INTEGRATION OF INFORMATION COMMUNICATION TECHNOLOGIES IN TEACHING AND LEARNING OF KISWAHILI LANGUAGE IN PUBLIC SECONDARY SCHOOLS IN KAKAMEGA COUNTY, KENYA

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E83/21202/010

A Research Thesis submitted in fulfillment of the requirements for the degree of Doctor of Philosophy in the Department of Educational Communication and Technology, School of Education, Kenyatta University.

AUGUST 2014
DECLARATION

I confirm that this research thesis is my original work and has not been presented in any other university/institution. 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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DEDICATION

To my children, Ian Atsobwa and Sheryl Lusinde, my dear husband, Kefa Miima and my parents, the late William and Melisa Abuyeka for opening the door for my success.
ACKNOWLEDGEMENT

The successful completion of this work was made possible through God’s grace and blessings. Many people contributed in different ways to enable me produce the thesis. First, I would like to thank Kenyatta University for giving me the opportunity and scholarly support to study. Special tribute goes to my supervisors Dr. Karen Oyiengo, Dr. Samson Ondigi and Dr. Edwin Masinde for their sacrifice, keenness, motivation and unparallel encouragement that not only ensured quality of the output, but certainly enhanced my working capacity. Their persistent reminder and demand to see me work and finish the work continuously urged my efforts and made me work harder.

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<tr>
<td>CALL</td>
<td>Computer Assisted Language Learning</td>
</tr>
<tr>
<td>CD-ROM</td>
<td>Compact Disks – Read Only Memory</td>
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<tr>
<td>DVDs</td>
<td>Digital Video Disks</td>
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<tr>
<td>EFA</td>
<td>Education for All</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
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<tr>
<td>INSET</td>
<td>In-Service Education and Training</td>
</tr>
<tr>
<td>KCSE</td>
<td>Kenya Certificate of Secondary Education</td>
</tr>
<tr>
<td>KESSP</td>
<td>Kenya Education Sector Support Program</td>
</tr>
<tr>
<td>KICD</td>
<td>Kenya Institute of Curriculum Development</td>
</tr>
<tr>
<td>KIE</td>
<td>Kenya Institute of Education</td>
</tr>
<tr>
<td>KNEC</td>
<td>Kenya National Examination Council</td>
</tr>
<tr>
<td>MDGs</td>
<td>Millennium Development Goals</td>
</tr>
<tr>
<td>MOE</td>
<td>Ministry of Education</td>
</tr>
<tr>
<td>NEPAD</td>
<td>New Partnership for Africa’s’ Developments</td>
</tr>
<tr>
<td>NI3C</td>
<td>National ICT Innovation and Integration Centre</td>
</tr>
<tr>
<td>PPPs</td>
<td>Public-Private Partnerships</td>
</tr>
<tr>
<td>QASO</td>
<td>Quality Assurance and Standards Officers</td>
</tr>
<tr>
<td>R, D &amp; D</td>
<td>Research, Development &amp; Diffusion</td>
</tr>
<tr>
<td>ROK</td>
<td>Republic of Kenya</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Educational Scientific and Cultural Organization</td>
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ABSTRACT
Integration of technology in education is considered all over the world as a strategy of transforming the quality of education. In recent times, considerable investment in computer based Information Communication Technologies (ICTs) has been made by many countries with a belief that it will support and transform teaching and learning in the school systems. Despite the effort, many teachers in Kenya and elsewhere have been criticized for neglect of integrating ICT into their teaching and learning activities. Concerns have also been raised on availability and integration of the ICT resources in teaching and learning process. The main focus of this study was to investigate the integration of computer assisted ICTs in teaching and learning of Kiswahili language in Secondary schools in Kakamega County, Kenya. The objectives of the study were: to investigate the level and nature of integrating ICTs in teaching and learning of Kiswahili language in Secondary schools; to establish teachers’ and learners’ perceptions about integration of ICT in teaching and learning of Kiswahili language; to establish teachers’ competency in integrating ICTs in teaching and learning of Kiswahili language in Secondary schools; explore the challenges encountered by both the teachers and learners in integration of ICT in teaching and learning of Kiswahili and finally, investigate the extent to which these challenges influence both the teachers and learners in their teaching and learning respectively. The study was guided by Bruner’s Constructivism Theory (1990) and adopted a descriptive survey design. It targeted 45 public secondary schools which had been supplied with computers by the government of Kenya from 2008-2012, 90 Kiswahili language teachers and 3148 form three students in these schools, 2 ICT teacher champions in public secondary schools, one curriculum developer in-charge of Kiswahili language and 2 Quality Assurance and Standard Officers (QASOs). Stratified proportional sampling was used to select schools while purposive sampling was used to select teachers in these schools. The students were selected randomly. Data collection instruments included questionnaires for both teachers and learners, interview schedules for ICT teacher champions, curriculum developer and programmer as well as QASOs. Classroom Observation and document analysis schedules were also used to collect the data. Reliability for the instruments was tested through piloting in two schools. Only the questionnaires were re-tested and accepted at r=0.785. Data was analyzed through descriptive statistics that included frequencies, percentages, means, ratios and inferential statistics (Chi-square and ANOVA). Statistical Package for Social Sciences (SPSS) was used to analyze the data. The study found out that integration of ICTs in teaching of Kiswahili language was not effective. The teachers and students skills were low and the integration was not significant to the sex, category of schools, experience and teachers academic and professional qualifications. Based on these findings, this study recommended that Kiswahili language teachers should be trained in all the ICT skills and also on how to integrate ICTs in their teaching and learning activities. The ministry of Education in conjunction with KICD should organize refresher courses for all the Kiswahili language teachers in secondary schools on ICTs integration in teaching of Kiswahili language. The higher institutions training teachers should create a unit that equips the trainees with ICT skills in their specialized areas. It is hoped that the findings and recommendations of the study will be useful in filling in the gaps in teaching of Kiswahili language and also provide knowledge and skills that Kiswahili curriculum and implementers can incorporate in their teaching activities.
CHAPTER ONE
INTRODUCTION

1.1 Introduction
This study aimed at investigating integration of ICTs in teaching and learning of Kiswahili language in selected pilot secondary schools in Kakamega County in Kenya. This chapter lays the background to the study, statement of the problem, objectives and questions to the study, assumptions, theoretical and conceptual framework. The scope of the study is discussed and an operational definition of key terms has been included.

1.2 Background to the Study
Education systems all over the world are under pressure to integrate the Information and Communication Technologies (ICTs) in teaching and learning various subjects in the school curriculum and Kenya is no exception. Kenya as a country has emphasized the importance of integrating ICTs in the teaching and learning activities through its Education Sector Support Program (KESSP). This is evidenced through the introduction of the National ICT Strategy for Education and Training (MOE, 2005). The document outlines various domains on ICTs. Some of the areas in the document include: ICT in education policy, connectivity and networks infrastructure, digital equipment, access and equity, maintenance and technical support, harnessing emerging technologies, digitized content, ICT
integration in education, research development and training. This will enable the country to achieve global goals like Education for All (EFA) and the Millennium Development Goals (MDGs). In general, the main goal is to facilitate Public-Private Partnerships (PPPs) that will mobilize and offer ICT resources to public schools, community resources and learning centers in Kenya (ROK, 2006).

The Kenya government has taken steps to support and implement the strategy with an aim of enhancing the quality of teaching and learning to enhance students’ participation in the emerging knowledge economy and information based society. Some of the government’s initiative is seen in the vision 2030 which seeks to reform curricula and modernize teacher training to establish a computer supply program that will equip students with modern ICT skills. This will transform the curriculum and ensure that usage of ICT knowledge becomes part of formal instruction (MOE, 2004). Kiswahili language is a compulsory subject in the Kenya school education system (KIE, 2002). Teachers teach Kiswahili like any other language using both traditional and modern approaches of teaching. Old classroom and instructional technologies include use of chalk and writing board, text books, charts, radio and television. According to Look (2005), new technology refers to using computer programs and facilities to teach. These programs and facilities include power point, CDs, DVD, You tube, Internet,
SMART boards, smart pens among others, depending on the level of technological development and use in the region.

Kenya disseminated its ICT policy in 2006 with its vision to become a prosperous ICT-driven Kenyan society and its aim is to better the welfare of the citizen by ensuring the accessibility, efficiency, reliability and affordability of ICT services. The policy spells out the goals, aspirations and strategies of integrating ICT in education. Therefore, the Kenyan government has the task and responsibility of encouraging adoption and use of ICT in all the schools and other institutions of learning in order to better the quality of teaching and learning. (National ICT Policy, 2006). The policy is divided into several sections. These include: Broadcasting, Information technology, Postal services and Telecommunications. The section in the policy on information technology highlights the objectives and strategies of ICT and its integration in education sector. The related strategy under ICT includes:

i. E-learning to promote the development of e-learning resources.

ii. Facilitate public-private partnerships to mobilize resources in order to support e-learning activities.

iii. Promote the development of an integrated e-learning curriculum to support education.

iv. Promote the establishment of a national ICT centre of excellence.
v. Provide affordable infrastructure to facilitate dissemination of knowledge and skill through e-learning platforms.

vi. Create awareness of opportunities offered by ICT as an educational tool to education sector.

vii. Facilitate sharing of e-learning resources between institutions.

viii. Integrate resources with existing resources.

In general, the aim is to facilitate Public-Private Partnerships (PPPs) that will mobilize and provide ICT infrastructure to all public schools, community and other learning institutions in Kenya (ROK, 2006).

In Kenya, teachers at various levels are prepared and encouraged to integrate new technology in their teaching and learning activities in order to achieve their objectives and improve the quality of education. Computers and the related infrastructure like Internet can be used to provide information that could improve the efficiency and effectiveness of the teaching and learning process (Guha, 2003).

Since 1963, education system in Kenya has been undergoing curriculum changes through different commissions and committees appointed by the Government of Kenya. The main aim of curriculum review by these commissions is to identify ways of improving the education system and teaching methodology in Kenya.
Currently, the Kenyan government is keen on ensuring that strategies used in teaching various subjects are tailored to achieving Millennium Development Goals (MDGs) with reference to the latest strategic plan of vision 2030 initiative, the government has commitment to invest in training, research and development, and offer incentives to boost application of ICT in all operations in order to meet the needs of the society (Republic of Kenya, 2005; World Bank, 2003, African Union, 2004). The Sesional paper No. 1 of 2005 which is the current education policy captures stakeholders’ recommendations on how education needs to be transformed to be responsive for the 21st century needs for education and training. Integration of ICTs in education is well articulated in the recent Odhiambo report (2012) that led to the seasonal paper No. 14 of 2012 on reforming education and training sector in Kenya. Both sessional papers provide a policy framework within which integration of ICTs or modern tools in teaching and learning is to take place in various regions and areas in Kenya.

Kiswahili curriculum has undergone revision by the curriculum centre in Kenya (KIE) for a number of years, the latest being in 2002; and some of the changes being implemented include integration of ICTs in teaching and learning of Kiswahili language (KIE, 2008). These changes include adopting new pedagogical practices such as ICTs integration. The main aim is to develop the
teaching and learning of Kiswahili in secondary schools. Kiswahili was accorded a national language status in Kenya because its importance to the country was envisaged. One of the major reasons why Kiswahili language enjoys this new status is due to the fact that it is used in many parts of the world in nurturing and developing various spheres of life like: culture, economy, and politics among others. With the inception of regional trade and education, countries like Rwanda and Burundi have now been included in the East African regional block, hence the need for the development of Kiswahili language for communication across the region. It is therefore important that, it is taught appropriately in schools and institutions of higher learning, so as to further facilitate communication all over the world. This situation has necessitated further developed technological approach in teaching and learning of Kiswahili language.

Integration of ICTs in teaching and learning of Kiswahili can enable the learners interact with the computer based resources rather than the instructor who is the teacher all the time. Through the computer resources, learners are likely to interact and communicate with the teacher on the curriculum content and could even discuss assignments given to them and give immediate feedback. ICTs enable one to engage in learning activities any time, in any place and use any method to learn at any pace. The use of ICTs in teaching and learning Kiswahili language could not have come at a better time.
The Kenya Institute of Curriculum Development (KICD), the curriculum centre in Kenya plays an important role of reviewing curriculum and foreseeing implementation of National Goals of Education in Kenya. According to the report by KIE (2005), integration of ICTs in teaching and learning of Kiswahili language in the country could contribute to making learners participate fully in learning activities and therefore discover and nurture their individual talents. Kiswahili teachers can integrate ICTs program and facilities such as animation, digitization, video captions and voice in their teaching activities to achieve this objective.

There are various ways in which Kiswahili language teachers and learners can integrate ICTs in a language classroom in order to assist the development of the content and four key language skills: listening, speaking, reading and writing. Power point presentations, web downloads of audio and video recordings, commercially produced Compact Disks (CDs) and Digital Video Disks (DVDs), animated graphics, mixing media and electronic communication can enhance teaching and learning Kiswahili subject. The Kiswahili language teacher needs to be creative to employ the different varieties in his/her activities. For instance, a voice- over teacher reads the content and explains the images and colour illustrations that run concurrently. Use of coloured animated images to teach some concepts or topics perceived to be difficult aids students to grasp them faster in an
interesting and relaxed environment. An innovative teacher while teaching Kiswahili composition (insha) for example could start the lesson by showing the learners animated images that highlight the major theme of the lesson to provide a communicative setting for that lesson. This is the only way the Kiswahili language teachers can bridge the gap between the teacher-centered approaches of teaching to learner-centered by introducing computers and related infrastructure as a medium of instruction in the classroom.

There are many advantages of integrating ICTs in teaching and learning of a language, (Leakey, 2011). First it motivates both learners and teachers making the learning process more exciting and enjoyable. Secondly, it provides a wide range of multimedia sources enabling texts, still images, combination of audio and video in exciting and stimulating ways for presentation purposes in the classroom. Thirdly, it offers opportunities for intensive one-to-one learning in a multimedia computer laboratory and lastly, offers access to a rich resource of authentic materials on the internet, CD-ROM and DVD. ICT is perceived as a means of promoting educational change, improving the students’ skills of learning, preparing them for the global economy and information society and also improving delivery and access to education (Kozma & Wagner, 2005). Computer based technology is perceived as a very powerful tool that extends educational chances and facilitate acquisition of knowledge (Conlon & Simpson, 2003) and
redefine the instructor who is the classroom teacher and learners roles and attitude concerning teaching and learning (Guha, 2003).

In Kenyan schools, ICTs has been introduced to the learners and even to some teachers especially in arts and languages at secondary school level. This is done at times without taking into consideration students’ background and the teachers’ training. This makes it difficult for teachers to integrate ICT in their teaching activities and therefore, continue using the old approaches (MOE 2005). Rapid expansion of education system in Kenya is usually politically driven as opposed to well researched interventions. The provision of powered lap-top to all standard one school children is a case in point (Jubilee manifesto, 2013-2017), first it started as political election campaign agenda and is now on the brink of implementation without considering the adequate knowledge on the use by some primary school teachers and even the learners. The Kenyan ICT Policy on Education emphasizes that there is need to: develop ICT resources, establish a national ICT centre of excellence, offer affordable infrastructure for dissemination of knowledge and skill through e-learning as well as integrate ICT resources with other existing resources. This aspect of the policy necessitated the Ministry of Education in conjunction with KIE to initiate ICT programs that are being integrated in teaching and learning of various subjects in secondary schools through trained ICT champions posted to all counties in Kenya. A former Kenya
Science and Training College turned a constituent of University Nairobi College is where a National ICT Innovation and Integration centre (NI3C) has been initiated by the Ministry of Education. The centre is assisting the teachers through their ICT champions in implementing the integration of ICT in education.

Various report, show that, Kiswahili as a subject at secondary level is wide in content and may not be covered adequately within the recommended timeframe (KIE 2005). Grammar lessons in Kiswahili are mainly taught without much variety, some topics are difficult and vocabulary is taught independently lacking originality. National examination results at form four levels, which is the culmination of secondary school Kenya Certificate of Secondary Education (KCSE), released by the national examination body Kenya National Examination Council (KNEC) continue to show poor performance of Kiswahili language (KNEC 2009, 2010). The results could be as a consequence of most Kiswahili language teachers using the content based instruction in their teaching and learning activities. Some of the learners cannot communicate effectively in the language after completing school (Momanyi, 2007). Kiswahili Curriculum Developers feel that integrating computer assisted ICTs in the teaching and learning process could be a solution. Integration of computer assisted ICTs in teaching and learning process has a lot of variety, provides stimulus variation and diversification (Farrel, 2007).
Kiswahili as a language of communication is spoken by almost eighty million people in parts of East and Central Africa, making it one of the most widely used languages in Sub-Saharan Africa. Kiswahili is now the national and the official language in Kenya and it is taught and examined at all levels of education from nursery, primary, secondary schools, teacher training colleges and universities (Republic of Kenya 1981). Apart from being an official language in Kenya, Kiswahili has spread all over the world and more than forty nine (49) international institutions of higher learning use Kiswahili as a language of research. Countries that carry out research in Kiswahili language include Britain, America, Europe, German, China and some of the African countries where it is perceived as the richest language in the region in culture, semantics and phonetics (Mwanzoka 2003, Musau, 2003). It is evident that as a language, Kiswahili is receiving international recognition.

Kiswahili is also taught as a foreign language in more than one hundred institutions of higher learning in the world (Chimera, 1998). The countries that teach Kiswahili as a foreign language include: - Germany, South Korea, Ghana, Japan, Universities of London, New York and America. Globally, Kiswahili is one of the languages that are used in running various activities during African Union meetings and it has most of its speakers in Kenya, Tanzania, Uganda, Kenya, Zambia, Malawi, Rwanda and Burundi (Ogechi, 2004).
In the Kenya Constitution (Republic of Kenya 2010), Kiswahili has been declared an official and national language and it is used alongside English language in official and non-official communication. Kiswahili language has the capacity to grow and promote unity and patriotism in Kenya (KIE, 2002). Therefore, it is important for Kiswahili language to be taught by using ICT so that it can develop and fit in the national and international scenario. The Kiswahili language Syllabus (2002) puts emphasis on the importance of teaching Kiswahili language effectively in order to enable the learners to grasp and communicate fluently as citizens. This would also help the learners improve their participation in the class. Teaching objectives can be achieved if teachers and learners used a variety of instructional approaches, ICTs being among them in their teaching and learning all aspects of Kiswahili language (grammar, language skills, vocabulary and literature). Through use of ICTs in teaching and learning of Kiswahili language, students could develop skills such as problem solving and critical thinking. Therefore against this background the researcher went out to undertake a study on integration of ICTs in teaching and learning of Kiswahili language in secondary schools in Kenya.

According to the KNEC report of 2010, one of the reasons why Kiswahili results continue deteriorating is because some of the teachers continue using teacher-centered approaches in their teaching activities and do not integrate ICTs which
increases students’ participation and is more learner-centered. This kind of situation prompted KIE (2008) and MOE to develop ICTs programs to be integrated in teaching and learning Kiswahili subject. On internet, www.Google, a search engine avails Kiswahili language materials that Kiswahili language teachers and their learners at all levels basic, intermediate and advanced could use. ICTs in Kiswahili have also been enhanced by the availability of Microsoft windows office which was developed by Microsoft Company (Microsoft Corporation, 2006). In addition are the Kamusi project available in the web with free access initiated in 1994 by Yale University and so far produced English-Kiswahili dictionary. The Swahili Language Management (SALAMA) plays a major role in developing use of Kiswahili language as computer software. The main objective is to improve the use, participation and performance of Kiswahili as a subject and also to enable people to learn and communicate more effectively.

In order to enhance integration of ICTs in teaching of each subject, the Ministry of Basic Education in Kenya has been funding and equipping five schools in every Constituency in Kenya with computer facilities since 2008. Teachers teaching various subjects, Kiswahili language inclusive in those schools have been equipped with knowledge and skills on how to integrate them in their teaching and learning activities through seminars and workshops facilitated by KIE.
KIE has since developed ICT programs/platform for Sciences, Agriculture, English and Kiswahili languages. This platform has gone through various steps in ensuring that the teaching objectives of those subjects are considered. According to KIE (2008) report to schools in all counties, integration of ICT in teaching and learning activities should assist the teacher to expose content or develop the theme. This enables the Kiswahili language teachers to focus on the basics of the topic, methodologies and presentation. At this stage, the teacher preparation is very important because he/she is expected to incorporate ICT and other teaching aids in the execution of his/her subject. KIE has so far transferred the Kiswahili curriculum to CDs and distributed to all schools in Kenya (KIE, 2008).

Kakamega County is one of the 47 Counties in the Republic of Kenya. In this County, some schools have been equipped with computer facilities and some of the Kiswahili language teachers have been in-serviced through workshops organized by KICD on how to integrate ICTs in teaching and learning of Kiswahili language. Apart from transferring Kiswahili language curriculum on CDs by KICD, an innovative teacher should be able to use other computer related software materials like internet, power point presentations, simulations among others to promote new learning environment in which enquiry and problem solving increases learners achievement. This is also likely to develop deeper
understanding of language skills and concepts by engaging them in active learning practices.

One of the goals of Education in Kenya (MOE, National ICT Strategy for Education and Training, 2006) is to build a good foundation for technology and growth, critical thinking, analyzing issues and also identifying and nurturing learners’ talents. All this is possible for Kiswahili as a subject through integration of ICTs in teaching and learning process and this therefore necessitated the study to investigate the integration of ICTs in teaching and learning of Kiswahili language in secondary schools in Kenya.

1.3 Statement of the Problem

Integration of ICT in teaching and learning improves the quality of education Gomes, (2005). All over the world today, Kenya included the education systems are tailored towards achieving Millennium development goals and vision 2030 which embraces use of ICTs in all the daily operations and sectors. The government of Kenya through the ministry of education has provided ICT policy and guidelines on integration of ICT in education. Studies have shown that lack of adequate attention to technology integration in teacher preparation programs limits its use. Many teachers put emphasis on teaching about technology rather than teaching with technology (Farrel, 2007). Studies indicate that many teachers
in Kenya continue using non-ICT based approaches in teaching various subjects especially languages despite the effort being made by the government of Kenya to equip schools with computer infrastructure. Case studies have also confirmed the potential of ICT to have a major impact on classroom practices in computer and science related subjects (Dwyer, 2000). Science lends itself easily to use of various ICT but a language like Kiswahili may require a very innovative teacher to integrate ICT in the teaching and learning process in secondary schools. In Kenya, use of ICT has not reached optimum level and the researcher did not come across any evidence of empirical study done in this area and level of integration of ICT required. Kakamega County is one of the largest counties with computer based infrastructure and has many schools equipped with computer facilities. With such a large investment in ICT infrastructure, teachers are expected to integrate ICTs in their teaching and learning activities competently and effectively without caring about their perception, competency, challenges and to what extent. It was not very clear whether the Kiswahili language teachers in the county are integrating ICTs in their teaching and learning activities. The Kiswahili language performance as indicated by KNEC results is low and integration of ICTs is likely to improve the situation. Considering that Kiswahili language is gaining higher status due to its place in the Kenyan new constitution and the emphasis in the Ministry of Education policy and considering that teachers need to be sensitized about the benefits of using ICTs to teach the language effectively, and considering
that the learners need to be competent in Kiswahili language that could be reflected in their performance, the researcher investigated the nature and the extent to which the teachers’ and learners of Kiswahili language integrate ICTs in teaching and learning of the language in Secondary Schools in Kakamega County

1.4 Objectives of the Study

The study was guided by the following specific objectives:

   a) Investigate the level and nature of integrating ICTs in teaching and learning of Kiswahili language in secondary schools in Kakamega County.

   b) Establish teachers’ and learners’ perceptions, about integration of ICTs in teaching and learning of Kiswahili language in Kakamega County.

   c) Establish teachers’ competency in integrating ICTs in teaching and learning of Kiswahili in secondary schools in Kakamega County.

   d) Explore the challenges teachers and learners encounter in integrating ICTs in teaching and learning of Kiswahili language in Secondary schools in Kakamega County.

   e) Investigate how such challenges influence the teaching and learning of Kiswahili language.
1.5 Research Questions

The study was guided by the following questions:

a) What is the level and nature of integrating ICTs in teaching Kiswahili language in secondary schools?

b) What are the perceptions of teachers and learners’ towards integration of ICTs in teaching and learning of Kiswahili language in secondary schools?

c) How competent are Kiswahili language teachers in integrating ICTs in teaching and learning of Kiswahili in secondary schools?

d) What challenges are encountered by teachers and learners in integrating ICTs in Kiswahili language?

e) In what ways do such challenges influence the teaching and learning of Kiswahili language in secondary schools?

1.6 Significance of the Study

The study investigated the integration of ICTs in teaching and learning of Kiswahili language in Kenyan secondary schools, a case of Kakamega County. This is an area that has not attracted much interest from educational researchers in Kenya, yet if careful attention is not paid to whether change in practice has actually occurred; there is the risk of appraising non-events (Fullan, 2001). The practical significance of the study is that the results will be useful to teachers, Quality Assurance and Standards officers (QASO), Kiswahili curriculum
developers and education and training policy makers in providing information for overcoming learning difficulties and setting future learning experiences. It may also emphasize necessity for Kiswahili teachers to change or modify their pedagogical approaches in order for the potential of integration of ICTs in teaching and learning to be realized. The students will be provided with opportunities and capacity to increase the level of collaboration and participation in various levels of learning and teaching using a variety of ICTs, something that would enable them to communicate fluently.

The findings of this research will give direction and shed some light to the teachers on how to integrate ICTs in teaching Kiswahili language, which is in line with Millennium Development Goals and vision 2030 in Kenya. This could assist them to become more innovative and effectively embrace ICTs in their teaching activities.

The research findings may also be used to determine both initial and In-Service Education and Training (INSET) needs for teachers of Kiswahili language in this 21st century. This may impact on curriculum development and teacher training institutions to offer refresher courses to the teachers that address the need to effectively respond to an ever-changing technological and digital landscape.
1.7 Assumptions of the Study

For the study to elicit responses, the following assumptions were utilized:

i) Kiswahili teachers in target schools are computer literate and integrate ICTs in teaching Kiswahili language.

ii) Kiswahili language teachers in target schools do preparation in integrating ICTs in the teaching of Kiswahili.

iii) Kiswahili language teachers use the revised Kiswahili language syllabus of 2002.

1.8 Scope and Limitations of the Study

1.8.1 Scope of the Study

Though ICT covers a wide range of devices, the study focused on computers as a tool for teaching and learning. The study focused only on integration of ICTs in teaching and learning of Kiswahili language in public secondary schools in Kakamega County in Western Region of Kenya. These variables were measured in terms of study objectives touching on the level and nature of integration of ICTs, teachers’ competency, teachers and learners perceptions and the challenges they encounter in integrating ICTs in the teaching and learning process. The sample was drawn from schools equipped with ICTs infrastructure. The Kiswahili language teachers and form three students formed the study sample. Questionnaires, interview schedules, document analysis and observation protocols
were used as tools of data collection. These tools, it was believed could elicit adequate responses. A longitudinal study over time would have been useful but constraints of time necessitated the use of these tools in gathering the necessary data.

1.8.2 Limitations of the Study
The study was limited to only public secondary schools in Kakamega County with computer infrastructure in place. Only form three students and their teachers were targeted for more intensive and focused study. The study was restricted to only the objectives and research instruments. The study dealt with one region (Kakamega County) and therefore the data generated should be interpreted with caution when generalizing the results to the entire country especially private schools and areas with well developed ICT systems in place.

1.9 Theoretical Framework
The study was guided by Bruner’s constructivism theory (1990). According to Bruner, invention or creativeness is the process of coming up with new knowledge on the basis of learners experience. In this theory, the learner uses the knowledge that he/she already has in getting new knowledge through the facilitator who is the teacher. In ICT learning, some topics taught by the teachers have already been programmed by the Kiswahili curriculum developer and the Kiswahili lesson programmers in conjunction with Kiswahili Teachers. Kenya
Institute of Education gives direction or advice while the learner uses his/her computer knowledge to receive messages, something that involves and enhances interaction.

This theory perceives knowledge as something that emanates from the learner. Bruner (1990) recommends that, through the sphere of consensus, one can get knowledge through one’s experience. New knowledge may be found from that which one knows without changing its structure.

This theory postulates that learners get the meaning of something from new experiences they come across. Such experiences emerge from the environment and also as they continue to interact with their peers. The situation of originality emerges, thus leading to changes. Learning of environmental creativity needs learners to use their knowledge and experience to produce new findings which relates with their areas of learning. In this situation the teacher is an adviser and his/her responsibility is to give direction to learners so that they can contribute and create their own comprehension of knowledge that leads to learning. The main aim is for the teacher to ensure that what he/she teaches relates to the experience that learners have. The learning environment is important for it enables the teacher and the learner to have the procedure in class activities and they can relate the topic that they are learning with the environment (Jonassen,
Therefore, teachers who take the direction of constructivism must emphasize what the learners know and relate it to what they teach. This would enable learners to gain more knowledge that would enable them to solve issues in their surrounding environment. When a teacher uses ICT in his/her teaching, the learners are involved effectively in the learning and teaching process.

