

![Figure 4.7: Type of schools](image)
As presented in figure 4.7, out of the sampled students, 35% came from purely day schools, 45% came from purely boarding schools while 20% students came from mixed schools. From the above results, the bulk of the schools that were offered ICT resources were the boarding schools.

4.3 Availability of ICT resources

4.3.1 Availability of ICT resources as reported by principals

According to the sampled 7 principals, the ICT resources in schools were contributed by the schools, Ministry of Education, well-wishers and NGOs, except for two schools that did not have NGO’s contributing to any of the ICT resources in the institutions.

Table 4.7: Available ICT resources for teaching

<table>
<thead>
<tr>
<th>No.</th>
<th>Resources</th>
<th>Frequency</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Computer</td>
<td>7</td>
<td>100.0</td>
</tr>
<tr>
<td>2</td>
<td>Smart phones</td>
<td>1</td>
<td>14.3</td>
</tr>
<tr>
<td>3</td>
<td>Internet connectivity</td>
<td>4</td>
<td>57.1</td>
</tr>
<tr>
<td>4</td>
<td>Television</td>
<td>4</td>
<td>57.1</td>
</tr>
<tr>
<td>5</td>
<td>Radio</td>
<td>6</td>
<td>85.7</td>
</tr>
<tr>
<td>6</td>
<td>LCD projectors</td>
<td>4</td>
<td>57.1</td>
</tr>
<tr>
<td>7</td>
<td>Email services</td>
<td>4</td>
<td>57.1</td>
</tr>
</tbody>
</table>

From table 4.7 all the principals said that they had computers in their schools, 57.1% reported that they had T.Vs, internet connectivity, LCD projectors and email services, 85.7% of the principals reported that they had radio and 14.3% of the principals said
that there were smart phones in their schools. This shows that all the schools had computers which are the core ICT resource, and could be used before the other ICT resources could be provided.

4.3.2 Availability of ICT resources as reported by teachers

All the sampled teachers confirmed availability of computers, 86.7% of the teachers confirmed the availability of E-mail services, 66.7% teachers confirmed using power point, 73.3% teachers confirmed the availability of cell phone, 80% teachers confirmed that there was internet connectivity in their schools, 66.7% of the teachers confirmed the availability of television in their schools, 20% of the teachers confirmed the availability of radio in their schools and 80% teachers confirmed of the availability of CD ROMs in their schools. This showed that all schools had been provided with computers and other ICT facilities were provided in varying proportions. Therefore, schools which had been provided with these resources could easily use them in the teaching/learning process. This information is captured in figure 4.8.

![ICT tools available in sample schools](image)

**Figure 4.8: ICT resources available as reported by teachers**
### 4.3.3 Availability of ICT resources as reported by students

**Table 4.8: ICT Resources Available in Schools According to Students**

<table>
<thead>
<tr>
<th>No.</th>
<th>ICT resources</th>
<th>Frequency</th>
<th>Percentage (%) Distribution of ICT resources in schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Computer</td>
<td>493</td>
<td>99.0</td>
</tr>
<tr>
<td>2.</td>
<td>E-mail services</td>
<td>443</td>
<td>89.8</td>
</tr>
<tr>
<td>3.</td>
<td>LCD projector</td>
<td>368</td>
<td>73.9</td>
</tr>
<tr>
<td>4.</td>
<td>Television</td>
<td>489</td>
<td>98.2</td>
</tr>
<tr>
<td>5.</td>
<td>Cell phone</td>
<td>349</td>
<td>70.1</td>
</tr>
<tr>
<td>6.</td>
<td>Internet Connectivity</td>
<td>428</td>
<td>85.9</td>
</tr>
<tr>
<td>7.</td>
<td>CD ROM</td>
<td>343</td>
<td>68.9</td>
</tr>
<tr>
<td>8.</td>
<td>Radio</td>
<td>192</td>
<td>38.6</td>
</tr>
</tbody>
</table>

As presented in table 4.8, 99% students confirmed that there were computers in their schools, 89.8% students confirmed of the availability of e-mail services in their schools and 73.9% of the students said they had power point projectors, 98.2% of the students said they had televisions in their schools, 70.1% of the students said they had cell phones in their schools and 85.9% of the students confirmed that they had internet connectivity in their schools. Only 68.9% of the students said they used CD ROMs in their schools and 38.6% of the students confirmed that their schools had radio. From the study it was evident that all the schools had computers and other ICT resources were present in varying proportions with the radio being the least available.
4.4 Extent of ICT integration in the teaching of English
The first objective of the study examined the extent of ICT integration in the teaching and learning of English. The study examined the views of the teachers and the students. The views were as presented in figures 4.9.

