

**ASSESSMENT OF INTEGRATION OF INFORMATION COMMUNICATION
TECHNOLOGY TOOLS IN TEACHING AND LEARNING OF KISWAHILI
LANGUAGE IN PUBLIC SECONDARY SCHOOLS IN
KILUNGU SUB-COUNTY, MAKUENI COUNTY**

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**A Research Project Submitted to the Department of Educational Communication and
Technology in Partial Fulfillment of the Requirements for the Award of Degree of
Masters of Education, School of Education, Machakos University**

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DECLARATION

Declaration by Student

I declare that this research project is my original work and is by no means a duplicate of any other person's work. It has not been presented for any other study programme in any other university.

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DEDICATION

I dedicate this project to my wife Roselyne Martin who has stood with me during my studies.

ABSTRACT

Integration of technology in education is considered as a strategy of transforming the quality of education all over the world. The purpose of the study was to assess of integration of ICT tools in the teaching and learning of Kiswahili Language in public secondary schools in Kilungu sub-county. With respect to the teaching and learning of Kiswahili language in secondary schools, the objectives of the study were: to determine the level of competency of teachers in integrating ICTs, to assess the support of school management on the use of ICT, to investigate the challenges that Kiswahili language teachers face in the integration of ICT tools, and to establish teachers' perceptions about ICT integration. The research design used in the study adopted a descriptive survey design. The study was carried out in Kilungu sub-county in the western region of Makueni County. The study targeted a population of 22 secondary schools in Kilungu Sub-county, 22 Principals, 48 Kiswahili language teachers and 1540 form three students in these schools; the schools were grouped into three categories using stratified sampling while the 48 teachers in these schools were found using purposive sampling. 22 principals were purposively sampled; learners were sampled using simple random sampling. Data collection instruments used were questionnaires for teachers, interview schedules for principals and classroom observation checklist for both teachers and learners. Data was collected through administering teachers' questionnaires by the researcher, interviewing principals and using observation checklist for both teachers and learners. Statistical package for social sciences (SPSS) version 23 was used to analyze the data. The study established that majority of Kiswahili teachers in Kilungu sub-county have knowledge in computer and how it functions. They can also create teaching aids with computers and use computers for lesson delivery and demonstration while teaching and learning of Kiswahili language in a classroom setting. The findings from the observation made by the researcher during lesson presentation by the Kiswahili teachers in the schools visited affirmed that teachers were able to use computers through the production of media, lesson preparation, and presentation during Kiswahili lesson. 81.83% of the Kiswahili teachers agreed that school management encourages teachers to acquire IT skills and also motivates them to use ICT based tools in the teaching and learning of Kiswahili language. Majority of the teachers agreed that ICT tools make lessons more interesting and interactive. The majority agreed that insufficient ICT tools hinder them from using ICT tools during content delivery. Based on the findings of this study, the researcher concludes that most of the teachers are competent in the use and integration of ICT tools in the teaching and learning of Kiswahili language and that the teachers have a positive perception about the integration of ICT in the teaching and learning of Kiswahili language. The study made three recommendations: the ministry of education in collaboration with the ministry of ICT should supply computers to all schools in Kenya and make the integration of ICT in the teaching and learning process mandatory for all schools; schools should obtain an alternative power supply particularly in the areas with no electric connection to enable effective use of ICT tools in the teaching and learning process.

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LIST OF ABBREVIATIONS AND ACRONYMS

CD-ROM	Compact Disk – Read Only Memory
DVDs	Digital Versatile Disks
EFA	Education for All
ICT	Information and Communication Technology
KCSE	Kenya Certificate of Secondary Education
KIE	Kenya Institute of Education
KESSP	Kenya Education Sector Support Program
KICD	Kenya Institute of Curriculum Development
KNEC	Kenya National Examination Council
M o E	Ministry of Education
NACOSTI	National Commission of Science, Technology and Innovation
NGO	Non-Governmental Organizations
T.S.C	Teachers Service Commission
TPCK	Technology, Pedagogy, Content and Knowledge
UK	United Kingdom

CHAPTER ONE

INTRODUCTION

1.0 Introduction

The aim of this study was to assess ICT tools integration in teaching and learning of Kiswahili language in public secondary schools in Kilungu Sub-county, Makueni County, Kenya. This chapter covered the background to the study, statement of the problems, objectives, questions to the study and assumptions. The scope of the study and operational definitions was also included.

1.1 Background to the Study

Information, communication, and technology (ICT) tools play an essential role in education systems. ICT tools can accelerate, enrich and deepen skills to motivate and involve learners in relating school experience to work practices, create economic variability for tomorrow's workers as well as strengthening teaching and helping schools to change academically (Mingaine, 2013).

According to Mikre (2011), ICT is considered as the primary key of unlocking the knowledge and skills of our learners. It can also be considered as the gateway for the learning of the 21st century skills. Globally, education systems are integrating ICT tools into the teaching and learning process. Integration of ICT tools in education provides dynamic, proactive teaching and learning environment. In this digital era, teachers are expected to employ ICT tools in the teaching process to replace the traditional methods especially to improve the quality of teaching and learning process. Nowadays, ICT tools

not only facilitate the delivery of the lesson but also the learning process itself in all learning environments. These tools include, but are not limited to computer-based technologies, data storage devices, desktops, laptops, mobile phones, iPods, overhead projectors, broadcasting technologies, i.e. radio and television which are used as instructional tools at schools.

Ghavifekr, Kunjappan, Ramasamy, and Anthony (2016)state that the ministry of education in Malaysia, has recognized the importance of ICT integration in primary and secondary curriculum. The element of ICT was included in the education blueprints of the period of 2013-2025 as the national future development focus under the ICT Transform Focus. The M o E has been trying to strengthen ICT capacity in different stages, one being the review of the current teacher to student ratio for ICT devices allocation and ICT innovation on distance learning. Consequently, the M o E integrated a few ICT programs into the education system as a way to create interactivity during the teaching and learning process. The good intention of Malaysian government was to elevate the quality of ICT skills among schools in the country's remote areas.

Similarly, Kenya has emphasized the importance of the integration of ICT tools into teaching and learning activities through the Kenya Education Sector Support Program (KESSP). This has been demonstrated by introducing the National ICT Strategy for Education and Training (Farrell, 2007)through which the country can achieve global goals such as Education for All (EFA) (Waema, 2005). The Kenyan Government has also

been keen on the support and implementation of the strategy as it aims at to improving the quality of teaching and learning.

Farrell (2007) states that one of the sub-plans of NICI in Rwanda (2010), is that the M o E in collaboration with other agencies strategized on training both primary and secondary school teachers about the importance of incorporating ICT in education. The development of e-learning content also yields positive results. The M o E funded the training of 3000 secondary school teachers on basic skills on ICT.

Kiswahili language is a compulsory subject taught in Kenyan school education system, and its four major language skills can be taught or learned well using ICT tools (Wanjiku-Omollo, 2014). Kiswahili language teachers use both traditional and modern approaches to teaching. They commonly use instructional materials such as; use of chalk and blackboard, textbooks, charts, pictures and realia. The curriculum developers, i.e. the Kenya Institute of Curriculum Development (K.I.C.D) has revised the Kiswahili curriculum for some years, the interest being in 2002 and one of the changes implemented is the integration of ICTs in teaching and learning of Kiswahili language (Kinuthia, 2009). These changes include the adoption of new practices of teaching, an example of which is integrating ICTs into education systems.

According to Unwin (2009), ICT tools integration in teaching and learning of Kiswahili can be elemental in assisting learners to interact with the computer-based resources and even enables teachers to achieve their teaching objectives and improve the quality of

education. PowerPoint presentations, recordings, web downloads of audio and videos, commercial compact disks (CDs), and digital video disks (DVDs) once integrated into any language teaching, assist in developing content and key language skills such as reading, writing, listening, and speaking. These devices also enhance the teaching and learning of Kiswahili language. The application of computerized infrastructure as a medium of in the classroom is an effective way a Kiswahili language teacher can reduce the rift between teacher-centered approaches and learner-centered approaches to teaching.

Crusan (2012) adds that one of the impressive advantages of integrating ICT tools in teaching and learning of a language is that the tools motivate both learners and teachers by making the learning process more exciting and extremely enjoyable. It also allows multi-sensory learning because multimedia computers combine text, sound and colorful moving images such as hypermedia that engage learners in the learning process and which also suits hearing impaired learners. Additionally, teachers and learners no longer have to rely solely on printed textbooks for their educational need; they can access some learning materials from the internet in order to enrich their content and knowledge. This enhances the learner-centered approach as learners become very active in research work.

According to the KNEC report of 2016, one of the reasons the performance in Kiswahili continues to deteriorate is the continued use of teacher-centered approaches in the teaching and the failure to integrate ICTs which more learner-centered as practiced by most teachers.

1.2 Statement of the Problem

The quality of education can be improved through the integration of ICT tools in teaching and learning activities (Gome, 2005). Studies have been conducted on the area of ICT integration in education. For instance, Baskin and Williams (2006) studied the barriers to ICT integration in the learning environment in Australia; Khirwadkar (2007) studied on integration of ICT in education with respect to pedagogical issues in India; Buabeng-Andoh (2012) studied factors influencing teachers' adoption and integration of information and communication technology into teaching, and Ondiegi (2014) studied the use of ICT in teaching and learning process.

Integration of ICT tools in education in most developed countries such as U.K. schools have embraced the use of ICT tools in teaching and learning process (OECD, 2004). Grabe and Grabe (2008) emphasize that technologies can play an important role in enabling students to gain skills and knowledge during the teaching and learning process. The Kenyan Government, through the M o E, has provided ICT policy and guidelines on integration of ICT in education. It is assumed that most of the schools in Kilungu sub-county have ICT infrastructure and teachers are expected to use such ICT facilities in their teaching and learning activities effectively. Tinio (2003) considers the integration of ICT into education system a challenging task given that a number of likely problems, for instance, the resistance to change from stakeholders and teachers. The above studies show that teachers have continued to use non-ICT based approaches in teaching various subjects especially Kiswahili language despite that most of the schools in Kenya have been equipped with computers. Similarly, it has been observed that teachers in Kilungu sub-county use ICT on management tasks such as typing and printing examinations,

result slips, minutes among others rather than teaching purposes. This study was, therefore, meant to assess ICT tools integration in teaching Kiswahili language in public secondary schools in Kilungu Sub-county.

1.3 Purpose of the Study

The purpose of the study was to assess integration of ICT tools in teaching and learning of Kiswahili language in public secondary schools in Kilungu sub-county.

1.4 Objectives of the Study

The objectives of this research were:

- i. To determine the level of teachers' competencies in use of ICT tools in teaching and learning of Kiswahili language in Kilungu sub-county.
- ii. To assess the school management support in ICT tools integration in teaching and learning of Kiswahili language in public school in Kilungu sub-county.
- iii. To investigate the teachers' perception of ICT tools integration teaching and learning of Kiswahili language in Kilungu Sub-county.
- iv. To establish the challenges teachers encounter in integrating ICT tools in teaching and learning of Kiswahili language in secondary schools in Kilungu Sub-county.