The constructivism theory emphasizes that teachers are supposed to involve learners effectively in the learning and teaching process and not listening and implementing what they hear from their teachers. It is the responsibilities of teachers to use their skills effectively to involve learners so as to enable them understand what they are taught. In this area, the teachers and learners participate effectively in learning and teaching and also in developing the topic together.

In teaching, the approaches used by teachers contribute greatly to the outcome of the learners in class and also their future life. Therefore the responsibility of the teacher is to make sure that learners get knowledge by incorporating new approaches such as ICT in their teachings so as to improve their results in Kiswahili language. This would enable learners to communicate and interact effectively in class and be able to face their real life independently.
Constructivism theory in relation to Kiswahili language curriculum, teachers and learners general ICT experience, learning and teaching process is summarized in the conceptual framework. Constructivism theory was deemed important to the present study in a way that it helped the research to understand how the Kiswahili language teachers and their learners were using their previous knowledge, experience and available ICT resources innovatively to gain new knowledge.

1.10 Conceptual Framework

Change involves ‘change in practice’. Three dimensions of current practice are altered if change has to take place: (i) The possible use of technologies,(ii) Adaptation of new teaching and learning strategies or activities, and (iii) change in beliefs, perception, attitudes or pedagogical assumptions and theories concerning particular policies or programs. Change has to take place along the three dimensions for it to have an effect on the outcome (Fullan, 2001). Based on this thinking the researcher developed the following conceptual framework.
From the diagram, the first two dimensions concur and are supported by Barnes (1982) antecedents and transactions. The study considered the third dimension as part of the outcome. Barnes notes that in any curriculum, gaps between purpose and performance are to be determined and also between intention and effect. We can compare intention and effect with respect to antecedents, transactions and then to outcomes. Antecedents can be compared to the content, teachers’
competency in integrating ICTs in teaching activities, perceptions and computer facilities available for the teachers and students to use. In the realm of transactions, we consider the amount of time spent by teachers and students work corresponding to what had been originally intended. These include time spent on lesson preparation, lesson presentation and the strategies used in delivering the content. In the outcomes, we compare the objectives for students learning and what they actually learn that leads to effective teaching and learning and thus gaining new knowledge and eventually affect the individual’s attitude which may be positive or negative. From the illustration, if the teachers’ intention is to integrate ICTs in the teaching and learning activities then all the antecedents and transactions should be put in place for the objectives to be achieved.
1.11 Operational Definition of Terms

Antecedents

Antecedents are conditions existing before students interact with teachers and the subject matter. These include Kiswahili language curriculum, facilities and equipment, teachers’ qualifications, students’ entry behavior and school culture.

Competency

This is how well an individual has mastered a skill or language in terms of receptive and expressive. In the study, competency is used to refer to teachers’ ability in integrating ICTs in teaching and learning Kiswahili language.

Constructivism

To get new knowledge or ideas with prior knowledge in order to make sense or meaning. Constructivism will be equivalent to getting knowledge through enhanced system of integrating ICTs.

Information Communication and Technologies (ICTs)

Sharing information through the use of technology. In this section, information implies Kiswahili content, information that is being shared and technology the software which includes use of CDs, DVDs, images, videos, voice, captions, power point and animation.

ICTs Integration

Using computer programs and facilities such as CDs, DVDs, Internet, power point among others for teaching and learning to enhance activities in the classroom.
**Kiswahili Curriculum**

The Kiswahili language content taught in a certain cycle of education. The content relates with the objectives of education in the country, the aim, the teaching methods and evaluation of Kiswahili subject as provided by MOE through KIE.

**Kiswahili Language**

A compulsory subject taught in primary and secondary schools in Kenya and examined by Kenya National Examination Council. It is also an official and national language in Kenya alongside English language. In this study Kiswahili language will refer to both language and literature in Kiswahili.

**Learning**

Learning is the acquisition of knowledge, skills and attitudes. The knowledge being acquired is the Kiswahili language skills through integration of ICTs resources.

**Perception**

Willingness, perceived constraints and teachers own reservations about integrating ICTs in teaching and learning of Kiswahili. In the study, perception will include teachers and learners perceptions, interest, attitude and beliefs of using ICTs in a Kiswahili language classroom
**Practices**

The activities and processes undertaken during teaching and learning by Kiswahili teachers and learners in the classroom.

**Teaching**

Sharing of knowledge and Kiswahili language skills using a variety of instructional resources.

1.12 Chapter Summary

This chapter has provided the background to the study, outlined the problem, objectives, questions, theoretical framework that led to construction of the conceptual framework that identified the antecedents, transactions and the outcomes of the study. The significance of the study in this chapter has been explained indicating why the study was important and necessary. The literature review related to the study and the gaps are discussed in the next chapter.
CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

In this chapter, both local and international literature related to integration of technology has been reviewed. Themes have been derived from the objectives of the study that include; Integration of ICTs in teaching and learning processes, teachers and learners perceptions in integrating ICTs in teaching and learning process, teachers’ proficiency in integrating ICTs in teaching Kiswahili language, challenges of integrating ICTs in teaching and learning of Kiswahili language and other related studies on integration of ICTs in education.

2.2 Overview of Kiswahili language Syllabus

The government of Kenya recognizes the role played in language teaching. The ministry of education and KIE which is the curriculum developer spells out the policies, goals and objectives that guide the language instruction in secondary schools in Kenya. The language policy in Kenya states that Kiswahili language should be taught at all levels in education: pre-primary, primary, secondary and colleges (KIE, 2002).

Kiswahili language is divided into four skills: listening (kusikiliza), speaking (kuzungumza), reading (kusoma) and writing (kuandika). The skills are divided
into various sections and are taught at all levels of secondary schools (forms one-
four). The objectives of teaching all these language skills according to KIE (2002) is to enable the learner to use the skills to infer and interpret meaning correctly from spoken discourse, speak accurately, fluently, confidently and appropriately in a variety of contexts, make an efficient use of range of sources of information including libraries, dictionaries, encyclopedias and the internet, use a variety of sentence structures and vocabulary correctly, communicate appropriately in functional and creative writing among others. The four Kiswahili language skills are further broken into various units that include: grammar (sarufi na matumizi ya lugha), comprehension (ufahamu), summary (ufupisho), composition writing (insha), vocabulary (msamiati), socio-linguistics (isimujamii) and literature (fasihi).

The teaching of the Kiswahili language skills requires the language teacher to use various methods, strategies and also integrate instructional resources among them ICTs to improve the quality of teaching (KIE, 2002). Teaching requires the teachers to be innovative themselves and to provide learners with ethos and a culture that values creativity. The creative and effective teacher relies on a series of sources that include ICTs resources that can be manipulated and innovative resources (Simplicio, 2000). Innovative teaching allows learners to take responsibility for their own learning under the guidance of the instructors who are
there teachers in order to succeed (Craft, 2005). The teachers of Kiswahili language therefore should be ready to integrate computer assisted ICTs in a seamless manner to support and extend Kiswahili language curriculum objectives by engaging students in a meaningful learning. Some topics or in the topic area, computer assisted ICTs can be used to cover some topic areas within the curriculum. Integration of ICTs in teaching and learning of Kiswahili should be part of the daily activities taking place in the classroom and this could provide a learning format that allows students to discover and explore.

ICTs include use of computers and CD-ROMS and Internet facilities. ICT can be divided into two categories: old or traditional which includes radio and television and new or modern which consist of Internet and telecommunications (UNESCO, 2001). Use of ICT in teaching and learning requires a lot of creativity in order for it to be effective (Rovin, 2004).

Recent studies show that computer and other technological devices when integrated in teaching and learning environment engages the participants and improves their attainment level (Rickey, 2003). Use of ICT consistently in education creates a rich environment contributing to positive effects on performances in all subjects (Becta, 2003). According to Becta, use of ICT in
education promotes deep learning and allows institutions to respond better to varying needs of the students.

Despite investments by many countries worldwide in ICT facilities, the evidence in many countries indicates that many teachers do not make regular use of technology in their teaching-learning activities in the classrooms (Cuben, 2001, Allen & Seaman, 2006). Technology in basic forms has been integrated into teaching of language. CDs and DVDs have been in regular use in all language-learning environments in many countries in the world Kenya being among them where KIE has digitized school syllabus and transferred some Kiswahili topics to CDs. ICT as a resource provides an authentic, easily managed encounter with the language. The KIE is also involved in computer education pilot studies in some schools in Kenya and development of some online courses in on-going. It can provide a variety in revising and rehearsing basic skills such as vocabulary acquisition and practice in using tenses and grammatical structures. Teachers can use multimedia technology and hyperlinks to introduce engaging, authentic situations into the classrooms. Use of authentic language materials from YouTube, videos, captions, animation and among others can provide domain support in receptive skills for Kiswahili language learners.
Computer Assisted Language Learning (CALL) software programs have been developed on both CDs, DVD and on the Internet and can be used in language teaching and learning to enhance interaction and motivation. Multimedia resources can be used to help in showing learners the cultural context within which they are learning a language. ICT if integrated well in teaching and learning process can assist the learner gather more knowledge which is important in discovering and solving daily life issues (Clark & Mayer, 2003).

ICT is used in various ways to enhance teaching and learning process of a language. This could assist the development of four key skills in Kiswahili language (listening, speaking, reading, and writing). Teachers and learners integrate power point presentations by creating their own materials such as essays and presentations and also incorporate a video clip into it. Audio and video recordings downloaded from the web are integrated in teaching various aspects of a language. Use of the web as a resource, including online interactive quizzes, dictionaries, encyclopedias and grammar reference materials, web quests, scavenger hunts as well as generic tools such as search engines is integrated in a language classroom to make it more interactive. Images, audio and video are also incorporated into learning materials using a variety of authoring programs. Mixing media such as digital materials include not only text and images but also audio clips, video clips and animation. This facility provides a rich environment
within which learners activities are created. Other ways in which ICT could be used in teaching and learning a language is by using texts, images, audio files and video files produced on computer and distributed via a school intranet or internet. Electronic communication which includes information sharing through email messages, blogs and wikis is also important in a language class (Omwengo, (2005).

There are various steps a teacher can follow in the process of integrating ICT in a lesson as highlighted by Wang et al, (2007) and this can apply to the Kiswahili language teachers in their lesson preparation. First, the teacher should determine the type of technology or tool needed to teach a specific topic. Secondly, he/she should have a clear justification for its choice. Thirdly, the teacher should decide on how to effectively and meaningfully integrate the selected ICT resource into the topic and lastly, provide details of the resource required for each of the lessons in the topic. The above steps could answer the four questions a teacher has to answer when preparing the lesson that requires him/her to incorporate ICT in his/her teaching and learning activities. This includes; what ICT resources will be required? How will the ICT resources be used? Why should we use the ICT resources? And what activities will the learners engage in during the lesson? This could promote learners’ critical thinking, understand what they are supposed to
learn, their expectations and opportunities to take control over content, peace and sequence.

The reviewed literature laid a basis for the study because it helped the researcher to understand various ICT resources that could be integrated in teaching and learning of language which is closely related to this study that investigated levels and nature of integration of computer assisted ICTs in teaching and learning of Kiswahili language in Secondary schools in Kenya.

Integration of ICT into education as reported by Barron et al (2002) has the following benefits:

i. Promotes active learning.

ii. Promotes critical thinking.

iii. Offers diversity and self-paced learning and individual growth.

iv. Motivates and inspires students by making learning exciting and relevant.

v. Provides flexibility for students with special needs.

vi. Enhances communication skills.

vii. Supplies information through multi-channels (supporting students with various learning styles).

viii. Helps students to build cultural bridges.
Despite the apparent benefits of use of ICTs in education, studies reveal that in many cases the teaching and learning potential of ICTs is curtailed as many teachers are not fully ICT literate and are not willing to use it in teaching process (Look, 2005). Integration of ICTs in teaching and learning is important because it improves quality of education in the country. For the teachers to embrace ICTs, they need to undergo some intensive training that could help them develop interest acquire skills and knowledge and also understand various level of integration (Shaukat, 2006). Kenya has realized the importance of ICTs and put in place various strategies in the education sector from primary schools, secondary schools and universities. The main objective is to develop the social pillars of Kenya vision 2030 by the year 2015. This will enable the youth to have a chance of getting more knowledge and improve their potential, ability and make informed choices, solve issues and face life challenges.

In reference to the Ministry of Education policy, integration of ICT in teaching and learning prepares a student to realize his technological potential (MOE 2005). KIE has a program in which various subject curricula, Kiswahili language inclusive, have been transferred to the CDs and distributed to schools with computer facilities. KIE is also involved in computer education pilot studies in some schools in the country. This is to equip the teachers with new approaches to teaching. According to the circular (KIE/ICT/02/08) sent to all secondary
schools in Kenya, the objectives of integrating ICT have been outlined. The role of the teacher is to facilitate and guide the learners on how to use the software to learn various language concepts. Through integration of ICTs learners are able to listen to the voice, see and participate fully in learning activities. Through the study the researcher used the KIE initiative to investigate the level of integration of computer assisted ICTs in the teaching and learning of Kiswahili language in secondary schools in Kenya.

A study done by Allen and Seaman (2006) shows that integration of ICTs in education makes the learners able to grasp and understand difficult concepts. Integration of cartoons, pictures and voice captures the learners’ attention and motivates them to continue learning. Learners also learn diverse content within a short time. Integration of ICTs contributes to development and promotion of our culture (Look, 2005).

A study by Odeo, (2007) indicated that Kiswahili language is taught through different approaches that encourage learners’ involvement. Integration of ICTs if done well by teachers could increase the learners learning activities and improve their performance in general. The study therefore, investigated the integration of computer assisted ICTs in teaching and learning of Kiswahili language in secondary schools in Kenya.
Studies done by Allen and Seaman (2006) indicate that 3.2 million students in America integrate ICT in their learning activities in Science subjects. Another report released by the same authors in 2008 shows that many students in higher learning institutions use ICT in learning various curricula. Though their study is of much importance to the proposed study, it targeted institutions of higher learning specifically different faculties at the American universities. It also targeted students learning science and computer related subjects. The present study aimed at investigating the integration of ICT in teaching and learning of Kiswahili language in Secondary Schools in Kenya which is a developing country.

2.3.1 ICT Adoption Theories

There are many theories and models that have been used by a number of researchers and scholars concerning adoption and use of ICTs in our daily life. Most of these ICT theories and models focus on individual’s intention or attitude to adoption and use of ICT. The theories consistently emphasize the three stages of ICT adoption and use. The three stages include: pre-adoption, adoption and post-adoption stage. According to Fishman and Kemerere (1999), the pre-adoption stage gives the individual an opportunity to examine a new technology and prepares one to use it. In the adoption stage, the individual forms an attitude
of using the new technology and therefore considers it necessary to acquire particular ICT resources to use. In the post-adoption stage, the individual makes a decision on whether to continue using that particular technology or to abandon it altogether.

The three stages (pre-adoption, adoption and post-adoption) are guided by various ICT adoption theories and models suggested and used by various theorists and scholars. Some of these theories that exist include: Social Psychology Theories, Innovation Diffusion Theories, transactional theories among others.

a) Social Psychology Theories. These are the theories that describe the behavior of an individual. The Social Psychology Theories (SPT) include: Theory of Reasoned Action (Fishbein & Ajzen, 1975) which explains the individual behavior based on behavioral intention that determines ones behavior or attitude. This theory, combined with other models, has a significant influence on intention to use or adopt the intended technology. The second is the Theory of Planned behavior (Ajzen 1991). This theory highlights particular salient believes that determine behavior intentions and patterns. Many studies have used this theory on ICT adoption such as Hsu & Chin (2004), Chen & Yen (2003) among others. The third theory is the Technology Acceptance Model which focuses mainly on the adoption and use of ICT as well as its perceived usefulness and ease to use. Many
scholars who have used the Social Psychology Theories confirm that there is a significant relationship between the intended behavior and use of the intended technology.

b) Innovation Diffusion Theory (Rogers, 2003). This theory has been used in studying individual’s technology adoption and use. Innovation Diffusion theory consists of five elements that include, innovation, time, communication, channels and social systems. According to Rogers (2003), an individuals’ technological behavior and perception influences him/her to decide to adopt and use a particular technology. Many studies have been done using Innovation Diffusion Theory such as Agarwal & Prasad (1997). In their study, five main elements of Innovation Diffusion Theory were tested and the findings showed that there was significant relationship with other factors in ICT adoption.

The Social Psychology Theories and Innovation Diffusion Theory provide theoretical background for other ICT theories that emphasize the engagement of behavior which could be adopted by people in a positive or negative way. These theories on ICT adoption and use are very important to this study although they have some limitations. The focus of these theories is on adoption of ICT as one-
time event and not researching on evolving dynamics of ICT integration after adoption.

Many studies done using Social Psychology Theories and Innovation Diffusion Theory, focus on adoption intention to use a certain technology at the initial stage and do not measure or evaluate the actual practices by an individual. This study, given its nature, adopted the Constructivism Theory (Brunner, 1999) that focuses on the actual classroom practices and use of ICTs that involves the teacher as the facilitator and the learners as the main centre of interest. The learner uses his/her experience or the previous information learned to construct new ideas or knowledge. The learner participates in all learning activities that determine his or her performance.

2.3.2 ICTs Adoption in Teaching and Learning Process

There are two approaches in adopting a new approach. One is based on a behavioral aspect and the other on experimental perspective (Posner, 1992). The Research, Development and Diffusion (R, D &D) model manifest behaviorist assumptions and features. According to Posner, (1992), The R, D & D approach believes in the inherent benefits of technology and scientific research applied to the process of change. Teaching using ICT in curriculum could be technisized by rationing it into a series of separate tasks. Research establishes the principles of
teaching and learning, Development applies the research findings to the production of material that embody new approach and Diffusion systematically disseminates these new materials/resources and curricula to teachers for their use. The forth item of R, D & D is the adoption. This involves the actual use of the resources by the teachers in teaching and learning process (Posner, 1992).

Adoption is the last stage of R, D & D model and therefore it’s assumed that the teacher and the learners have the skills needed that are specifiable and learnable. Development efforts focus on perfecting the materials through involvement by experts in the production field testing, evaluation and revision of materials. The objectives are set by developers and have to be interpreted by the teachers. According to Posner (1992), the teacher is seen as a passive recipient of educational products and the technology of teaching is truly transferable from one situation to another.

Educational change involves change in practice. This indicates altering aspects of current practice (Fullan, 2001). Innovation is multidimensional and therefore according to Fullan, there are three components of dimensions in adopting a new approach or policy. The first one is the possible use of new or revised materials such as the revised curriculum, innovative available instructional resources like in this case ICTs. The second one is the possible use of new teaching/ instructional
strategies and third, the possible alteration of beliefs for example pedagogical assumptions and theories underlying particular policies, curriculum or programs. A teacher may adopt none, one or two or even all the three dimensions. A language teacher could use new technology without altering the approach or could use ICTs and alter some teaching behaviors without coming to grips with conceptions, attitudes or beliefs underlying the change. Integration of ICTs in teaching and learning of Kiswahili language requires the teacher together with the learners to have technological skills, Knowledge and innovativeness for it to be effective. This could assist the learner to receive knowledge in different ways (listen, observe, think, write, speak and even share ideas) and therefore improve his/her performance and skills. ICT adoption in teaching and learning of Kiswahili language could create interest among the learners leading to an interactive class and making teaching and learning more varied.

For the teacher to embrace ICTs in teaching and learning activities, first, he/she must be convinced that technology can more effectively meet higher-level goals than other resources that have been previously used. Secondly, he/she must be convinced that integrating technology will not undermine the achievements of other higher-level goals that he or she considers more effective than being maintained. Thirdly he/she should be convinced that use of ICTs can assist in improving the quality of teaching and learning while at the same time cutting
down on teaching time. Lastly, the teacher must be convinced that he/she has or will have necessary ability and resources to use technology (Timothy et al, 2006).

Studies reviewed by International Journal of Computing and ICT Research (2008) that revealed use of ICTs in teaching and learning various subjects in education consistently experienced positive effects in performance, motivated the learners and generally led to improved performance. Integration of ICTs in teaching and learning in education promotes deep learning and allows learners respond better to their varying needs and also provide them with reliable link to various information sources (Barak, 2006).

The studies on ICTs adoption in teaching and learning in education have highlighted some of the issues specific to ICTs deployed in schools and institutions of higher learning. The information from the studies is vital and related to our study since it raises issues in integration of ICTs in education in general. The current study investigated specifically the nature and levels of integration of ICTs adoption in teaching and learning of Kiswahili language in secondary schools in Kenya.
2.4 Factors which Influence Integration of ICTs in the Classroom

There are various factors that influence integration of ICTs in teaching and learning process. According to Mumtaz (2000), there are three interlocking factors namely, institution/school, resources and the teachers. Several factors function as limitations or constraints on teaching or effecting change. These include: School based factors, students entry behaviors, curriculum materials and resources among others.

2.4.1 School Based Factors

School based factors include the role of administrators, provision of resources and training. The role of administration is critical in implementing change of any sort since it’s tasked to ensure that the best pedagogical use of ICTs is made. (Fullan, 1991). School administrators provide leadership that can enable teachers to engage innovative practice and to encourage teachers to integrate ICTs in teaching and learning activities. School administrators ought to first be ICTs competent, knowledgeable and have practical experience (Cogill, 2003). Such administrators with ICTs information can therefore bring about organizational change of implementing or adopting new development in education and among their staff.
A school can develop a plan that can stimulate and strengthen a culture of collaborative development planning in schools. Fullan, (2010) stresses the importance of developing collaborative practices in schools which leads to better student achievement. School planning should include subject-based planning for its integration with a vision of realizing the capacity of ICTs to motivate and inspire learners and to build a cooperative and interactive learning environment the classroom (Des, 2008). Planning should address issues such as the location of computers and other resources to facilitate teachers and learners use and integration.

In most schools in Kenya, majority of computers in secondary schools are centrally located in computer laboratories and students and teachers may not have sole access to them. Accessibility of ICTs resources assists teachers to prepare lessons by using a wide range of resources such as Internet. The learners may also access and share a lot of information related to the subject (Condie & Munro, 2007). In the study the role of School administrators in supporting integration of ICTs in teaching and learning Kiswahili language cannot be underestimated.

2.4.2 Students Entry Behavior

The students’ entry behavior involves the background, abilities and interests of the learners in ICTs. They include the learners academic and interpersonal skills
like ability to work in groups or interactively (Collis, 2002). Integration of ICTs in teaching and learning process should consider the learners entry behavior. An approach has a meaning if it is translated to the learner’s own experience to meet their growing needs (Bagozzi, 2007). A distinction should be made between learner-centered education and interest-dominated curriculum. Education is concerned about culture and rules of its various aspects and therefore the learners must learn them whether they interest them or not. Interest only lends motivation to the learner and therefore there are certain things a child needs to learn even if they do not interest him. In using ICTs to teach Kiswahili language, interests of the learners to some extent influence the teachers’ approach, stimulate and motivate without influencing the objectives and the whole purpose of curriculum. Therefore the learners’ entry behavior has an important role in adoption of ICTs in teaching and learning process of Kiswahili language since it requires exploration and therefore this study investigated the levels of integration of ICTs in teaching and learning of Kiswahili language education.

2.4.3 Curriculum Materials and Resources

Curriculum materials and resources are important in teaching and learning process because they clarify subject content/concepts and make learning easier. The materials could be manipulated in a short time (Posner, 1992). The aim of this study was to identify the ICT materials and resources available in schools and
accessible to the Kiswahili language teachers and students. The materials should enable the teachers and their students achieve their objectives. The materials and resources in this study included computer laboratory, Internet facilities, computers, CDs, DVDs, power point projectors among others.

2.4.4 Teachers Academic and Professional Qualification

The study treated Kiswahili language teachers’ academic qualification as the highest level of education attained by the teacher. It could be certificate, diploma, degree or postgraduate degree. Professional qualification of teachers refers to personal frames or pedagogical knowledge of implementing the curriculum. This includes teachers’ subject-matter knowledge, teaching skills knowledge of students and sense of collegiality. Goble and Porter (1977), identifies components of the professionalism of the teacher as diagnosis, response, evaluation, personal relations curriculum development, social responsibility and administration. Diagnosis refers to accurate estimation of the educational needs of an individual. It is assumed that the policy requirements meet the kind of knowledge, skills and cultural awareness that are needed by the changing society in relation to global trends. Response involves the selection of the media of communication that best conveys the Knowledge and skills being presented. These include performance capabilities of students and their perceptions. Evaluation is the growth or nature of the change that has occurred in the student. Personal relations involve the
reactions of the nature of the change in the learner. The teacher should be able to motivate, interpret, build realistic self-esteem in the students and develop his self-assessment. Curriculum development is the planning of teaching-learning activities. It involves breakdown of the subject matter into a sequence of units, each one manageable within allotted period of time, presenting concepts and facts in a logical order.

Integration of ICTs in teaching and learning in education requires upgrading of teachers knowledge and appropriate skills for effective performance. According to Roblyer et al, (2004), teachers need new pedagogical skills to take full advantage of ICTs to enhance learners learning. Teachers require some training that could equip them with the required knowledge on how to develop an appropriate and effective lesson that requires use of ICTs to bring meaningful teaching and learning. Therefore in implementing ICTs integration in teaching of Kiswahili language or education, the teacher needs to be very innovative to create suitable environments and learning situations required.

All these components are important to this study because a teacher should have both academic and professional qualification to teach the Kiswahili language curriculum and also be able to adopt any new approaches in his/her content delivery like integrating ICTs in teaching and learning activities. It is also
important to consider the ICTs skills acquired by the Kiswahili language teachers as one of the professional qualification. Relevant training and qualification for teachers enables them to make fundamental changes in their classroom pedagogy and therefore they need continuing professional development (Callan, 2001).

According to UNESCO (2007), the classroom teachers need to be trained in four major areas:

i. Awareness and attitudes which includes awareness of technology’s value, self assessment and concepts of lifelong learning

ii. Knowledge and skills which consists of concepts and skills.

iii. Integration and innovation. This includes designing and implementing technology-supported lessons and activities, using technology to support teaching and management.

iv. Using technology to enhance research and professional development.

v. Using technology to mediate collaboration and communication.

The teacher training in computer skills helps in improving students’ achievement, adoption of ICTs in education and also increase focus on interaction among students and between students and teachers (Frost & Sullivan, 2006).
2.4.5 Teaching Experience

Teaching experience according to Fullan (2001) refers to both individual teacher characteristics and collegial factors. These factors play a major role in curriculum and policy implementation. The teachers’ individual characteristics and collegial factors like relationship with other teachers and learners play roles in determining change in practice (Fullan, 2001). Psychological state of a teacher can be more or less predisposed towards change. Some teachers are more self-actualized and have a greater sense of efficacy, which makes them take action and persist in the effort required to bring about successful change (Ooko, 2006). Psychological state of an individual can be a permanent or changeable trait, depending on prevailing conditions.

Several researchers have revealed that some institutions or schools have a higher proportion of change-oriented teachers than others. The climate and culture of the school can equally shape the individual psychological state causing change. Adoption of a new approach or change in practice involves learning to do something in a different way to improve on existing quality. Integration of ICTs in teaching and learning process is a new approach that requires teachers to adopt new skills of using computers, change their pedagogical beliefs, exchange ideas and develop a positive feeling about their work and competence in using ICTs. The teachers experience was vital to the study which is integration of ICTs in
teaching and learning of Kiswahili language in secondary schools. The aim of the study was to establish the extent to which school based factors, students’ entry behavior, curriculum materials and resources and teachers academic and professional qualification influence ICTs integration in teaching and learning of Kiswahili language in Secondary schools in Kenya.

2.5 Teachers’ Perception about Integration of ICTs in Teaching and Learning Process.

Teacher perception is defined by Fishbein and Ajzen (2005) as a learned predisposition to respond to an object or class of objects in a consistently favorable or unfavorable way. In this case it is the teachers perception or attitudes or a state of mind or feeling towards integration of ICTs in teaching and learning of Kiswahili language. Integration of ICTs in teaching and learning process largely depend on teachers’ perception which is a key factor in accepting it in their pedagogical practices or their actual use (Baylor & Ritchie, 2002). According to Fishbein and Ajzen, teachers’ perception about an object could be objectively true or mere opinions, prejudice or stereotypes. This could be influenced by gender, education, training and profession, religious convictions, individuals’ character, personality and even relationship with others.
For teachers to embrace ICTs, they must view it as a very effective means to achieve pedagogical objectives with respect to their current teaching practice (Timothy et al. 2006). Therefore it is essential that training focuses on how to integrate ICTs effectively into curriculum of various subjects Kiswahili language inclusive to convince the teachers of its usefulness.

Teachers’ perception to change influences willingness to integrate technology into classroom. Some teachers view computers as administrative machines while others see them as tools to use in analyzing and presenting information. According to Carrington and Robinson (2010), positive attitudes towards computers are positively correlated with teachers’ extent of computer technology.