![Figure 4.9: Application of ICT by teachers](image)

From figure 4.9, out of the sampled teachers 73.3% used the ICT resources for teaching vocabulary, 86.7% of the teachers used the resources for literature search, 86.7% of the teachers used ICT resources in setting exams and 16.7% of the teachers used ICT resources for marking exams. This shows that the teachers of English mostly use ICT resources in the setting of exams and looking up material to be used in teaching and rarely use the resources for marking exams. The internet contains materials on various topics which teachers can use to supplement the materials got from the text books.
As appertains to learning of English, students agreed to sometimes use ICT with varied proportions as distributed in table 4.9.

**Table 4.9: Application of ICT resources by students**

<table>
<thead>
<tr>
<th>Description</th>
<th>Freq</th>
<th>Sometimes %</th>
<th>Freq</th>
<th>Never %</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT is integrated into the instructional programmes</td>
<td>269</td>
<td>54.0</td>
<td>229</td>
<td>46.0</td>
</tr>
<tr>
<td>ICT is integrated teaching vocabularies</td>
<td>301</td>
<td>60.4</td>
<td>197</td>
<td>39.6</td>
</tr>
<tr>
<td>Teachers use to assess our listening skills</td>
<td>266</td>
<td>53.4</td>
<td>232</td>
<td>46.6</td>
</tr>
<tr>
<td>We use it to source for information</td>
<td>403</td>
<td>80.9</td>
<td>95</td>
<td>19.1</td>
</tr>
<tr>
<td>Do my homework</td>
<td>187</td>
<td>37.6</td>
<td>311</td>
<td>62.4</td>
</tr>
<tr>
<td>Practice things I learnt at school</td>
<td>286</td>
<td>57.5</td>
<td>212</td>
<td>42.5</td>
</tr>
</tbody>
</table>

From table 4.9, of the sampled students 54% confirmed that ICT was fully integrated into the instructional programmes, 60.4% of the students said ICT was integrated in teaching vocabularies, 53.4% of the students said teachers used ICT resources to assess their listening skills, 80.9% of the students said that they used ICT resources to source for information, 37.6% of the students said ICT resources helped them do their homework and 57.5% of the students said ICT resources helped them practice what they learnt at school. On average, ICT resources helped students more in sourcing for information on various topics this is because the internet contains lots of information which can be of help to students.
4.5 Skills in English taught using ICT

On skills taught and improved as a result of use of ICT, the teachers’ responses were presented in table 4.10.

Table 4.10: Skills taught and improved using ICT as reported by teachers (15)

<table>
<thead>
<tr>
<th>Skills</th>
<th>Frequency</th>
<th>SD</th>
<th>D</th>
<th>UD</th>
<th>A</th>
<th>SA</th>
<th>Mean %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>Frequency</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>8</td>
<td>4</td>
<td>3.9</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>6.7</td>
<td>0</td>
<td>13.3</td>
<td>53.3</td>
<td>26.6</td>
<td>100</td>
</tr>
<tr>
<td>Writing</td>
<td>Frequency</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>9</td>
<td>2</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>13.3</td>
<td>6.7</td>
<td>6.7</td>
<td>60</td>
<td>13.3</td>
<td>100</td>
</tr>
<tr>
<td>Listening</td>
<td>Frequency</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>8</td>
<td>4.5</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>46.7</td>
<td>53.3</td>
<td>100</td>
</tr>
<tr>
<td>Speaking</td>
<td>Frequency</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>7</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>Percentage</td>
<td>0</td>
<td>6.7</td>
<td>13.3</td>
<td>33.3</td>
<td>46.7</td>
<td>100</td>
</tr>
</tbody>
</table>

Key: SA=Strongly Disagree, D= Disagree, UD= Undecided, A= Agree, SA= Strongly Agree

On skills taught and improved using ICT, the teachers had varied opinions as captured in table 4.8. The researcher asked the teachers to rate the influence of these resources on the acquisition of different skills. The researcher presented the teachers with a likert scale to report on this level of acquisition. The teachers had to respond Strongly Disagree-1, Disagree-2, Undecided-3, Agree-4 and Strongly Agree-5. For each skill the scores of the responses of all the teachers were summed up to present a mean. A mean of less than 1.5 meant that the teacher strongly disagreed that use of ICT resources helped in improving that particular skill. A mean between 1.5- 2.5 meant that the teachers disagreed that the use of ICT resources improved that particular skill; a mean of between 2.5-3.5 meant that the teachers were undecided as to the effects of ICT resources on that particular skill. A mean of between 3.5- 4.5 meant that the teachers agree that ICT resources helped in the
acquisition of that skill. Finally a mean score of greater than 4.5 meant that the teachers strongly agreed that the use of ICT resources helped in the acquisition of that particular resource.