1.5 Research Questions

The research questions addressed the following study questions:

- (i). What is the competence of Kiswahili language teachers concerning the integration of ICT tools in teaching and learning of Kiswahili in secondary schools in Kilungu Sub-county?
- (ii). What is the extent of school management support in ICT tools integration in teaching and learning of Kiswahili language in Kilungu sub-county?
- (iii). How do teachers perceive the integration of ICT tools in teaching and learning of Kiswahili language in secondary schools in Kilungu Sub-county?
- (iv). What challenges do teachers encounter in integrating ICT tools in Kiswahili Sub-county?

1.6 Significance of the Study

The study investigated integration of ICT tools and in teaching and learning of Kiswahili language in public Kenyan Secondary Schools, in Kilungu Sub-county. The results of this study may be useful to teachers and Kiswahili curriculum developers in education and training, and policymakers who will use the information to address the difficulties encountered in learning and which subsequently deteriorate performance in national examinations Kiswahili subject examined by the Kenya National Examination Council, and setting future learning experiences in relation to teaching strategies used by teachers. It may also emphasize the necessity for Kiswahili teachers to embrace ICT tools in the classroom as they drop their traditional pedagogical approaches to teaching. It may give teachers some insights on how to integrate ICT tools in the teaching of Kiswahili

language and assist them to become more inventive, innovative and effectively embed ICT tools in their teaching activities.

1.7 Assumptions of the Study

For the study to give responses, the following assumptions were used:

- i). Kiswahili teachers in public secondary schools use ICT tools in teaching and learning process.
- ii). Kiswahili teachers in target schools have ICT skills and use ICT tools in teaching and learning process.
- iii). The information to be given by the respondents will be true and free from bias.

1.8 Scope of the Study

The study focused only on the integration of ICT tools in the teaching and learning of Kiswahili language in public secondary schools in Kilungu Sub-county, Makueni County. Principals, Kiswahili teachers and form three students formed the study sample. The tools of data collection were questionnaires, interview schedules, and observation checklists.

1.9 Limitations of the Study

1. Due to suspicion, some of the respondents were not willing to disclose information that regarded personal details and school ICT status. The researcher assured them anonymity and confidentiality of the information obtained from them.
2. The schools were far apart from one another and long distances associated with poor road network. The researcher sought for financial assistance from friends and well-wishers in order to cater for transport.

1.10 Delimitations of the Study

All teachers used as respondents were Kiswahili teachers in public secondary schools in Kilungu sub-county. The information was only obtained from trained, registered practicing teachers as per the regulations given by T.S.C. The study was carried out in public secondary schools in Kilungu sub-county. Only form three students, principals and Kiswahili teachers were the targeted respondents in the study. The respondents were assured that the information gathered from them will be used only for the purpose of the study. The study was also restricted to the study objectives and research instruments mentioned.

1.11 Definition of Key Terms

Challenge refers to the difficulties or hindrances that teachers face in the integration of ICT tool in the teaching and learning process of Kiswahili Language.

Competency the extent to which an individual has mastered a skill or language in terms of receptive and expressive.

ICT tools refer to a variety of technological tools and resources used to communicate, create, disseminate, store and manage information. Such tools include computers, broadcasting tools such as radio and TVs, mobiles, projectors, digital cameras among others.

ICT integration refers to the use of ICT tools to introduce, reinforce, supplement and extend knowledge and skills in order to engage learners in meaningful learning.

Kiswahili language refers to a compulsory subject taught in both primary and secondary schools in Kenya and examinable by the Kenya National Examination Council.

School management support refers to the help accorded to the teachers in the use of ICT tools in the teaching process by the school's administration either through the provision of the ICT infrastructure or training.

Teacher perception/attitude refers to the liking or dislike of the use of ICT tools in the teaching of Kiswahili Language.

Teaching and learning of Kiswahili language refer to the process of giving instruction to learners in Kiswahili lessons and the acquisition of knowledge in Kiswahili language.

1.12 Theoretical Framework

This study was guided by Bruner's constructivism theory (1990) and the TPCK Model by Koehler and Mishra (2005). Bruner considers invention or creativeness a process of creating new knowledge on the basis of learners' experience. Hung and Khine (2006) refer to the constructivist learning theory as among the hailed for its suitability concerning the use of ICT in teaching and learning. Constructivist learning theory is founded on education psychology. The basic idea in this theory is that learning is an active and constructive process. This theory operates on the principle that learners are viewed as information constructor and new information is linked with prior knowledge. Use of technology affords learners to have a high level of critical thinking and problem solving. This theory place more emphasis on sensory input, something that has been overlooked by traditional educators where their learners are passive as opposed to learners in constructivist who are fully involved in the learning process.

The researcher used the theory because the learners are expected to use the knowledge that they already have to create new knowledge through the teacher. Teachers who choose in constructivism must first emphasize what the learner knows and then relate it to what they teach. The constructivism theory requires that teachers effectively involve learners in the learning and teaching process. Application of ICT in teaching enables the teacher to effectively involve the learners in the learning and teaching process. This will also enable learners to communicate and interact effectively in class. Language also plays an important role in learning because thinking takes place in communication.

The research was also guided by the TPCK model which is more concerned with ICT in education and whose aim entails knowledge and negotiating of the relationship among three knowledge components, namely: Technology, Pedagogy and Content. This model was developed by Koehler and Mishra (2005) for making decisions on the integration of ICT that causes a representation of new concepts and requires developing sensitivity to dynamics, transactional relationship among all the three components. For any teacher to apply ICT in teaching and learning he or she must have the technological knowledge of the tools to use, pedagogical knowledge and content knowledge of what he or she intends to teach in order to cause meaningful teaching and learning process.

TPC is a framework for knowledge of technology integration. The components of the TPC model are:

T- Technology which entails all forms of technologies such as computers, video, projectors, radio, television, mobile phone among others which a teacher can choose that suits his content or learners.

P- Pedagogy describes the methods of teaching and learning.

C- Content is the subject matter to be taught or to be learnt.

K- This is the technological, pedagogical and content knowledge a teacher has.

1.13 Conceptual Framework

INDEPENDENT VARIABLES

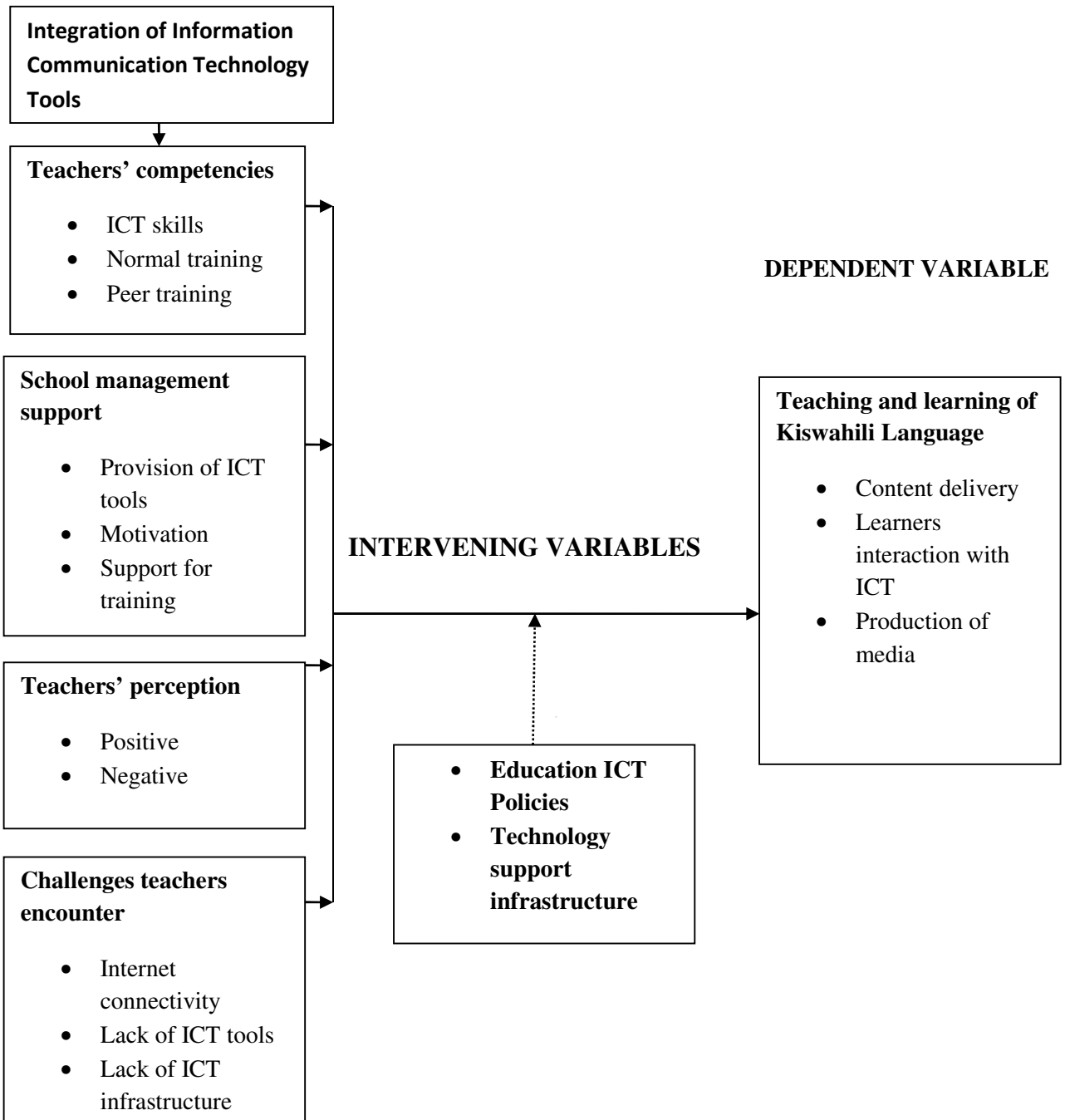


Figure 1.1 Conceptual Framework Showing the Relationship Between the Variables.

Source: Researcher (2018)

The conceptual framework entails independent variables which include the following: teachers' competency, school management support, teachers' perception and challenges that teachers face in the integration of ICT tools in the teaching of Kiswahili language. These are the factors that influence the dependent variable i.e. teaching and learning of Kiswahili language so as to have the following outcome: production of Media, preparation of Kiswahili lesson with ICT tools that enable the teacher in content delivery and also allow learners to interact with the ICT tools. Other factors that may also support the independent and dependent variables are the intervening variables such as education ICT policies from the ministry of education science and technology that endorse the use of ICT tools in teaching and learning process in public secondary schools. Availability of ICT tools in the public secondary school either through the supply by ministry of education or through procurement of the ICT tools by the school management.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

In this chapter, both the local and international literature on the integration of ICT in teaching and learning process was reviewed. Theoretical framework and conceptual framework were looked into.

2.1 The Concept of ICT and Integration in the Teaching and Learning

According to Kisirkoi (2015) ICT is a tool in form of hardware such as computers, digital cameras; or software such as PowerPoint, discussion forums, or both. In the educational context, ICT mainly refers to different tools and resources presented on the computer.