The amount of confidence a teacher possesses in integrating ICTs in teaching may greatly influence his or her effective implementation and therefore improving his/her teaching and learning activities. Teachers are the main gatekeepers in allowing innovations to diffuse into the classrooms and therefore, the key factors for effecting an integration of ICTs in teaching of Kiswahili language lies on the teachers. This requires the teachers to be trained adequately in order to handle and manage the computer resources in their daily practices.

A number of studies have been carried out to determine teachers’ perception about use of ICTs in teaching and learning process. A study carried by Harrison
and Rainer (1992), on ICT integration in teaching and learning process among the teachers teaching large universities in the Southern United States found out that many of them were less skilled in computer use and therefore had a negative attitude about it. Another study done by Albirini (2006) investigated the Science teachers’ perception about ICT integration in teaching and learning in Syrian high schools. The study adopted both qualitative and quantitative methods of collecting the data. The results for the study indicated that Science teachers had a positive attitude towards integration of ICT in teaching and learning process. Albirini (2006) also found out that majority of teachers in high schools in Syria were interested in developing their ICT skills and knowledge.

A study done by Zhao & Cziko (2001) found that teachers were reluctant to devote class time to technology based activities. They felt that the time available was to prepare students for high stakes state examinations and therefore many were unwilling or unable to change their teaching approaches (teacher-centered to learner-centered).

Though the studies done by Harrison, Rainer and Albirini are very important to the proposed study, they were done in developed countries and in science-based subjects. This study investigated the teachers’ perception about integration of
ICTs in teaching and learning of Kiswahili language in Kenyan secondary schools.

2.6 Challenges of Integrating ICTs in Teaching and Learning Process

Challenges are factors that hinder integration of ICTs in teaching and learning activities in various subjects in schools or any condition that makes it difficult to progress or integrate ICT by teachers in the classroom (Becta, 2004). Various scholars classify challenges into different categories. Etmer (1999) classifies challenges into two groups: extrinsic and intrinsic. Extrinsic challenges are first order challenges that include access, time, support, resources and training. Intrinsic are second order challenges and include attitudes, beliefs, practices and resistance. Challenges range from teacher-level to school level (Becta, 2004). According to Becta, teacher level challenges include lack of time, lack of confidence, lack of competence and resistance to change. School level challenges include lack of effective training, lack of access to resource, time, and technical support among others.

2.6.1 Teachers’ Lack of Confidence

There are various reasons that could contribute to lack of confidence among the teachers in integrating ICT in teaching and learning process. According to Beggs, (2000), teachers fear of failure causes lack of confidence. Many teachers lack ICT
skills and this makes them feel anxious about integrating it in their teaching and learning activities in the classroom and therefore affecting their confidence to use it (Becta, 2004).

A survey done by Becta, (2004) indicated that many teachers that lack confidence lacked enough knowledge in ICT like operating computers, using basic software and related ICT resources for instruction and therefore were afraid of using it because they felt that some of their learners could be more knowledgeable.

2.6.2 Time Limitation

Lack of time could be a challenge for teachers to integrate ICTs in their teaching and learning activities. Teachers need time to plan for their lessons, explore internet sites, look at various aspects of software, and prepare power point presentations among other things. Many teachers may have confidence and competence in integrating ICT in their teaching and learning activities but they may not have enough time to do so since they use more time in preparing students for tests and high stakes examinations (Empirica, 2006).

Studies done in Saud Arabia and Canada reveal that Science teachers use more time in designing projects that include use of technology and devote very little time on integrating ICT into Science education. Reviewed literature indicates that
time limitation is a challenge to ICT integration in developed and particularly among Science teachers. The study aimed at investigating integration of ICT in teaching and learning of Kiswahili language in Kakamega County with challenges encountered as one of the objective.

2.6.3 Teachers Competence
Lack of ICT skills and knowledge by teachers could affect their competency in integrating it in their teaching and learning activities. According to Newhouse, (2002), many teachers without skills and knowledge are not enthusiastic about integration of ICT in their teaching activities. This makes it difficult for them to adopt it. Teachers with no experience with computer do not want to try and work with it because they could look like idiots and more stressed. Such teachers avoid completely integrating ICT into their teaching and learning activities (Lam, 2000). Studies done by Bill, Jesse and Acosta, (2001) in Silicon Valley in America indicate that less than 10% of the teachers use computers in their classroom and many shy off due to lack of skill.

2.6.4 Technical Support
Lack of technical support in ICT integration in education could be a challenge to many teachers (Lewis, 2003). Technical challenges include, Internet connection failure, malfunctioning computers, waiting for websites to open among others.
Technical faults could discourage teachers from integrating ICT in their teaching and learning activities due to fear of computer failure and therefore affecting the lesson presentation.

Technical support is one of the main problems that affect integration of ICT according to the study done by Gomes, (2005) among the teachers integrating ICT in science subjects. Gomes asserts that Science teachers need at least a technician to check on the computer facilities and operations and if not this could be a big challenge to the teachers.

2.6.5 Lack of Computer Infrastructure

Computer materials, facilities and equipments are vital for integration of ICT. Studies done elsewhere in the world show that insufficient numbers of computers and insufficient funds prevent schools and teachers from using computers for teaching and learning (Hadad & Draxler, 2002). In some African countries, according to Butcer (2003) statistics on technological content within which efforts to use ICT in education indicate that Egypt with a total of 32,120 schools had 10,000 computers, Namibia with 1,520 schools had 60, Ghana with 35,000 had 500 computers and highest number of computers in schools (31.25%). Ghana and South Africa have computers but it is clear that only 1.43% and 17.4% of schools have access to computer respectively. Insufficient numbers of computers and
other related ICT resources hinder schools from using computers for teaching and learning (Draxler, 2002). Access and lack of technological resources can seriously limit what teachers can do in the classroom with regards to integration of ICT (Muntaz, 2000).

Lack of software Internet limit individual and community access to ICT and pose a barrier to its integration with curricula in schools (Menda, 2006). African region especially rural areas face external systematic factors like electricity, network configuration, frequent power break downs and power cuts that increase cost of ICT infrastructure making rural areas almost impossible to access and integrate ICT in teaching and learning process (Farrel, 2007). A large part of Kakamega County is situated in a rural setting and therefore one of the objectives of the study was to investigate the challenge affecting the integration of ICT in teaching and learning of Kiswahili language.

2.6.6 Limited materials on Kiswahili on the Internet

Most materials found on the Internet are in English. Currently, about 70% of all Internet content is in English and only 12 languages out of the worlds 6,000 account for about 98% of the web content. Kiswahili language only constitutes 2% of the Internet content and even what is available is poorly translated (Jagero, 2010). Unlike Mathematics, Science and computer-related subjects where a lot of
information is on the web and in English language, Kiswahili language teachers and learners do not have such an opportunity to access the materials. The alternative is to spend a lot of time translating the information or the materials on the web into Kiswahili language in order for them to benefit or use it.

The reviewed literature discussed on ICTs in education is crucial to this study because it seeks to establish the present and future challenges of integration of ICTs in teaching and learning of Kiswahili language. The reviewed literature is mostly from the studies done in developed countries and in the areas of Mathematics, Science and Computer-related subjects and therefore, could provide basis for ways of identifying possible challenges to this study. The reviewed literature is important to this study because it helped the researcher in establishing the challenges that Kiswahili language teachers and their learners encounter in integrating ICTs in teaching and learning of Kiswahili language.

2.7 Chapter Summary

This chapter has provided an overview of the literature related to the study. Both literature reviewed from the studies done locally and internationally have highlighted some of the issues specific to integration of ICTs in education for example adoption of ICTs by educational managers, challenges and evaluation.
The literature was arranged thematically according to the objectives and questions of the study. The literature review has indicated that:

i. Integration of ICTs in all spheres of life is well documented and reflected in education in general and broadly and does not clearly articulate the integration of computer assisted learning in education and especially the level and nature of integration.

ii. The reviewed literature is in developed countries with well developed ICTs infrastructure in place such as United States of America, China, Canada among others and is on higher learning institutions. However literature review hardly provide information on ICTs adoption in developing countries and especially in secondary schools.

iii. The literature reviewed shows that there exist theories and models on ICTs adoption that have been used in several studies. Little has been done using the constructivism theory that this study is articulating.

iv. The literature reviewed has also revealed that most studies done on integration of ICTs in teaching and learning is in the areas of Science, Mathematics and computer based subjects. Little has been done in languages and especially Kiswahili language which is a skill-oriented subject that is gaining a national and international status.
The research sought to make contribution in this area. In the following chapter, the methodology of the study has been presented.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction
Methodology describes the overall approach to research design. It is a strategy or plan of action that links methods to outcomes (Creswell, 2007). This chapter addresses the research design, study area, target population, sample size, sampling techniques, instruments, and piloting. Reliability, validity, data collection and analysis procedures have also been highlighted.

3.2 Research Design
A design is the systematic organization of collecting and analyzing of the data (Craswel, 2007). It consists of the purpose, theory or conceptual framework, research objectives, methodology and data analysis procedure.

The study adopted a descriptive survey design, employing both quantitative and qualitative approaches. A survey design integrates different methods in collecting the data (Ploywright, 2011). Through the design, data about various variables or subject as they are found in a social system will be collected. According to Fraenkel and Wallen (1993), descriptive design deals with incidence, distribution and relationship of educational variables. It is also concerned with describing, recording and reporting conditions as they exist (Kothari, 2004). In a descriptive
survey, researchers are generally not so much concerned with why the observed distribution exists but rather with what the distribution are and therefore are appropriate in gathering both quantitative and qualitative data (Poland, 2005). In this study, descriptive survey aimed at exploring the nature and level of integration of ICTs in teaching and learning of Kiswahili language, teachers proficiency in integrating ICTs in teaching and learning of Kiswahili, the challenges encountered by the these teachers and how they affect their teaching and learning activities. This design was found to be appropriate for this study in view of the fact that teaching and learning is a day-to-day process and at the same time, the information was collected from a cross section of respondents over a wide area.

3.3 Location of the Study

The study was carried out in Kakamega County located in western region of Kenya bordering Bungoma to the North, Trans Nzoia to the North East, Uasin Gishu and Nandi Counties to the East, Vihiga to the South, Siaya to the South West and Busia to the West. The County politically is divided into 12 constituencies being one of the largest Counties in Kenya. Kakamega County’s population stands at 1,660,651 and covers an area of 3,224.9 km2. The temperatures range from a minimum of 10.3c to a maximum of 30.8c with an average of 20.5c. The rainfall ranges between 1,250-1750mm per annum. It has a
population density of 515 people per km² and annual growth rate of 2.12. Poverty level is at 57% (rural and urban). The County resources include gold, arable land and forests. The County has a few tourist attractions such as Kakamega forest, caves and a crying stone. Main economic activities are large scale and mixed farming and commercial businesses. Kakamega County has a number of institutions of higher learning, middle colleges, secondary and primary schools. Administratively, the county is divided into 5 educational divisions: Kakamega South, Kakamega North, Kakamega Central, Kakamega East and Kakamega West. Secondary schools enrolment stands at 18,320. Kakamega County has a total of 45 public secondary schools equipped with computer facilities. The computers in schools were acquired by the government through the Ministry of Education, NEPAD projects, non-governmental organizations, schools management and sponsors. This study assumed that both the teachers and their learners are exposed to them.

3.4 Target Population

The target population is the total population for the study. This study’s target population was from 45 public Secondary schools in Kakamega County with computers distributed by the government of Kenya, 90 Kiswahili language teachers and 3148 form three students in these schools, 4 ICT champion teachers, the County has 2 Quality Assurance Standard Officers (QASOs) and 2 Kiswahili
curriculum developers and programmers. The total target population for the study was 3246. The sampling frame data of these schools was obtained from the County Education Office (CEO). Given the nature of the problem under investigation: that is integration of ICTs in teaching and learning of Kiswahili in secondary schools, the study used teachers as units of study due to the fact that they are the point of focus and influential in facilitating the teaching and learning process in schools and therefore capable of effecting change. The teachers are also in close contact with the learners and they are in position to give their views about the system. The form three classes are strategically placed for the study because the students are exposed to most Kiswahili language content/skills, the teaching and learning is at its peak and it was assumed that learners have experience with computer technology since it was introduced in schools when they were in form one and were likely to give reliable and honest responses. The Kiswahili curriculum developer, ICT county champion and QASO also formed the study sample.

3.5 Sampling Techniques and Sample Size

3.5.1 Sampling Techniques

Kakamega County is administratively divided into five educational zones (Kakamega North, Kakamega South, Kakamega Central, Kakamega West and Kakamega East) with different categories of schools. Kakamega Central
represented schools in urban set up while East, West North and South represented rural schools. The stratified proportional sampling was used to represent schools in the County in the three categories namely, National, County and District. There are 2 national schools, 20 County schools and 23 District public secondary schools in the County with computer facilities. Stratified random sampling technique was used to sample 9 schools. Proportional sampling included a national school, 4 County and 4 District public secondary schools. Teachers teaching Kiswahili language in these schools were used as the study units. The teachers sampled had to have been trained and practicing with varied experience and also teaching Kiswahili language in a form three class. A teacher who was identified, his or her class was used for the study in other words purposive sampling. A total of 25 Kiswahili language teachers in the selected schools were sampled for the study representing 20.9% of the total target population. The students were randomly selected from the schools sampled. For each sampled school, a class register was used. The odd-even method was used whereby every 3rd 5th 7th 9th and so on was sampled. The number of students in each class varied between 40-60 students per class. The researcher selected 630 form three students that were used in the study. There are 4 ICT teacher champions in the County. The study used only two ICT champions in-charge of the languages. One curriculum developer in-charge of Kiswahili and two QASOs were purposively sampled.
3.5.2 Sample Size

The study sample consisted of 9 public secondary schools offering 8-4-4 curriculum, 25 Kiswahili language teachers, approximately 630 form three students, 2 ICT teacher champions, 2 curriculum developers and 2 QASOs in the County. This gave a total sample size of 661. A representative of 20\% of the total schools in the County equipped with computer facilities. According to Ary et al, (2002), a study sample of between 10\% -20\% representatives is appropriate for any study.

Table 3.1 Sampling Frame

<table>
<thead>
<tr>
<th>Category of Respondents</th>
<th>Types of schools</th>
<th>Total (N)</th>
<th>Sample (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schools</td>
<td>N 02</td>
<td>01</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C 20</td>
<td>04</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D 23</td>
<td>04</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>t 45</td>
<td>09</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Teachers</td>
<td>N 08</td>
<td>04</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C 50</td>
<td>13</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D 34</td>
<td>08</td>
<td>25.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>t 90</td>
<td>25</td>
<td>27.7</td>
<td></td>
</tr>
<tr>
<td>Students</td>
<td>N 286</td>
<td>57</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>C 1462</td>
<td>292</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>D 1310</td>
<td>262</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td></td>
<td>t 3058</td>
<td>612</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3148</td>
<td>630</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

KEY
N- National  C- County  D- District  t- Total for each category
3.6 Construction of Research Instruments

The objectives of the study formed the basis from which, the instruments were constructed. The study needed to answer questions on the nature and level of integration of ICTs in teaching and learning of Kiswahili language. The respondents were required to respond to pedagogical items, proficiency, perception, challenges and how they affect the teaching and learning of Kiswahili language.

The self-constructed research instruments used in the study included questionnaires, observation schedules, interviews and document analysis. The instruments enabled the researcher to collect sufficient data. The instruments are described below.

3.6.1 Questionnaires for Teachers and Students

Two questionnaires were used in the study to collect the data: The teachers’ questionnaire and learners’ questionnaire. The teachers’ questionnaire consisted of 24 items (see appendix A) while the students’ consisted of 11 (see appendix B). The questionnaires served the purpose of translating the objectives of the investigation into specific questions. Both closed and open-ended items were used. The questionnaires were used to gather information related to levels of integration of ICTs in teaching and learning of Kiswahili, teachers and learners’
perception about integration of ICTs in teaching and learning of Kiswahili, teacher competency and challenges encountered in integrating ICTs in the teaching and learning of Kiswahili language in secondary schools in Kenya. Only teachers teaching Kiswahili language and form three students in Secondary schools were eligible for participation. The reason for using the questionnaires is that, they are convenient to administer when handling a large group or respondents from a wide and distant geographical area.

3.6.2 Interview Schedules

The interview schedule was used to validate information obtained from quantitative data. The interview schedules were used to support and verify the information from the questionnaires. The ICT County teacher champions, Kiswahili language curriculum developer and programmer and the County QASO were interviewed. The interview was based on integration of ICTs in teaching and learning of Kiswahili language and ways of enhancing it.

3.6.3 Observation Schedules

Classroom observation was carried out in 9 schools. The reason for direct observation in this study is that it is a useful means for evaluating some aspects of learning and development such as performance skills and certain aspects of personal-social development that are difficult to evaluate using paper-and-pencil.
methods (Gronlund, 1985). The Kiswahili language teachers were observed in the classroom performing various aspects of lesson presentation from introduction, development, use of software resources, organization of language learning activities and ICTs resources and how they integrate it in their teaching and learning activities to conclusion of the lesson. Teachers personality in handling of ICT resources and challenges was also observed, A Likert-type rating scale observation protocol with three rating scales: below average, average and above average were used. This provided a common frame of reference for comparing teachers integration skills based on the same set of characteristics.

### 3.6.4 Document Analysis Schedule

The researcher accessed Secondary source documents relating to ICT use in the sampled schools. The documents include procedure for computer rooms, acceptable use policy, and resources available policy document among others. These documents were reviewed and analyzed to provide insights into perceptions, rules, and guidelines in the planning and implementation of ICTs integration in teaching and learning of Kiswahili language. The documents provided information related to organizational background of the school, ICTs resources, teachers’ and learners’ skills and achievements.
3.6.5 Pilot Study

The pilot study was carried out in two schools in the County to establish reliability of the research instruments. The schools were not used in the actual study but had characteristics similar to the ones used in the study. The schools were purposively sampled for convenience purpose due to proximity to the researcher. Four Kiswahili language teachers and 10 students from each school were selected randomly. The researcher visited the pilot schools and explained to the respondents the objectives of the study before allowing them to participate. The teachers and students who participated in the pilot study were not involved in the final study. Participatory observation and questionnaires were pre-tested since they were the main tools of the data collection. The piloting was to determine if the research instruments were in line with objectives and questions of the study and also estimate time duration needed for responding to questionnaires. The pilot study was also to enable the researcher to identify inconsistencies, discrepancy, ambiguities and misinterpretation of the research instruments. The questionnaires were analyzed to find out if the questions were understood and responded to by all the respondents without many problems. The pilot study assisted the researcher to restate and clarify some items that proved difficult. Participatory observation assisted the study to adjust the rating scale on the observation schedule guide.
3.7 Validity and Reliability

3.7.1 Validity

Validity is the extent to which a test measures what it purports to measure (Orodho, 2004). In this study, triangulation of research methods was used to validate the research. Triangulation is use of two or more methods of data collection. According to Cohen et al. (2000) triangulation is a powerful way of demonstrating concurrent validity in qualitative and quantitative design. This assisted the researcher to check on the content, construction of items and criterion of the research instruments.

3.7.2 Reliability

Reliability is the measure of the degree to which a research instrument yields consistent results or data after repeated trials (Mugenda & Mugenda, 1999, 2012). This study used Test-retest approach to verify reliability. The questionnaires were administered to respondents in the pilot study on two independent occasions in a two weeks period under similar conditions. The responses were compared using the Pearson’s Correlation Coefficient. According to Plowright (2011), a reliability of at least 0.5 is normally accepted as a measure of reliability for the instruments. The validation and reliability of the instruments especially the questionnaires which was the main tool for the study was accepted at r=0.785.

Pearson Product Moment Correlation Coefficient
\[ r_{xy} = \frac{N (\sum xy - \sum x \sum y)}{\sqrt{[N \sum x^2 - (\sum x)^2] \left( N \sum y^2 - (\sum y)^2 \right)}} \]

Where

- \( r_{xy} \) = Coefficient of reliability
- \( \sum xy \) = Sum of the product \( X \) and \( Y \)
- \( \sum x \) = Sum of the \( x \) rated values
- \( \sum y \) = Sum of the \( y \) rated values
- \( \sum x^2 \) = Sum of \( x \) values squared
- \( \sum y^2 \) = Sum of \( y \) values squared
- \( N \) = Number of the pairs of scores

3.8 Data Collection Procedure

The researcher first sought research approval from the school of graduate studies, Kenyatta University, and proceeded to obtain research authorization from the National Council of Science and Technology (NCST) before the process of data collection (a copy of the permit is attached as (Appendix H). The permit was important because it provided smooth entry into the field and encouraged free flow of ideas from the respondents. The researcher then visited the sampled schools to explain the purpose of the study to the, its significance, their potential roles in the study and the implication of their participation. The research made arrangements with the school authority and the Kiswahili language teachers on when to collect the data. A follow-up was made through telephone calls to
confirm the appointments. During the visit, students were sampled, and this was followed by the administration of study instruments. The research also booked appointments with the QASOs, ICT teacher champions and the Kiswahili curriculum developer and programmer for the purpose of interview. This exercise was conducted in the month of May-June 2013.

3.8.1 Questionnaires for Teachers and Students

The researcher distributed the questionnaires for the teachers herself and collected them three days later. This gave the respondents enough time to respond at their convenience and therefore a sure way of a high rate of return. The students’ questionnaires were distributed to them through the assistance of the Kiswahili language teachers in the sampled schools. The researcher requested the teachers to assemble the students in a hall, explained to the students her expectation before filling the questionnaires. The students were given one hour to respond to the questionnaires and then the researcher assisted by their respective teachers collected them as they left the hall. This ensured 100% collection of the questionnaires.

3.8.2 Interviews

The face to face interview schedule was with ICT teacher champion, Kiswahili curriculum developer and programmer and the County QASO. The researcher met
each one of them to book an appointment. Guided by the interview guideline, the researcher interviewed each one of them on different days and recorded their responses. The Kiswahili language teachers after filling the questionnaire, some were interviewed to clarify some responses. Use of interview schedules gave the researcher an opportunity to probe the respondents for clarification and elaboration (Weirsam & Jurs, 2005).

3.8.3 Classroom Observations
The researcher sat in form three classes in each of the 9 selected schools and observed directly the two Kiswahili lessons in each school. Each lesson lasted 40 minutes. The researcher was guided by the observation guide to get the data intended. After and before observing each lesson, the researcher held discussions with the respective teachers on her expectations. A total of 18 observations in 9 schools were carried out.

3.8.4 Document Analysis Schedule
The researcher visited the selected schools administrative offices and analyzed some of the ICT policy documents and other Government documents which state policy and other matters of language. The researcher then proceeded to the Kiswahili language department to analyze the schemes of work, lesson plans, record of work and requisition reports on ICT resources.
3.9 Data Analysis

The raw data collected through questionnaires, was clarified and analyzed through descriptive statistics that included frequencies, means and percentages based on objectives and questions of the study. The Statistical Package for Social Sciences (SPSS) computer based program was used as a tool for data analysis. Quantitative data collected using questionnaires was analyzed by first coding and inputting coded responses into the computer for analysis. The open-ended questions and data collected from the interviews were transcribed and categorized. Data collected from the classroom observation was scored and the mean calculated for each item. The researcher then established theme, coded the data and then input in the computer then run for descriptive analysis. Interview responses and data obtained from the document analysis were triangulated for discussion while narratives were used for qualitative data. The scores from each item of the research were subjected to Chi-Square test and in some cases ANOVA to test the significance differences between the sub-items. This was to establish whether the teachers’ competence, perception, nature and level of integration and the challenges encountered were significant with the demographic information (category of schools, age, professional and academic qualification, experiences among others). The findings of the study were presented using tables, graphs, pie charts, frequencies, ratios and percentages in relation to research objectives and questions.
3.10 Ethical Considerations

Before going to the field, the researcher obtained a research authorization permit from the Ministry of Education. The researcher went ahead and did the mapping of schools and actual visit. The researcher got permission from the County Educational Director which allowed her to visit and collect data from various secondary schools. The researcher then proceeded to meet the respondents and explained to them the objectives of the study before engaging them.

3.11 Chapter Summary

This chapter has outlined the study design and sampling procedure used in this study. The chapter has described how the research instruments were constructed giving direction to the researcher in the field. Validity and reliability of the research instruments have been articulated. The next chapter presents data collected from the field, analysis and discussion of the findings.
CHAPTER FOUR
DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.1 Introduction

The chapter highlights data presentation, interpretation, analysis and discussion of the study. The purpose of the study was to investigate the integration of ICTs in teaching and learning of Kiswahili language in public secondary schools. To do this it was important to:

a) Investigate the level and nature of integrating ICTs in teaching and learning of Kiswahili language in secondary schools in Kakamega County.
b) Establish teachers’ and learners’ perceptions, about integration of ICTs in teaching and learning of Kiswahili language in Kakamega County.
c) Establish teachers’ competency in integrating ICTs in teaching and learning of Kiswahili in secondary schools in Kakamega County.
d) Explore the challenges teachers and learners encounter in integrating ICTs in teaching and learning of Kiswahili language in secondary schools in Kakamega County.
e) Investigate how such challenges influence the teaching and learning of Kiswahili language in Kakamga County.

The data is presented thematically in sections. Tables and graphs have been used to summarize the data followed by analysis and discussion of the findings.
4.2 Demographic Data

The study set out to establish the demographic information of the Kiswahili language teachers and their learners. The data was collected from 25 Kiswahili language teachers and 630 learners. This information is important because in a way it affects the integration of ICTs in teaching and learning of Kiswahili language. The teachers’ demographic information included: category of schools, age, and experience, academic and professional qualification. From the data gathered from the teachers, percentages and means were calculated for each item. The percentages were considered to represent the general options.

4.2.1 Category of the Schools and the Sampled Teachers

Participants in this study came from different categories of schools (National, County and District). The schools were varied and different in terms of facilities, teaching and learning resources. The schools were either in rural or urban set-up but with computer facilities. The results for Kiswahili language teachers sampled as per the category of schools are as shown in table 4.1.
Table 4.1: School Categories of the Sampled Teachers (N=25)

<table>
<thead>
<tr>
<th>School category</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
<td>4</td>
<td>16.0</td>
</tr>
<tr>
<td>County</td>
<td>13</td>
<td>52.0</td>
</tr>
<tr>
<td>District</td>
<td>8</td>
<td>32.0</td>
</tr>
</tbody>
</table>

The results in table 4.1 indicate that among the schools where the teachers were sampled, 16.0% were from National schools, 52.0% from County schools whereas 32.0% were from District schools.

4.2.2 Demographic Information of the Kiswahili Language Teachers

The data collected captured age brackets of the Kiswahili language teachers, their sex, academic and professional qualification. Table 4.2 presents the findings from the respondents.
<table>
<thead>
<tr>
<th>Demographic information</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>15</td>
<td>60.0</td>
</tr>
<tr>
<td>Female</td>
<td>10</td>
<td>40.0</td>
</tr>
<tr>
<td>Ages (Years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 – 30</td>
<td>3</td>
<td>12.0</td>
</tr>
<tr>
<td>31 – 40</td>
<td>6</td>
<td>24.0</td>
</tr>
<tr>
<td>41 – 50</td>
<td>10</td>
<td>40.0</td>
</tr>
<tr>
<td>51 – 60</td>
<td>4</td>
<td>16.0</td>
</tr>
<tr>
<td>60 and above</td>
<td>1</td>
<td>4.0</td>
</tr>
<tr>
<td>None committal</td>
<td>1</td>
<td>4.0</td>
</tr>
<tr>
<td>Experience in teaching Kiswahili</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 – 5 yrs</td>
<td>4</td>
<td>16.0</td>
</tr>
<tr>
<td>6 – 10 yrs</td>
<td>4</td>
<td>16.0</td>
</tr>
<tr>
<td>11 – 15 yrs</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>16 – 20 yrs</td>
<td>3</td>
<td>12.0</td>
</tr>
<tr>
<td>Over 20 yrs</td>
<td>14</td>
<td>56.0</td>
</tr>
<tr>
<td>Highest academic qualification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>K.C.P.E</td>
<td>1</td>
<td>4.0</td>
</tr>
<tr>
<td>MBA</td>
<td>1</td>
<td>4.0</td>
</tr>
<tr>
<td>Postgraduate</td>
<td>2</td>
<td>8.0</td>
</tr>
<tr>
<td>None committal</td>
<td>21</td>
<td>84.0</td>
</tr>
<tr>
<td>Highest professional qualification</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma</td>
<td>3</td>
<td>12.0</td>
</tr>
<tr>
<td>Bed.</td>
<td>15</td>
<td>60.0</td>
</tr>
<tr>
<td>M.Ed.</td>
<td>2</td>
<td>8.0</td>
</tr>
<tr>
<td>M.A</td>
<td>1</td>
<td>4.0</td>
</tr>
<tr>
<td>None committal</td>
<td>5</td>
<td>20.0</td>
</tr>
</tbody>
</table>

Table 4.2 reveals that Kiswahili language teachers were mainly in their ages of 41 – 50 years (40.0%), followed by those between 31-40 (24.0%) while those between age 20-30 represented 12%. Only one teacher (4%) fell in the bracket age of 60 and above. On experience of Kiswahili language teachers in teaching of Kiswahili language, majority (56.0) of them had over 20 years of teaching Kiswahili language and were professionally trained B.Ed teachers (60.0%). Among the teachers sampled, there was none with teaching experience of between 11-15 years while 16-20 represented only 12%. This is an indication that majority
of the sampled teachers had a teaching experience of over 20 years and were well trained and therefore had required qualification to teach Kiswahili language in secondary schools.