On reading skills 6.7% of the teachers strongly disagreed that the use of ICT improved the reading skills of the students, 13.7% of the teachers were undecided whether the use of ICT resources helped the students in improving their reading skills, 53.3% of the teachers agreed that the use of ICT helped the students in improving their reading skills and 26.6% of the teachers strongly agreed that the use of ICT resources improved the reading skills of the students. This gave a mean score of 3.9 which meant that the teachers agreed that the use of ICT resources improved students’ reading skills. On the other hand, 13.3% of the teachers strongly disagreed that use of ICT resources improved students’ writing skills, 6.7% of the teachers disagreed that ICT resources improved students’ writing skills, 6.7% of the teachers were undecided whether ICT improved students’ writing skills, 60% teachers agreed that the use of ICT resources improved students’ writing skills and 13.4% of the teachers strongly agreed that ICT improves students’ writing skills. The mean response was 3.5, which means that the teachers agreed that ICT resources improved students’ writing skills.

On listening skills, 46.7% of the teachers agreed that the use of ICT resources improved students’ listening skills and 53.3% strongly agreed that use ICT resources improved students listening skills. The mean response was 4.5 indicating that the teachers strongly agreed that the use of ICT resources helped students acquire listening skills.
Lastly, 6.7% of the teachers disagreed that use of ICT resources improved students’ speaking skills, 13.3% of the teachers were undecided whether the use of ICT improved the students’ speaking skills or not, 33.3% of the teachers agreed that the use of ICT improved students’ speaking skills and 46.7% of the teachers strongly agreed that the use of ICT resources improved students’ speaking skills. The mean response was 4.2 showing that the teachers agreed that the use of ICT resources improved the speaking skills of the students. The average mean was found to be 4.0 which meant that on average the teachers agreed that the use of ICT improved reading, writing, listening and speaking skills in students. The study further sought to determine the skills taught using ICT among students. The results were as presented in table 4.11.

<table>
<thead>
<tr>
<th>Skills</th>
<th>SD</th>
<th>D</th>
<th>UD</th>
<th>A</th>
<th>SA</th>
<th>MEAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td>Frequency</td>
<td>71</td>
<td>31</td>
<td>24</td>
<td>155</td>
<td>217</td>
</tr>
<tr>
<td></td>
<td>Percentages</td>
<td>14.3</td>
<td>6.2</td>
<td>4.8</td>
<td>31.1</td>
<td>43.6</td>
</tr>
<tr>
<td>Writing</td>
<td>Frequency</td>
<td>84</td>
<td>58</td>
<td>56</td>
<td>192</td>
<td>108</td>
</tr>
<tr>
<td></td>
<td>Percentages</td>
<td>16.9</td>
<td>11.6</td>
<td>11.2</td>
<td>38.6</td>
<td>21.7</td>
</tr>
<tr>
<td>Listening</td>
<td>Frequency</td>
<td>81</td>
<td>48</td>
<td>57</td>
<td>95</td>
<td>217</td>
</tr>
<tr>
<td></td>
<td>Percentages</td>
<td>16.3</td>
<td>9.6</td>
<td>11.4</td>
<td>19.1</td>
<td>43.6</td>
</tr>
<tr>
<td>Speaking</td>
<td>Frequency</td>
<td>95</td>
<td>58</td>
<td>46</td>
<td>117</td>
<td>182</td>
</tr>
<tr>
<td></td>
<td>Percentages</td>
<td>19.1</td>
<td>11.6</td>
<td>9.2</td>
<td>23.5</td>
<td>36.5</td>
</tr>
</tbody>
</table>

Key: SD= Strongly Disagree, D= Disagree, UD= Undecided, A= Agree, SA= Strongly Agree

On students’ skills taught and improved using ICT, the students had varied opinions as captured in table above. The researcher asked the students to rate the influence of ICT resources on the acquisition of different skills. The researcher presented the students
with a Likert scale to report on this level of acquisition. The students had to respond
Strongly Disagree- 1, Disagree-2, Undecided-3, Agree-4 and Strongly Agree-5. For
each skill the scores of the response of all the students were summed up to present a
mean. A mean of less than 1.5 meant that the ICT resources did not help in improving
that particular skill, a mean of between 1.5-2.5 meant the students disagreed on the fact
that ICT resources improved that particular skill. A mean of 2.5-3.5 meant that the
students were undecided as to the effects of ICT resources on that particular skill, a
mean of between 3.5-4.5 indicated that students agreed that ICT resources helped in the
acquisition of that skill and lastly a mean score of greater than 4.5 meant that ICT
resources highly helped in the acquisition of that skill.

On reading skills, 14.3% strongly disagreed that ICT resources helped them in acquiring
reading skills, 6.2% of the students disagreed that ICT resources helped in acquiring
reading skills, while 4.8% were undecided on this proposition. Another 31.1% of the
students agreed that ICT resources helped in the acquisition of reading skills and 43.6%
of the students strongly agreed to the fact that ICT resources improved their reading
skills. This gave a response mean of 3.8 showing that the students agreed that ICT
resources improved their reading skills.