The word information and communication technology (ICT) generally refers to the various forms of technology used in the creation, storage, processing and application of information in its various forms (data, voice, image, and various forms of multimedia presentations including those not yet conceived), and which improve communication. More specifically, ICT refers to the concurrent application of micro-electronics, computers and telecommunications to transmit data, in various format such as the ones identified above, to any place in the world as much as digital signal reception is possible. Key elements in ICT are networks which include wireless, fixed and satellite telecommunications, broadcasting networks, and applications such as database management systems, the internet, and multi-medium tools (Lundall & Howell, 2000).

Tondeur (2007)offer a much broader definition of ICT which comprises equipment and services. For them, ICT “includes the computing industry(hardware, software, networks, the internet, and related services); electronic data processing and display (such as photocopiers, cash registers, calculators, and scanners, as well as a myriad of well known machines specifically made for production and manufacturing); telecommunications and related services (such as fixed and cellular telephones, fax-mail machines, instant messaging, teleconferencing and so on) and audiovisual equipment and services including: television, radio, video, DVDs, digital cameras, compact discs, MP3 players, and others.”

ICT tools integration is the use of technology in seamless flow to support and extend curriculum objectives and to involve learners in meaningful learning. ICT tools integration in teaching and learning is not at all new concept; it is as old as other technologies in the world such as television and radios. However, with the fast development of upcoming technologies such as web technology, educators are finding ICT tools integration increasingly attractive (Obonyo, 2013).

In a properly prepared ICT integrated lesson, ICT and other paramount educational components such as content and pedagogy are molded into the one that can support interactions such as learner-teacher, learner-learner, learner- content, and learner-interface in the learning environment. With these interactive learning processes, learners become more active and engaged(Wong et al., 2006).

Twining (2002) asserts that there has been a high investment in ICT in the education sector over a long period in developed countries. In England, in the mid-70s they started to focus on ICT in education in a higher level of education than secondary and finally in primary education. The U.S. has a very long history of technology innovations revolutionizing education in the mid-80s starting with the use of textbooks through technology such as film, radios, television and computers. The use of computers in developing countries in Africa is embraced in slow phase and uneven (Farrell, 2007).

Kisirkoi (2015) states that the importance or the advantages of the utilization of ICT in teaching and learning process as follows: It increases the access to education as teachers and learners do not have to solely to rely on print media in the physical media housed in the libraries for their educational needs. The internet is a source of wealthy learning materials in almost every subject taught and in a various media accessible wherever, whenever and by whoever wants them.

ICT tools allow multi-sensory learning; learners easily get engaged in the learning process because of the challenging and authentic content provided by the use visual ICT tools such as videos and television and multimedia computer software that combine text, sound and multi-color motion pictures. Similarly, interactive radio programs make use of sound effects, songs, dramatizations, and comic skits among other performance conventions that can encourage and motivate the students to learn as well as act as a catalyst to boost students' self-confidence. ICT stimulates young students' sensory and cognitive curiosity. Use of ICT can promote the shift from a teacher-centered approach to

a learner-centered approach. An important tool of active learning, ICT also enhances learning and enhances the learner's skills for examination, calculation and analysis of information; this provides learners with a platform they can use in inquiry, analysis and creation of new information. This way, learners learn as they do and this gives them a chance to work on real-life problems where appropriate, making learning practical and more relevant to the learner's life. Creative learning; ICT-supported learning diverts focus from regurgitation of received information to manipulation of the existing information and creation real-world products (Obonyo, 2013). Existing types of ICT tools such as television lessons, radio broadcast, audio cassettes, CDs, DVDs, projectors, and internet among others all have relevance in secondary education. ICT is actively adapted in schooling to the extent that it can innovatively change pedagogical practice.

There is a very large gap in the use of ICT in developed countries and developing countries causing a digital gap known as Digital Divide. The digital divide is mainly revolves around factors such as appropriate products, cost, education, literacy, human resources and government policies. The government has the power to reduce the digital divide through reducing tax or subsidizing the cost on ICT related products that are imported in order to ease affordability even to elementary institutions (Albirini, 2006).

2.2 Kiswahili Language Syllabus (Content) and ICT Adoption in Teaching and Learning

Kenya's language policy stipulates that Kiswahili language should be a compulsory subject at all levels of education (K.I.E, 2002). Kiswahili language is made up of four language skills, i.e. listening, speaking, reading and writing. The four Kiswahili language skills are further divided into other various units that include grammar, comprehension, summary, composition writing, vocabulary, socio-linguistics, and literature.

Teaching of Kiswahili language skills should use multiple instructional methods and strategies, and as well integrate instructional resources and then ICT tools to improve the quality of teaching and learning. Use of ICT in teaching and learning process demands high level of teacher's creativity in order for it to be effective (Gome, 2005).

Educational change involves a change in practice, indicating alterations to the aspects of the current practice with the emerging practices (Fullan, 2001). A language teacher may use new technology alongside the approach or could use ICT and induce alterations to some teaching practices without contradicting conceptions, attitudes underlying the change. However, the effectiveness of the integration of ICT in the teaching and learning process of Kiswahili language requires both the teacher and the learners to possess technological skills, knowledge and innovativeness. These skills enhance various ways a learners can use to receive knowledge (listen, observe, think, write, speak and even share ideas) and therefore, improve the learner's performance and skills. Adoption of ICT in teaching and learning of Kiswahili language increase the learners' interest to learn which

is good for an interactive class and diversifying teaching and learning. A recent study shows that the integration of computer and other technological devices in the classroom increases the level of involvement and boosts the level of attainment of the learners (Sandholtz & Reilly, 2004).

According to Cox et al. (2004), the use of ICT tools in education promotes the depth of learning and enables institutions to respond better to the varying educational needs of the students. The use of ICT in teaching and learning of Kiswahili language can take the form of texts, images and audio-visual files (Omwenga, 2006).

2.3 Teachers Competencies and Integration of ICT in Teaching and Learning

Manduku, Kosgey and Sang (2012) discovered a gap between the skills and competencies possessed by majority of teachers in public secondary schools in Kenya and the implementation and adoption of ICT tools in schools. An effective adoption of ICT in schools should start with frequent application of ICT in the process of teaching and learning of which teachers are the primary initiators. This however, means that the teachers are acquainted with modern ICT technologies and these in turn demands considerable competence and confidence from the teachers as far as the use of user of hardware and software organization of the classroom and the comfort of presenting in a lesson are concerned.

According to Karimi (2012) many traditional teachers in Kenya may not know how to deal with ICT tools and may sometimes be reluctant to accept new technologies in their

classroom. ICT can make an essential tool concerning accessibility to education and the latter's level of relevance and quality. According to Tinio (2003) ICT has a significant impact on education when it comes to the acquisition and absorption of knowledge to both teachers and learners; ICT promotes active learning and this increases the engagement of learners as latter choose what to learn at their own pace. Besides, ICT promotes teacher-learner cooperation within and beyond the school environment. ICT also encourages learner-centered approach to learning which enables learners to discover and learn through new ways, hence meet the learning needs of every individual learner.

2.4 School Management Support and Integration of ICT in Teaching and Learning

Mingaine (2013) argue that school leaders support the implementation of technology in their school by acquiring the necessary ICT infrastructure. However, the cost of the infrastructure is so high that few schools adopt ICT tools. In order to integrate ICT in teaching and learning process, school management should make proper school-level plans. The school is expected to provide the necessary and affordable ICT tools for the teachers and learners to use (Karimi, 2012). According to Obonyo (2013), unrestricted access to training would yield an effective use of computers if teachers are expected to use ICT tools meaningfully. In this regard, a strong leadership is needed for an effective ICT integration, teacher training and implementation in teaching and learning process.

A study by Maithya (2013) indicated that teaching Kiswahili language through different approaches that encourage learners' involvement alongside a properly integrated ICT could increase the learners' learning activities and generally improve their performance.

Other studies done by Allen and Seaman (2007) show that about 3.2 million students in America integrate ICT in their learning activities in science subjects.

Haggins and Moseley (2011) state that there is always a problem when it comes to acquisition of the necessary infrastructure from administrators who are the decision makers of any learning institution. The support given by administration is paramount for the enhancement of ICT integration in the teaching and learning process as Hawkins (2002) noted that teachers need support in good practice and leadership from the school administration so that they may become more effective in their teaching work.

2.5 Teachers' Perception on ICT Integration in Teaching and Learning Process

Fishbein and Ajzen (1975) define teacher perception as a “learned predisposition to respond to an object or class of objects in a consistently favorable or unfavorable way”. It can also mean the liking or disliking attitude towards the use of ICT tools in teaching Kiswahili language. Among the studies that have been completed concerning the perception of teachers when it comes to the use of ICTs in teaching and learning process is that by Yuen, Law, and Wong (2003). Targeting the population of teachers in large universities in the Southern United States, the study concluded ICT integration in teaching and learning process is minimal many teachers were poor in computer skills and therefore, had a negative attitude towards it.

A study conducted by Haggins and Moseley (2011) found that teachers who use ICT in the classroom considered it a useful for personal work and teaching and demonstrated

readiness to continue using since its usefulness in matters such as simplifying their work and making teaching more interesting and enjoyable both for them and the students.

Teaching and learning of Kiswahili language and integration of ICT largely depend on teacher perception; teacher perception is a key determinant in accepting and changing the teacher's pedagogical practices or their actual use (Miima, Ondigi, & Mavisi, 2013). In a study on ICT integration in teaching and learning process in the United States, Stack (2008) found out that many teachers were less skilled in the use of computer and therefore had a disliked its use. Albirini (2006) also found that in Syria, teachers in high schools were interested in developing their ICT skills and knowledge.

Miima et al. (2013)found that Kiswahili teachers in Kakamega had not embraced the integration of ICT in the teaching and learning of Kiswahili subject. Montrieux, Vanderlinde, Schellens and De Marez (2015)believe that many educators perceive computers as just a burden due to lack proper awareness on the great potential offered by computers in education context especially in teaching and learning process.

2.6 Challenges Teachers Face in Integration of ICT in Teaching and Learning

Process

Kozma and Vota (2014) state that there are a number of factors hindering the wholesale uptake of ICT in education across all sectors. Some of the factors contributing to this problem could be inadequate funds to support the procurement of the technology, inadequate training among the teaching practitioners, lack of motivation and the need

among teachers to adopt ICT as teaching tools. Compared to developed nations, developing nations is relatively lagging behind in the use of ICT tools in education programmes because the latter find it expensive, lack trained teachers on ICT skills, and lack of proper ICT adoption policies.

Remote areas have a limited access to internet service and therefore have a low utilization of ICT for teaching and learning. Also, it is expensive more to pay the licensing fees charged to education software bearing in mind these software requires annual renewal at a considerably high cost (Aguyo, 2010). Relatively poor infrastructure in developing countries such as supply and lack of trained teachers when it comes to practical application of the ICT; traditional teachers are not conversant with most ICT tools and sometimes they tend to prefer the traditional methods to new technologies in their classroom (Joo, Park, & Lim, 2018).

Farrell (2007) argues that high cost for acquiring and maintaining ICT infrastructure is a challenge that continues to retard the adoption and use of ICT during teaching and learning process in schools. Lack of electricity in most of Kenyan rural schools despite the introduction of rural electrification by the government remains a challenge even to the small ICT tools like phones, radios, cameras and laptops among others which need electricity to be charged (Rebecca & Marshall, 2012).