**4.2.3 Demographic Data of the Learners**

Demographic data of the learners sampled for the study is as shown in figure 4.1.

![Figure 4.1: Number of Sampled Learners in the Study (N=630)](image)

As shown in figure 4.1, Learners sampled were mainly from the County schools (48.1%). Those from the District schools were 26.5% while those from the National schools were 25.4%. The researcher wanted to understand the sex distribution of the sampled learners as per category of schools and the results are as shown in table 4.3.
Table 4.3: Demographic Information of the Learners in the Schools

<table>
<thead>
<tr>
<th>School category</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
<td>160 (100%)</td>
<td>0 (0.0%)</td>
<td>160</td>
</tr>
<tr>
<td>County</td>
<td>227 (74.4%)</td>
<td>78 (25.6%)</td>
<td>305</td>
</tr>
<tr>
<td>District</td>
<td>93 (55.4%)</td>
<td>75 (44.6%)</td>
<td>168</td>
</tr>
</tbody>
</table>

\( \chi^2 \) –value 89.744

P – value 0.001
df=2

From table 4.3, it is clear that learners from national schools were male (100%) while (55.4%) were from the district schools. The female students from County schools accounted for only (25.6%) while those from the district schools were (44.6%). More male than female learners participated in this study. A chi-square test was conducted to test the significance difference in the number of males and female learners in the school categories at P-value (probability) at 95% Confidence interval. The number of males was significantly higher in the school categories \( \chi^2 = 89.744, df=2, P = 0.001 \).
4.3 Objective 1: Investigate the Level and Nature of Integrating ICT in Teaching and Learning of Kiswahili Language in Secondary Schools.

The study sought to investigate the nature and level of ICTs integration in teaching and learning of Kiswahili language. The information gathered included, availability of ICTs resources, the awareness of teachers about integration of ICTs in teaching, various ICTs resources and how integrated, how often the teachers used these resources, the degree of preference and comfort ability in teaching Kiswahili language components using ICTs. A further analysis on respondents views on integration of ICTs in teaching and learning of Kiswahili language based on biographical data was done. The objective was sub-divided into the following sections as discussed further.

4.3.1 Teachers awareness about Integration of ICTs in Teaching Kiswahili Language

The study sought to find out if the Kiswahili language teachers were aware of integration of ICTs in teaching of Kiswahili language. The study defined integration of ICTs as the use of computers and other related resources to support the teaching and learning of Kiswahili language. The responses from the teachers are as shown in figure 4.2.
Figure 4.2: Teachers Awareness about Integration of ICTs in Teaching Kiswahili Language

The results from figure 4.2 indicate that the Kiswahili language teachers (84.0%) were aware of integration of ICTs in teaching and learning Kiswahili language while 16% were not aware. This means Kiswahili language teachers in Kakamega County are aware of integration of ICTs in teaching and learning process.

The teachers were further asked to indicate the means by which they became aware of ICTs integration in teaching and learning of Kiswahili language in secondary schools. Their responses are as shown in table 4.4.
Table 4.4: Means by which the Teachers became Aware about Integration of ICTs in Teaching Kiswahili Language (N=25)

<table>
<thead>
<tr>
<th>Means of awareness</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal communication</td>
<td>7</td>
<td>28.0</td>
</tr>
<tr>
<td>Friends</td>
<td>3</td>
<td>12.0</td>
</tr>
<tr>
<td>Colleagues</td>
<td>2</td>
<td>8.0</td>
</tr>
<tr>
<td>Social media</td>
<td>4</td>
<td>16.0</td>
</tr>
<tr>
<td>School policies</td>
<td>4</td>
<td>16.0</td>
</tr>
<tr>
<td>MOE Policies</td>
<td>5</td>
<td>20.0</td>
</tr>
<tr>
<td>KIE policy documents, circulars, posters</td>
<td>8</td>
<td>32.0</td>
</tr>
<tr>
<td>Training</td>
<td>5</td>
<td>20.0</td>
</tr>
<tr>
<td>Conferences, seminars and workshops</td>
<td>6</td>
<td>24.0</td>
</tr>
<tr>
<td>ICT policy document</td>
<td>3</td>
<td>12.0</td>
</tr>
<tr>
<td>ICT champions</td>
<td>5</td>
<td>20.0</td>
</tr>
<tr>
<td>QASOS</td>
<td>4</td>
<td>16.0</td>
</tr>
</tbody>
</table>

It is clear from table 4.4 that 32% of Kiswahili language teachers became aware of ICTs integration in teaching Kiswahili through KIE Policy documents, circulars and posters, 28% in conferences/seminars/workshops while 24% became aware through MOE policy documents. 8% of the teachers became aware of ICTs through friends while the rest became aware through other sources as shown in table 4.4. From the responses, it is clear that the Kiswahili language teachers were aware of the integration of ICTs in teaching of Kiswahili language in secondary schools.
Research studies done in America indicated that most science teachers are aware of integration of ICTs in teaching of science subjects (Allen and Seaman, 2006). The findings indicate that just like science teachers in America, Kiswahili which is gaining prominence in Kenya as the national and official language, the Kiswahili language teachers are aware of integration of ICT in teaching and learning of Kiswahili language. The consistency of this finding should prompt curriculum developers to encourage teachers through proper procedure and opportunities to exercise creativity in their pedagogical practices by integrating ICTs. The current study has also demonstrated that Kiswahili language teachers are aware of ICTs integration and this provides them with an additional tool or strategy to employ in promoting innovativeness in their teaching activities. The findings however lack support from previous studies done in Kenya on ICTs integration awareness among the Kiswahili language teachers and on this basis, further studies should be done to establish the correlation between awareness and the actual practices. However, since the Kiswahili language teachers are aware of ICTs integration in Kiswahili there is need for them to integrate it in their teaching and learning activities.
4.3.2 Availability of Computer Resources in Schools

The researcher wanted to establish the opinion of the learners on the availability of computer facilities in their schools. This was done as per the category of schools. The learners’ responses are as shown in table 4.5.

**Table 4.5: Learners stating the Availability of Computer Facilities in their Schools**

<table>
<thead>
<tr>
<th>School category</th>
<th>Have computer facilities</th>
<th>No computer facilities</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
<td>159 (98.8%)</td>
<td>2 (1.2%)</td>
<td>161 (100%)</td>
</tr>
<tr>
<td>County</td>
<td>283 (95.0%)</td>
<td>15 (5.0%)</td>
<td>298 (100%)</td>
</tr>
<tr>
<td>District</td>
<td>168 (100%)</td>
<td>0 (0%)</td>
<td>168 (100%)</td>
</tr>
</tbody>
</table>

χ² = 12.092

P = 0.001

Table 4.5 indicates that 100% of sampled District schools have computer facilities as compared to County schools with 95.0%. Further computation indicates that availability of computer facilities were significantly higher in National schools than in the county schools (χ² = 12.092, df=2, P = 0.001).

4.3.3 Teachers and Students Opinion on Availability of ICTs Resources

Availability of ICTs resources in schools was of much interest to this study. The computer assisted ICTs resources the respondents were to respond to include the CDs, DVDs, Internet connectivity among others. Respondents were to indicate
whether the computer assisted ICTs resources were available or not available. The results are as indicated in table 4.6

<table>
<thead>
<tr>
<th>ICT Resources</th>
<th>Teachers</th>
<th></th>
<th></th>
<th>Students</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td></td>
<td></td>
<td>Percentage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computers</td>
<td>83.3%</td>
<td></td>
<td></td>
<td>97.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CDs</td>
<td>11</td>
<td>61.1%</td>
<td></td>
<td>568</td>
<td>90.2%</td>
<td></td>
</tr>
<tr>
<td>DVDs</td>
<td>9</td>
<td>50.0%</td>
<td></td>
<td>437</td>
<td>69.4%</td>
<td></td>
</tr>
<tr>
<td>Internet connectivity</td>
<td>5</td>
<td>27.8%</td>
<td></td>
<td>123</td>
<td>19.5%</td>
<td></td>
</tr>
<tr>
<td>Smart boards</td>
<td>2</td>
<td>11.1%</td>
<td></td>
<td>11</td>
<td>1.7%</td>
<td></td>
</tr>
<tr>
<td>Power point</td>
<td>8</td>
<td>44.4%</td>
<td></td>
<td>286</td>
<td>45.4%</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>1</td>
<td>5.6%</td>
<td></td>
<td>13</td>
<td>2.1%</td>
<td></td>
</tr>
</tbody>
</table>

Results from table 4.6 indicate that 83.3% of Kiswahili language teachers responded on the item of the availability of computers in schools compared to 97.9% of the students. On the availability of digitized CDs the respondents were as follows: teachers 61.1% and students 90.2%. DVDs were also available in most schools as confirmed by 50% of teachers and 69.4% of students. However, Internet connectivity and Smart boards were not common in schools as indicated by 27.8% and 11.1% respectively. The students’ responses also indicated that Internet connectivity (19.5) and Smart boards (1.7) were not very common in their
schools. For integration of computer assisted ICTs in teaching to be effective, there must be availability of computer resources. The findings of the study showed that most of the schools had the necessary computer infrastructure/resources in place as indicated by the teachers’ responses (83.3%) and students (97.9) and hence the need to study on the extent of integration of computer assisted ICTs in teaching and learning Kiswahili language.

Further analysis was carried out on the students’ computer ratios in their schools or how many students shared a computer. The ratios ranged between 1:10 to 1:15. The results indicate that though above 80% of the respondents reported to have computers in their schools, the ratios show that they are not adequate. Though the ideal ratio would be 1:1, the study assumes that a ratio of 1:2 would be the minimum required for meaningful teaching and learning. The results confirm earlier studies done by Butcher, (2003) on technological availability in African countries. According to him, African countries have insufficient numbers of computers and other related ICTs resources and therefore limit the use in the classroom. It is clear that schools in Kakamega County do not have adequate computers and other ICTs related resources which could be a challenge for its integration in teaching and learning of Kiswahili language which is an examinable and a medium of communication. Lack or inadequate resources can seriously limit what the teachers can do in the classroom using computers (Mumtaz, 2000).
The government of Kenya through the ministry of education should provide adequate targeted ICTs to schools to motivate the Kiswahili language and their learners, to integrate in their teaching and learning process.

The researcher further carried out a document analysis to establish the availability of ICTs documents in schools and other relevant materials related to teaching and learning of Kiswahili language and ICTs integration. The documents were important to the study because when a new approach or strategy is being adopted; relevant documents should be put in place (Posner, 1992). The results for document analysis are as shown in the table 4.7.

**Table 4.7: Availability of ICTs Documents in Schools (N=25)**

<table>
<thead>
<tr>
<th>ICT Documents</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICTs policy document from the ministry</td>
<td>9</td>
<td>100</td>
</tr>
<tr>
<td>TSC circulars on ICTs integration</td>
<td>9</td>
<td>100</td>
</tr>
<tr>
<td>Kiswahili language revised syllabus</td>
<td>9</td>
<td>100</td>
</tr>
<tr>
<td>Computer procurement documents</td>
<td>8</td>
<td>66.7</td>
</tr>
<tr>
<td>Schemes of work</td>
<td>2</td>
<td>22.2</td>
</tr>
<tr>
<td>Lesson plan</td>
<td>3</td>
<td>33.3</td>
</tr>
<tr>
<td>Guide books in ICTs integration</td>
<td>9</td>
<td>100</td>
</tr>
<tr>
<td>Reports on ICTs integration evaluation</td>
<td>2</td>
<td>22.2</td>
</tr>
</tbody>
</table>
Table 4.7 shows that documents required for ICTs integration were available in all the schools sampled in the study. This included, ICTs policy document from the Ministry of Education, TSC circulars on ICTs integration, Kiswahili language revised syllabus and guide books on ICTs integration. However, reports on ICTs integration evaluation (22.2%) and schemes of work (22.2%) in teaching Kiswahili language were not adequate. This shows that majority of the schools in Kakamega County possess the required documents for efficient integration of ICTs in teaching Kiswahili language though evaluation should be intensified by parties concerned. This could encourage the Kiswahili language teachers to utilize the available ICT resources.

4.3.4 Learners’ Skills in Use of Computers

The researcher wanted to establish whether the learners in sampled schools had any computer skills. A cross tabulation of learners computer skills and availability of the computers in schools was computed and the results are as shown in table 4.8.
Table 4.8: Learners Computer Skills and the Availability of the Computers in Sampled Schools

<table>
<thead>
<tr>
<th>School having computer</th>
<th>Learners computer skills</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Have computer</td>
<td>596</td>
</tr>
<tr>
<td></td>
<td>(100%)</td>
</tr>
<tr>
<td>No computers</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>(88.2%)</td>
</tr>
</tbody>
</table>

\( \chi^2 = 70.232 \)

\( P = 0.001 \)

Results from table 4.8 indicate that 100% of the learners in sampled schools with computer facilities in place have computer skills while 11.8% of the learners in schools with no computers did not have skills. The computer skills in this research included the knowledge on how to operate the basic skills of computers for example starting a computer/connecting the computer to power gadgets, opening and locating files among others.

The researcher further wanted to establish how the learners acquired the computer skills. The learners were guided by various options. Table 4.9 shows the summary of the learners’ responses on computer skills and the source.
The findings in table 4.9 revealed that learners acquired computer skills from various sources besides getting skills from their schools. It was evident from the results that majority of the learners 81.1% acquired computer skills from the school, 31.5% from home while the rest acquired the skills from the peers/friends 22.7% and from social media 8.2%.

### 4.3.5 Use of ICTs by Teachers in Teaching and Learning Activities

The researcher wanted to establish the use of computer assisted ICTs in teaching and learning of Kiswahili language. The Kiswahili language teachers were asked to indicate whether they used computer assisted ICTs in their teaching and learning activities when teaching Kiswahili language. Their responses are as shown in figure 4.3.
Figure 4.3: Teachers Using ICTs in Teaching of Kiswahili Language

Results in figure 4.3 indicate that majority of teachers 56% do not use ICTs in teaching Kiswahili language while only 20% made an effort of using it. The researcher further wanted to establish from the teachers who indicated that they made an effort in integrating ICTs in teaching activities on how they did it. Their responses indicated that teachers did it by use of CDs (20%), DVDs (20%), PowerPoint Presentations (16%), SMART boards and pens (12%), captions (4%) and finally by use of images/photographs by 4%. This showed CDs and DVDs were mostly used by the Kiswahili language teachers and could be associated with their convenience of use and do not require too much training to grasp the technology required. Further interrogation was done to establish why CDs and DVDs were preferred and one of the respondent asserted that:

*CDs and DVDs are easy to use because I simply use the students to fix them and leave them to watch the recorded programs as I continue with my own things. One does not need technical skills to operate them and the students...*
do not have to wait for me to come to class, they watch, discuss and revise on their own.

The results confirm earlier findings by Albirini, (2006) in his case study of Syrian high school science teachers that indicated that many teachers preferred using CDs and DVDs because they think they are easily prepared and are available. The same situation is evidenced in Kakamega County by the scores of 20% of each of them. Indeed, with the increasing presence of different ICTs resources in the world, Kenyan society included and especially in education sector, it is imperative that the Kiswahili language teachers access and integrate different ICTs resources in their teaching and learning activities in order to engage the learners and also improve their teaching quality.

Further analysis was computed on use of ICTs by Kiswahili language teachers across the schools category. The results are shown in table 4.10.

**Table 4.10: Teachers Integrating ICTs in Kiswahili Teaching**

<table>
<thead>
<tr>
<th>School category</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
<td>3 (75%)</td>
<td>1 (25%)</td>
<td>4</td>
</tr>
<tr>
<td>County</td>
<td>11 (84.6%)</td>
<td>2 (15.4%)</td>
<td>13</td>
</tr>
<tr>
<td>District</td>
<td>7 (87.5%)</td>
<td>1 (12.5%)</td>
<td>8</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 0.318 \]

\[ P = 0.853 \]
Table 4.10 indicated that use of ICTs in teaching Kiswahili language was not significantly different in National schools than the other category of schools ($\chi^2 = 0.318, P = 0.853$).

Further analysis was done on use of ICTs by Kiswahili language teachers in relation to demographic data. This included sex, age experience in teaching Kiswahili language and academic and professional qualification. The results are shown in table 4.11.
Table 4.11: Use of ICTs in Teaching Kiswahili among the Demographic Information of the Teachers.

<table>
<thead>
<tr>
<th>Demographic information</th>
<th>Use ICT in teaching</th>
<th>Do not use</th>
<th>$\chi^2$-value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>8</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>6</td>
<td>3</td>
<td>0.087</td>
<td>0.001*</td>
</tr>
<tr>
<td><strong>Ages (Years)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 – 30</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31 – 40</td>
<td>5</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41 – 50</td>
<td>8</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51 – 60</td>
<td>4</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 and above</td>
<td>1</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None committal</td>
<td>-</td>
<td>-</td>
<td>1.680</td>
<td>0.794</td>
</tr>
<tr>
<td><strong>Experience in teaching Kiswahili</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 – 5 yrs</td>
<td>2</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 – 10 yrs</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 – 15 yrs</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 – 20 yrs</td>
<td>3</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Over 20 yrs</td>
<td>8</td>
<td>4</td>
<td>4.127</td>
<td>0.248</td>
</tr>
<tr>
<td><strong>Highest academic qualification</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K.C.S.E</td>
<td>0</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MBA</td>
<td>1</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postgraduate</td>
<td>2</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None committal</td>
<td>-</td>
<td>-</td>
<td>3.631</td>
<td>0.304</td>
</tr>
<tr>
<td><strong>Highest professional qualification</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma</td>
<td>3</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bed.</td>
<td>12</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.Ed.</td>
<td>2</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M.A</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>None committal</td>
<td>-</td>
<td>-</td>
<td>0.808</td>
<td>0.668</td>
</tr>
</tbody>
</table>

NB P-value denoted by * is significant at 95% CI level.
The analysis in table 4.11 reveal that more male teachers (57.1%) significantly ($\chi^2 = 0.087, P = 0.001$) used ICTs in teaching Kiswahili language than female teachers, 42.9%.

**4.3.6 Observation Made by the Researcher on Teachers’ Integration of ICTs in Teaching Kiswahili Language**

To confirm the respondents’ responses on the nature and level of integration of ICTs in teaching and learning of Kiswahili language, the researcher made classroom observation of teachers in handling the Kiswahili lesson. The classroom observation was designed specifically to gather information on the classroom procedure on integration of ICTs in teaching and learning of Kiswahili language. Kiswahili language teachers were observed teaching on different occasions. The observation guide used was divided into 5 major sections namely: Preparation, presentation, how ICTs is integrated, and organization of ICTs resources and teachers personality. The observation was rated at above average, average and below average (a scale of 1-3). The results of specific observation areas average are analyzed and summarized in table 4.12.
<table>
<thead>
<tr>
<th>Observation</th>
<th>Areas</th>
<th>Average result in scale 1 – 3 “above average, average and below average”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation</td>
<td>Schemes of work</td>
<td>2.04 “Average”</td>
</tr>
<tr>
<td></td>
<td>Lesson plan</td>
<td>2.04 “Average”</td>
</tr>
<tr>
<td></td>
<td>Objectives</td>
<td>2.08 “Average”</td>
</tr>
<tr>
<td></td>
<td>Learning activities</td>
<td>2.84 “Below average”</td>
</tr>
<tr>
<td>Presentation</td>
<td>Introduction</td>
<td>2.88 “Below average”</td>
</tr>
<tr>
<td></td>
<td>Development</td>
<td>2.8 “Below Average”</td>
</tr>
<tr>
<td></td>
<td>Use of learning experience and link with current lesson using ICT.</td>
<td>2.84 “Below average”</td>
</tr>
<tr>
<td></td>
<td>Level and nature of integration of ICT</td>
<td>2.84 “Below average”</td>
</tr>
<tr>
<td></td>
<td>Teachers competency, skills, knowledge and content</td>
<td>2.84 “Below average”</td>
</tr>
<tr>
<td>How ICT is integrated</td>
<td>Introducing the lesson</td>
<td>2.88 “Below average”</td>
</tr>
<tr>
<td></td>
<td>Developing the lesson</td>
<td>2.88 “Below average”</td>
</tr>
<tr>
<td></td>
<td>Illustrating the major points</td>
<td>2.88 “Below average”</td>
</tr>
<tr>
<td></td>
<td>Concluding the lesson</td>
<td>2.68 “Below average”</td>
</tr>
<tr>
<td></td>
<td>Giving assignments</td>
<td>2.52 “Below average”</td>
</tr>
<tr>
<td>Organization of ICT resources in teaching Kiswahili language</td>
<td>Arrangement</td>
<td>2.44 “Average”</td>
</tr>
<tr>
<td></td>
<td>Availability of the resources</td>
<td>2.1 “Average”</td>
</tr>
<tr>
<td></td>
<td>Learner interaction with ICT materials</td>
<td>2.76 “Below average”</td>
</tr>
<tr>
<td></td>
<td>Use of learner experience and opportunities available</td>
<td>2.76 “Below average”</td>
</tr>
<tr>
<td>Teachers’ personality</td>
<td>Handling of ICT resources</td>
<td>2.64 “Below Average”</td>
</tr>
<tr>
<td></td>
<td>Handling of the challenges of use</td>
<td>3.0 “Below Average”</td>
</tr>
</tbody>
</table>
As shown in table 4.12, teachers preparation was divided into four sections; schemes of work, lesson plan, objectives and learning activities. On schemes of work and lesson plan preparation using computer assisted ICTs, 9 Kiswahili language teachers’ had the schemes of work and lesson plan in soft copies while the rest had printed ones. The resource columns on some of the schemes of work and lesson plans indicated use of digitized CDs. From the observation scale, lesson plan and schemes of work preparation using computer assisted ICTs was rated at 2.04 “average” while learning activities were rated at 2.84 “below average” since teachers did not indicate how the learners were to be involved in the teaching and learning activities using ICTs. This is an indication that Kiswahili language teachers in Kakamega County use ICTs averagely in preparation of Kiswahili language schemes of work and lesson plan.

Lesson presentation was divided into three sections: introduction, development and teachers’ knowledge and content. The researcher observed how the Kiswahili language teachers used ICTs to support the introduction of the lesson, developing the lesson and illustrating the main points of the topic. From the results in table 4.12 teachers use of learning experience and link with current lesson using ICTs was rated at 2.88 “below average,’ level and nature of integration at 2.8 “below average” while teachers knowledge and competency in using ICTs to develop the lesson was rated at 2.84 “below average”.

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On how ICTs is integrated in handling of the lesson from introduction to conclusion of the lesson. The analysis on table 4.12 indicates that lesson introduction, developing the lesson and illustrating the major points was rated at 2.88 “below average” while using ICTs in concluding the lesson was rated at 2.52 “below average.” These results indicate that majority of the Kiswahili language teachers observed did not make great effort in integrating ICTs in their teaching. In some cases, it was observed that though the teachers had the ICTs resources in place, they never made any attempt in using or referred to them.

The researcher also observed how the Kiswahili language teachers organized the ICTs resources while teaching Kiswahili language. Four areas were observed. As shown on table 4.12 above, arrangement and availability of computer assisted ICTs resources were rated at 2.44 and 2.1 “average” respectively. Learner interaction with ICTs materials and use of learner experience and opportunities available was rated at 2.76 “below average.” From the results, most schools had computer labs with computers well arranged unfortunately most Kiswahili language teachers observed in the classroom did not allow the learners interact with them. The two teachers that attempted to refer to the computer resources available in the classrooms ended up teaching parts of the computer and not using it to teach.
Regarding Teachers personality, two areas were observed that included teachers handling of ICT resources and the challenges of use. As indicated in table 4.12, handling of ICTs resources by Kiswahili language teachers was rated at 2.64 while handling of the challenges of use of ICTs was rated at 3.0 ‘below average.’ These results indicate that the Kiswahili language teachers have limited knowledge in handling the ICTs resources. In fact in one of the class observed by the researcher the Kiswahili teacher who attempted to use PowerPoint to teach a topic could not fix it and sought the learners’ assistance.

The results from the class observation generally indicate that Kiswahili language teachers and learners either do not understand strategies of teaching using ICTs or they do not have required knowledge on operational skills. What came out clearly from the classroom observation was that the Kiswahili language teachers were comfortable in using the old technology and strategies were not enthusiastic in embracing ICTs to engage learners in various learning activities.

Further analysis on results of classroom observation was done in comparison with the respective school categories to establish any significant differences in teachers’ practices. ANOVA analysis of variance was used. The results are as shown in table 4.13.
Table 4.13 Comparing the Observation in the Respective School Categories

<table>
<thead>
<tr>
<th>Observation</th>
<th>Areas</th>
<th>Average result in scale 1 – 3 “above average, average and below average”</th>
<th>District</th>
<th>County</th>
<th>National</th>
<th>F-values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation</td>
<td>Schemes of work</td>
<td></td>
<td>2.20</td>
<td>2.0</td>
<td>2.0</td>
<td>0.259</td>
</tr>
<tr>
<td></td>
<td>Lesson plan</td>
<td></td>
<td>2.2</td>
<td>2.0</td>
<td>2.0</td>
<td>0.259</td>
</tr>
<tr>
<td></td>
<td>Objectives</td>
<td></td>
<td>2.2</td>
<td>2.07</td>
<td>2.0</td>
<td>0.159</td>
</tr>
<tr>
<td></td>
<td>Learning activities</td>
<td></td>
<td>2.8</td>
<td>2.92</td>
<td>2.67</td>
<td>1.071</td>
</tr>
<tr>
<td>Presentation</td>
<td>Introduction</td>
<td>Use of learning experience and link with current lesson using ICT.</td>
<td>3.0</td>
<td>2.79</td>
<td>3.0</td>
<td>1.320</td>
</tr>
<tr>
<td></td>
<td>Development</td>
<td>Level and nature of integration of ICT</td>
<td>3.0</td>
<td>2.71</td>
<td>2.83</td>
<td>0.923</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Teachers competency, skills, knowledge and content</td>
<td>3.0</td>
<td>2.79</td>
<td>2.83</td>
<td>0.584</td>
</tr>
<tr>
<td>How ICT is integrated</td>
<td>Introducing the lesson</td>
<td></td>
<td>2.8</td>
<td>2.86</td>
<td>3.0</td>
<td>0.550</td>
</tr>
<tr>
<td></td>
<td>Developing the lesson</td>
<td></td>
<td>2.8</td>
<td>2.86</td>
<td>3.0</td>
<td>0.550</td>
</tr>
<tr>
<td></td>
<td>Illustrating the major points</td>
<td></td>
<td>2.8</td>
<td>2.86</td>
<td>3.0</td>
<td>0.550</td>
</tr>
<tr>
<td></td>
<td>Concluding the lesson</td>
<td></td>
<td>2.8</td>
<td>2.57</td>
<td>2.83</td>
<td>0.882</td>
</tr>
<tr>
<td></td>
<td>Giving assignments</td>
<td></td>
<td>2.6</td>
<td>2.57</td>
<td>2.3</td>
<td>0.513</td>
</tr>
<tr>
<td>Organization of ICT resources</td>
<td>Arrangement</td>
<td></td>
<td>2.6</td>
<td>2.43</td>
<td>2.33</td>
<td>0.650</td>
</tr>
<tr>
<td>in teaching Kiswahili language</td>
<td>Availability of the resources</td>
<td></td>
<td>2.4</td>
<td>2.07</td>
<td>2.17</td>
<td>1.478</td>
</tr>
<tr>
<td></td>
<td>Learner interaction with ICT materials</td>
<td></td>
<td>2.8</td>
<td>2.71</td>
<td>2.83</td>
<td>0.170</td>
</tr>
<tr>
<td></td>
<td>Use of learner experience and</td>
<td></td>
<td>3.0</td>
<td>2.79</td>
<td>2.50</td>
<td>2.204</td>
</tr>
<tr>
<td></td>
<td>opportunities available</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teachers’ personality</td>
<td>Handling of ICT resources</td>
<td></td>
<td>3.0</td>
<td>2.64</td>
<td>2.33</td>
<td>2.933</td>
</tr>
<tr>
<td></td>
<td>Handling of the challenges of use</td>
<td></td>
<td>3.0</td>
<td>3.00</td>
<td>3.00</td>
<td>0.000</td>
</tr>
</tbody>
</table>
Comparing the means of the observed values of the teachers ICT integration as per school category, ANOVA (Analysis of variance was used). The results showed that there were no significant differences in teachers’ practices in the various school categories as shown in table 4.13. The school category did not affect the teachers’ integration of ICT practice in teaching Kiswahili language. The observations are clear evidence that integration of ICT in teaching and learning of Kiswahili has not transformed its delivery in secondary schools and that teachers have not shifted from the teacher-centered approach to learner centered despite effort by the government to support it by providing ICT resources to schools.