Of the sampled students, 16.9% disagreed that ICT resources helped in improving their
writing skills, 11.6% disagreed that ICT resources improved their writing skills, 11.2%
of the students were undecided whether ICT resources improved their writing skills,
38.6% of the students agreed that ICT resources improved their writing skills and 21.7%
of the students strongly agreed that ICT resources improved their writing skills. This gave a response mean of 3.4 showing that the students were undecided whether ICT resources helped in improving writing skills.

On listening skills, 16.3% strongly disagreed that ICT resources helped in acquiring writing skills, 9.6% of the students disagreed that ICT resources helped in acquiring listening skills, 11.4% of the students were undecided as to whether ICT resources improved listening skills or not, 19.1% of the students agreed that the use of ICT resources improved their listening skills and 43.6% of the students strongly agreed that use of ICT resources improved listening skills. This gave a response mean of 3.6 showing that the students agreed that use of ICT resource help in acquiring listening skills.

On speaking skills, 19.1% of the students strongly disagreed that use of ICT resources improved their speaking skills, 11.6% of the students disagreed that ICT resources improved speaking skills, 9.2% of the students were undecided whether ICT resources improved speaking skills or not, 23.5% of the students agreed that use of ICT resources improved speaking skills and 36.5% of the students strongly agreed that use of ICT resources improved their speaking skills. This gave a response mean of 3.4 showing that the students were undecided whether the use of ICT improved their speaking skills or not. The average mean was found to be 3.6 which meant that on average the students agreed that the use of ICT improved Reading, Writing, Listening and Speaking skills.
4.6 Data collected through checklist
In order corroborate and complement the information provided by the respondents concerning the availability and the use of ICT resources in the sampled schools, the researcher directly observed the resources. Using an observation schedule previously developed, observation was done in all the seven schools involved in the study. A summary of the findings is provided in table 4.12.

Table 4.12: ICT Resources found in schools

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>Percentage</td>
</tr>
<tr>
<td>Computer</td>
<td>7</td>
</tr>
<tr>
<td>IT room</td>
<td>7</td>
</tr>
<tr>
<td>Radio</td>
<td>6</td>
</tr>
<tr>
<td>Tablets</td>
<td>0</td>
</tr>
<tr>
<td>Smart phones</td>
<td>1</td>
</tr>
<tr>
<td>Internet connectivity</td>
<td></td>
</tr>
<tr>
<td>Television</td>
<td>4</td>
</tr>
</tbody>
</table>

The findings in table 4.12 showed a close similarity between what the respondents reported and the observation that was made in the schools as concerns the availability of ICT resources. For example, the principals, teachers and students reported 100%, 100% and 99% respectively of the availability of computers and this was confirmed by the researcher as 100%. As reported by the principals, all the sampled school had IT rooms
and this was confirmed by the researcher. Of the principals sampled 57.1% confirmed that there was internet connectivity in their schools and this was corroborated with what the researcher found. There were no tablets in all the schools as observed by the researcher and the principals had pointed this out. The close similarity between what the principals, teachers of English and students said about the availability of ICT resources and the observations made added to the reliability of the research instruments.

4.7 ICT Facilities used in the Classroom

Lastly, the respondents views on ICT facilities used in classrooms were as presented in table 4.13.

**Table 4.13: ICT facilities used in the classroom**

<table>
<thead>
<tr>
<th>IT Resources</th>
<th>Yes Frequency</th>
<th>Yes Percentage</th>
<th>No Frequency</th>
<th>No Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer</td>
<td>10</td>
<td>35.7</td>
<td>18</td>
<td>64.3</td>
</tr>
<tr>
<td>LCD Projector</td>
<td>7</td>
<td>27</td>
<td>21</td>
<td>73</td>
</tr>
<tr>
<td>Smart phones</td>
<td>0</td>
<td>0</td>
<td>28</td>
<td>100</td>
</tr>
<tr>
<td>Tablets</td>
<td>0</td>
<td>0</td>
<td>28</td>
<td>100</td>
</tr>
<tr>
<td>TV</td>
<td>6</td>
<td>21.4</td>
<td>22</td>
<td>78.6</td>
</tr>
</tbody>
</table>

A total of 28 observations were made by the researcher and the findings in table 4.15 showed that in only 35.7% lessons was there use of computers and these were used in teaching listening comprehension, pronunciation, and spelling. Only 27% lessons used LCD projectors, these were used to teach genres of Oral literature and parts of speech.
Smart phones and tablets were not used in any of the lessons observed. In 21.4% of the lessons observed there was use of TVs where the students observed an on-going debate in order to write a composition on what they had viewed. Students viewed the T.V to listen to various speakers speaking on various topics. In most of the lessons, teachers did not use ICT resources despite their availability in schools. Of the available ICT resources, computer was the most frequently used because it was a core ICT resource.