According to Mathevula and Uwizeyimana (2014), the main challenges facing teachers in the ICT integration, implementation and adoption in education include: access to internet which is limited to remote areas, poor infrastructure such as supply of electricity and ICT tools, teachers incompetency or lack of ICT skills when it comes to the use of ICT tools, lack of computers which are still expensive despite the efforts done by government, NGOs and other agencies who have donated computers to many schools there remains a number of schools without computers.

2.7 Summary and Research Gap

The literature showed that the developed countries have already made remarkable use of ICT in education compared to developing countries creating a Digital Divide. The government of Kenya through Sessional paper no .1 (2005) pointed out that ICT plays a direct role in schools and if applied properly, it could highly benefit schools as it presents new opportunities for teacher-to-teacher and learner-to-learner to learn communication and content in the curriculum. In most of the developing countries, teachers do not have the enthusiasm accept the use of ICT tools in teaching and learning process due to lack of ICT skills, school management support and challenges such as poor internet connectivity and unavailability of ICT tools in the schools (Kozma & Vota, 2014).

Teaching Kiswahili language requires one to integrate ICT tools in the teaching and learning process in order to improve the quality of teaching and learning process. Researches which had been conducted focused on different conceptual and contextual concerns like factors affecting ICT integration in teaching and learning, ICT integration in education in primary level and ICT integration in other subjects in secondary schools in other parts of Kenya. This study aimed at assessing integration of ICT tools in teaching and learning of Kiswahili language in Kilungu sub-county where there is no known research of the same kind.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter looked into the study area, research design, target population, sample size, sampling techniques, instruments and piloting. Reliability, validity, data collection techniques, data analysis procedures and ethical considerations have been discussed. The study used a mixed method approach, i.e. a qualitative method and quantitative method. According to Munyoki and Mulwa (2012) states that qualitative approach involves assessing one feelings, views and opinions using qualitative measures. The quantitative approach yielded quantifiable data from the respondents by using questionnaires.

3.1 Research Design

A research design is a plan and structure of investigation whose conception is aligned towards answering research questions. It constitutes the blueprint for the data collection, measurement and analysis, and assists the researcher to allocate of his or her limited resources (Munyoki & Mulwa, 2012). The study will adopt a descriptive survey design. A survey design integrates different methods in data collection. In this study, descriptive survey aims at exploring the teachers' competency in integrating ICT tools in teaching and learning Kiswahili, teachers' perception of ICT tools integration in teaching and learning Kiswahili language, school management support in ICT use in teaching and learning of Kiswahili language and challenges that teachers face in their teaching and learning activities. The data was analyzed through concurrent triangulation since the study involved concurrent but separate collection of qualitative and quantitative data.

3.2 Location of the Study

The study was carried out in Kilungu Sub-county located in Western region of Makueni County in Eastern region of Kenya. Kilungu sub-county neighbors Mukaa Sub-county and Makueni sub-county. The area is divided into three educational divisions namely: Nunguni division, Ilima, division and Kikoko division. The area is densely populated with an approximate population of 120116 people and covers an area of 97.2Km² (Makueni C.I.D. 2013). The Sub-county resources include sand, arable land and forests. The main economic activities are mixed farming and commercial businesses. The Sub-county has 22 secondary schools and several primary schools. According to KCSE 2017 results analysis in Kilungu sub-county, there is a dismal performance in Kiswahili subject in most of the secondary schools registering a mean of below 5.0 (Kilungu sub-county analysis of KCSE 2017).

3.3 Target Population

The study targeted the population of all public secondary schools in Kilungu Sub-county, all Kiswahili language teachers, all Principals and all form three students in these schools as shown in the table below.

Table 3.1: Target Population

Respondents	Population
Public secondary school	22
Kiswahili teachers	48
Principals	22
Learners	1540
TOTAL	1632

Source: Kilungu Sub-County Education Office (2018)

3.4 Sampling Techniques and Sample Size

Kilungu Sub-county has three educational divisions (Kikoko division, Ilima division and Nunguni division) with Extra-County, County and Sub-county schools. Stratification of the schools in the sub-county in three categories was done (boys' schools, girls' schools and mixed schools). In stratified sampling, the population is sub-divided into smaller homogeneous groups to get more accurate representation (Best & Kahn, 2016). Census survey technique was used, i.e. all the 22 schools were used in the study. 48 Kiswahili language teachers in these schools were purposively sampled and used in the study. 22 school principals were purposively sampled and used in the study. 154 students were randomly selected from the 22 schools through simple random sampling technique.

The sampled size consisted of 22 public secondary schools which were 100%, 48 Kiswahili language teachers who were 100%, 22 Principals which was 100% and approximately 154 from three students who are 10% giving a total of 246 sample size as shown below. An appropriate sample should be of 10%-30% of the parent population (Mugenda & Mugenda, 2008).

Table 3.2: Sample Size Grid

Respondents	Target Population	Sample Size	Sampling Technique
Public high schools	22	22	Purposive sampling
Kiswahili teachers	48	48	Purposive sampling
Principals	22	22	Purposive sampling
Learners	1540	154	Simple random sampling
TOTAL	1632	246	

Source: Researcher (2018)

3.5 Research Instruments

The research instruments were constructed on the basis of the study objectives. Questionnaires, observation checklists and interview schedules were used.

3.5.1 Questionnaires for Teachers

The questionnaires were one of the methods used in the study to collect data from the targeted population. The researcher used the questionnaire because it collected quantitative data for the study. Only form 3 Kiswahili language teachers were eligible. The reason for using the questionnaires was their convenience when administering them to the respondents.

3.5.2 Observation Checklist

Classroom observation was carried out in the 22 public secondary schools. Kiswahili language teachers were observed in the classroom using ICT resources while teaching Kiswahili lesson. 154 form three learners were also observed as they interacted with ICT tools in teaching and learning process of Kiswahili Language. The importance of using this method was that it could evaluate part of the aspects affecting learning and development of skills such as performance and competency among others.

3.5.3 Interview Schedule for Principals

The interview was conducted to the principals of the schools in Kilungu sub-county. This was guided by the objectives of the study. This provided both qualitative and quantitative information concerning the integration of ICT in the teaching and learning of Kiswahili language.

3.6 Piloting Research Instruments

Piloting is a preliminary survey (Kothari, 2004). This was done by administering questionnaires to two schools in neighboring Mukaa sub-county. This was conducted as a way to identify the likely deficiencies and difficulties that respondents could encounter when responding to the items. The pilot study was carried out to establish the reliability and validity of the research instruments. It also helped in determining whether the research instruments were aligned with the objectives and study questions.

3.6.1 Validity

Validity is the extent to which research results and data analyzed represent the phenomenon under investigation (Orodho, 2009). A research instrument is valid depending on how the data collected in terms of how effective the items have sampled significant aspects of the purpose of the study. The instrument was assigned to two types of respondents in public secondary schools in the neighboring sub-county. The university supervisors were consulted to check on the validity of the instruments.

3.6.2 Reliability

Reliability is defined as the measure of the extent to which research instruments, with repeated trials, yield consistent results or data (Mugenda & Mugenda, 2008). The term reliability points at consistency or stability over time of a research instrument. A measuring instrument that provides consistent results is said to be reliable (Kothari, 2004). Questionnaires were administered to two public secondary schools in the neighboring Mukaa sub-county. Results from the pilot study were used to compute reliability index, $r = 0.7$, using Cronbach Alpha after test and retest method of which it indicated high internal reliability.

3.7 Data Collection Procedures

The researcher first got research approval from the Board of Post Graduate Studies; Machakos University which acted as an identity and after that obtained a research permit from the National Commission for Science, Technology and Innovation (NACOSTI). The researcher sought authority from Kilungu sub-county education director to collect data from the schools in his jurisdiction. The researcher then made appointments with Kiswahili language teachers on when to visit their schools after giving an introduction letter to the schools' principals and explained to them the purpose and significance of the study. The researcher then visited the sampled schools for the actual collection of data. The researcher proceeded to the selected schools and personally administered the questionnaires to the Kiswahili teachers. The researcher also interviewed the principals of the same sampled schools. The researcher also conducted an observation of teacher-learner interaction with ICT tools during Kiswahili lesson.

3.7.1 Questionnaires for Teachers

The researcher personally distributed the questionnaires to the teachers and collected them a week later.

3.7.2 Observations Checklist

The researcher visited the selected schools and made lesson observation as the teachers present their Kiswahili language lesson in the classroom using ICT tool of their choice. The researcher also observed the learners as they interacted with the ICT tools during Kiswahili lesson.

3.7.3 Interview Schedules for the Principals

The researcher interviewed the principals of the sampled schools on the matter of integration of ICT tools in the teaching and learning process of Kiswahili Language.

3.8 Data Analysis

According to Orodho (2009), data analysis involves carrying out some type of grouping of data collected, therefore presenting the data in common categories and computing a number of percentages of each division. The raw data collected through questionnaires was descriptive statistics that include frequencies and percentages based on objectives and questions of the study. Statistical Package for Social Sciences (SPSS) version 23 computer based program was used as a tool for data analysis. It was used because it could accommodate large amount of data. The findings of the study are presented using tables, graphs, frequencies and percentages in relation to research the objectives and questions.

The data collected through interviews and observation checklist was thematically analyzed and triangulated with the quantitative data in respect to the study objectives.

3.9 Ethical Considerations

According to Mugenda and Mugenda (2008), ethics in research ensure ethical standards are met with respect to the plan of the study, data analysis and application of the study results. This means that the study addressed logistical ethical and human relations issues to ensure successful completion of the research project (Orodho, 2009), the researcher got a research authorization permit from NACOSTI before going for the actual data collection in the field. The researcher also obtained permission from Kilungu sub-county educational director who allowed him to visit the schools under his jurisdiction in order to collect data. Prior to engaging the respondents in the study, the researcher met and explained to them the objectives of the study. The researcher also assured the respondents that their identity would not be rendered anonymous, i.e. confidentiality was maintained. Ideas, processes, results or words to be used in the study from other authors were properly acknowledged and credited.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION OF FINDINGS

4.1 Introduction

This chapter provides analysis and discusses the data collected from the respondents in relation to the research objectives and questions. Descriptive analysis technique which involved the use of descriptive statistics and tabulations was used. Descriptive statistics used included frequencies, percentage and tables. The study sought to address the following objectives:

- i. Determine the level of teachers' competencies in use of ICT tools in teaching and learning of Kiswahili language in Kilungu sub-county.
- ii. To assess the school management support in ICT tools integration in teaching and learning of Kiswahili language in public school in Kilungu sub-county.
- iii. Investigate the teachers' perception of ICT tools integration teaching and learning of Kiswahili language in Kilungu Sub-county.
- iv. Establish the challenges teachers encounter in integrating ICT tools in teaching and learning of Kiswahili language in secondary schools in Kilungu Sub-county.