4.3.7 Learners Views on Use of Computer Resources by their Teachers in Teaching of Kiswahili Language

The research sought the learners’ views on weather their Kiswahili language teachers integrated ICT resources in their teaching and learning activities. This was done to cross check the teachers’ responses on use of ICT in teaching and learning of Kiswahili language. The summary of the analysis are as shown in figure 4.4.
The results in Figure 4.4 reveal that majority of the Kiswahili teachers do not integrate ICT in teaching Kiswahili language with 88.1% of the students confirming this. It is further shown that the teachers who integrate ICT in teaching Kiswahili language mostly use CDs (41.8%) and DVDs (41.8%). Only a small percentage use Internet (7.3%), captions (3.6%) and PowerPoint (5.5%). The ICT teacher champion and the County QASOs interviewed also indicated that Kiswahili language teachers were not keen in integrating ICTs resources in their teaching and learning activities since most of them associated it with Science and Computer related subjects. In fact one of the ICT teacher champion asserted that:

*I enjoy assisting the Science teachers integrate ICTs in teaching than any other teacher teaching a language or art related subjects since the Science programs are more on the Internet and it is easy to come up with experiments and even illustrations which is not easy in a language.*
Though the KICD curriculum and programmer interviewed indicated that there were Kiswahili digitized content and programs developed and distributed to schools, the results show that much effort is required to ensure that Kiswahili teachers expose students to a variety of available ICTs resources to increase their knowledge on the various uses of computers. This will play a major role in cultivating a positive attitude in students as they will appreciate diversity of ICT technology.

4.3.8 Learners Views on Frequency of Use of ICT by their Teachers

The study sought learners’ views on the frequency in which their teachers use various ICT resources in teaching and learning activities. The analysis is as indicated in table 4.14.

Table 4.14: Use of ICT Resources in the Teaching and Learning of Kiswahili
as Viewed by Learners

<table>
<thead>
<tr>
<th>ICT Resources</th>
<th>Daily</th>
<th>Several times a week</th>
<th>Once a week</th>
<th>Rarely</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDs</td>
<td>4 (0.6%)</td>
<td>12 (1.9%)</td>
<td>26 (4.1%)</td>
<td>65 (10.3%)</td>
<td>527 (83.2%)</td>
</tr>
<tr>
<td>DVDs</td>
<td>4 (0.6%)</td>
<td>10 (1.6%)</td>
<td>12 (1.9%)</td>
<td>124 (19.6%)</td>
<td>484 (76.3%)</td>
</tr>
<tr>
<td>Power Point</td>
<td>4 (0.6%)</td>
<td>8 (1.3%)</td>
<td>2 (0.3%)</td>
<td>42 (6.6%)</td>
<td>578 (91.1%)</td>
</tr>
<tr>
<td>You tube</td>
<td>2 (0.3%)</td>
<td>-</td>
<td>10 (1.6%)</td>
<td>26 (4.1%)</td>
<td>596 (94.0%)</td>
</tr>
<tr>
<td>Animation</td>
<td>2 (0.3%)</td>
<td>-</td>
<td>2 (0.3%)</td>
<td>50 (7.9%)</td>
<td>580 (91.5%)</td>
</tr>
<tr>
<td>Captions</td>
<td>2 (0.3%)</td>
<td>2 (0.3%)</td>
<td>4 (0.6%)</td>
<td>58 (9.1%)</td>
<td>568 (89.6%)</td>
</tr>
<tr>
<td>Internet</td>
<td>-</td>
<td>8 (1.8%)</td>
<td>8 (1.9%)</td>
<td>52 (8.2%)</td>
<td>566 (89.2%)</td>
</tr>
<tr>
<td>Images</td>
<td>9 (1.4%)</td>
<td>10 (1.6%)</td>
<td>11 (1.7%)</td>
<td>53 (8.4%)</td>
<td>551 (87.0%)</td>
</tr>
<tr>
<td>Smart boards</td>
<td>4 (0.6%)</td>
<td>4 (0.6%)</td>
<td>11 (1.7%)</td>
<td>62 (9.8%)</td>
<td>553 (87.3%)</td>
</tr>
</tbody>
</table>
Despite the fact that majority of the learners indicated that their schools had computer resources, it is evident from table 4.14 that most of the Kiswahili language teachers do not utilize ICT resources available. The number of Kiswahili language teachers who use the available resources on daily basis was insignificant and only 14.1% used ICT resources on weekly basis. The findings of this study is contrary to the revelation of the Gordon university Aberdeen, (2004) that secondary school teachers at Scotland made use of ICT in the classroom on every single day. In Kenya, there is need to put mechanisms in place to ensure that Kiswahili language teachers use available ICT resources to engage their learners in the learning activities. The curriculum programmers have a big role to play in ensuring that teachers frequently use ICT resources since this can only be implemented if the curriculum advocates so for the teachers to pick it up with equal vigour.

### 4.3.9 Teachers Preference for ICTs Integration in Teaching of Kiswahili

The respondents in this study were required to indicate the degree of preference of using ICT resources in teaching and learning of Kiswahili language. The teachers were to indicate whether they mostly preferred, preferred or not preferred. The analysis is summarized in table 4.15.
Table 4.15: Teachers Preference of ICT Resources

<table>
<thead>
<tr>
<th>ICT Resources</th>
<th>Mostly preferred</th>
<th>Preferred</th>
<th>Less preferred</th>
<th>Rarely preferred</th>
<th>Not preferred</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDs</td>
<td>13 (52.0%)</td>
<td>-</td>
<td>2 (8.0%)</td>
<td>2 (8.0%)</td>
<td>8 (32.0%)</td>
</tr>
<tr>
<td>DVDs</td>
<td>12 (48.0%)</td>
<td>1 (4.0%)</td>
<td>2 (8.0%)</td>
<td>2 (8.0%)</td>
<td>8 (32.0%)</td>
</tr>
<tr>
<td>PowerPoint</td>
<td>8 (32.0%)</td>
<td>2 (8.0%)</td>
<td>2 (8.0%)</td>
<td>4 (16.0%)</td>
<td>9 (36.0%)</td>
</tr>
<tr>
<td>You tube</td>
<td>1 (4.0%)</td>
<td>3 (12.0%)</td>
<td>4 (16.0%)</td>
<td>6 (24.0%)</td>
<td>11 (44.0%)</td>
</tr>
<tr>
<td>Animation</td>
<td>3 (12.0%)</td>
<td>3 (12.0%)</td>
<td>2 (8.0%)</td>
<td>6 (24.0%)</td>
<td>11 (44.0%)</td>
</tr>
<tr>
<td>Captions</td>
<td>5 (20.0%)</td>
<td>3 (12.0%)</td>
<td>1 (4.0%)</td>
<td>4 (16.0%)</td>
<td>12 (48.0%)</td>
</tr>
</tbody>
</table>

Table 4.15 illustrates that CDs 52.0% and DVDs 48.0% are mostly preferred by respondents respectively. The other ICT resource that is mostly preferred by teachers is PowerPoint presentations 32%. On the other hand, it is clear that majority of the teachers do not prefer using the other ICT resources with 44.0% not preferring You Tube, 44.0% not preferring animations, 48.0% not in preference of captions, 36% not in preference of images/photographs, 54% not in preference of SMART boards and pens, 54% not in preference of social media and 60% not in preference of hyperlinks.

From the analysis on degree of preference of ICT resources in teaching and learning of Kiswahili language in Kakamega County, most teachers prefer using digitized CDs and DVDs while Internet related resources are not popular among teachers. The findings of this study do not agree with studies done by Timothy (2006) in USA and Carrington and Robinson (2010). In their studies, Internet related resources and PowerPoint presentations were mostly preferred by teachers.
than CDs and DVDs. A lot of learning materials are found on the Internet and indeed, it is an alarming revelation that more than 50% of Kiswahili language teachers do not integrate Internet related resources in their teaching and learning activities. Information found on the Internet could be used by both teachers and learners as references to the Kiswahili topics. Animated graphics could also be used to explain Kiswahili language content which may be perceived to be difficult. The opinion held by Kiswahili language teachers on integration of ICTs in teaching and learning of Kiswahili language is crucial and should be considered in curriculum planning and improvement since such resources enhances interaction between the teachers and students on a daily basis in the classroom and therefore improving the quality of content delivery.

4.3.10 Kiswahili Language Components

The researcher further wanted to establish whether the Kiswahili language teachers were comfortable teaching Kiswahili components by integrating ICTs. Kiswahili language is divided into different parts (components). Some of the components include grammar (sarufi), compositions (insha), vocabulary (msamiati) among others. These are language aspects/areas that the teachers will be biased on when introducing the use of ICTs in their teaching methodology. Table 4.16 presents a summary of the results on Kiswahili language components comfortably integrated by teachers in their teaching activities.
Table 4.16: Kiswahili Language Components Teachers were Comfortable in Integrating ICTs when Teaching

<table>
<thead>
<tr>
<th>Kiswahili component</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grammar</td>
<td>10</td>
<td>40.0</td>
</tr>
<tr>
<td>Listening skills</td>
<td>10</td>
<td>40.0</td>
</tr>
<tr>
<td>Speaking skills</td>
<td>8</td>
<td>32.0</td>
</tr>
<tr>
<td>Reading skills</td>
<td>2</td>
<td>8.0</td>
</tr>
<tr>
<td>Writing skills</td>
<td>4</td>
<td>16.0</td>
</tr>
<tr>
<td>Literacy</td>
<td>8</td>
<td>32.0</td>
</tr>
<tr>
<td>Speech acts</td>
<td>3</td>
<td>12.0</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>4</td>
<td>16.0</td>
</tr>
<tr>
<td>Social-linguistics</td>
<td>6</td>
<td>24.0</td>
</tr>
<tr>
<td>Others (Set book)</td>
<td>2</td>
<td>8.0</td>
</tr>
</tbody>
</table>

It is evident from table 4.16 that 40.0% of the teachers are comfortable in integrating ICTs when teaching grammar (sarufi) and listening skills (kusikiliza). The others are comfortable integrating speaking skills (kuzungumza) and literacy aspects (fasihi) with each contributing 32.0%. Great difficult of integrating ICTs in teaching Kiswahili was identified to be in reading skills (kusoma) and set books analysis by only 8.0% of the respondents accepting that they are comfortable. The findings in Figure 4.16 reveal that majority of participants are not comfortable in integrating ICTs in teaching various components of Kiswahili language since the percentages are below 30%. Only 40% of the teachers interviewed seemed to be comfortable in teaching grammar and listening skills using ICTs.
A part from the Kiswahili language components, the teachers were asked to give specific topics they mostly taught using ICTs. They listed konsonanti, ala za sauti na utamkaji wake, vitate, vitanza ndimi, aina za maneno, uakifishaji, uchanganuzi wa sentensi, tanzu na vipera vya fasihi simulizi, fasihi andishi and isimu jami as some of the topics. The topics were mainly taught using digitized CDs and DVDs from KICD and PowerPoint presentations. Kiswahili language consists of very many topics falling in four major language skills (kusikiliza, kuongea, kusoma na kuandika). Many Kiswahili language topics could be taught using a variety of ICT resources for instance, pronunciation (matamshi), a voice-over teacher accompanied by images and colour illustrations that run concurrently could be incorporated into teaching and learning to make the lesson more interesting. Use of coloured images and animations could also be used to clarify some Swahili teams. From the results obtained in the study, it seems that during the 1-3 weeks training, the Kiswahili language teachers were not adequately exposed to integration of ICTs in teaching all the Kiswahili topics. The classroom observation also revealed that the teachers encountered problems in teaching the mentioned topics in integrating ICTs in their teaching and learning activities. In general, though the teachers indicated that they integrated ICTs in their teaching and learning process, they did not do it effectively.
The study further required the Kiswahili language teachers to explain how they integrated ICT resources in their teaching activities. Their responses were as follows: 14% of teachers indicated that their students watched the DVDs after reading and analyzing the themes and characters of the books in the classroom, 13% allowed their students to listen to the materials on CDs about the plot, theme, characterization of characters and language used in specific set books such as Kiswahili prose (Riwaya), Kiswahili play (Tamthilia) and Kiswahili short stories (Hadithi fupi). On writing skills (kuandika), 7% of teachers indicated that they used PowerPoint presentation and only 1% downloaded images from YouTube and used them to teach different Swahili compositions (insha). On teaching of vocabulary (msamiati) only 5% indicated that they used recorded conversation on CDs and DVDs. None of the teachers in the study explained how grammar (sarufi) and speech acts (matamshi) were taught through the use of ICTs. Kiswahili language teachers ought to teach more of speech acts and grammar by using simulations, games from the Internet and other related resources to make it more interesting in the classroom. The low percentages attained by teachers are a testimony of low adoption of ICTs by teachers in integrating ICTs in teaching and learning of Kiswahili language in secondary schools in Kenya. The teaching and learning of Kiswahili language using computer assisted ICTs could assist the teachers to teach effectively and improve the quality of education and even the students’ grades since there is a lot that could slowly edge out the textbooks and
chalk. Use of interactive boards makes the lesson more interesting especially with the right software. The teacher only needs to be creative to prepare the lesson materials and could use it as chalkboard but with a special pen or even a finger like touch screen and this could help the students learn on their stance and even guide on pronunciations since the device comes with speakers.

4.3.11 Frequency of Integration of ICTs in Teaching and Learning of Kiswahili

Despite the fact that some Kiswahili language teachers gave an indication that they integrated ICTs in teaching and learning Kiswahili language, when they were asked to indicate how often they used it, their responses were as shown in table 4.17.

Table 4.17: Frequency of Integration of ICTs in Teachings

<table>
<thead>
<tr>
<th>Frequency</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Once a week</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Twice per week</td>
<td>1</td>
<td>4.0</td>
</tr>
<tr>
<td>Thrice per week</td>
<td>2</td>
<td>8.0</td>
</tr>
<tr>
<td>Others</td>
<td>5</td>
<td>20.0</td>
</tr>
<tr>
<td>Never</td>
<td>13</td>
<td>52.0</td>
</tr>
</tbody>
</table>

The results from table 4.17 indicated that majority of the teachers (52.0) never integrated ICTs in teaching Kiswahili language. However, 16.0% of the teachers
integrated ICTs once a week, 8.0% integrated thrice per week while 4.0% integrated ICTs twice a week. Others integrated ICT either once per month, occasionally or twice a month. This does not augur well for the Kiswahili language teachers not to embrace ICTs in their teaching and learning activities and yet the world today is moving too fast towards integration of ICTs all spheres.

4.3.12 Integration of ICTs in Teaching and Learning Activities by the Teachers

The researcher sought to establish specific resources the Kiswahili language teachers used in their teaching and learning activities. This included use of CDs, captions, animations among others. Further analysis was done to establish significance association with biographic information. The summary of the analysis is as shown in table 4.18.
Table 4.18: Teachers Integrating ICTs Resources in Teaching and Learning

Kiswahili

<table>
<thead>
<tr>
<th>Resources</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CDs</td>
<td>5</td>
<td>31.3</td>
</tr>
<tr>
<td>DVDs</td>
<td>5</td>
<td>31.3</td>
</tr>
<tr>
<td>Power Point</td>
<td>4</td>
<td>25.0</td>
</tr>
<tr>
<td>Internet</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>You tube</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Captions</td>
<td>1</td>
<td>6.3</td>
</tr>
<tr>
<td>Animations</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hyperlinks</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Smart board</td>
<td>1</td>
<td>6.3</td>
</tr>
</tbody>
</table>

It is clear from table 4.12 those Kiswahili language teachers mostly integrated CDs and DVDs in their teaching and learning activities. Usages of these resources were not significant in any way to the teachers’ experiences, professional or academic qualifications.

4.3.13 Extent to which ICTs Assists in Realizing Lesson Objectives

Realization of lesson objectives is important in teaching and learning process (Barnes, 1982). According to Barnes, four questions need to be considered when formulating or specifying the lesson objectives, learning experiences, organization
of experiences and evaluation. In this study, the research sought to find out the extent to which the integration of ICTs assisted the teachers in realization of their lesson objectives. The results are as shown in Table 4.19.

**Table 4.19 Extent to which ICTs Assist in Realization of Lesson Objectives**

<table>
<thead>
<tr>
<th>ICT Resources</th>
<th>Greater extent</th>
<th>Moderate extent</th>
<th>Lesser extent</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>%</td>
<td>Frequency</td>
</tr>
<tr>
<td>Computers</td>
<td>8.0</td>
<td>44.4</td>
<td>4.0</td>
</tr>
<tr>
<td>CDs</td>
<td>9.0</td>
<td>50.0</td>
<td>1.0</td>
</tr>
<tr>
<td>DVDs</td>
<td>2.0</td>
<td>11.1</td>
<td>3.0</td>
</tr>
<tr>
<td>Internet</td>
<td></td>
<td></td>
<td>4.0</td>
</tr>
<tr>
<td>Smart boards</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power point</td>
<td>2.0</td>
<td>11.1</td>
<td>5.0</td>
</tr>
<tr>
<td>Captions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Animations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Images/Photographs</td>
<td>2.0</td>
<td>11.1</td>
<td></td>
</tr>
<tr>
<td>Hyperlinks</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The results from table 4.19 indicate that computers (44.4%) and digitized CDs (50%) greatly assisted the teachers in realization of lesson objectives. The other ICT resources did not assist the Kiswahili language teachers in realizing their lesson objectives as evidenced by the low scores. Further interrogation was done by the researcher to find out why other ICT resources especially related to
Internet and SMART boards were not effective in assisting the teacher in achieving the objectives of the lesson and these are some of the responses:

R$_1$  \textit{Internet facilities are not available in schools and it never crosses my mind that Kiswahili programs and materials are on the Internet.}

R$_2$  \textit{Since the SMART board was launched in my school, I have not seen anybody use it and at the same time nobody seems to have knowledge on how to use in teaching and learning activities.}

There is need to encourage the Kiswahili language teachers to integrate ICT resources in their teaching and learning activities in Kakamega County since technology is being adopted in many countries in the world in terms of almost all spheres of education and pedagogical practices.

Based on the findings from this objective, the level and nature of integrating ICT in teaching and learning of Kiswahili language is low as indicated by the respondents from both the teachers ($\chi^2 = 0.808$, $P = 0.668$) and the learners. However, teachers made attempts to use CD and DVDs.
4.4 Objective 2: Establish Teachers’ and Learners’ Perceptions, about
Integration of ICTs in Teaching and Learning of Kiswahili Language.

The study sought to establish teachers’ perception on several factors that determine the rate at which ICTs is currently integrated in teaching and learning of Kiswahili language. The study defines teachers’ perception as the belief or attitudes of the Kiswahili language teachers about integration of ICTs in teaching and learning of Kiswahili language.

Adoption of ICTs in teaching and learning depends strongly on the belief, attitude and support of teachers. It is believed that if teachers perceived integration of ICTs in their teaching and learning activities as neither fulfilling their needs or their learners’ needs, it is likely that they will not adopt it. Teachers’ perception greatly influenced integration of ICT into teaching and learning process (Keengwa & Onchwari, 2008). The researcher set 16 statements relating to teacher perception to which the Kiswahili language teachers were to indicate their responses. The researcher divided the teachers’ responses into two parts namely: environment and availability of resources and others. The responses on environment and availability of resources are as shown in table 4.20.
Table 4.20: Teachers’ Perception about Integration of ICTs in Teaching Kiswahili Language

<table>
<thead>
<tr>
<th>Integration of ICT in teaching and learning of Kiswahili</th>
<th>S Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>S.Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provides a rich environment within which to create activities</td>
<td>F 15</td>
<td>7</td>
<td>2</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>% 60.0</td>
<td>28.0</td>
<td>8.0</td>
<td>4.0</td>
<td>-</td>
</tr>
<tr>
<td>Provides valuable facilities to support student learning</td>
<td>F 12</td>
<td>5</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>% 48.0</td>
<td>20.0</td>
<td>24.0</td>
<td>4.0</td>
<td>4.0</td>
</tr>
<tr>
<td>Only CDs distributed by KIE are available in schools</td>
<td>F 3</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>% 12.0</td>
<td>20.0</td>
<td>24.0</td>
<td>28.0</td>
<td>16.0</td>
</tr>
</tbody>
</table>

Results on environment and the ICT resources in table 4.20 reveal that majority of the teachers (60%) agreed that integration of ICTs provides a rich environment within which to create activities for students. Teachers strongly agree (48.0%) that ICTs provides valuable facilities to support learning. However, in the schools, not only CDs distributed by KIE are available. This showed there are other CDs in the schools for teaching Kiswahili language. The findings are supported by Newhouse (2002) assertions that:

Learning environments could be good for constructivist teaching and learning approach. The technology help to create the types of learning environments and the types of support for learning that are known to be ideal, which are argued to have been ignored or failed to be implemented widely in the past.
Cross tabulation analysis was further done to establish the effect of school categories on teachers’ perception. The analysis is as shown on table 4.20.

**Table 4.21: Effect of School Category on the Teachers’ Opinion on the ICTs Provision for A rich Environment**

<table>
<thead>
<tr>
<th>School category</th>
<th>Disagree</th>
<th>Agree</th>
<th>S. agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
<td>0 (0%)</td>
<td>2 (18.2%)</td>
<td>9 (81.8%)</td>
</tr>
<tr>
<td>County</td>
<td>0 (0%)</td>
<td>4 (44.4%)</td>
<td>5 (55.6%)</td>
</tr>
<tr>
<td>District</td>
<td>1 (50%)</td>
<td>0 (0%)</td>
<td>1 (50%)</td>
</tr>
</tbody>
</table>

$\chi^2$ – value 12.549  
P – value 0.014

As shown in table 4.21, school category had a significant effect on the teachers’ perception on provision of a rich environment within which to create activities for students ($\chi^2 = 12.549$, $P = 0.014$). More teachers in the National schools (81.8%) than those in the other category of schools strongly agreed that ICTs provides a reach environment.

Further analysis revealed that teachers’ perception on ICTs provision for a rich environment within which to create activities for students was not significantly
associated to the teachers’ gender ($\chi^2 = 0.969, P = 0.616$) age ($\chi^2 = 10.470, P = 0.106$) or the teachers’ years of experience ($\chi^2= 4.856, P = 0.562$)

### 4.4.1 Other Teachers’ Perception on Integration of ICTs in Teaching of Kiswahili Language

The teachers were required to indicate their responses on the other statements set. They were to indicate whether they strongly agreed, agreed or disagreed to the statements. The results are analyzed in table 4.22.

**Table 4.22: Teachers’ Perception about Integration of ICTs in Teaching Kiswahili Language**

<table>
<thead>
<tr>
<th>Integration of ICT in teaching and learning of Kiswahili</th>
<th>S. A</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>S. D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is good for teacher lesson preparation and not for classroom teaching</td>
<td>F 9</td>
<td>7</td>
<td>4</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>% 36.0</td>
<td>28.0</td>
<td>16.0</td>
<td>20.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interesting to integrate various ICT facilities in teaching language skills</td>
<td>F 9</td>
<td>7</td>
<td>4</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>% 36.0</td>
<td>28.0</td>
<td>16.0</td>
<td>20.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helps the learners access authentic and up to date information</td>
<td>F 10</td>
<td>5</td>
<td>8</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>% 40.0</td>
<td>20.0</td>
<td>24.0</td>
<td>8.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Makes learning interesting because learners are involved fully in learning activities</td>
<td>F 12</td>
<td>5</td>
<td>8</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>% 48.0</td>
<td>20.0</td>
<td>20.0</td>
<td>8.0</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>Makes one more productive and enhances student learning</td>
<td>F 8</td>
<td>10</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>% 32.0</td>
<td>40.0</td>
<td>16.0</td>
<td>8.0</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>Is scaring and teacher are reluctant to adopt</td>
<td>F 2</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>% 8.0</td>
<td>16.0</td>
<td>20.0</td>
<td>20.0</td>
<td>32.0</td>
<td></td>
</tr>
<tr>
<td>Teachers would like to learn more about ICT integration</td>
<td>F 8</td>
<td>5</td>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>% 32.0</td>
<td>20.0</td>
<td>24.0</td>
<td>16.0</td>
<td>8.0</td>
<td></td>
</tr>
<tr>
<td>Helps teachers organize teaching activities</td>
<td>F 6</td>
<td>9</td>
<td>6</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>% 24.0</td>
<td>36.0</td>
<td>24.0</td>
<td>12.0</td>
<td>4.0</td>
<td></td>
</tr>
<tr>
<td>Consumes a lot of time and delay syllabus coverage</td>
<td>F -</td>
<td>6</td>
<td>9</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>% -</td>
<td>24.0</td>
<td>36.0</td>
<td>16.0</td>
<td>24.0</td>
<td></td>
</tr>
<tr>
<td>Teachers unable to integrate ICT in teaching due to lack of facility</td>
<td>F 3</td>
<td>6</td>
<td>7</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>% 12.0</td>
<td>24.0</td>
<td>28.0</td>
<td>20.0</td>
<td>16.0</td>
<td></td>
</tr>
</tbody>
</table>

**NB:** P-values denoted by * indicate significant association at 95% Confident Interval CI) Key: SA-Strongly agree, A-Agree, N-Neutral, D-Disagree, SD-Strongly disagree
The first statement ‘ICTs is good for teacher lesson preparation and not for classroom teaching’ saw 64.0% of teachers agreeing and 20.0% disagreed. 16.0% were not sure and were rated as ‘neutral’. This is an indication that Kiswahili language teachers in Kakamega County believe that ICTs is good for teacher lesson preparation and not for actual teaching in the classroom. Teacher preparation involves preparation of schemes of work, lesson plan among others.

The responses on second statement ‘it is interesting to integrate various ICT facilities in teaching language skills’ saw 64.0% of the Kiswahili language teachers agreeing while 20.0% disagreed. 16.0% were neutral. This meant they were not sure or they were undecided. The results show that majority of Kiswahili language teachers believe that teaching Kiswahili language using ICTs can be very interesting. Use of ICTs in teaching language skills ensure that students have adequate time to practice them and that all students are involved in classroom activities (Timothy, 2006).

The third statement ‘ICTs helps the learners’ access authentic and up to date information’ saw 60.0% of the Kiswahili language teachers agreeing while 8.0% disagreed. 24.0% were neutral. The results of this study confirm studies done elsewhere in the world for instance Margret & Aaron (2010) in their study carried among the university students in America revealed that students were able to access more and up to date information through Internet than other sources like
textbooks. The research has established that majority of Kiswahili language teachers’ believe that use of ICTs provides access to authentic and up to date information that could be used to improve on the available materials and therefore improve on the quality of their teaching and learning process. There many programs on the Internet that could offer materials on all the subjects Kiswahili language inclusive. One of the best programs for revision materials include, Encarta, Think quest and Think.com. The materials available are more detailed and accompanied with a lot of illustrations and sometimes directs the user to another Internet site with related materials. The Kiswahili language should explore such sites to access more relevant and authentic materials to use in their teaching and learning materials.

The fourth statement ‘ ICT makes learning interesting because learners are involved fully in learning activities’ saw 68.0% agreeing and 12.0% disagreed. The results are an indication that good learning should be learner centered and not teacher centered (Bruner 1990). The teacher should facilitate the learning by giving instruction and guidance while the learner performs or is fully engaged in the learning activities to be able to master the content being learnt (Bruner 1990). From the analysis it is clear that majority of the Kiswahili language believe that use of ICTs in teaching of Kiswahili language is interesting because it engages learners in learning activities throughout the lesson.
The fifth statement ‘ICTs makes one more productive and enhances student learning’ saw 72.0% of Kiswahili language teachers agreeing while only 12.0% disagreed. This revelation is an indication that Kiswahili language teachers believe that when ICTs is integrated in teaching and learning, the teacher becomes more productive and the learner is able to get quality education.

The sixth statement ‘integration of ICTs is scaring and teachers are reluctant to adopt’ saw 22.0% of the Kiswahili language agreeing and a bigger percentage 52.0% disagreeing. This is an indication that majority of Kiswahili language teachers are willing to adopt use of ICTs in their teaching activities. The problem for them not adopting it fully could be blamed on the curriculum developers and lack of skills or training as earlier indicated.

The seventh statement ‘teachers would like to learn more about ICTs integration’ saw 52.0% of the Kiswahili language agreeing and 22.0% disagreeing. 24.0% were neutral. This meant that they were either not sure or undecided. On the eighth statement ‘ICTs helps teachers organize teaching activities’ 60.0% of the Kiswahili language teachers were in agreement while 16.0% disagreed. The last two statements ‘ICTs consumes a lot of time leading to delay in syllabus coverage’ and ‘teachers are unable to integrate ICTs in teaching due to lack of facilities’ saw a big percentage of teachers disagreeing 40.0% and 36.0%
respectively. 24.0% and 36.0% were in agreement. The rest of the teachers were neutral meaning they were either not sure or undecided.