4.8 Discussion of the findings
The first objective was to find out to what extent schools in Nyakach Sub County had embraced ICT in the teaching and learning process. It is the ministry’s policy that ICT should be integrated into education so that the learners and staff are prepared in the use of ICT so that they become ICT literate; skills that are required in the present society, (MOEST, 2006).

The study found out that the use of ICT in teaching English in secondary schools in Nyakach Sub-County was still in the formative stages. Not many schools had embraced the use of ICT into the teaching and learning process. The study found out that the government, private sectors, NGOs and Board of Management (BOM) had donated to some schools ICT facilities which could be used in the teaching and learning process. The study also revealed that all the schools had assorted ICT resources ranging from computers, LCD projectors, cell phones, and internet, CD ROMs, T.Vs and radio resources. However, the findings revealed that these resources were inadequate in all the sampled institutions. As noted by Wafula et al (2007), the government encouraged
private sectors to help in the promotion of ICT in secondary schools and as a result a number of bodies were involved in the financing of ICT in public schools. The financiers included Computers for Schools Kenya, Kenya Education Network, ICT Trust Fund, and NEPAD. The findings from the principals showed that most of the ICT facilities found in their schools had been provided by the government in line with the government’s national policy to make sure that quality of education is improved as documented by Farrell (2007) in the Survey of ICT in Africa Report. The report recommended the development of e-learning materials that would help address the educational needs of primary, secondary and tertiary institutions.

The principals were all in agreement that the available ICT resources were not adequate in carrying out the teaching and learning process. The integration of ICT in the teaching and learning process was further hampered by a lack of qualified ICT teachers who could use the resources effectively, a lack of internet connectivity and a lack of technicians who could maintain or repair the equipment in case of breakdown. Some principals also reported that the IT rooms lacked IT classroom plan and the safety of the equipment was not guaranteed. This is because when the ICT resources were received, the available classes were turned into IT rooms. These findings are in agreement with the findings of Jones (2004) who identified several barriers while integrating ICT in lessons. First, the teachers lacked confidence while using ICT resources, secondly, the ICT resources could not be easily accessed by the teachers and thirdly, the teachers lacked time for integration. Furthermore, the teachers lacked the technical knowhow on the usage of ICT resources and the age of the teacher was also seen as a barrier. Teachers who have taught
for long are not ready to adopt new strategies. Akbaba-Altun’s (2006) findings also agree with these findings. In his study he found that ICT integration into teaching was hindered by a lack of computers, which are a core ICT resources, slow internet connection, poor IT rooms, insecurity, and insufficient in-service training for teachers. Odera (2011) in her findings also cited that ICT integration was hindered by the inadequate supply of computers, attitudes of teachers towards the use of computer-related education. Time was another limiting factor and lack of training among the teachers who were the main implementers. Ayere et al. (2010) also found out that there was integration of ICT in teaching and learning but this cannot be completely realized due to lack of computers in their schools, rules and regulations from the ICT department and the number of computer teachers in the schools were few. These findings are also supported by Chang’ach et al. (2009) who also found out that teachers’ knowledge in the use of ICT influenced how the learners used the resources in learning. Nyambane et al. (2014) also found out that for ICT integration in education to be effective, the ICT resources should be accessible; the users must have confidence and competence while using the resources. The teachers also need to have technical support, time, professional advancement and the right software and hardware. From the findings of these studies, it can be concluded that for ICT integration to be achieved, there are various factors which have to be considered.

The second objective of the study was to find out which ICT resources were available for the teaching and learning of English. The study established that the teachers used a range of resources in the teaching of English. These resources included the computer, T.V.s, LCD projectors, radio, cell phones, internet and CD ROMs in various
proportions. These ICT resources were utilized by both the teachers and students in the learning of English. Technology complements language learning allowing access to current online materials and making it possible for the learners to interact with native speakers which is an authentic environment for learning a new language. Technology offers an all inclusive learning experience to the learners which is required in the development of a lifelong autonomous learning. Due to the many advantages of the ICT resources it must be integrated into the curriculum and be linked to all the learning activities (Hoven, 1999).