4.2 Questionnaire Return Rate

Table 4.3 presents the response rate of sampled respondents. The study targeted 22 principals, 48 teachers, and 154 learners out of which 20 principals, 44 teachers and 154 learners responded. This represented a 90.91 percent return rate for the principals, 91.67 percent for teachers, and 100 percent for learners. A response of 97.32% was adequate for the researcher to proceed to data analysis.

Table 4.3: Response Rate of the Sampled Respondents

Category	Targeted sample	Response rate
Principals	22	20 (90.91%)
Teachers	48	44 (91.67%)
Learners	154	154 (100%)
Total	224	218 (97.32%)

4.3 Demographic Characteristics

4.3.1 Gender Analysis

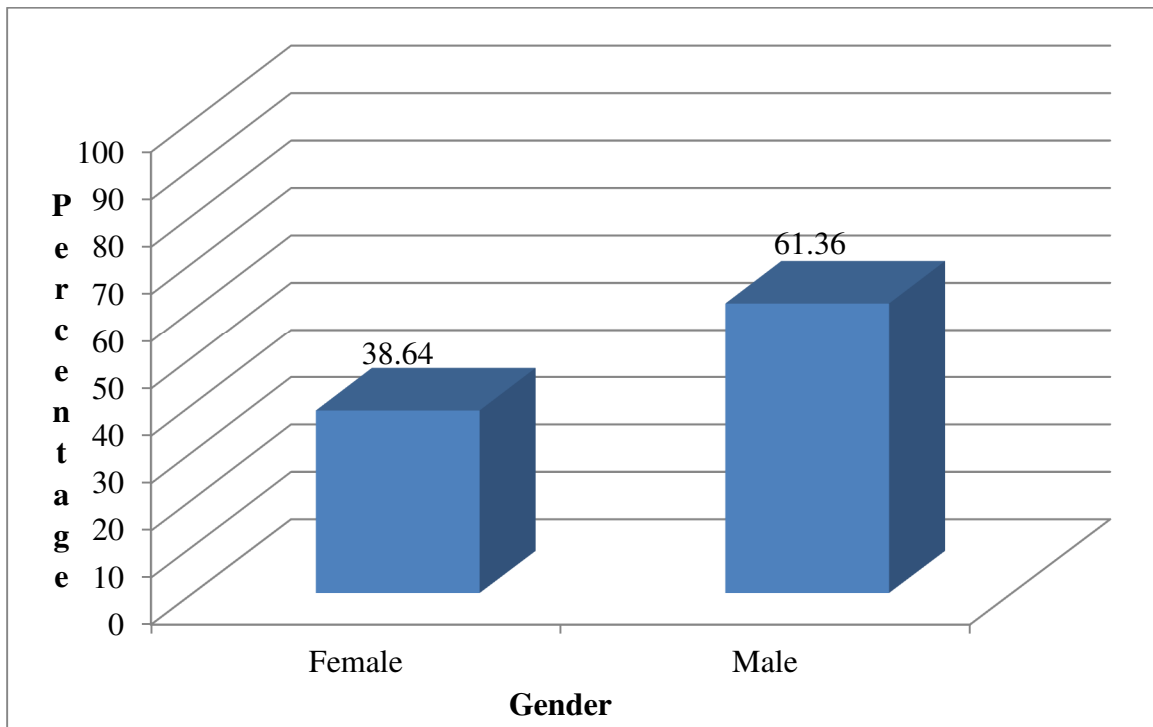


Figure 4.2: Gender Composition

The figure above indicates that 61.36% of the Kiswahili teachers in schools within the sub-county are male while 38.64% were female which shows that male teachers are dominated in the institutions. The research indicates that Kiswahili teachers majorly consisted of males.

4.3.2 Duration Worked in the Institutions

The study determined the duration of work in the school held by the respondents.

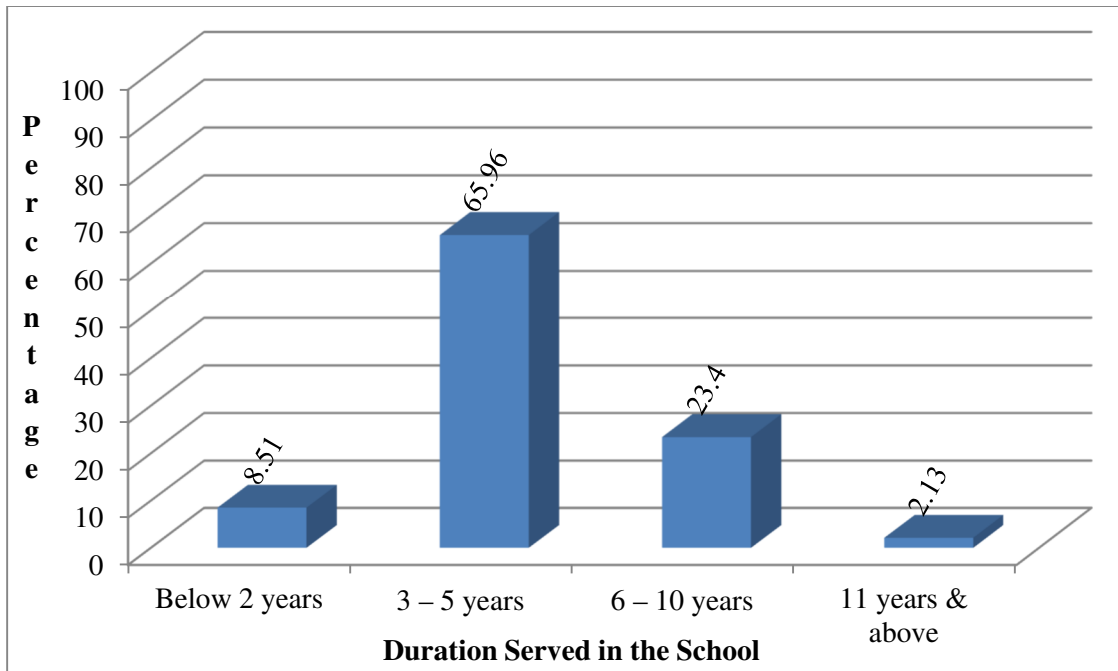


Figure 4.3: Duration Served by the Respondents in the School

From the figure 4.3, 65.96% indicated to have a working experience of 3-5 years, 23.4% had a working experience of 6-10 years, 8.51% had a working experience of below two years and 2.13% had a working experience of at least 11 years. This is an indication that most of the Kiswahili teachers who have taught for 1-10 years give 97.87% showing that these are the youngest teachers in the profession who have graduated in this ICT era and possibly have already acquired ICT skills in their university study making it possible for the teachers to integrate the ICT tools in the teaching and learning of Kiswahili language.

4.4 Level of Teachers' Competencies in Use of ICT Tools in Teaching and Learning of Kiswahili Language

The first objective was concerned with investigation of the level of teachers' competencies in use of ICT tools in teaching and learning of Kiswahili language in Kilungu sub-county.

Table 4.4: Level of Teachers' Competencies in Use of ICT Tools

	SD %	D %	N %	A %	SA %
I know computer and its function	0.00	0.00	0.00	65.91	34.09
I can install software on my own	0.00	63.64	27.27	6.82	2.27
I can create teaching aids with computer	4.55	9.09	2.27	65.91	18.18
I prepare notes for my students using the computer	4.55	43.18	4.55	45.45	2.27
I can use computer for demonstration	0.00	4.55	2.27	77.27	15.91

Table 4.4 shows that 65.91% and 34.09% of the Kiswahili teachers agreed and strongly agreed respectively that they know computer and its function. Thus, the majority of the Kiswahili teachers in Kilungu Sub-County are knowledgeable in computers and how it functions. The study also revealed that 6.82% and 2.27% of the Kiswahili teachers could install software on their own whereas 63.64% could not install software on their own. However, 27.27% of the teachers could not tell whether they can install software on their own. From the study, 65.91% and 18.18% of the Kiswahili teachers agreed and strongly agreed respectively that they could create teaching aids with computer whereas 4.55% and 9.09% strongly disagree and disagreed respectively that they can create teaching aids with computer. Hence, the majority of the teachers can create teaching aids with the computer except for a few individuals. At the same time, 45.45% and 2.27% of the Kiswahili teachers agreed and strongly agreed respectively that they prepare notes for

their students using the computer. Thus, about 47.72% of the teachers use a computer to prepare students notes. However, 4.55% and 43.18% of the teachers strongly disagreed and disagreed respectively that they prepare notes for students using computer whereas 4.55% of the teachers could not whether they can prepare notes for students using a computer or not. 77.27% and 15.91% of the Kiswahili teachers agreed and strongly agreed respectively that they could use the computer for demonstration. Hence, the majority of the Kiswahili teachers can use computer for demonstration. However, the study revealed that 4.55% of the teachers could not use computer for demonstration.

In regards to the level of teachers' competencies in use of ICT tools in teaching and learning of Kiswahili language, the majority of the Kiswahili teachers in Kilungu Sub-County have knowledge in computers and how it functions; can create teaching aids with the computer, and can use the computer for demonstration.

These study findings are contrary to those by Manduku et al. (2012) who asserted that majority of Kenya's public secondary school teachers lack the essential skills and competencies concerning the implementation and adoption of ICT tools in schools. In addition, it negates the findings by Karimi (2012) that many teachers in Kenya may not know how to deal with ICT tools and may sometimes be reluctant to embrace the use of new technologies in their classroom. However, they cannot install software on their own indicating that the teachers have no required skills in the installation of software. This confirms the average rating by principals for teachers' competency in ICT tools integration in the teaching and learning of Kiswahili Language in their school.

4.4.1 Thematic Analysis of Qualitative Findings on the Level of Teachers’

Competencies in Use of ICT Tools in Teaching and Learning of Kiswahili Language

Principals were also interviewed on the level of teachers’ competencies in use of ICT tools in teaching and learning of Kiswahili language. One of the principal remarked that “*teachers ought to be facilitated to attend courses; sourcing of video clips; and provision of personal laptops.*” Another one noted that “*teachers in my school are competent in ICT integration in the teaching and learning of Kiswahili language.*” This negates what was said by Karimi (2012) that many teachers in Kenya may not know how to deal with ICT tools and may sometimes be reluctant to accept new technologies in their classroom. However, it was found that teachers in public schools in Kilungu sub-county have competence in ICT tools integration in the teaching and learning of Kiswahili language.