Further analysis was done to establish the significant association of the Kiswahili language teachers’ perception and their demographics. The analysis is as shown in table 4.23.

**Table 4.23: Association of the Teachers’ Perception and the Teachers’ Demographic Data**

<table>
<thead>
<tr>
<th>Integration of ICT on the teaching of Kiswahili</th>
<th>Teachers demographics</th>
<th>School category</th>
<th>Ages (years)</th>
<th>Sex</th>
<th>Experience</th>
<th>Academic qualification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Makes one more productive and enhances student learning</td>
<td>χ²</td>
<td>10.360</td>
<td>13.979</td>
<td>0.937</td>
<td>9.535</td>
<td>1.883</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>0.241</td>
<td>0.302</td>
<td>0.919</td>
<td>0.657</td>
<td>0.757</td>
</tr>
<tr>
<td>Is scaring and teachers are reluctant to adopt</td>
<td>χ²</td>
<td>11.159</td>
<td>12.283</td>
<td>5.943</td>
<td>9.663</td>
<td>3.295</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>0.193</td>
<td>0.423</td>
<td>0.203</td>
<td>0.645</td>
<td>0.510</td>
</tr>
<tr>
<td>Teachers would like to learn more about ICT integration</td>
<td>χ²</td>
<td>9.797</td>
<td>7.422</td>
<td>1.294</td>
<td>7.909</td>
<td>2.091</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>0.280</td>
<td>0.829</td>
<td>0.862</td>
<td>0.792</td>
<td>0.554</td>
</tr>
<tr>
<td>Helps teachers organize teaching activities</td>
<td>χ²</td>
<td>6.420</td>
<td>14.841</td>
<td>3.796</td>
<td>12.036</td>
<td>3.238</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>0.600</td>
<td>0.250</td>
<td>0.434</td>
<td>0.443</td>
<td>0.519</td>
</tr>
<tr>
<td>Consumes a lot of time and delays syllabus coverage</td>
<td>χ²</td>
<td>11.569</td>
<td>10.660</td>
<td>0.447</td>
<td>11.736</td>
<td>7.825</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>0.072</td>
<td>0.300</td>
<td>0.930</td>
<td>0.229</td>
<td>0.050*</td>
</tr>
<tr>
<td>Teachers unable to integrate ICT in teaching due to lack of facility</td>
<td>χ²</td>
<td>11.644</td>
<td>11.519</td>
<td>0.758</td>
<td>18.304</td>
<td>4.500</td>
</tr>
<tr>
<td></td>
<td>P</td>
<td>0.168</td>
<td>0.485</td>
<td>0.944</td>
<td>0.107</td>
<td>0.343</td>
</tr>
</tbody>
</table>

NB: P-values denoted by * indicate significant association at 95% Confident Interval CI)
Table 4.23 demonstrates that there were significant association in the teachers ages ($\chi^2 = 21.972$, $P = 0.038$) teachers experiences in teaching Kiswahili ($\chi^2 = 23.356$, $P = 0.026$) and teachers academic qualifications ($\chi^2 = 12.413$, $P = 0.015$) to the teachers perception on ICTs for teachers lesson preparation. Teachers who were younger (66.7%), those who were less experienced in teaching (75%) and those who only had Diploma levels of education significantly agreed that ICTs is good for teacher lesson preparation.

Establishment of the association of the teachers demographic effects on their perception showed that, Teachers academic qualification had significant effect on their perception on ICTs integration consuming a lot of time and delay in syllabus coverage ($\chi^2 = 7.825$, $P = 0.050$). More Diploma holder teachers (66.7%), stated that ICTs integration do not consume a lot of time.

Based on the tested perception attributes, teachers’ perception about ICTs in teaching and learning Kiswahili language was therefore established to be significantly influenced by the teachers’ age ($\chi^2 = 21.972$, 0.038), experience in teaching Kiswahili ($\chi^2 = 23.356$, $P = 0.026$), teachers’ academic qualification ($\chi^2 = 7.825$, $P = 0.050$) and the school category ($\chi^2 = 12.549$, $P = 0.014$).
4.4.2 Learners’ Perception on Integration of ICTs in Learning Kiswahili Language

To establish learners’ perception, the researcher set 9 statements to which they were to respond to by agreeing or disagree. The learners’ perception was then evaluated in the individual school categories and the association using chi-square test. The responses are as shown in table 4.24.

Table 4.24: Learners Perception on Use of ICTs when Learning Kiswahili and the effect of School Categories

<table>
<thead>
<tr>
<th>Statement</th>
<th>S. Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>S. Disagree</th>
<th>( \chi^2 )-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enjoy learning when teacher uses ICT</td>
<td>256(40.4%)</td>
<td>38(6.0%)</td>
<td>258(40.7%)</td>
<td>40(6.3%)</td>
<td>42 (6.6%)</td>
<td>( \chi^2=90.493, P=0.001^* )</td>
</tr>
<tr>
<td>ICT makes learner participate in learning</td>
<td>180(28.4%)</td>
<td>131(20.7%)</td>
<td>250(39.4%)</td>
<td>34(5.4%)</td>
<td>39(8.7%)</td>
<td>( \chi^2=9.186, P=0.057 )</td>
</tr>
<tr>
<td>ICT helps learners access authentic information</td>
<td>237(37.4%)</td>
<td>81(12.8%)</td>
<td>258(40.7%)</td>
<td>26(4.1%)</td>
<td>32(5.0%)</td>
<td>( \chi^2=22.495, P=0.001^* )</td>
</tr>
<tr>
<td>ICT makes learners collaborate</td>
<td>130(20.5%)</td>
<td>98(15.5%)</td>
<td>321(50.6%)</td>
<td>34(5.4%)</td>
<td>51(8.0%)</td>
<td>( \chi^2=17.934, P=0.001^* )</td>
</tr>
<tr>
<td>ICT makes learners understand the topics</td>
<td>148(23.3%)</td>
<td>92(14.5%)</td>
<td>297(46.8%)</td>
<td>28(4.4%)</td>
<td>69(10.9%)</td>
<td>( \chi^2=25.229, P=0.001^* )</td>
</tr>
<tr>
<td>Computers scare learners and they do not follow the lessons when used</td>
<td>25(3.9%)</td>
<td>-</td>
<td>212(33.4%)</td>
<td>46(7.3%)</td>
<td>351(55.4%)</td>
<td>( \chi^2=4.830, P=0.185 )</td>
</tr>
<tr>
<td>Teachers do not allow learners to use computers</td>
<td>14(2.2%)</td>
<td>23(3.6%)</td>
<td>54(39.9%)</td>
<td>104(16.4%)</td>
<td>240(37.9%)</td>
<td>( \chi^2=27.591, P=0.001^* )</td>
</tr>
<tr>
<td>There are no computers in the school</td>
<td>26(4.1%)</td>
<td>22(3.5%)</td>
<td>209(33.0%)</td>
<td>49(7.7%)</td>
<td>328(51.7%)</td>
<td>( \chi^2=28.956, P=0.001^* )</td>
</tr>
<tr>
<td>When teachers use computer in teaching, learners perform well</td>
<td>59(9.3%)</td>
<td>72(11.4%)</td>
<td>165(56.2%)</td>
<td>54(8.5%)</td>
<td>93(14.7%)</td>
<td>( \chi^2=13.022, P=0.011^* )</td>
</tr>
</tbody>
</table>
Results for each statement in table 4.24, beginning with learners enjoy learning when their teacher use ICTs, show that 46.4% of the learners agreed while 12.9% disagreed. The rest 40.7% were not sure or undecided and therefore rated as neutral. The results indicate that about a half of the learners interviewed enjoyed when their teachers integrated ICTs in their teaching and learning activities. This means that the Kiswahili language teachers should be encouraged to adopt ICTs in their teaching activities to make their learners enjoy the learning of various Kiswahili language skills.

Regarding the statement ‘ICTs makes learner participate in learning activities’ 49.1% of the learners agreed while 14.1% disagreed. The rest 39.4% were neutral. The results mean that a lot still needs to be done by the Kiswahili language teachers on ICTs integration in teaching and learning of this language to increase learner participation in the lesson. The teachers should engage learners in various learning activities and this is only possible by using various resources ICTs being one of them in their teaching activities.

Results on ‘ICTs helps learners’ access authentic information’ saw 50.2% of the learners agreeing and 9.1% disagreed. 40.0% were neutral. The results indicate that though ICTs and more so use of Internet is believed to have up to date materials, some learners still do not believe in using it to access more materials.
The learners should be encouraged to use materials on the Internet and other ICT resources to supplement or improve on what is in the text books they use in their schools.

Regarding the statement that computers scare learners and they do not follow the lessons when used, the majority of the learners 62.9% disagreed while only a small percentage 3.9% strongly agreed. The results show that students are comfortable with the computers and follow the lessons when their teachers use them in their teaching and learning activities. These results confirm earlier studies done by Margaret at el (2010) that learners get excited with computers and are able to learn more and even understand better what is being taught.

With regard to teachers not allowing learners not use computers in learning Kiswahili language, majority of the learners 54.3% disagreed while only 5.8% agreed. These results mean that the Kiswahili language teachers allow the learners access computers and therefore the study recommends continued use of computers in learning of Kiswahili language.

With regard to use of computer and performance, 20.7% indicated that they performed well when their teachers integrated ICTs in their teaching activities. 23.2% disagreed while 56.2% were neutral. These results reveal that whether the
teachers integrate ICTs in teaching and learning of Kiswahili language, the learners still perform well.

Learners perception was therefore evaluated in the individual school categories and the association using chi-square test were noted. Except in Learners participation in learning activities ($\chi^2=9.186$, $P = 0.057$) where there were no significant differences in the school categories and perception of “computer scare of the learners making them not follow lessons, $\chi^2=4.830$, $P = 0.185$,” Perception of learners in the National schools significantly differed in favour of ICT from that of learners in the county schools.

Based on the findings of the objective on teachers and learners perception, teachers and the learners perception on integration of ICTs in teaching and learning of Kiswahili was positive, mean response, 4.0 “agree” in the scale of “1-SA – 5- Disagree”. The results are in agreement with the findings of a group of scholars (Bee et al. 2008) from the school of computing and design in Malaysia to measure the extent of ICTs among secondary school teachers. Their results showed that the teachers held a reasonably positive attitude towards ICTs adoption in schools. The overwhelming positive perception position by Kiswahili teachers on integration of ICTs in teaching and learning of Kiswahili language was not reflected in the actual classroom practices. In fact when observed in the
classroom the data obtained as indicated earlier in this study was rated as below average while their perception is seen as positive. The findings of this study also confirm the findings of Eugene (2006) that there is inconsistency between teachers’ beliefs or perception and their actual use of technology in the classroom. Despite the findings, Keengwa & Onchwari, (2008), believes that, if the teachers’ perception is positive towards integration of ICTs, then it is obvious that, they can provide useful insight to make it better and adopt it into their teaching and learning activities. The findings of this study equally contradicts the findings of a study done by Simonson (2004) that explored the beliefs and attitudes of primary school teachers in Ghana in use of computers in teaching. The results revealed that teachers attitudes/perception were related to their use of computers.

A similar pattern was reported in the projects presented at students’ congress on Science and technology forum. Majority of the teachers and student were observed to reflect positive perception in use of ICTs in teaching and learning science. Despite this, there is high potential of willingness for further development into use of ICTs in teaching and learning of Kiswahili language as shown by the data obtained.

This study has therefore established that both Kiswahili language teachers and their learners in Kakamega County though have a positive perception towards integration of ICTs in teaching and learning of Kiswahili language, it is not
reflected in the actual classroom teaching. This could be attributed to lack of skills and adequate computer resources in schools.

4.5 Objective 3 Establish Teachers’ Competency in Integrating ICTs in Teaching and Learning of Kiswahili in Secondary Schools

The study sought to establish the level of competency of Kiswahili language teachers in use of ICTs in teaching Kiswahili language. Competency in this study referred to individual’s mastery of ICT skills or having proper skills in terms of receptive and expressive. This was measured through training that included the in-service courses. The in-service courses in this study referred to short courses that last a maximum of one-three weeks carried at enhancing pedagogical practices. The research also wanted to establish the level of comfort of the Kiswahili language teachers in performing various ICT tasks, their participation in workshops/seminars on integration of ICTs in teaching of Kiswahili language and finally the overall teachers and learners rating on their ICT skills. The information was necessary to this study because without proper training, handling of ICT resources could be a challenge to them and therefore could affect the integration process. On training, teachers were required to indicate whether they had undergone any training, whether relevant and the skills acquired. The results are as shown in figure 4.5.
It is evident from figure 4.5 that 50% of the teachers had received training whereas the other 50% had not received training. Those who undertook the training indicated that the training took 2-4 weeks and was arranged through their respective schools. A further investigation on the relevance of the training was sought from the teachers who had been trained on integration of ICTs teaching of Kiswahili language. In response, it was observed that 67% of the teachers who had trained on integration of ICTs in teaching of Kiswahili language found the training very relevant while those who found it relevant and fairly relevant contributed 17% each. This gave the impression that teachers were satisfied with the training received since none of the teachers indicated that the training was
irrelevant. This was mainly in the areas of use of CDs in teaching, video clips, PowerPoint, Smart Boards and social media.

Teachers require in-service education in order to cope with the curriculum changes in content and teaching and learning strategies. Initial training does not provide graduating teachers with all the skills, knowledge and attitudes required for effective curriculum implementation. The results presented suggest that in Kakamega County, there is need for the government and heads of schools to encourage the Kiswahili language teachers and also allocate funds for capacity building in order for them to be exposed on new pedagogical practices.

4.5.1 Areas of ICTs Trained in by Kiswahili Language Teachers

The teachers were also asked to indicate whether during the training they were trained on use of various ICT resources in teaching and learning of Kiswahili language. The results are as shown in table 4.25.
Table 4. 25: Areas Trained in during ICTs Training

<table>
<thead>
<tr>
<th>Areas the teachers were trained</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer software in teaching</td>
<td>12</td>
<td>100</td>
</tr>
<tr>
<td>Use video clip in teaching</td>
<td>10</td>
<td>83.3</td>
</tr>
<tr>
<td>Record and editing video in teaching</td>
<td>1</td>
<td>8.3</td>
</tr>
<tr>
<td>Use simulation in teaching</td>
<td>2</td>
<td>16.7</td>
</tr>
<tr>
<td>Use web resources in teaching</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Locate, retrieve and retain content related information from arrange of text and technologies</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Use clickers to engage students during class</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Use smart boards</td>
<td>3</td>
<td>25.0</td>
</tr>
<tr>
<td>Create smart board lessons</td>
<td>3</td>
<td>25.0</td>
</tr>
<tr>
<td>To integrate ICT into Kiswahili lesson</td>
<td>8</td>
<td>66.7</td>
</tr>
</tbody>
</table>

The analysis in table 4.25 indicates that all the teachers were trained on use of computer software. 83.3% were trained on use of video clip while 66.7% were trained on how to integrate ICTs in teaching and learning of Kiswahili. From the results in table 4.25, it is clear that the Kiswahili language teachers in Kakamega County although they undertook training, the trainers concentrated more on use of computer software and not other areas necessary for integration of ICTs in teaching and learning of Kiswahili language. Teachers need to have proper training and sufficient skills required in order to engage the learners confidently. A research study done in Asian- Pacific on capacity-building toolkit among the
teachers in various institutions indicated that many teachers found use of computer software like CDs and DVDs to be an easier task than other computer related infrastructure (Lim, Chai and Churchil, 2010). This research has established that Kiswahili language teachers in Kakamega County were trained on use of computer software and therefore have skills on use of CDs and DVDs and therefore should be able to integrate them in their teaching and learning activities.

However, it is surprising that from the findings that Kiswahili language teachers were not trained in areas such as use of web resources in teaching Kiswahili language, how to retrieve to locate, retrieve, and retain content from a range of texts and also how to use clickers to engage learners in class. Further investigation showed that the respondents seemed not to be aware of such terms. Future training should address these areas.

4.5.2 Level of Comfort in Performing Various ICT Tasks

The study measured the ICT skills of the Kiswahili language teachers since without proper skills the teachers were likely to find it hard to integrate various ICT resources into their teaching and learning activities. The Kiswahili language teachers were to indicate the level of comfort in performing various ICT tasks. They were to indicate whether they were very comfortable, somewhat comfortable or would like assistance. The results are as shown in table 4.26.
Table 4.26: ICT Tasks the Kiswahili Language Teachers are Comfortable in Performing

<table>
<thead>
<tr>
<th>Task teachers are comfortable in performing</th>
<th>Very comfortable</th>
<th>Somewhat comfortable</th>
<th>Would like assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Using technical writing strategies, graphics and design to communicate effectively</td>
<td>4 (16.0%)</td>
<td>2(8.0%)</td>
<td>6(24.0%)</td>
</tr>
<tr>
<td>Creating a linear or non-linear PowerPoint presentation</td>
<td>4(16.0%)</td>
<td>3(12.0%)</td>
<td>5 (20.0%)</td>
</tr>
<tr>
<td>Create and delete slides</td>
<td>3(12.0%)</td>
<td>5(20.0%)</td>
<td>4(16.0%)</td>
</tr>
<tr>
<td>Add a picture from clip</td>
<td>2 (8.0%)</td>
<td>5(20.0%)</td>
<td>5(20.0%)</td>
</tr>
<tr>
<td>Scale and size objects</td>
<td>5(20.0%)</td>
<td>2(8.0%)</td>
<td>5(20.0%)</td>
</tr>
<tr>
<td>Insert hyperlinks</td>
<td>3(12.0%)</td>
<td>3(12.0%)</td>
<td>6(24.0%)</td>
</tr>
<tr>
<td>Add sound from clip</td>
<td>2(8.0%)</td>
<td>3(12.0%)</td>
<td>7(28.0%)</td>
</tr>
<tr>
<td>Add video clip</td>
<td>4(16.0%)</td>
<td>2(8.0%)</td>
<td>6(24.0%)</td>
</tr>
<tr>
<td>Add slide transitions</td>
<td>5(20.0%)</td>
<td>2(8.0%)</td>
<td>5(20.0%)</td>
</tr>
<tr>
<td>Save presentations</td>
<td>5(20.0%)</td>
<td>1 (4.0%)</td>
<td>5(20.0%)</td>
</tr>
<tr>
<td>Change background for PowerPoint</td>
<td>6(24.0%)</td>
<td>1(4.0%)</td>
<td>4(16.0%)</td>
</tr>
<tr>
<td>Use video clips in teaching</td>
<td>5(20.0%)</td>
<td>2(8.0%)</td>
<td>4(16.0%)</td>
</tr>
<tr>
<td>Use CDs and DVDs in teaching</td>
<td>5(20.0%)</td>
<td>2(8.0%)</td>
<td>5(20.0%)</td>
</tr>
<tr>
<td>Download the images from you tube</td>
<td>4(16.0%)</td>
<td>3(12.0%)</td>
<td>5(20.0%)</td>
</tr>
<tr>
<td>Use web resources</td>
<td>5(20.0%)</td>
<td>3(12.0%)</td>
<td>4(16.0%)</td>
</tr>
<tr>
<td>Use simulations while teaching</td>
<td>3(12.0%)</td>
<td>3(12.0%)</td>
<td>6(24.0%)</td>
</tr>
<tr>
<td>Record and edit videos for teaching</td>
<td>3(12.0%)</td>
<td>3(12.0%)</td>
<td>6(24.0%)</td>
</tr>
<tr>
<td>Teach students to handle ICT resources</td>
<td>3(12.0%)</td>
<td>5(20.0%)</td>
<td>3(12.0%)</td>
</tr>
<tr>
<td>Use of SMART boards</td>
<td>3(12.0%)</td>
<td>4(16.0%)</td>
<td>5(20.0%)</td>
</tr>
</tbody>
</table>

The results in table 4.26 indicated that Kiswahili language teachers were very comfortable in saving of presentation (20%), adding slide transitions (20%), creating linear and non-linear PowerPoint presentation (16.0%), use of technical
writing (16.0%), adding video clips (16%), scaling and sizing objects (20%), entering text (16.0%), creating and deleting slides (16.0%), adding sound (8.0%), inserting hyperlinks (12.0%), using SMART boards 12.0% and adding pictures (8.0%).

From the results in table 4.26 on all the ICT tasks examined, the Kiswahili language teachers required assistance. This indicates that they still require more training on use of various ICT resources in their teaching and learning activities and more so in adding of sound from clip, using technical writing strategies, graphics and design to communicate effectively. They also require more training on Inserting hyperlinks, use of simulations, record and edit videos for teaching and use of SMART boards. The Kiswahili language teachers need training in a wider range of ICT skills to fully integrate it in their teaching and learning activities.

4.5.3 Teachers Comfort in Performing ICT Tasks and the Demographic Data
A cross tabulation of teachers comfort in performing each of the ICT tasks and the Kiswahili language teachers demographics (category of school, gender and experience in teaching) was further done to establish any significant association.
a) Kiswahili language teachers’ use of technical writing strategies to teach

Using a chi-square test to establish any association in the Kiswahili language teachers’ comfort in using technical writing strategies graphics and design to teach and communicate effectively in Kiswahili language, the result showed that there was no significant difference in the three categories of schools ($\chi^2 = 4.33$, df = 4, P = 0.363). This implied that Kiswahili language teachers’ comfort in technical writing did not depend on the school category.

Technical writing strategies used by the teachers to teach was similarly not significantly different in the sex of the teachers ($\chi^2 = 1.714$, df = 2, P = 0.424). Both Male teachers and female teachers required some assistance in using technical writing strategies in teaching and learning activities.

Teachers’ experience in teaching Kiswahili language was not having a significant effect on their use of technical writing strategies $\chi^2 = 10.667$, df = 6, P = 0.424). This implied that whether the Kiswahili language teacher was experienced or not, they still required some assistance in the use of technical writing strategy in teaching Kiswahili language.
b) Creating and deleting slides in Kiswahili language lesson preparation

The comfort in performing the task of creating and deleting a slide when preparing a lesson on Power Point similarly was not dependent on the teachers school category ($\chi^2 = 4.917$, df = 4, $P = 0.296$). This imply that whether the teachers were from National, County or District schools, they experience the same discomfort in performing the task of creating and deleting slides preparing a Kiswahili Power Point presentation that was to be integrated in their teaching activities.

Comfort in the task of creating and deleting slides when preparing a power point presentation of Kiswahili language lesson was similarly not significantly different in the Kiswahili language teachers’ sexes ($\chi^2 = 1.851$, df = 2, $P = 0.396$). Both the male and female teachers required some assistance in creating and deleting slides when preparing a power point presentation for teaching Kiswahili language.

Teachers’ experience in teaching Kiswahili was not having a significant effect on the teacher ICT use of creating and deleting a slide ($\chi^2 = 4.747$, df = 6, $P = 0.577$). This result showed that the ICT technique of creating and deleting a slide when preparing a power Point presentation by the Kiswahili language teachers was a problem and all the teachers both experienced and inexperienced required some assistance in this area.
c) Adding a picture from clip to use in teaching Kiswahili language

The task of adding a picture from a clip to be used in teaching of Kiswahili language by Kiswahili language teachers from various school categories was not significantly different ($\chi^2 = 5.60, df = 4, P = 0.231$). Implication of this finding was that teachers from all the various school categories required some assistance to be able to perform the task of adding a picture from a clip to be integrated in their teaching and learning activities.

Teachers comfort in the task of adding a picture from clip was significantly different in the teachers’ sexes ($\chi^2 = 6.651, df = 2, P = 0.036$). The male teachers were somewhat comfortable in performing the task of adding a picture from a clip than the female teachers who stated they required some assistance in their teaching activities.

The task of adding a picture from a clip by most experienced teachers was not significantly different from that of less experienced teachers’ in teaching Kiswahili language ($\chi^2 = 8.480, df = 2, P = 0.205$). In this case, both the experienced and none experienced were somewhat comfortable in adding a picture from a clip when teaching Kiswahili lesson.
d) Scaling and sizing objects for use in teaching Kiswahili language

The task of scaling and sizing objects for use in teaching by the Kiswahili language teachers in various school categories was not significantly different ($\chi^2 = 5.100$, df = 4, $P = 0.277$). This is an implication that Kiswahili language teachers needed assistance in scaling and sizing objects in their teaching and learning activities.

Task of scaling and sizing objects for use in teaching Kiswahili language by the teachers was not significantly different in the teachers’ sexes ($\chi^2 = 5.417$, df = 2, $P = 0.067$). Both male and female teachers required some assistance in performing the task of scaling and sizing objects to be integrated in their teaching activities.

The task of scaling and sizing objects to be integrated in teaching of Kiswahili language by most experienced teachers was not significantly different from that of less experienced teachers’ in teaching Kiswahili ($\chi^2 = 11.360$, df = 6, $P = 0.780$). In this case, both the experienced and none experienced teachers required some assistance in scaling and sizing objects to use when teaching Kiswahili lesson.

e) Insertion of hyperlink in a Kiswahili language lesson

On inserting hyperlinks in a Kiswahili lesson, the findings showed that there was no significant differences in the school categories ($\chi^2 = 2.667$, df = 4, $P = 0.615$).
This implies that Kiswahili language teachers from all school categories required some assistance in performing the task of insertion of hyperlink in Kiswahili lesson.

Comfort in the task of Insertion of hyperlink in a Kiswahili lesson similarly was not significantly different in the teachers’ sexes ($\chi^2 = 3.771$, df = 2, $P = 0.152$). Both the male and female Kiswahili language teachers required some assistance in inserting hyperlinks in their teaching activities.

The results also showed that insertion of hyperlink in a Kiswahili lesson by most experienced Kiswahili language teachers was not significantly different from that of less experienced teachers’ in teaching Kiswahili ($\chi^2 = 9.867$, df = 6, $P = 0.130$). Both the highly experienced and less experienced teachers required assistance in performing the task of inserting hyperlink in a Kiswahili lesson.

f) Adding sound from clip for use in teaching Kiswahili language

The task of adding sound from a clip to be used in teaching Kiswahili language topics was found to be not significantly different in the three categories of schools ($\chi^2 = 4.929$, df = 4, $P = 0.295$). The implication here is that, the Kiswahili language teachers required assistance in adding sound from a clip to be integrated in teaching a Kiswahili lesson.
Addition of sound from a clip for teaching was not significantly an easy task for both the sexes. This task in a Kiswahili lesson similarly was not significantly different in the teachers’ sexes ($\chi^2 = 2.890$, df = 2, $P = 0.236$). This implied that both the male and female teachers required some assistance in addition of sound in their teaching activities.

On the task of adding sound from a clip, results showed that perfuming this task by most experienced Kiswahili language teachers was not significantly different from that of less experienced teachers’ ($\chi^2 = 10.476$, df = 6, $P = 0.106$). Both the highly experienced and less experienced teachers required assistance in performing this task when teaching Kiswahili lesson.

**g) Adding slide transitions for use in teaching Kiswahili language**

On addition of a slide transitions when preparing a Kiswahili lesson, the findings showed that there was no significant differences in the school categories ($\chi^2 = 5.100$, df = 4, $P = 0.277$). This indicated that teachers from all school categories required some assistance in performing the task of adding slide transitions to be used in teaching a Kiswahili lesson.
Addition of slide transition for teaching was not significantly easy task for both the sexes. This task in a Kiswahili lesson similarly was not significantly different in the teachers’ sexes ($\chi^2 = 5.417$, df = 2, $P = 0.067$). This implied that both the male and female Kiswahili language teachers required some assistance in addition of slides to be used in their teaching activities.

When the teachers were performing the task of adding slide transition, the results showed that perfuming this task by highly experienced teachers was not significantly different from that of less experienced teachers’ ($\chi^2 = 11.360$, df = 6, $P = 0.078$). Both more experienced and less experienced teachers required assistance in performing this task when preparing for a Kiswahili lesson.

**h) Saving Kiswahili language presentations**

The comfort in performing the task of saving presentations was not dependent on the teachers school category ($\chi^2 = 8.140$, df = 4, $P = 0.087$). This implied that whether the teachers were from National, County or District schools, they had little discomfort in performing the task of saving presentations to be used in their teaching activities.

Performing the task of saving a presentation by the teachers was not a comfortable venture for both the sexes. The results showed that this task in a Kiswahili lesson was not significantly different in the teachers’ sexes ($\chi^2 = 2.357$, $P = 0.067$).
df = 2, P = 0.308). This implied that both the male and female Kiswahili language teachers required some assistance in saving their presentations used in their teaching activities.