The third objective of the study was to find out which areas of English teaching and learning could be complemented by use of ICT resources. The resources were used in the teaching of reading, writing, speaking and listening skills. Drama could be taught using TVs, students could also learn pronunciation by recording the correct pronunciation of words on DVDs and repeat them until perfection is achieved. The internet contains various educational articles which can help the students improve their reading. Using emails, the students can practice writing and sending mails which will further help them learn how to write for different audience. A similar study was done by Elia (2007) confirmed that ICT provided varied approaches in teaching and further reinforced the materials delivered in other forms. The study further noted that learners love working with computers as it aids in language acquisition. This study found out that all the respondents were all in agreement that when ICT was used, students’ view of the whole world was improved. The use of ICT inspired, increased and sustained motivation, helped the students search for knowledge and offered unique opportunities
for learning. This is in consonance with Verma (2010) who found out that when ICT was used in education it enhanced education in several ways: first, the learners’ motivation and engagement is increased, and secondly, the many ICT resources can be used to give the learners challenging content that keeps them occupied. Cox et al. (2010) also found that when used ICT made lessons more interesting, more enjoyable, fun, and diverse and improved presentation. These ICT resources could be used in the teaching of listening, reading writing and speaking skills in English.

The teachers confirmed that the ICT resources were used in teaching, Reading, Writing, Speaking and Listening. These ICT equipment were further used in teaching vocabulary, literature search, setting examinations and marking examinations. The teachers and students were all in agreement that ICT equipment helped students in doing their homework and practiced what they had learnt at school.

According to Serhan (2000), in speech work lesson, students may practice pronunciation online using audio dictionary. They can listen and model pronunciation and at the same time learn the meaning of new words and how these new words can be used in sentences. The learners can also access online dictionaries and pick the ones that can help them in learning. Using good software in order to record their voices can be of great help to the learners since they can listen to their own voices. The whole process will help the learners acquire new skills which sharpen their learning skills and broaden their knowledge.
CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction
This chapter presents the summary, conclusion of the research based on the findings and discussions and further gives recommendations for policy and practice.

5.1 Summary of findings
The study examined the extent of ICT integration in the teaching and learning of English and went further to identify which available ICT resources could be used in the teaching of English and which part of English teaching and learning these resources could be used. The study found out that the use of ICT in the teaching and learning of English in secondary schools in Nyakach Sub-County was still in the formative stages. The study also found out that the schools had assorted ICT resources ranging from computers, LCD projectors, cell phones, CD-ROMS, TVS, radio and internet services. However these resources were inadequate and thus could not be used effectively in the learning process. The study revealed that the ICT resources could be used in the teaching of English language skills namely: reading, listening, writing and speaking.

5.2 Conclusions
The following conclusions were arrived at:

1. The first conclusion made was that a good number of schools in Nyakach Sub-County have started integrated ICT in teaching of English. These schools have assorted ICT resources ranging from computers, E-mail services, LCD projectors, television., cell phones, internet, CD ROMs and radio; though the student population
out number these available resources in various schools, hence, a need to intensify efforts geared towards additional resource mobilization. These resources were often used by teachers in the teaching of English in varied proportions.

2. Second, it was concluded that all the stakeholders from Nyakach district are in support of advancement of ICT skills in secondary schools, and that is why they all make significant contributions towards acquisition of ICT resources.

3. Finally, it was concluded that full integration of ICT in secondary schools within Nyakach may be jeopardized by the fact that a proportion of principals and teachers of English are still ICT illiterate. This raises a need to urge the teachers to acquire the vital knowledge and skills needed so that the integration of ICT in the teaching process can be fully realized.

5.3 Recommendations

It is easily understandable that ICT is a part of technical and specialized knowledge and skills whose acquisition is much important in staying at par with the constantly dynamic global market. It should be integrated in the education system so as to build globally competitive graduates from all levels of education. This study therefore recommends the following:

1. To achieve literacy in ICT, it is important that the teachers, preferably of all subjects, be trained on ICT. It is important that all the principals should also be included in the bracket for holistic ICT literacy.

2. Intensive resource mobilization efforts should be put in place by the government to enable all schools acquire ICT resources and improve access by all the students and
teachers in the learning institutions.

3. The government should avail mobile phones, which are relatively cheaper ICT resources, to schools to enable the students access the internet. Furthermore, the government should relax its rule on the use of mobile phones in schools and allow those students who can afford to buy them do so. Mobile phones, laptops and tablets should be provided to help ease congestion in the IT rooms.

4. Besides equipping students with the theoretical knowledge only, it would be commendable to also put more emphasis on practical application of ICT skills.

5.4 Suggestions for further study
From the research findings and conclusions, the following conclusions were made;

1. This study was restricted to only one Sub-County; therefore, other studies should be done on a larger scale in order to compare the findings with what is happening elsewhere in the country.