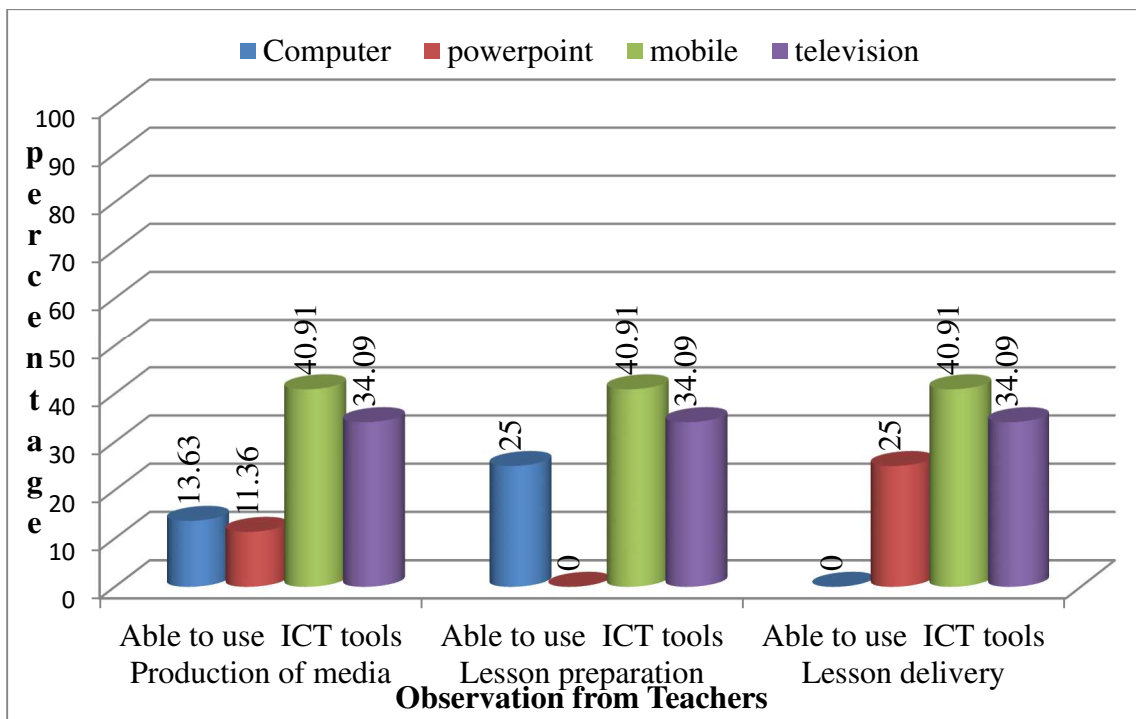


Figure 4.4: Observation for Teachers

Figure 4.4 shows that based on the observation from teachers only 13.63% were able to use a computer in the production of media, 25% were able to use computers for lesson preparation and 25% were able to use Power Point presentations for lesson delivery. However, 40.91% of the teachers were only able to use mobile phones in the production of media, lesson preparation and lesson delivery. This observation shows that the teachers are competent and have the required skills in ICT but, the small number using the ICT tools was because of the lack of equipment in the schools visited.

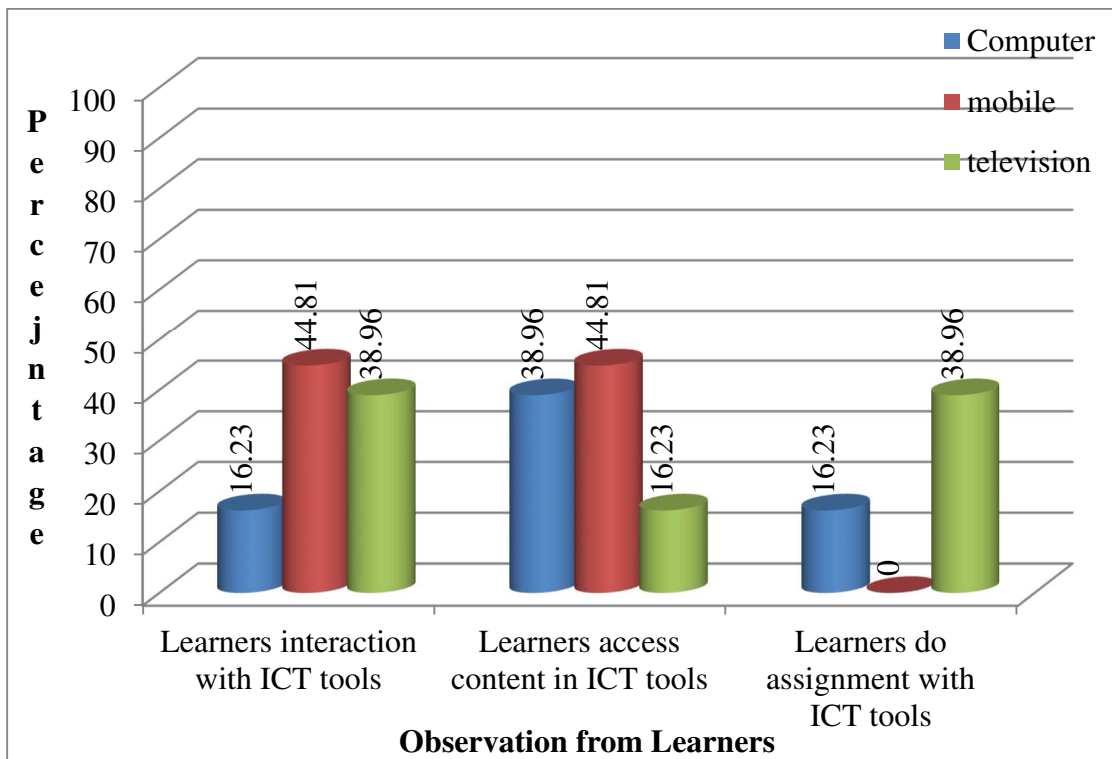


Figure 4.5: Observation for Learners

Figure 4.5 shows that based on observation for the learners, only 16.23% were able to use and interact with computers, 38.96% were able to access content using a computer, and only 16.23% of the learners were able to do their assignment using computers. This indicates that most of the teachers integrate ICT tools in the teaching and learning process

of Kiswahili language and have already taught their learners the operations of the most commonly used ICT tools available in their schools such as T.Vs, computers among others.

4.4.2 Triangulation and Interpretation of Qualitative and Quantitative Data

The first objective sought to investigate the level of teachers' competencies in use of ICT tools in teaching and learning of Kiswahili language in Kilungu sub-county. From the observations made as teachers interact with ICT tools revealed that, only 13.63% were able to use a computer in the production of media; 25% were able to use computers for lesson preparation, and 25% were able to use Power Point presentations for lesson delivery. However, 40.91% of the teachers were able to use mobile phones in production media, lesson preparation and lesson delivery. This observation shows that the teachers are competent and have the required skills in ICT but, the small number using the ICT tools was because of the lack of equipment in the schools visited.

Based on observations made from the learners, only 16.23% were able to use and interact with computers, 38.96% were able to access content using a computer, and only 16.23% of the learners were able to do their assignment using computers. This indicates that most of the teachers integrate ICT tools in the teaching and learning process of Kiswahili language and had already taught their learners the operations of the commonly used ICT tools available in their schools such as T.Vs, computers among others.

A descriptive and thematic analysis showed that majority of the Kiswahili teachers in Kilungu Sub-County have knowledge in computers and how it functions; can create teaching aids with the computer, and can use the computer for demonstration. Further, it was established through interviews that teachers in public schools in Kilungu sub-county have competence in ICT tools integration in the teaching and learning of Kiswahili language.

4.5 School Management Support in ICT Tools Integration in Teaching and Learning of Kiswahili Language

Objective two sought to investigate the school management support in ICT tools integration in teaching and learning of Kiswahili language in public school in Kilungu sub-county.

Table 4.5: School Management Support in ICT Tools Integration

	SD %	D %	N %	A %	SA %
The school management provides the school with ICT tools.	2.27	47.73	0.00	40.91	9.09
The school management supports the use of ICT in teaching and learning of Kiswahili language.	2.27	13.64	2.27	79.55	2.27
The school management motivates teachers to use ICT in teaching and learning of Kiswahili language.	2.27	25.00	6.82	59.09	6.82
The school management encourages teachers to acquire ICT skills through training	2.27	0.00	9.09	79.55	9.09
The school management has procured some ICT tools such as computers, TVs, radios, projectors among others.	18.18	0.00	34.09	31.82	15.91

Table 4.5 shows that 40.91% and 9.09% of the Kiswahili teachers agreed and strongly agreed respectively that the school management provides the school with ICT tools.

Hence, the school management does not provide the school with ICT tools according to 50% of the teachers. The study also revealed that 79.55% and 2.27% of the Kiswahili teachers agreed and strongly agreed respectively that the school management supports the use of ICT in teaching and learning of Kiswahili language whereas 16.91% pointed out the failure of the school management to support the use of ICT in the teaching and learning of Kiswahili language. Thus, the school management supports the use of ICT in teaching and learning of Kiswahili language according to the majority of the teachers. From the study, 59.09% and 6.82% of the Kiswahili teachers agreed and strongly agreed respectively that the school management motivates teachers to use ICT in teaching and learning of Kiswahili language. However, 27.27% of the teachers revealed that the school management does not motivate teachers to use ICT. Thus, about 65.91% of the teachers argue that the school management motivates teachers to use ICT in teaching and learning of Kiswahili language whereas 6.82% of the teachers were unable to tell whether the school management supports the use of ICT or not. On the same vein, 79.55% and 9.09% of the Kiswahili teachers agreed and strongly agreed respectively that the school management encourages teachers to acquire ICT skills through training whereas 2.27% of the teachers said that the school management does not encourage the training which would enable the teachers to acquire ICT skills. Thus, the majority of the teachers noted that the school management encourages teachers to acquire ICT skills through training. The study also showed that 31.32% and 15.91% of the Kiswahili teachers agreed and strongly agreed respectively that the school management had procured some ICT tools such as computers, TVs, radios, projectors among others whereas 18.18% of the teachers indicated that the school management had not procured some ICT tools. However,

34.09% of the teachers could not tell whether school management had procured some ICT tools.

Regarding school management support in ICT tools integration in teaching and learning of Kiswahili language, the majority of the Kiswahili teachers noted that the school management supports the use of ICT in teaching and learning of Kiswahili language and encourages teachers to acquire ICT skills through training. Moreover, the school management motivates teachers to use ICT in teaching and learning of Kiswahili language according to 65.91% of the teachers and also based on 55 % of the principals. Similarly, based on 50% of the Kiswahili teachers, the school management provides the school with ICT tools; and has procured some ICT tools such as computers, TVs, radios, projectors among others.

Similar findings were established by Maithya (2013) that school management supports the use of ICT in teaching and learning and encourages teachers to acquire ICT skills. Similarly, Mingaine (2013) argued that school management supports the implementation of technology in their school through the procurement of the needed infrastructure. All the principals visited and interviewed also noted that they do support Kiswahili language teachers to acquire and further ICT skills.

4.5.1 Thematic Analysis of Qualitative findings on School Management Support in ICT Tools Integration in Teaching and Learning of Kiswahili Language

Principals were also interviewed on school management support in ICT tools integration in teaching and learning of Kiswahili language. One of the principals noted that “*there is need for standby generators in case of power failure; capacity building workshops training; and equipping ICT room.*” Another one indicated that “*I have already procured a laptop, projector, a television and some computers.*” This correlates with Mingaine (2013) who argued that school leaders support the implementation of technology in their school through the acquisition of the needed infrastructure. This affirmed that school management supports ICT tools integration in Kilungu sub-county.

4.6 Teachers’ Perception of ICT Tools Integration in Teaching and Learning of Kiswahili Language

The third objective was to investigate the teachers’ perception of ICT tools integration teaching and learning of Kiswahili language in Kilungu Sub-county.