When the teachers were performing the task of saving their presentations, the results showed that performing this task by highly experienced Kiswahili language teachers was significantly different from that of less experienced teachers’ ($\chi^2 = 12.833, \text{df} = 6, P = 0.046$). More experienced teachers required assistance than less experienced teachers when saving a presentation for teaching Kiswahili lesson.

i) Changing background for PowerPoint presentation for use in teaching Kiswahili lesson

The task of changing the background for PowerPoint presentation by Kiswahili language teachers from various school categories was not significantly different ($\chi^2 = 8.140, \text{df} = 4, P = 0.087$). Implication of this finding was that teachers from the various school categories required some assistance to be able to perform the task of changing background for PowerPoint presentation for teaching a Kiswahili lesson.

Changing background for PowerPoint presentation by the teachers was an easy task for both the sexes. This task in a Kiswahili lesson was not significantly different in the teachers’ sexes ($\chi^2 = 4.158, \text{df} = 2, P = 0.125$). This implied that
both the male and female Kiswahili language teachers were comfortable in changing background for PowerPoint presentations used in their teaching activities.

On the task of changing a background in PowerPoint presentation, the results showed that performing this task by highly experienced Kiswahili language teachers was significantly different from that of less experienced teachers’ \( \chi^2 = 15.507, \ df = 6, \ P = 0.017 \). More experienced Kiswahili language teachers required assistance than less experienced teachers when changing a background on PowerPoint in presentation for teaching Kiswahili lesson.

j) Using video clips in teaching of Kiswahili language

On using video clips in teaching a Kiswahili lesson, the findings showed that there was no significant differences in the school categories \( \chi^2 = 7.315, \ df = 4, \ P = 0.120 \). This implies that Kiswahili language teachers from all school categories required some assistance in performing the task of using video clips in teaching various Kiswahili topics

Use of video clips in teaching Kiswahili language among the sexes was not a comfortable task for both the sexes. In a Kiswahili lesson, this task was not significantly different in the teachers’ sexes \( \chi^2 = 1.061, \ df = 2, \ P = 0.588 \). This
implied that both the male and female Kiswahili language teachers were comfortable in using video clips in their teaching activities.

When using a video clip in teaching, the study results showed that performing this task by more experienced teachers was not significantly different from that of less experienced teachers’ ($\chi^2 = 9.854$, df = 6, $P = 0.131$). Both highly experienced and less experienced Kiswahili language teachers were comfortable in using video clip when teaching Kiswahili lesson.

**k) Using CDS and DVDs in teaching Kiswahili language**

On the usage of CDS and DVDs in teaching Kiswahili language, the results showed that there was no significant difference in the teachers usage of CDs and DVDs in teaching in the various school categories ($\chi^2 = 5.100$, df = 4, $P = 0.277$). This implies that Kiswahili language teachers from the three school categories required some assistance in performing the task of using CDs and DVDs in teaching a lesson.

In the usage of CDs and DVDs, the teachers’ sexes did not determine their comfort ability. This task was not significantly different in the teachers’ sexes ($\chi^2 = 5.417$, df = 2, $P = 0.067$). This implied that both the male and female Kiswahili
language teachers required assistance in using CDs and DVDs in their teaching activities.

Basing on experience in usage of CDs and DVDs in teaching, the results showed that there was no significant difference among the teachers ($\chi^2 = 11.360$, df = 4, P = 0.078). This implied that more experienced and less experienced Kiswahili language teachers were comfortable in performing the task of using CDs and DVDs in teaching Kiswahili lesson.

1) **Downloading images from YouTube for use in teaching Kiswahili language**

In all the category of schools, teachers required some assistance in downloading images from youtube for use in a Kiswahili lesson. There was no significant difference in the task of downloading images by the Kiswahili language teachers in the three school categories ($\chi^2 = 3.667$, df = 4, P = 0.453). This implied that Kiswahili language teachers from the three school categories required some assistance in performing the task of downloading images from youtube to be integrated in their teaching activities.

To download images from youtube by the teachers was not significantly different in the teachers’ sexes ($\chi^2 = 2.949$, df = 2, P = 0.229). In this case, both the male and female teachers stated that they required some assistance to down
load images from YouTube and especially to be used in teaching Kiswahili language.

The task of downloading images from YouTube was not significantly different in the teachers’ years of experience ($\chi^2 = 10.347$, df = 6, $P = 0.111$). The results showed that performing this task by highly experienced teachers was not different from that of the less experienced teachers. Both, experienced teachers and less experienced teachers required assistance in downloading images from YouTube for teaching Kiswahili lesson.

m) Using web resources to teach Kiswahili language

The use of Web resources in teaching a Kiswahili language lesson findings showed that there was no significant differences in the school categories ($\chi^2 = 8.250$, df = 4, $P = 0.108$). This implies that Kiswahili language teachers from all the school categories required some assistance in using web resources in teaching a Kiswahili lesson.

In the usage of web resources, the teachers’ sexes did not determine their comfort ability. This task was not significantly different in the teachers’ sexes ($\chi^2 = 3.977$, df = 2, $P = 0.137$). In this case, both the male and female teachers were comfortable in using web resources in their teaching activities.
On the task of using web resources, the results showed that highly experienced teachers were less comfortable and required assistance significantly different from that of less experienced teachers’ ($\chi^2 = 15.413, \text{df} = 6, P = 0.017$). Less experienced teachers were more comfortable in using web resources in teaching Kiswahili language.

**n) Recording and editing video for teaching Kiswahili language**

In recording and editing video for teaching Kiswahili language, findings showed that there was no significant differences in the school categories ($\chi^2 = 2.667, \text{df} = 4, P = 0.615$). This implies that teachers from the three school categories required some assistance in recording and editing video for teaching a lesson.

The task of recording and editing video for teaching was not significantly different in the Kiswahili language teachers’ sexes ($\chi^2 = 3.711, \text{df} = 2, P = 0.152$). In this case, both the male and female Kiswahili language teachers required assistance in recording and editing video for use in their teaching activities.

Performing the task of recording and editing video for teaching among the Kiswahili language teachers showed that, there was no significant difference in the teachers’ teaching experiences in years ($\chi^2 = 9.867, \text{df} = 6, P= 0.130$). This
implied that both highly experienced and less experienced teachers required assistance in recording and editing videos in teaching Kiswahili language.

o) Teaching students to handle ICT resources in a Kiswahili class

Teaching students to handle ICT resources in a Kiswahili lesson was found not to be significantly different in the school categories ($\chi^2 = 7.627$, df = 4, $P = 0.106$). This implies that teachers from the various school categories required some assistance in teaching students to handle ICT resources in equal measures.

When teaching students to handle ICT resources, the teachers’ sex played no significantly different role ($\chi^2 = 0.052$, df = 2, $P = 0.974$). In this case both the male and female teachers stated that they were somewhat comfortable in teaching students to handle ICTs.

Teaching students to handle ICT resources among the teachers showed that, there was no significant difference in the teachers’ teaching experiences in years ($\chi^2 = 10.022$, df = 6, $P= 0.124$). This implied that both highly experienced and less experienced teachers required assistance in teaching students to handle ICT resources in teaching Kiswahili lesson.

p) Use of SMART boards in teaching Kiswahili language

Usage of SMART boards in teaching in the various school categories showed that there was no significant difference in the teachers usage of SMART boards in
teaching in the various school categories ($\chi^2 = 3.667$, df = 4, P = 0.453). This implied that teachers from the school categories required some assistance in the usage of SMART boards in teaching.

In the usage of SMART boards in a Kiswahili teaching, the study results showed that there was no significant different in the teachers’ sexes ($\chi^2 = 1.234$, df = 2, P = 0.539). Both the male and female teachers required assistance in using SMART board in their teaching activities.

The use of SMART boards in teaching by the teachers, both experienced and less experienced was not significantly different ($\chi^2 = 7.253$, df = 6, P = 0.298) All the teachers in various teaching experience in years required assistance in use of SMART boards in teaching.

From the results, it appears that Kiswahili language teachers in Kakamega County feel less competent in performing various ICT tasks. These are areas that need to be taken seriously and the Kiswahili language teachers need to be trained for them to be able to integrate it in their teaching and learning activities with much ease. The results of this study are consistent with the findings of Jegede et. al (2007) and Lau & Sim, (2008) that concluded in their studies that teachers seem to be more competent in use of software such as CDs and DVDs than other resources or
computer applications. This is means that Kiswahili language teachers have not mastered ICT skills in many applications despite the training. Kiswahili language teachers’ mastery of ICT skills is critical to successful integration of ICT in teaching and learning process and hence, they need to be trained on various advanced ICT skills to be able to use it competently.

4.5.4 Teachers’ Participation in Workshops and Seminars on Integration of ICT in Teaching and Learning of Kiswahili Language

In this study, Question 17 to 20 in the teachers’ questionnaire required the Kiswahili language teachers to indicate their participation in workshops and seminars. The teachers were asked to indicate whether they had attended workshops/conferences/seminars on integration of ICT in teaching and learning of Kiswahili language in secondary schools. Their responses are as shown in figure 4.6 below.
Figure 4.6: Teachers’ Attendance of Seminars/Conferences and Workshops

The results in figure 4.6 reveal that 36.0% of the teachers had attended workshops/conferences while the rest of the teachers had not. Most of those who had attended seminars/workshops were teachers from National schools. The workshops attended by the teachers on integration of ICT in teaching Kiswahili were sponsored or organized by either Kenya Institute of Education (KIE), NEPAD or British Council. These were 2 days, one week, 3 weeks or 4 weeks seminar/workshops. The teachers (76%) stated they would prefer more training on integration of ICT in Kiswahili teaching Kiswahili. Staff development programs are essential in implementation of any curriculum and should be integral part of the education process and should be arranged on regular basis for educational personnel (UNESCO, 1975).
4.5.4 Overall Teachers’ Rating on their ICT Skills

The Kiswahili language teachers were asked to rate their overall skills in ICT. They were to rate their skills as ‘high, medium or low’. The responses were as indicated in figure 4.7

![Figure 4.7: Teachers’ overall rating on their ICT skills](image)

The results in figure 4.7 indicate that 44.0% of the Kiswahili language teachers rated themselves as low in ICT skills, 28.0% felt they were medium while 4.0% felt they had high skills. Teachers’ limited skills could have a direct influence on his/her innovative use of ICT in the classroom (Drent & Meelissen, 2008). This study has established that Kiswahili language teachers in Kakamega County have low ICT skills and therefore there is need for them to be trained in order to transform their pedagogical practices.

Further analysis was done on the teachers’ individual rating and their training/seminars attendance. Their responses were as shown in table 4.2
Table 4.28: Rating by the Individual Teachers of their Overall ICT Skills

<table>
<thead>
<tr>
<th>Teachers’ Rating</th>
<th>Have attended</th>
<th>Have not attended</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>seminar</td>
<td>seminar</td>
</tr>
<tr>
<td>Low</td>
<td>F 4</td>
<td>F 5</td>
</tr>
<tr>
<td></td>
<td>% 50.0</td>
<td>% 62.5</td>
</tr>
<tr>
<td>Medium</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>% 37.5</td>
<td>% 37.5</td>
</tr>
<tr>
<td>High</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>% 12.5</td>
<td>% 0.0</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>% 100%</td>
<td>% 100</td>
</tr>
<tr>
<td>$\chi^2$ – value</td>
<td>1.11</td>
<td></td>
</tr>
<tr>
<td>P – value</td>
<td>0.574</td>
<td></td>
</tr>
</tbody>
</table>

From table 4.28, the rating of the individual teachers varied. Those who have attended some training on ICT rated themselves slightly higher (12.5%) than those who have not attended any workshop/seminars on ICT. However, the difference was not statistically significant ($P > 0.05$). From the findings, it appears that the Kiswahili language teachers do not have a wide range of ICT skills and they need to be trained in all ICT applications for them to acquire the required skills or to improve on their skills.

4.5.5 Overall Learners Rating on their ICT Skills

Learners overall rating on their ICT skills were also established. The analysis is as shown in Figure 4.8.
Figure 4.8: Learners overall rating of ICT skills

The result from figure 4.8 indicate that a larger population (39.4%) of the learners were not able to rate themselves. However, 26.8% rated their ICT skills as low while 11.5% rated their skills as high.

Further analysis was done to establish whether there was any significant difference in the learners rating of ICT skills and the schools category. The results are as shown in table 4.29.
Table 4.29: Rating by the learners of their overall ICT skills

<table>
<thead>
<tr>
<th>Learners’ Rating</th>
<th>National schools</th>
<th>County school</th>
<th>District school</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>F</td>
<td>%</td>
<td>F</td>
</tr>
<tr>
<td>Low</td>
<td>47</td>
<td>33.8</td>
<td>87</td>
</tr>
<tr>
<td>Medium</td>
<td>72</td>
<td>51.4</td>
<td>49</td>
</tr>
<tr>
<td>High</td>
<td>21</td>
<td>15.0</td>
<td>38</td>
</tr>
<tr>
<td>Total</td>
<td>140</td>
<td>100</td>
<td>174</td>
</tr>
<tr>
<td>$\chi^2$ – value</td>
<td>18.591</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the table 4.29, learners rated their overall computer skills as medium (mean 1.74 in the scale of 1 – 3 “Low – High”. Further analysis indicated that there was a significant difference in the learners rating in the school categories ($\chi^2 = 18.591$, $P = 0.001$). Learners in the National schools believed their skills in computers are low (37.6%) while those in the county schools thought their skill in computer is high (23.2%). This showed how the county schools were not well informed in the use of ICT, hence they were not aware of their deficit in ICT.

In overall, the teachers were not competent in integrating ICT in teaching and learning of Kiswahili as they rated their skills at 44% while the learners rated their skills as medium (mean 1.74 in the scale “1 – low to 3 high”. The findings are alarming and calls for concern among the stakeholders in education sector. For effective change in pedagogical practices, teachers need to be trained or rather be
equipped with required skills. Relevant training built confidence in the teachers and also increases their level of proficiency. From the findings, Kiswahili language teachers need to be trained on how to use computers in teaching and learning of Kiswahili language in order to improve on their content delivery.

4.5.6 Comparison of the overall teachers and learners rating of their skills in ICTs

To compare the overall Kiswahili language teachers rating of their skills in ICTs to the overall learners rating of their skills in ICTs, a Paired sample t-test was conducted on the two sets of ratings

Table: 4.30 Teachers and learner rating of their ICT skills

<table>
<thead>
<tr>
<th>Rating</th>
<th>Learners</th>
<th>Teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>26.80%</td>
<td>44.0%</td>
</tr>
<tr>
<td>Medium</td>
<td>22.20%</td>
<td>28.0%</td>
</tr>
<tr>
<td>High</td>
<td>11.50%</td>
<td>4.0%</td>
</tr>
<tr>
<td>None committal</td>
<td>39.40%</td>
<td>24.0%</td>
</tr>
<tr>
<td>Mean</td>
<td>24.98</td>
<td>25.0%</td>
</tr>
</tbody>
</table>

The results showed that there was no significant different in the two ratings (T = 0.001, df = 1, P = 0.997). Both the Kiswahili language teachers and their learners rated their skills as low. Mean teachers rating of their skills was 25.0% whereas the mean learners rating of their overall skills was 24.98%. These shows that the
skills on ICT is generally low and both the learners and the teachers are aware of this.

4.6 Objective 4: Explore the Challenges Encountered by the Teachers and Learners in integrating of ICT in teaching and learning of Kiswahili Language

The research sought to explore the Kiswahili language teachers’ challenges in their effort in integrating ICT in teaching of Kiswahili language. The results are as shown in Table 4.31.

**Table 4.31 Teachers Challenges in Integrating ICT in Teaching of Kiswahili**

<table>
<thead>
<tr>
<th>Challenges teachers encounter in integration of ICT in teaching of Kiswahili language</th>
<th>F</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited computer skills</td>
<td>16</td>
<td>64.0</td>
</tr>
<tr>
<td>Lack of training</td>
<td>15</td>
<td>60.0</td>
</tr>
<tr>
<td>Inadequate computer resources</td>
<td>17</td>
<td>68.0</td>
</tr>
<tr>
<td>Inadequate materials on Kiswahili topics</td>
<td>17</td>
<td>68.0</td>
</tr>
<tr>
<td>Lack of confidence</td>
<td>15</td>
<td>60.0</td>
</tr>
<tr>
<td>Lack of administrative support</td>
<td>17</td>
<td>68.0</td>
</tr>
<tr>
<td>Lack of ICT technicians</td>
<td>17</td>
<td>68.0</td>
</tr>
<tr>
<td>Lack of in-service courses</td>
<td>16</td>
<td>64.0</td>
</tr>
<tr>
<td>Lack of time</td>
<td>17</td>
<td>68.0</td>
</tr>
<tr>
<td>Scanty &amp; poor translation in the online Kiswahili dictionary</td>
<td>14</td>
<td>56.0</td>
</tr>
<tr>
<td>Lack of suitable software programs for Kiswahili</td>
<td>17</td>
<td>68.0</td>
</tr>
<tr>
<td>Lack of electricity</td>
<td>08</td>
<td>32.0</td>
</tr>
<tr>
<td>Frequent power blackout</td>
<td>15</td>
<td>60.0</td>
</tr>
</tbody>
</table>
The results in Table 4.31 show that the Kiswahili language teachers face very many challenges that make them shy from using computers in their teaching activities. The challenges range from inadequate materials on Kiswahili topics online to lack of electricity. The results in table 4.31 suggest that lack of technicians, inadequate computer resources, lack of administrative support, lack of time and lack of suitable software for Kiswahili were the key challenges all scoring 68.0%.

As shown on table 4.31, lack of ICT technicians has a great impact on integration of ICT in teaching and learning of Kiswahili language. Technical faults could affect the lesson delivery and this could be one of the barriers to integration of ICT by the teachers (Cox et al 1999). For instance in one of the Kiswahili language teachers observed in the classroom during the data collection failed to fix a PowerPoint presentation that affected the lesson delivery. School administrators should put in place technical support to build the confidence in teachers and also to ensure that adequate support is available for the teachers to make full use of ICT resources in the classroom without technical problems.

As depicted in table 4.31, lack of time was also another key challenge facing the teachers. The results are consistent with the findings of Preston et al (2000) who
found out that lack of time affected greatly the teachers’ delivery in schools. Teachers need time to prepare the lesson, assemble the relevant ICT resources to be integrated in the teaching and learning activities and also to come up with the learners’ activities. Time is needed by the teachers to be more familiar with the ICT resources and how to use it.

The results on table 4.30 however confirm the earlier studies done by Hadad et.al (2002), Empirca (2006), and Majanja –Minishi (2007). The challenges limit the Kiswahili language teachers from accessing and integrate ICT in their teaching and learning activities and especially in Kakamega County with a larger part situated in rural set up. The QASOs and The KICD curriculum developer and implementer interviewed also indicated that there many challenges encountered by the teachers in their attempt to integrate ICTs in teaching and learning of Kiswahili language. They pointed out lack of adequate computer infrastructure, lack of training, lack of administrative support and lack or frequent power black outs. Analysis of the interviews with the QASOs and the KICD staff indicated that there exist ICT illiteracy of the Kiswahili language teachers that they were concerned with teaching technology instead of teaching or using it to teach. This made them view integration of ICTs in teaching and learning of Kiswahili language as an add-on and not something that enhances or improves the quality of content delivery.
Further analysis was done to establish any significance differences in the challenges encountered by teachers and their academic qualification. The results are as shown in Table 4.32.

**Table 4.32: Challenges teachers experienced when integrating ICT in Kiswahili teaching**

<table>
<thead>
<tr>
<th>Teachers Academic qualification</th>
<th>Challenges in integrating ICT in teaching Kiswahili</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diploma</td>
<td>Lack of computer in schools, Lack of confidence, inadequate facilities, lack of electricity, materials not well developed, limited time for planning</td>
</tr>
<tr>
<td>Degree</td>
<td>Finance inadequate, computer skills, lack of personnel facilities, Limited knowledge on computer, Kiswahili language not yet fully integrated,</td>
</tr>
</tbody>
</table>

The results in Table 4.32 indicate that challenges faced by Kiswahili language teachers were not significantly different in the respective teacher teaching experiences and highest academic levels (P > 0.05).
4.6.1 Students Challenges in Integration of ICT in Learning Kiswahili Language

The students were also asked to state any problems that they encountered when learning Kiswahili language using computers. The results are summarized in Table 4.33.

4.33 Challenges in Integration of ICT in Learning Kiswahili Language

<table>
<thead>
<tr>
<th>Students' challenges</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited skills</td>
<td>447</td>
<td>71.0</td>
</tr>
<tr>
<td>Limited online Kiswahili content</td>
<td>586</td>
<td>93.0</td>
</tr>
<tr>
<td>Less computer-student ratio</td>
<td>403</td>
<td>90.0</td>
</tr>
<tr>
<td>Lack of electricity</td>
<td>277</td>
<td>69.0</td>
</tr>
<tr>
<td>Frequent power blackout</td>
<td>473</td>
<td>75.0</td>
</tr>
<tr>
<td>Limited internet connectivity</td>
<td>365</td>
<td>80.0</td>
</tr>
<tr>
<td>Inadequate computer resources</td>
<td>373</td>
<td>91.0</td>
</tr>
</tbody>
</table>

It is clear from Table 4.33 that the problems encountered by the student correlate with those of their teachers. It is evident that the biggest challenge that the students encounter is limited online Kiswahili content 93.0% followed by inadequate computer facilities 91.0%, frequent power blackout 89.0% and limited Internet connectivity 80.0%. However, only 71.0% claimed that limited computer skills were their challenge. The results on the challenges facing the students in their effort to learn Kiswahili language confirm the earlier studies done by...
Hurskainen (2006) who asserts that though there are Kiswahili programs on the Internet for instance Living Swahili dictionary, they have many problems and could mislead both teachers and students of Kiswahili language. Many of the words found in the Internet dictionaries are non-standard Swahili words and mostly have certain problems. The results also agree with Osborn (2007) assertions that the African continent is not adequately represented on content on the Internet. Lack of proper terminologies on the Internet could also limit the learners from using it to access more Swahili vocabularies though Kihore (2005) explains that ICT has created new terminologies and concepts that never existed. Furthermore, the Swahili information found on the Internet is not free and cannot be accessed easily. The teachers and learners are required to purchase in order to use and thus posing a challenge to them. The increase and access to Internet information could equip the teachers and students with up to date learning materials that could support and supplement the ones found in the textbooks.

The opinion of Kiswahili language teachers and learners on challenges encountered in their effort to integrate ICT in teaching and learning is paramount. It must be considered by all stakeholders in the education system for effective integration. Teachers are the main implementers of the education policy and the learners are the main beneficiaries; and therefore, there is urgent need to address
each of the challenges by taking into consideration the views, fears and concerns expressed by both teachers and learners.

4.7 Objective 5: Investigate how the Challenges Influence the Teaching and Learning of Kiswahili Language

Objective 5 of this study sought to establish how the challenges encountered by Kiswahili language teachers and their learners influenced the teaching and learning activities. The respondents’ results are as shown in Table 4.34.

Table 4.34 Effects of challenges on Teaching of Kiswahili Language

<table>
<thead>
<tr>
<th>‘Effects of challenges on teaching’</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers shy from integrating ICT</td>
<td>17</td>
<td>68.0</td>
</tr>
<tr>
<td>Limited to information in textbooks</td>
<td>17</td>
<td>68.0</td>
</tr>
<tr>
<td>Traditional methods and resources</td>
<td>17</td>
<td>68.0</td>
</tr>
<tr>
<td>Only taught parts of the computers and other ICT related resources</td>
<td>16</td>
<td>64.0</td>
</tr>
<tr>
<td>Poor results, learning boring with no variety in teaching methodology</td>
<td>14</td>
<td>56.0</td>
</tr>
</tbody>
</table>

The results in Table 4.34 indicate that challenges experienced by Kiswahili language teachers greatly affected their integration of ICT in their teaching and learning activities. This is exemplified by the high percentages of 68.0% of the
respondents indicating that the challenges make them shy from integrating ICT in their teaching and learning activities, limits them to information found in textbooks and use traditional resources while 64.0% taught parts of computers and other ICT related resources. ICT support learning and a situation where teachers at this point of transformation still use procedural strategies of teaching a language is problematic. Constructivist approach where a teacher is a facilitator has replaced behaviorist approach and therefore Kiswahili language teachers need to create environments that encourage classroom interaction or rather situations that involve learners in various learning activities. The present findings of the research shed light on the influence of challenges on integrating ICT in teaching and learning of Kiswahili language.

4.7.1 Suggestions on how to Improve Integration of ICT by Kiswahili Language Teachers

The teachers and students were further asked to suggest ways of improving ICT integration in teaching and learning of Kiswahili language. The Kiswahili language teachers gave some valuable insights on how ICT could be improved in their schools. The following are some of the ways they think could improve integration of ICT.
The Kiswahili language teachers involved in this study suggested that since their schools lacked adequate ICT resources (68.0%) as earlier pointed in this section, there was need for the government and even the non-governmental bodies to make an effort of providing these resources to the schools to motivate them to utilize them.

The teachers further suggested that there was need to train Kiswahili language teachers on various ICT skills. As earlier noted, the Kiswahili language teachers ICT skills were generally low (64.0%) and this prevented them from integrating ICT in their teaching and learning activities. Though the teachers were aware of ICT integration in teaching and learning activities they did not make much effort towards it and this is due to lack of skills.

Kiswahili language teachers also felt that they needed in-service courses on integration of ICT in teaching and learning of Kiswahili through frequent workshops and seminars. This could assist them in refreshing their ICT skills. Training increases the teachers’ competence through search for new knowledge. The training enables teachers to embrace new changes, new skills and new knowledge that could be used to improve on their teaching and learning quality (Kazadi, 2006). Through in-service in integration of ICT in teaching and learning of Kiswahili language, knowledge is acquired, clarified, deepened and applied
through different interactions in different situation. As earlier noted in this study, the in-service courses given to the teachers lasted for between 3 days to two weeks. The teachers felt that the period was not enough to grasp the Skills and therefore suggested for frequent short courses on how to ICT in their teaching activities.

The teachers further suggested that more time should be allocated to Kiswahili subject to enable the Kiswahili language teachers to plan and organize their lessons better. They felt that the 5 lessons assigned to form one and two and 6 to form three and four by the curriculum developers were not adequate for the teachers and students to engage in constructive integration of ICT in teaching and learning activities. More time was required for the teachers to prepare the teaching materials, prepare and arrange the ICT resources, prepare the learners activities and also time to interact with ICT materials.

The teachers also suggested demystifying computer literacy among the older teachers. From the data obtained earlier in this study, older teachers did very little in integrating ICT into their teaching and learning activities. The teachers felt that an effort should be made to encourage, assist and advise these teachers to embrace ICT in order to improve on their teaching practices.
The teachers further more felt that there was need for more appropriate and relevant materials in Kiswahili language online. The Kiswahili works online are too few and even what is available is not relevant to the Kiswahili curriculum taught in secondary schools. The teachers felt that more Kiswahili scholars and the Kiswahili curriculum could develop some materials relevant to Kiswahili curriculum and post it online. The Kiswahili language materials already online could be reviewed and given proper translation where necessary. This could assist Kiswahili language teachers engage their learners in using ICT in learning.

The Kiswahili language teachers also suggested that KICD should come up with relevant and a variety of ICT materials/resources for Kiswahili subject. Currently, the only materials available at KICD for the Kiswahili language is digitized CDs. The Kiswahili syllabus using the KLB course book has been digitized on CDs and sent to schools. The challenge is that there are a variety of approved text books for Kiswahili and a teacher who makes effort of integrating the materials to teach Kiswahili language may only refer to only one kind of a course book. Therefore, teachers need to be exposed to a variety of ICT resources with Kiswahili materials to improve the quality of their delivery.

Other suggestions mentioned by the Kiswahili language teachers included: Erecting generators/solar panels in schools to run the computers in case of
blackouts, Contracting more ICT technicians and teacher champions specialized in Kiswahili language to assist the Kiswahili language on handling the ICT resources and connecting Internet infrastructure in schools. All these suggestion made by teachers if implemented, could improve the quality of delivery and enhance learners’ participation in the classroom activities.

4.8 Chapter Summary

This chapter has presented the data, analyzed and discussed the main findings of the study based on the study objectives. Information on integration of ICT in teaching and learning of Kiswahili language in secondary schools in Kakamega County has been provided. Several insights on integration of ICT in teaching and learning of Kiswahili language has been pointed out. The findings of this study can be generalized to other parts of the country or any other region with similar characteristics. The following chapter presents summary, conclusions and recommendations of the study.
CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1: Introduction
The purpose of this study was to investigate the nature and level of integration of ICT in teaching and learning of Kiswahili in secondary schools. It also explored the Kiswahili language teachers’ and learners’ perception about ICT integration, the teachers’ competency, their challenges and how such challenges influenced the integration of ICT in their teaching and learning activities. This chapter provides a summary of the study findings and conclusions based on research questions. The chapter also makes recommendations from the findings drawn from chapter four in view of the research stated objectives. Suggestions for further research are also given.

5.2 Summary of the Study Findings
This section provides a summary of the study findings relating to ICT integration in teaching and learning of Kiswahili language in secondary schools.
5.2.1 The Nature and Level of Integration of ICT in teaching and Learning of Kiswahili Language.