2. A study should be conducted to investigate ICT use in other language subjects, so that a comparison can be made.
REFERENCES


Allison, L. (1997). *Factors which, potentially, will enable teaching staff to make more effective use of ICT for learning and teaching*: Centre for Academic Practice, University of Strathclyde, Glasgow G1 1QE. Retrieved on 20th January 2014 from https://www.google.com#q=Allison+%281997%29+and+ICT


http://www.information.go.ke/doc.ict20policy.pdf


Neuman, W. L. (2000). *The selection of a research design.* www.sagepub.com/upm-data/22780_chapter_1pdf


Odera, F. Y. (2011). Emerging issues in the implementation of computer technology into Kenyan Secondary school classrooms. *International Journal of Science and Technology (1(6)112-123).*


APPENDICES

APPENDIX I: INTRODUCTORY LETTER TO THE PRINCIPALS

Box 185 40111

PAP-ONDITI

DATE: ……………………………… Dear Sir / Madam

RE: INTEGRATION OF ICT IN TEACHING OF ENGLISH IN SECONDARY SCHOOLS IN NYAKACH SUB-COUNTY, KISUMU COUNTY

This letter is a request to you to help me in getting information for my research. The study aims at establishing to what extent teachers and students have integrated ICT in the teaching and learning of English in Nyakach Sub-county, Kisumu County. The information given will be used for academic purposes. You need not write your identification anywhere on the questionnaire. Provide your responses by either filling in the blanks or ticking in the options that apply to you.

Thank you,

Jane Owino.
APPENDIX II: QUESTIONNAIRE FOR THE PRINCIPALS SECTION

A: PERSONAL INFORMATION

Q1. Sex Male [ ] Female [ ]

Q2. Age 20-30 years [ ] 31-40 years [ ]
41-50 years [ ] Over 50 years [ ]

Q3. Your highest academic qualifications is?

Diploma [ ]
Bachelors Degree [ ]
Masters Degree [ ]
PhD [ ]

Other (specify) __________________________________________

Q4. What subject(s) do you teach? _____________________________

Q5. How long have you taught? ________________________________

Less than one year [ ]
1-5 years [ ]
6-10 years [ ]
11-15 years [ ]
16-20 years [ ]
21-25 years [ ]
Above 25 years [ ]
Q6. Have you been trained on the use of ICT?

YES [ ]  NO [ ]

SECTION B

Q7. Below is a list of ICT resources that can enhance the teaching / learning of English. Identify those available in your school

<table>
<thead>
<tr>
<th>Resource</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer</td>
<td>[ ]</td>
</tr>
<tr>
<td>Internet (www)</td>
<td>[ ]</td>
</tr>
<tr>
<td>Email</td>
<td>[ ]</td>
</tr>
<tr>
<td>CD ROM</td>
<td>[ ]</td>
</tr>
<tr>
<td>LCD projector</td>
<td>[ ]</td>
</tr>
<tr>
<td>Radio</td>
<td>[ ]</td>
</tr>
<tr>
<td>Television</td>
<td>[ ]</td>
</tr>
<tr>
<td>Cell phones</td>
<td>[ ]</td>
</tr>
<tr>
<td>Others</td>
<td></td>
</tr>
</tbody>
</table>

Q8. Indicate by (√) how the ICT resources in your school were acquired

<table>
<thead>
<tr>
<th>Source</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>The school bought and installed</td>
<td>[ ]</td>
</tr>
<tr>
<td>The ministry of education</td>
<td>[ ]</td>
</tr>
<tr>
<td>Well-wishers donated</td>
<td>[ ]</td>
</tr>
<tr>
<td>Parents bought</td>
<td>[ ]</td>
</tr>
<tr>
<td>Any other</td>
<td></td>
</tr>
</tbody>
</table>
Q9. Are the ICT resources available adequate in teaching English?

YES [ ] NO [ ]

Q10. In your view, what are the benefits of ICT?

-----------------------------------------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------------------------------------

Q11. Are there any challenges that are faced in the integration of ICT in teaching in your?

-----------------------------------------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------------------------------------
-----------------------------------------------------------------------------------------------------------------------------

THANK YOU FOR YOUR COOPERATION
APPENDIX III: INTRODUCTORY LETTER TO THE TEACHERS OF ENGLISH

BOX 185 4011

PAP ONDITI

DATE: ……………………………… Dear Sir / Madam

RE: INTEGRATION OF ICT IN TEACHING OF ENGLISH IN SECONDARY SCHOOLS IN NYAKACH SUB-COUNTY, KISUMU COUNTY

This letter is a request to you to help me in getting information for my research. The study aims at establishing to what extent teachers and students have integrated ICT in the teaching and learning of English in Nyakach Sub-county, Kisumu County. The information given will be used for academic purposes. You need not write your identification anywhere on the questionnaire. Provide your responses by either filling in the blanks or ticking in the options that apply to you.