Table 4.6: Teachers’ Perception of ICT Tools Integration

	SD %	D %	N %	A %	SA %
It is very simple for me to use ICT tools in teaching Kiswahili lesson	0.00	9.09	40.91	43.18	6.82
Integrating ICT is very difficult for me when teaching Kiswahili lesson	45.45	29.55	2.27	22.73	0.00
ICT tools make a lesson to be more interactive when teaching Kiswahili language.	0.00	9.09	0.00	84.09	6.82
ICT tools make lessons to be more interesting in class	0.00	9.09	0.00	81.82	9.09
I like using ICT tools when teaching Kiswahili lessons	15.91	9.09	13.64	56.82	4.55
I do not like using ICT tools when teaching Kiswahili language.	47.73	18.18	18.18	15.91	0.00

Table 4.6 shows that 43.18% and 6.82% of the Kiswahili teachers agreed and strongly agreed respectively that it is very simple for them to use ICT tools in teaching Kiswahili lesson. Thus according to 50% of the Kiswahili teachers, it is very simple for them to use ICT tools in teaching Kiswahili lesson. However, 9.09% of the teachers disagreed that it is very simple for them to use ICT tools in teaching Kiswahili language whereas 40.91% of the teachers could not tell whether it is simple for them to use ICT tools or not. The study also showed that 22.73% of the Kiswahili teachers agreed that integrating ICT is very difficult for them when teaching Kiswahili lesson. Hence, according to 65% of the Kiswahili teachers, integrating ICT is not very difficult for them when teaching Kiswahili lesson whereas 2.27% could not tell whether integrating ICT is very difficult or not. The study further showed that 84.09% and 6.82% of the Kiswahili teachers agreed and strongly agreed respectively that ICT tools make a lesson to be more interactive when they are teaching Kiswahili language whereas 9.09% of the teachers disagreed on the same. Thus based on the majority of the teachers, an ICT tool makes a lesson to be more interactive while teaching Kiswahili language. From the study, 81.82% and 9.09% of the Kiswahili teachers agreed and strongly agreed respectively that ICT tools make lessons to be more interesting in class whereas 9.09% of teachers disagreed on the same. Thus, according to the majority of the teachers ICT tools make lessons to be more interesting in class. The study also elicited that, 56.82% and 4.55% of the Kiswahili teachers agreed and strongly agreed respectively that they like using ICT tools when teaching Kiswahili lessons. Hence, based on 61.37% of the Kiswahili teachers they like using ICT tools when teaching Kiswahili lessons whereas 15.91% of the Kiswahili teachers agreed that they do not like using ICT tools when teaching Kiswahili language. Hence, the majority

of the Kiswahili teachers like using ICT tools when teaching Kiswahili language. However, 13.64% and 18.18% of the teachers could not tell whether they like using ICT tools or they do not like using ICT tools when teaching Kiswahili language respectively.

Pertaining to teachers' perception of ICT tools integration in the teaching and learning of Kiswahili language, majority of the Kiswahili teachers noted that integrating ICT is not very difficult for them when teaching Kiswahili lesson; ICT tools makes lesson to be more interactive and interesting in class thus make teachers like using ICT tools when they are teaching Kiswahili language. In addition, according to 50% of the Kiswahili teachers, it is very simple for them to use ICT tools in teaching Kiswahili lesson; and they like using ICT tools when teaching Kiswahili lessons based on 61.37% of the Kiswahili teachers.

Similar findings by Haggins and Moseley (2011) found that ICT tools make a lesson to be more interactive and more interesting in class. However, the results were contrary to findings by Miima et al. (2013) that Kiswahili teachers in Kakamega are yet to embrace the integration of ICT in their teaching and learning activities of the subject. In addition, the results negate the findings in the United States by Stack (2008) that many teachers were inadequately computer-skilled and disliked its use.

4.6.1 Thematic Analysis of Qualitative Findings on Teachers’ Perception of ICT Tools Integration in Teaching and Learning of Kiswahili Language

Principals were also interviewed on teachers’ perception of ICT tools integration in the teaching and learning of Kiswahili language. One of the principal asserted that “*my teachers have embraced ICT tools integration in the teaching and learning of Kiswahili language.*” Another one noted that “*the teachers’ perception in my school on ICT integration is positive.*” This negates the findings in the United States by Stack (2008) that many teachers were poor in computer skills and had a negative attitude towards its use. Therefore, teachers’ perception on ICT integration in teaching and learning of Kiswahili language is positive in Kilungu sub-county.

4.7 Challenges Teachers Encounter in Integrating ICT Tools in Teaching and Learning of Kiswahili Language

Objective four sought to establish the challenges teachers encounter in integrating ICT tools in teaching and learning of Kiswahili language in secondary schools in Kilungu Sub-county.

Table 4.7: Challenges Teachers Encounter in Integrating ICT Tools

	SD %	D %	N %	A %	SA %
Insufficient ICT tools hinder meto use them during content delivery.	2.27	2.27	6.82	88.64	0.00
Lack of adequate skills affect my ICT use in the classroom.	18.18	34.09	0.00	43.18	4.55
Lack of power connectivity in the school hinders me from using ICT when teaching.	79.55	4.55	0.00	0.00	15.91
Poor internet in the area affects my use of ICT in teaching of Kiswahili.	13.64	38.64	0.00	31.82	15.91
I cannot use ICT due to technophobia.	70.45	29.55	0.00	0.00	0.00

Table 4.7 shows that 88.64% of the Kiswahili teachers agreed that insufficient ICT tools hinder them to use ICT during content delivery. However, 4.54% of the teachers disagreed that insufficient ICT tools hinder them to use them during content delivery whereas 6.82% of the teachers were neutral on the same point. Thus, an impressive majority of the Kiswahili teachers indicated insufficient ICT tools hinder them from using ICT tools during content delivery. From the study, 43.18% and 4.55% of the Kiswahili teachers agreed and strongly agreed respectively that lack of adequate ICT skills affects teachers on ICT use in the classroom. This indicates that based on the Kiswahili teachers, 52.27% of them noted lack of adequate skills does not affect teachers on ICT use in the classroom. Zero percent and 15.91% of the Kiswahili teachers agreed and strongly agreed respectively, that lack of power connectivity in the school hinders them from using ICT when teaching. Hence, 84.28% of the Kiswahili teachers noted that lack of power connectivity in the school does not hinder them from using ICT when teaching. The study further indicates that 31.82% and 15.91% of the Kiswahili teachers agreed and strongly agreed respectively that poor internet in the area affects their use of ICT in teaching of Kiswahili. This indicates that based on the Kiswahili teachers, 52.28% of them noted poor internet in the area does not affect their use of ICT in teaching of Kiswahili. Zero percentage of the Kiswahili teachers neither agreed nor strongly agreed that they could not use ICT due to technophobia. Thus, 100% of the Kiswahili teachers in Kilungu sub-county disagreed that they cannot use ICT due to technophobia.

In regards to challenges, teachers encounter while integrating ICT tools in teaching and learning of Kiswahili language. Majority of the Kiswahili teachers indicated insufficient ICT tools hinder them from using ICT tools during content delivery. Lack of power connectivity in the school did not hinder them from using ICT when teaching and disagreed that they cannot use ICT due to technophobia. In addition, about 47.72% of the Kiswahili teachers noted lack of adequate skills affect teachers ICT use in the classroom; and that poor internet in the area affects their use of ICT in teaching of Kiswahili.

The results are contrary to deductions by Rebecca and Marshall (2012) who argued that lack of electricity in most of Kenyan rural schools remains a challenge. However, they are in line with deductions by Mathevula and Uwizeyimana (2014) that the main challenges facing teachers in the ICT integration and implementation in education include: access to the internet which is limited to rural areas, poor infrastructures such as the supply of electricity and ICT tools.

4.7.1 Thematic Analysis of Qualitative Findings on Challenges Teachers Encounter in Integrating of ICT Tools in Teaching and Learning of Kiswahili Language

Principals were also interviewed on challenges teachers encounter in the integration of ICT tools in teaching and learning of Kiswahili language. One of the principals said that “*their workload is too high and there is need for complementary sources of power in case of power failure.*” Another principal indicated that “*the main challenges faced by teachers in ICT integration are lack of power, poor internet connectivity and insufficient ICT tools in the school.*” This is in line with deductions by Mathevula and Uwizeyimana

(2014)that the main challenges facing teachers in the ICT integration and implementation in education include: access to the internet which is limited to rural areas, poor infrastructures such as the supply of electricity and ICT tools. This indicated that the main challenges teachers encounter in ICT tools integration in teaching and learning of Kiswahili language in public secondary schools in Kilungu sub-county are poor internet connectivity, lack of power supply in rural schools and lack of variety of ICT tools.

Table 4.8: Principals Reasons for Kiswahili teachers not Using ICT Tools

Why do you think that the Kiswahili teachers do not use ICT tools in teaching and learning of Kiswahili language	Frequency	Percent
High workload	4	20
Lack of ICT tools	14	70
Incompetence	1	5
Inadequate complementary sources like power failure, low internet	1	5

Similarly, 70% of the principals as shown in table 4.8 noted that Kiswahili teachers do not use ICT tools in teaching and learning of Kiswahili language due to lack of ICT tools, while 20% said is mainly due to high workload. Only 5% of the principals noted that Kiswahili teachers do not use ICT tools in teaching and learning of Kiswahili language due to inadequate complementary sources like power failure and low internet.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes, discusses and makes conclusions on the findings of this study in relation to the study objectives. It also discusses the recommendations for further research as well as recommendations for policy and practice.

5.2 Summary of Findings

The study sought to investigate the extent of integration of ICT tools and its influence on teaching and learning of Kiswahili language in public secondary schools in Kilungu sub-county.

5.2.1 Level of Teachers' Competences in Use of ICT Tools in Teaching and Learning of Kiswahili Language

The first objective of the study sought to determine teachers' competencies in use of ICT tools in the teaching and learning of Kiswahili language. The study established that majority of Kiswahili teachers in Kilungu sub-county have knowledge in computer and how it functions. They can also create teaching aids with computers and use computers for lesson delivery and demonstration while teaching and learning of Kiswahili language in a classroom setting. The school principals also affirmed that Kiswahili language teachers are competent on ICT tools integration in teaching and learning of Kiswahili language. The findings from the observation made by the researcher during lesson presentation by the Kiswahili teachers in the schools visited affirmed that a big percentage of the teachers had already acquired computer skills either through pre-service or in-service college/ university education simply because they were able to use computers through production of media, lesson preparation and

presentation during Kiswahili lesson. However, the study indicates that some teachers cannot install software on their own, cannot create teaching aids with a computer, cannot prepare notes using computer and cannot use a computer for demonstration in classroom.

5.2.2 School Management Support and Integration of ICT in Teaching and Learning

The second objective of the study which is school management support and integration of ICT in teaching and learning of Kiswahili language found that the school management provides the school with ICT tools according to one half of the teachers' response. The study also indicates that majority of the Kiswahili teachers agreed that school management encourages teachers to acquire IT skills and also motivates them to use ICT based tools in the teaching and learning of Kiswahili language. This is evidenced by ability of schools management procurement of ICT tools such as computers, radios, TVs, cameras, projectors among others. From the interviewed principals, it was noted that they do support Kiswahili language teachers through acquisition of above mentioned ICT tools for the schools. However, one half of the teachers indicated that the school management does not provide the school with ICT tools, others noted that the school management does not support the use of ICT in teaching and learning of Kiswahili language and some of the teachers said that the school management does not encourage teachers to acquire ICT skills through training. On the same vein, other teachers marked that the school management had not already procured some ICT tools.