This section provides a summary of the findings related to the nature and level of ICT integration in teaching and learning of Kiswahili. This section is divided into the following sections discussed below:

5.2.1.1 Teachers awareness about Integration of ICT in Teaching and Learning of Kiswahili Language.

The study established that the majority of Kiswahili language teachers are aware of integration of ICT in teaching and learning of Kiswahili language. A larger percentage of the teachers (84.0%) became aware about it through various sources like KIE policy documents, circulars and posters from KIE and others through conferences, seminars.

5.2.1.2 Availability of Computer Resources in Schools

The study established that schools have computer facilities and the related resources though not adequate. Some of the available resources included digitized CDs and DVDs. However, other resources such as Internet and Smart boards were limited. This was due to limited Internet connectivity. The study also established that though schools had computer resources, the computer-students ratio was low.
ranging as between 1:10 to 1:15. This impacted negatively on the use of computers to support the teaching and learning of Kiswahili language. Furthermore, the study established that ICT documents such as ICT policy documents from the ministry of education science and technology, TSC circulars on ICT integration, KIE documents on ICT and revised Kiswahili syllabus and guide books were readily available in all the schools sampled. However, teachers’ schemes of work and lesson plans did not reflect use of ICT resources as a way of supporting the lesson delivery. ICT evaluation reports were not in place. In addition, the study established that majority of the learners had computer skills acquired from different resources such as schools, home, peers and social media. However, no provision is made for the learners to practice computer skills during the Kiswahili lesson due to the time allocated to the Kiswahili lesson and teachers ability to handle the situation.

5.2.1.3 Use of ICT by Teachers in Teaching and Learning of Kiswahili Language

The study established that Kiswahili language teachers who made effort to integrate ICT in their teaching and learning of Kiswahili language mostly used CDs and DVDs. It is believed that these resources did not require much time and training. The classroom observation established that teachers use of ICT in preparing Kiswahili schemes of work and lesson was average (2.04). The
Kiswahili language teachers scored low a mean of (2.88) on integrating ICT in lesson introduction, development, illustrating major points, conclusion and giving assignment. This is an indication that Kiswahili language teachers seem to lack interest or no motivation or improvisation of attempting progressive methodologies in their teaching activities. In the classroom, the study established that the arrangement (2.44) and availability of the ICT resources (2.1) were average though the Kiswahili language teachers were unable to use them in their teaching and learning activities. This was because they were not confident in handling the ICT resources and challenges connected with its usage. This is partly due to the fact that the duration of training was very short and the teachers were not adequately exposed to the use of different ICT resources.

The study also established that the number of Kiswahili language teachers that used available ICT resources on daily basis was insignificant. The teachers who made effort of using it did it occasionally. The teachers preferred using CDs and DVDs as compared to other ICT resources like captions, animations hyperlinks Smart boards among others that seemed unpopular to them. The reasons could be partly due to poor Internet connectivity.
5.2.1.4 Kiswahili Language Components

The study established that Kiswahili language teachers who attempted to integrate ICT in teaching and learning of Kiswahili language were comfortable in using it while teaching Kiswahili grammar (40.0%) and listening skills (40.0%). The study also established that Integration of ICT in teaching and learning of Kiswahili language did not assist the teachers in realizing their lesson objectives.

5.2.2 Teachers’ and Learners’ Perception about Integration of ICT in Teaching and Learning of Kiswahili Language

The study established that both Kiswahili language teachers and learners had positive perception about integration of ICT in teaching and learning of Kiswahili language. Teachers’ perception about ICT in teaching and learning of Kiswahili language was found to be significantly influenced, *inter alia*, by age, experience in teaching Kiswahili language, teachers’ academic qualification and the school category.

5.3 Teachers Competency in Integrating ICT in Teaching and Learning of Kiswahili Language

The study established that Kiswahili language teachers were satisfied with the training received during the training on integration of ICT in teaching and learning of Kiswahili language that lasted for 1-3 weeks organized by KICD.
They found the training relevant. However, many felt that the trainers concentrated on use of computer software such as CDs and DVDs. This is the reason why they were not comfortable in performing certain skills that are interesting to integrate in their teaching activities. Generally, the Kiswahili language teachers’ skills were found to be low. They lack training on how to integrate various ICT resources in their teaching and learning activities and also the workshops are rare. The ICT teacher champions deployed to schools seem to be more interested in computer and science-oriented subjects. The curriculum developers should adopt a different or a new and more systematic approach in the way they organize and conduct their in-service courses for teachers on ICT integration in teaching and learning of Kiswahili language. This can be done by for example, conducting regular in-service courses organized in educational zones.

5.4. Challenges Encountered by Teachers and Learners in Integration of ICT in Teaching and Learning of Kiswahili Language

The study established that the main challenges both Kiswahili language teachers and learners encountered in teaching learning of Kiswahili language were:

i. Limited computer skills due to lack of meaningful, plausible and transferable training.

ii. Inadequate ICT resources including adequately trained ICT personnel who
are willing to utilize their knowledge as required. The ICT trained
sometimes meet hurdles in their desire to train and so give up.

iii. Inappropriate materials on Kiswahili topics on the Internet.
iv. Lack of confidence among the teachers in handling the ICT resources.
v. Lack of sufficiently committed computer technicians and specialized ICT
   teacher champions in languages to assist and guide the Kiswahili language
   teachers and learners on use of ICT.
vi. Scanty and poor translation in the online Kiswahili dictionary.
vii. Lack of adequate time for Kiswahili language teachers to prepare and
     integrate ICT resources in teaching.
viii. Lack of suitable software programs for Kiswahili.
ix. Frequent power blackout.
x. Limited erratic and at times shoddily done Internet connectivity.

5.5. How the Challenges Influence the Teaching and Learning of Kiswahili
     Language
The study established that the challenges encountered by the teachers influenced
the teaching and learning of Kiswahili language in various ways:
   i. Teachers shied away from using ICT in their teaching and learning
      activities.
   ii. Teachers confined themselves to information in the text books.
iii. Others taught only parts of computers and related resources.

iv. The teachers and learners found learning boring with no variety in teaching methodology.

5.6. Conclusion and Implications of the Study Findings

In the light of the findings of the study, the following conclusions were made:

a) The level and nature of integrating ICT in teaching and learning of Kiswahili language is low. The implication of this conclusion is that Kiswahili language teachers are not very enthusiastic about embracing ICT in their pedagogical practices. This can be, to some extent attributed to the way the Kiswahili curriculum was designed by the curriculum developers.

b) Kiswahili language teachers and learners have positive perception towards integration of ICT in teaching and learning of Kiswahili language but seem to lack enthusiasm. The implication of this conclusion is that Kiswahili language teachers and learners perception can be objectively be motivated by addressing the challenges limiting them from integrating ICT integration in teaching and learning of Kiswahili language.

c) Kiswahili language teachers’ perception about ICT in teaching and learning of Kiswahili language was significantly influenced by the teachers’ age, experience in teaching of Kiswahili, school category and their academic and professional qualification.
d) Some Kiswahili language teachers are not competent in performing various ICT tasks. This affected their performance in integrating ICT in their teaching and learning activities. The implication of this conclusion is that teachers should develop interest in a focused manner on ICT integration to be able to acquire appropriate ICT skills to use in the teaching of Kiswahili curriculum.

e) Generally, both the Kiswahili language teachers’ and their learners’ skills in use of ICT in teaching and learning of Kiswahili language is low. This affected the integration ICT in teaching and learning of Kiswahili language. The implication of this conclusion is that attempt could be to equip the teachers and learners with skills on ICTs and how to integrate it in order to use it appropriately in their instructional methodologies.

f) Integration of ICT in teaching and learning of Kiswahili language in secondary schools was faced by numerous challenges that demotivated the teachers and learners from adopting it. The implication of this conclusion is that attempts to address the challenges limiting the integration of ICTs in secondary schools could be begin without delay by all the stakeholders involved in education. The study proposes that effort to make ICTs integration effective should focus on training, review of the curriculum and equipping the schools with necessary and appropriate ICTs resources.
g) The challenges encountered influenced the Kiswahili language teachers’ integration of ICT in teaching and learning of Kiswahili language negatively.

5.7. Recommendations

The study makes the following recommendations in the hope that stakeholders in education will consider them useful and seek ways to improve integration of ICT in teaching and learning of Kiswahili language. These recommendations, it is believed will have implications for teachers’ pedagogical practices in secondary schools.

i. The study recommends that teacher training institutions and universities should train the teacher trainees on how to integrate ICT in their teaching and learning activities in their specialized areas. The training should include all ICT resources like use of Smart Boards, PowerPoint, insertion of video clips in a lesson among others. For instance, the Kiswahili language teachers should be equipped with skills on integration of ICT in teaching various Kiswahili language skills (kusikiliza, kuongea, kusoma na kuandika). This should be part of micro-teaching skills.

ii. The study recommends that the government, through the ministry of education and other non-government bodies, should pull resources together and endeavor to make available the ICT resources required not only to proposed class one primary schools pupils but also to all
secondary schools. Installation of solar panels and generators should be provided to schools without electricity through County government to ease computer operations. Internet connectivity should be put in place in most schools for instance; fibre optic cables can be used to enhance easier Internet access. This will encourage all the teachers and learners to embrace ICT and integrate it into their teaching and learning activities.

iii. ICT teacher champions in every subject should be recruited and be deployed to all zones in every County to advise, assist and encourage the teachers already in the field on integration of ICT in teaching and learning activities.

iv. Teachers should be encouraged to be more creative and focus on essential classroom instruction strategies that move with time to achieve their subject objectives. This may be effective through components of in-service training geared towards upgrading of professional skills in teaching Kiswahili language using a variety of ICT resources. During training, classroom activities such as use of PowerPoint, video clips, CDs, interactive boards among others should be emphasized. More stress should be put in incorporating ICT in giving and doing assignment. In-service courses should be provided frequently to build confidence among the teachers in order for them to handle the ICT resources and challenges of use.
v. The teachers’ guidebooks should include a variety of ICT resources and tasks to be performed by students. Other resources like online materials or web materials should be included in the teacher guide books for references. Kiswahili language teachers should be motivated to acquire their own ICT related materials like recorded voices and speeches on CDs that can be used to teach listening skills, DVDs to teach set books, stories and PowerPoint extracts from students compositions or from literature works. In general, KICD, should revise the syllabus to accommodate the current pedagogical practices that include use of ICT.

vi. The current time allocated to Kiswahili language should be reviewed by the curriculum designers to allow the Kiswahili language teachers to have more time to prepare and present their Kiswahili lessons using various ICT resources. For instance a Kiswahili language teacher using video clips to teach a topic or DVDs to teach a set book require more time than the usual 40 minutes. The study recommends that KICD syllabus developers take cognizance of this need when reviewing the Kiswahili language syllabus so that the Kiswahili language teachers can implement the integration of ICT in their teaching and learning activities effectively.

vii. The Ministry of Education, through its officers in the County, should provide frequent inspection services and give advice to the teachers on effective implementation of computer integrated approach in teaching
and learning of Kiswahili language. The program should be monitored, evaluated and feedback given to the relevant authorities.

viii. School administrators should support Kiswahili language teachers in embracing technology plans to share a common vision with them in order to stimulate them to use technology in their lessons. This will motivate them to select the appropriate ICT resources that are appropriate to the subject in terms of the learning need and preferences of their individual learners. The resources can be used by teachers to prepare their lessons, illustrate/demonstrate the content/subject matter, access information and even store the material electronically and even modify it for different topics and level so learners.

5.8 Suggestions for Further Research

This study has raised certain issues concerning integration of ICT in teaching and learning of Kiswahili language in secondary schools. In this respect, the study recommends that further research should be done in the following areas:

i. The impact of integrating ICT in teaching and learning of Kiswahili language on students’ performance.

ii. Relationship between Teachers’ perceptions of the ICT and actual integration in teaching and learning of Kiswahili language.

iii. Correlation between the teachers ICT skills acquired and the actual practices in the classroom.

v. A study should be done to establish why even after training teachers shy away from putting in practice what they have been trained to do.

5.9 Chapter Summary

This chapter has highlighted the main conclusions drawn from the findings of the study. Relevant recommendations regarding the nature and level of integrating ICT in teaching and learning of Kiswahili language, teachers’ competency, teachers and learners’ perceptions about integration of ICT and the challenges encountered by both teachers and learners in their effort to integrate ICT in their teaching and learning activities have been put forward. Suggestion for further research related to the research area has been made.

In conclusion, it is hoped that the recommendations and the information obtained from this study will be put into consideration by all the stakeholders in education to improve on the current practices in teaching and learning of Kiswahili language in Kenya, regionally and globally given that it has gained status of a national and official language. This study opens a new field for research in teaching and learning of Kiswahili language using computer as a tool to enhance its delivery
REFERENCES


Beggs, T.A. (2000). Influences and Barriers to Adoption of Instructional Technology. A paper presented at the proceedings of the Mid-South Instructional Technology Conference, Murfreesbon, TN.


Fullan, M. (2010).’Motion Leadership: The Skinny on Becoming Change Savvy’

(online)  http://www.michaelfullen.ca/resourceassets/handouts/10motion leadership Handout us.pdf.


Superintendent/ Downloads/Technology.pd


http://www.mirandanelt.ac.uk/pubs/tes-art.htm.


APPENDIX A: QUESTIONNAIRE FOR KISWAHILI LANGUAGE TEACHERS

This Questionnaire is meant to collect data on integration of ICT in teaching and learning of Kiswahili language in Secondary schools in Kakamega County.

Kindly fill in the spaces provided or tick where necessary. Any information given will be treated with confidentiality and will only be used for academic purposes.

Kindly do not write your names on this questionnaire.

PART I: DEMOGRAPHIC INFORMATION

School category [ ] National [ ] County [ ] District

Age of the teacher [ ] 20-30 [ ] 31-40 [ ] 41-50 [ ] 51-60 [ ] 61 and above.

Sex [ ] Male [ ] Female

Experience in teaching Kiswahili language. [ ] 1-5 years [ ] 6-10 years [ ] 11-15 years

[ ] 16-20 years [ ] over 20 years.

Highest academic qualification. [ ] KCSE [ ] KACE [ ] Diploma [ ] Degree

[ ] Others....................

Highest professional qualification. [ ] P1 [ ] Diploma [ ] B.ED [ ] M.ED

[ ] PhD [ ] Others...............
PART II: INTEGRATION OF ICT IN TEACHING OF KISWAHILI

Are you aware about integration of ICT in teaching and learning of Kiswahili?

[ ] Yes [ ] No

If your answer is ‘yes’ through which means did you become aware of it?

[ ] Verbal communication
[ ] Friends
[ ] Colleagues
[ ] Social media
[ ] School Policies
[ ] MOE Policy Documents
[ ] KIE Policy Documents, Circulars, Posters
[ ] Training
[ ] Conferences, Seminars and Workshops
[ ] ICT Policy Documents
[ ] ICT Champions
[ ] QASOS
[ ] Others

(specify)........................................................................................................

If ‘no’ give reason---------------------------------------------------------------

Do you use ICT in your teaching and learning activities in Kiswahili language?

[ ] Yes [ ] No
If your answer is ‘yes’ go to question next question.

Please indicate how you integrate the following ICT facilities into your teaching and learning activities of Kiswahili language in the classroom.

<table>
<thead>
<tr>
<th>Serial No</th>
<th>ICT facilities</th>
<th>How the ICT is integrated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CDS</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>DVDS</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Power point presentation</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Internet</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>You Tube</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Captions</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Animation</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Hyperlinks</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Social media</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Others (specify)</td>
<td></td>
</tr>
</tbody>
</table>

Please indicate how often you use the following ICT resources in your teaching and learning of Kiswahili. Tick where necessary.

<table>
<thead>
<tr>
<th>Serial No</th>
<th>ICT resources</th>
<th>Mostly used 5</th>
<th>Moderately Used 4</th>
<th>Rarely used 3</th>
<th>Less used 2</th>
<th>Not used 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CDs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>DVDs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Power point</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>YouTube</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Animations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Captions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Internet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Images/photographs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Smart boards</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Indicate your degree of preference for the following ICT resources in integrating in your teaching and learning Kiswahili language.

<table>
<thead>
<tr>
<th>No</th>
<th>ICT resources</th>
<th>Mostly preferred</th>
<th>Preferred</th>
<th>Less preferred</th>
<th>Rarely preferred</th>
<th>Not preferred</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CDS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DVDS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Power point</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>YouTube</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Animations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Captions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please give a brief explanation for your responses

Which Kiswahili language components are you comfortable in integrating ICT when teaching?

[  ] Grammar
[  ] Listening skills
[  ] Speaking skills
[  ] Reading skills
[  ] Writing skills
[  ] Literary aspects
[  ] Speech acts
[  ] Vocabulary
[  ] Social-linguistics
[  ] Others

(specify)...........................................................................................................
For which topics do you use ICT in teaching?

How often do you integrate ICT in your teaching and learning of Kiswahili language?

[ ] Always
[ ] Once a week
[ ] Twice per week
[ ] Thrice per week
[ ] Never
[ ] Others

(specify)........................................................................................................

PART III: TEACHERS PERCEPTION ABOUT ICT IN TEACHING AND LEARNING OF KISWAHILI

Please indicate the extent to which you agree or disagree with each statement.

KEY: SA- Strongly agree, A-Agree, N-Neutral, D-Disagree, SD-Strongly Disagree

<table>
<thead>
<tr>
<th>Integration of ICT in teaching and learning of Kiswahili</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT provides a rich environment within which to create activities for students.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICT provides valuable facilities to support student learning.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only CDS distributed by KIE are available in schools.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICT is good for teacher lesson preparation and not for Classroom teaching.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
It is interesting to integrate various ICT facilities in teaching different language skills because they make the subject matter more interesting.

ICT helps the learners access authentic and up-to-date information.

Integration of ICT in teaching and learning makes learning interesting because learners are involved fully in the learning activities.

Integration of ICT makes me more productive and enhances students’ learning.

Integrating ICT in teaching is scaring and am reluctant to adopt.

I would like to learn more about ICT integration.

ICT helps me organize my teaching activities.

ICT integration consumes a lot of time and delays my syllabus coverage.

Am unable to integrate ICT in teaching due to lack of computer facilities in my school.

**PART IV: TEACHERS’ PROFICIENCY**

Have you been trained in the use of ICT in teaching and learning of Kiswahili language?

[ ] Yes [ ] No

If your answer is ‘yes’ please indicate:

Where................... when........................ Duration....................

Organizer............. Qualifications..............
If ‘no’ give reasons ……………………………………………………………………………………..

<table>
<thead>
<tr>
<th>NO.</th>
<th>ICT AREAS</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Computer software in teaching (such as CDs, DVDs e.t.c)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Using Video clips in teaching.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Recording and editing video to use in teaching.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Using simulations in teaching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Using web resources in teaching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Locate, retrieve and retain content related information from a range of texts and technologies.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Using clickers to engage students during class</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Using SMART boards to teach Kiswahili</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Creating SMART board lessons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>How to integrate ICT into Kiswahili lesson</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Which one of the following ICT tasks are you comfortable in performing? 
Indicate VC- very comfortable, SC- somewhat comfortable, WA- would like assistance

<table>
<thead>
<tr>
<th>NO.</th>
<th>ICT TASKS</th>
<th>Very Comfortable</th>
<th>Somewhat Comfortable</th>
<th>Would like assistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Using technical writing strategies, graphics and page design to communicate effectively (e.g in Word or PowerPoint)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Creating a linear or non-linear PowerPoint presentation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Creating and deleting slides</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Adding picture from Clip Art or a file</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Scaling and Sizing objects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Inserting hyperlinks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Adding sound from clip</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Adding video clip</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Adding slide transitions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Saving presentations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Changing background for PowerPoint</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Using Video clips in teaching</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Using CDs and DVDs in teaching</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Downloading images from YouTube</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Using web resources</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Using simulations while teaching</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Recording and editing videos for teaching</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Implementing technological instructions for Students</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Teaching students to handle ICT resources</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Use of SMART boards</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Have you attended/participated in any conference/seminar/workshop on integration of ICT in teaching and learning of Kiswahili language in secondary schools?  [ ] Yes  [ ] No
If your answer is yes, indicate:

Organizers/sponsors----------Duration----------------------

Would you prefer more training on ICT integration in teaching and learning of Kiswahili language?  [ ] Yes [ ] No

If your answer is ‘yes’ which areas of ICT would you like to be trained in?

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

PART V: CHALLENGES OF ICT INTEGRATION IN TEACHING AND LEARNING OF KISWAHILI LANGUAGE

In your own opinion, what are the difficulties/obstacles associated with integration of ICT in teaching and learning of Kiswahili language in Secondary schools?

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

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

How do these obstacles/difficulties influence your teaching performance?

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

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

Suggest ways of improving or enhancing integration of ICT in teaching and learning of Kiswahili language

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

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

What are the interesting points in ICT interaction?

.............................................................................................................................
APPENDIX B: STUDENTS QUESTIONNAIRE

The purpose of this questionnaire is to gather information on Integration of ICT in teaching and learning of Kiswahili in Secondary schools in Kakamega County.

Kindly respond by either ticking in the spaces provided or give brief explanation where necessary. Please do not write your name on this questionnaire.

PART I: DEMOGRAPHIC INFORMATION

School name...........................................................................................................

Category of the school [ ] National [ ] County [ ] District

Gender [ ] Male [ ] Female

PART II: INTEGRATION OF ICT IN TEACHING AND LEARNING OF KISWAHILI LANGUAGE

Does your school have computer facilities? [ ] Yes [ ] No

Do you have any computer skills [ ] Yes [ ] No

If your answer is ‘yes’ indicate how you acquired the skills.

[ ] Friends/peers

[ ] School

[ ] Home

[ ] Social media

[ ] Others
Does your Kiswahili teacher use computer facilities in teaching of Kiswahili language?

[ ] Yes [ ] No

If your answer is ‘yes’ indicate the type of ICT resources used in teaching and learning of Kiswahili language in your classroom.

[ ] CDs [ ] DVDs [ ] Animations [ ] Internet [ ] Captions [ ] Images [ ] Power point

If your response is ‘no’ give reasons…………………………………………………………

Which topics does your Kiswahili language teacher teach by integrating ICT resources?..............................................................................................................................................

How often does your Kiswahili teacher use the following ICT resources in the teaching and learning of Kiswahili language?

<table>
<thead>
<tr>
<th>Serial No</th>
<th>Computer resources</th>
<th>Daily</th>
<th>Several times a week</th>
<th>Once a week</th>
<th>Rarely</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CDs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>DVDS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Power point</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>YouTube</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Animations</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>6</td>
<td>Captions</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>7</td>
<td>Internet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Images/photographs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Smart boards</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Indicate the extent to which you agree or disagree with the following statements

KEY: SA- Strongly Agree, A-Agree, N-Neutral D-Disagree SD- Strongly Disagree

<table>
<thead>
<tr>
<th>Serial No</th>
<th>Statement</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I enjoy learning when my teacher uses ICT in the teaching activities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2</td>
<td>ICT makes me participate in the learning activities.</td>
<td></td>
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<tr>
<td>3</td>
<td>ICT helps me access authentic and up-to-date information.</td>
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<tr>
<td>4</td>
<td>ICT makes me collaborate with other students.</td>
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<tr>
<td>5</td>
<td>ICT makes me understand the topics being taught easily.</td>
<td></td>
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</tr>
<tr>
<td>6</td>
<td>Computers scare me and therefore I do not follow the lesson when my teacher uses it in teaching.</td>
<td></td>
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<tr>
<td>7</td>
<td>Our teacher does not allow me to use computers and therefore I have no idea on how to use it.</td>
<td></td>
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</tr>
<tr>
<td>8</td>
<td>There are no computers in my school.</td>
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<tr>
<td>9</td>
<td>When my teacher uses computer in teaching, I always perform well in my exams.</td>
<td></td>
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</tr>
</tbody>
</table>
What difficulties do you encounter in using ICT in learning Kiswahili language?

How do these challenges influence your performance?

Suggest ways of dealing with the above challenges.
APPENDIX C: INTERVIEW GUIDE SCHEDULE FOR ICT TEACHER CHAMPION

1. In your opinion what are the objectives of integrating ICT in teaching and learning of Kiswahili language?

2. As a champion what extent do you think Kiswahili language teachers integrate ICT in their teaching and learning activities?

3. How do you assess the teachers’ competence in ICT integration in teaching and learning of Kiswahili language?

4. In your own opinion, do you think integration of ICT in teaching and learning of Kiswahili has an impact on students and teachers performance?

5. What are the challenges facing Kiswahili language teachers and learners in integrating ICT in teaching and learning of Kiswahili language?

6. In your own opinion what measures do you put in place to counter some of the challenges?
APPENDIX D: INTERVIEW SCHEDULE FOR QASO

1. In your opinion do you think schools in your area have enough computer facilities?

2. How do you assess the Kiswahili language teachers’ integration of ICT in their teaching and learning activities in secondary schools?

3. In your own opinion what challenges do you think face Kiswahili language teachers in integrating ICT in teaching and learning of Kiswahili language in your area of jurisdiction?

4. What effort is your office doing to counter some of the challenges facing them?

5. In your opinion, do you think integration of ICT in teaching and learning of Kiswahili language is adding some value to education?

6. Give suggestions on how integration of ICT in teaching and learning of Kiswahili language can be improved.
## APPENDIX E: OBSERVATION GUIDE SCHEDULE

<table>
<thead>
<tr>
<th>CRITERION</th>
<th>PERFORMANCE: MARK DISTRIBUTION</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Preparation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schemes of work</td>
<td>ABOVE</td>
<td>BELOW</td>
</tr>
<tr>
<td>Lesson plan</td>
<td>AVERAGE</td>
<td></td>
</tr>
<tr>
<td>Objectives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(varied, challenging)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>learner-centered)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Presentation</td>
<td></td>
<td></td>
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<tr>
<td>Introduction</td>
<td></td>
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</tr>
<tr>
<td>Use of learning experience and link with current lesson using ICT.</td>
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<td></td>
</tr>
<tr>
<td>Developments</td>
<td></td>
<td></td>
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<tr>
<td>Level and nature of integration of ICT in developing the lesson e.g. CDs, DVDs etc</td>
<td></td>
<td></td>
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<tr>
<td>Teachers’ proficiency, skills, knowledge and content of the</td>
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</tr>
</tbody>
</table>
relevance of the ICT resources with the topic being taught in class.

<table>
<thead>
<tr>
<th>CRITERION</th>
<th>PERFORMANCE: MARK DISTRIBUTION</th>
<th>REMARKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABOVE AVERAGE</td>
<td>BELOW</td>
<td></td>
</tr>
</tbody>
</table>

3. How ICT integrated
- Introducing the lesson
- Developing the lesson
- Illustrating the major points
- Concluding the lesson
- Giving assignments/homework

4. Organization of ICT resources in teaching Kiswahili language
- Arrangement
- Availability of the resources
- Learner interaction with ICT materials
- Use of learner experience and opportunities available.

5. Teachers’ personality
- Handling of ICT resources
- Handling of the challenges of use
### APPENDIX F: DOCUMENTARY ANALYSIS

<table>
<thead>
<tr>
<th>Document</th>
<th>Available</th>
<th>Not Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT policy document from the Ministry TSC circulars on ICT Integration Kiswahili Language revised syllabus Computer procurement Document Schemes of work Lesson plan Guide books in ICT Integration Reports on ICT Integration evaluation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX H: MAP OF KAKAMEGA COUNTY
APPENDIX I: RESEARCH PERMIT

THIS IS TO CERTIFY THAT:
Prof./Dr./Mr./Mrs./Miss/Institution
Florence Abuyuka Miima
of (Address) Kenyatta University
P.O Box 43844-00100, Nairobi,
has been permitted to conduct research in
Kakamega Location
Western District
Province
on the topic: Integration of ICT in teaching
and learning of Kiswahili in Secondary
schools in Kakamega County, Kenya,
for a period ending: 31st December, 2013.
APPENDIX J: RESEARCH AUTHORIZATION

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telephone: 254-020-2213471, 2241349, 254-020-2673550
Mobile: 0713 788 787, 0735 404 245
Fax: 254-020-3933332
When replying please quote
secretary@ncst.go.ke

Our Ref: NCST/RCD/13/013/50

Florence Abuyeka Miima
Kenyatta University
P.O Box 43844-00100
Nairobi.

RE: RESEARCH AUTHORIZATION

Following your application dated 17th May, 2013 for authority to carry out research on “Integration of ICT in teaching and learning of Kiswahili in Secondary schools in Kakamega County, Kenya.” I am pleased to inform you that you have been authorized to undertake research in Kakamega District for a period ending 31st December, 2013.

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

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

DR. M. K. RUGUGU, PhD, HSc.
DEPUTY COUNCIL SECRETARY

Copy to:
The District Commissioner
The District Education Officer
Kakamega District

“The National Council for Science and Technology is committed to the Promotion of Science and Technology for National Development.”