Thank you,

Jane Owino.
APPENDIX IV: QUESTIONNAIRE FOR TEACHERS OF ENGLISH

SECTION A: PERSONAL INFORMATION

Q1. Sex Male [ ] Female [ ]

Q2. Age
   25-29 years [ ]
   30-34 years [ ]
   35-39 years [ ]
   40-44 years [ ]
   45-49 years [ ]
   >50 years [ ]

Q3. Your highest academic qualification is?
   Diploma [ ]
   Bachelors Degree [ ]
   Masters Degree [ ]
   PhD [ ]
   Other (specify) ____________________________

Q4. What subject(s) do you teach? ____________________________

Q5. How long have you taught? ____________________________
   Less than a year [ ]
   1-5 years [ ]
   6-10 years [ ]
Q6. Have you been trained on the use of ICT?

YES [ ]

NO [ ]

SECTION B

Q7. Below is a list of ICT resources that can enhance the teaching / learning of English. Identify those available in your school

Computer [ ] Internet (www) [ ]

Email [ ] CD ROM [ ]

LCD projector [ ] Radio [ ]

Television [ ] Cell phones [ ] Others………………

Q8. Are the ICT resources available adequate in teaching English?

YES [ ]

NO [ ]

Q9. Which areas in English teaching and learning do you use ICT resources?

------------------------------------------------------------------------------------------------------------
Q10. The use of ICT helps to improve the following students’ skills

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Writing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Listening</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speaking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q11 In your view how has the use of ICT helped in the teaching/learning process?

THANK YOU FOR YOUR COOPERATION
APPENDIX V: INTRODUCTORY LETTER TO THE STUDENTS

BOX 185

PAP-ONDITI

DATE: ......................................

Dear Student

RE: INTEGRATION OF ICT IN TEACHING OF ENGLISH IN SECONDARY SCHOOLS IN NYAKACH SUB-COUNTY, KISUMU COUNTY

This letter is a request to you to help me in getting information for my research. The study aims at establishing to what extent teachers and students have integrated ICT in the teaching and learning of English in Nyakach Sub-county, Kisumu County. The information given will be used for academic purposes. You need not write your identification anywhere on the questionnaire. Provide your responses by either filling in the blanks or ticking in the options that apply to you.

Thank you,

Jane Owino.
APPENDIX VI: QUESTIONNAIRE FOR THE STUDENTS SECTION

A: PERSONAL INFORMATION

Q1. Sex Male [ ] Female [ ]

Q2. What is your age--------------------------?

Q3. Your school is Sub County [ ]

County [ ]

Q4. Your school is Day [ ]

Boarding [ ]

SECTION B

Q5. Below is a list of ICT resources that can enhance the teaching / learning of English. Identify those available in your school

Computer [ ] Internet (www) [ ]

Email [ ] CD ROM [ ]

LCD projector [ ] Radio [ ]

Television [ ] Others ____________________________

Cell phones [ ]
Q6. Tick as appropriate the areas ICT is used in learning of English in your institution

<table>
<thead>
<tr>
<th>Area</th>
<th>Sometimes</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT is integrated into the instructional programme</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICT is integrated teaching vocabulary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers use to assess our listening skills</td>
<td></td>
<td></td>
</tr>
<tr>
<td>We use it to source for information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do my homework</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practice things I learnt at school</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q7. The use of ICT has improved my ability and skills in…….

<table>
<thead>
<tr>
<th>Skill</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Undecided</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Writing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Listening</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Speaking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

THANK YOU FOR YOUR CO-OPERATION
APPENDIX VII: CLASSROOM OBSERVATION CHECKLIST

Types of ICT facilities used in class

<table>
<thead>
<tr>
<th>Types of ICT facilities used in class</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laptops</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LCD Projectors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smart phones</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tablets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Televisions</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# APPENDIX VIII: OBSERVATION CHECKLIST OF ICT RESOURCES IN SCHOOL RESOURCE

<table>
<thead>
<tr>
<th>Resource</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laptop</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Projector</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT Room</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Printer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX IX: PERMIT

THIS IS TO CERTIFY THAT:

MRS. JANE KAREJI OWINO

OF KENYATTA UNIVERSITY, 0-40111

has been permitted to conduct research in Kisumu County
don the topic: INTEGRATION OF ICT IN THE TEACHING OF ENGLISH IN SECONDARY SCHOOLS IN NYAKACH DISTRICT, KISUMU COUNTY for the period ending 31st December, 2014.

Signature

Secretary

National Commission for Science, Technology & Innovation
APPENDIX X: RESEARCH AUTHORIZATION

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.co.ke
When replying please quote

Ref: No.

16th September, 2014

NACOSTI/P/14/0125/2683

Jane Kareji Owino
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “Integration of ICT in the teaching of English in secondary schools in Nyakach District, Kisumu County,” I am pleased to inform you that you have been authorized to undertake research in Kisumu County for a period ending 31st December, 2014.

You are advised to report to the County Commissioner and the County Director of Education, Kisumu County before embarking on the research project.

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

DR. S.K. LANG’AT, OGW
FOR: SECRETARY/CEO

Copy to:

The County Commissioner
The County Director of Education
Kisumu County.