5.2.3 Teachers' Perception of ICT Tools Integration Teaching and Learning of Kiswahili Language

The third objective sought to investigate teachers' perception of ICT tools integration teaching and learning of Kiswahili language. It was established that one half of the teachers agreed that it was very simple for them to use ICT tools when teaching Kiswahili lessons. From the study, some teachers asserted that integration of ICT tools are very different for them when teaching Kiswahili lessons. Majority of the teachers agreed that ICT tools make lessons more interesting and interactive. The study further indicated that majority of the teachers like using ICT. The interviewed principals also indicated that teachers in their schools had positive attitude on integration of ICT tools in the teaching and learning of Kiswahili language. However, the study showed that it is very difficult for most of the teachers to integrate ICT tools when teaching Kiswahili lesson. It was also noted that some teachers remarked that ICT tools do not make Kiswahili lessons more interactive and interesting in class.

5.2.4 Challenges Teachers Encounter in Integrating ICT Tools in Teaching and Learning of Kiswahili Language

The last objective sought to find out the challenges teachers encounter when integrating ICT tools in teaching and learning of Kiswahili language. Majority of the teachers agreed that insufficient ICT tools hinder them from using ICT tools during content delivery. From the study, about half of the teachers noted that lack of adequate skills affect teachers' ICT use in class. Lack of power connectivity in school according to some of the teachers hinder them from using ICT tools when teaching even though majority of Kiswahili teachers noted that lack of power connectivity does not hinder them from using ICT tools when teaching Kiswahili language. The study

further showed that, about half of the teachers agreed that poor internet connectivity in the area affect their use of ICT in teaching of Kiswahili language whereas majority of the teachers noted that poor internet connectivity does not affect their use of ICT tools in teaching of Kiswahili. Lack of electricity in most of Kenyan rural schools remains a challenge as asserted by the interviewed principals. It was also found that technophobia cannot hinder teachers' use of ICT tools.

5.3 Conclusions

Based on the findings of this study, the researcher makes the following conclusions:

1. Most of the teachers are competent in the use and integration of ICT tools in the teaching and learning of Kiswahili language. This is evidenced by their ability to create teaching aids and use of ICT tools in their lesson preparation and presentation. However, there is a small percentage of teachers who are not competent.
2. The school management supports the use of ICT tools in the teaching of Kiswahili language. This is also evidenced by the school management procurement of some ICT tools for the school. Whereas there is a good percentage that does not support use of ICT.
3. Teachers' perception of ICT integration in the teaching and learning of Kiswahili language is positive. This is evidenced by the teachers' interest and use of ICT tools in their lessons preparation and presentation even though there are some teachers who are not interested in use of ICT.
4. The common challenges that teachers encounter in ICT tools integration are; poor internet connectivity, poor power supply, and lack of most ICT tools in their schools.

5.4 Recommendations

Based on the findings, the researcher makes the following recommendations:

1. School principals should provide some ICT tools such as computers, laptops, projector in their schools that will enable teachers to integrate ICT in the teaching and learning process.
2. The school principals should provide with alternative power supply such as generators especially in the areas where there is no electricity so as to enable effective use of ICT tools in the teaching and learning process.
3. All school principals should provide internet connection in their schools in order to enable teachers to use ICT tools in the teaching and learning process.
4. The Ministry of Education in collaboration with the Ministry of Information Communication Technology should supply computers to all schools in Kenya and make it compulsory for all schools to integrate ICT in the teaching and learning process.
5. The Ministry of Education should also introduce in-service compulsory computer training programme for all teachers to equip them with ICT skills.

5.5 Suggestions for further studies

1. This study was carried out in only one sub-county (Kilungu); similar study should be carried out in the other sub- counties in Makueni County.
2. A study can be carried out to find out influence of ICT tools integration in the teaching and learning of Kiswahili language in the private schools in the county.
3. A comparative study can be done to assess the factors that influence the use of ICT tools in secondary schools in the sub-county.

4. A study can be done on the impact of ICT integration in the teaching and learning of Kiswahili language on students' performance.

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APPENDICES

Appendix I: LETTER OF INTRODUCTION TO THE RESPONDENTS

Martin Mwalili Ngavana,

P.O. Box 489-90130,

NUNGUNI.

0711534878

Through the principal,

Dear respondent,

RE: RESEARCH PROJECT QUESTIONNAIRE.

I am a postgraduate student at Machakos University pursuing a master's degree and currently am carrying out research on “**Assessment of Information Communication Technology Tools in Teaching and Learning of Kiswahili Language in Kilungu Sub-county, Kenya.**”

You have been selected to participate in this study. I would appreciate if you would kindly assist me by responding to the items in the questionnaire attached and by giving honest answers and opinions.

You are assured that your identity will be treated with utmost confidentiality for the purpose of the study.

Thank you in advance,

Yours faithfully,

Martin. M. Ngavana.

Appendix II: QUESTIONNAIRE FOR TEACHERS

This questionnaire is only meant to collect data on the integration of ICT tools on teaching and learning of Kiswahili language in Kilungu sub-county.

Kindly answer the following questions to the best of your knowledge. Put (√) to the most appropriate answer or explanation in the box provided. Specify if you have a different idea.

Do not write your name or that of your school in this questionnaire. The information provided will be treated with ultimate confidentiality and shall not be used for any other purpose other than the research.

SECTION A: DEMOGRAPHIC INFORMATION

1. Gender: Male [] Female []
2. Teaching experience in Kiswahili language:
1-5yrs [] 6-10yrs [] 11-15yrs [] 16-20yrs [] 21-25yrs [] 26-30yrs []
3. Category of school: National [] Extra- county [] County [] Sub-county []

SECTION B: TEACHER' COMPETENCIES ON INTEGRATION OF ICT TOOLS IN TEACHING AND LEARNING OF KISWAHILI LANGUAGE

4. Rate the extent to which you agree with the following statements on the teachers' competencies on the integration of ICT tools in teaching and learning Kiswahili language by ticking (√) in the box.

Key: S.A. - strongly agree, A- agree, N- neutral, S.D.-strongly disagree, D-disagree

Competency	S.A.	A	N	S.D.	D
I know computer and its function					
I can install software on my own					
I can create teaching aids with computer					
I prepare notes for my students using the computer					
I can use computer for demonstration					

SECTION C: SCHOOL MANAGEMENT SUPPORT ON INTEGRATION OF ICT TOOLS IN TEACHING AND LEARNING OF KISWAHILI LANGUAGE.

5. Rate the extent to which you agree with the following statements on the school management support on ICT in teaching and learning Kiswahili language by ticking (√) in the box.

Key: S.A. - strongly agree, A- agree, N-neutral, S.D.-strongly disagree, D-disagree

SCHOOL MANAGEMENT SUPPORT	S.A.	A	N	S.D.	D
The school management provides the school with ICT tools.					
The school management supports the use of ICT in teaching and learning of Kiswahili language.					
The school management motivates teachers to use ICT in teaching and learning of Kiswahili language.					
The school management encourages teachers to acquire ICT skills through training					
The school management has procured some ICT tools such as computers, TVs, radios, projectors among others.					

SECTION D: TEACHERS' PERCEPTION ON INTEGRATION OF ICT TOOLS IN THE TEACHING AND LEARNING OF KISWAHILI LANGUAGE.

6. To what extent do you agree or disagree with the following statements on teachers' perception of the integration of ICT tools in the teaching and learning of Kiswahili language?

Key: S.A. - strongly agree, A- agree, N-neutral, S.D.-strongly disagree, D-disagree

PERCEPTION	S.A.	A	N	S.D.	D
It is very simple for me to use ICT tools in teaching Kiswahili lesson					
Integrating ICT is very difficult for me when teaching Kiswahili lesson					
ICT tools make a lesson to be more interactive when teaching Kiswahili language.					
ICT tools make lessons to be more interesting in class					
I like using ICT tools when teaching Kiswahili lessons					
I do not like using ICT tools when teaching Kiswahili language.					

SECTION E: CHALLENGES FACED WHEN INTEGRATING ICT TOOLS IN TEACHING AND LEARNING OF KISWAHILI LANGUAGE.

7. Rate the extent to which you agree with the following statements on the challenges teachers are faced with on integration of ICT tools in teaching and learning Kiswahili language by ticking (√) in the box.

Key: S.A.- strongly agree, A- agree, U-undecided, S.D.-strongly disagree, D-disagree

Challenge	S.A.	A	U	S.D.	D
Insufficient ICT tools hinder me to use them during content delivery.					
Lack of adequate skills affect my ICT use in the classroom.					
Lack of power connectivity in the school hinders me from using ICT when teaching.					
Poor internet in the area affects my use of ICT in teaching of Kiswahili.					
I cannot use ICT due to technophobia.					

THANK YOU.

Appendix III: INTERVIEW SCHEDULE FOR PRINCIPALS

The researcher will ask the principals the following questions. The researcher will also be noting down the opinions and views of the respondents.

SECTION A: TEACHER’ COMPETENCIES ON INTEGRATION OF ICT TOOLS IN TEACHING AND LEARNING OF KISWAHILI LANGUAGE

1. In your own view, how do you assess the teachers’ competency in ICT tools integration in the teaching and learning of Kiswahili Language in your school?

2. Do you support Kiswahili language teachers to acquire further their ICT skills?

SECTION B: SCHOOL MANAGEMENT SUPPORT ON INTEGRATION OF ICT TOOLS IN TEACHING AND LEARNING OF KISWAHILI LANGUAGE

1. Does your school have ICT tools?

2. In what ways do you support the use of ICT tools in the teaching and learning of Kiswahili Language?

SECTION C: TEACHERS' PERCEPTION ON INTEGRATION OF ICT TOOLS IN THE TEACHING AND LEARNING OF KISWAHILI LANGUAGE

1. In your own view, how do you rate the Kiswahili language teachers' perception about ICT integration in the teaching and learning of Kiswahili Language?

2. What do you think can be done in order for Kiswahili Language teachers to embrace the use of ICT tools in the teaching and learning of Kiswahili Language?

SECTION D: CHALLENGES FACED WHEN INTEGRATING ICT TOOLS IN TEACHING AND LEARNING OF KISWAHILI LANGUAGE

1. What kind of ICT tools does the Kiswahili teacher (s) use when teaching?

2. Why do you think that the Kiswahili teachers do not use ICT tools in teaching and learning of Kiswahili language?

3. Suggest some of the measures you have put in place to counter some of the challenges faced by teachers in the integration of ICT tools in teaching and learning of Kiswahili Language.

THANK YOU.

Appendix IV: OBSERVATION CHECKLIST FOR TEACHERS

The researcher will observe the teachers as they present their Kiswahili lesson using ICT tools of their choice and note down as indicated on the table.

Unit of observation	Able to use ICT tools	Unable to use ICT tools
Production of media <ul style="list-style-type: none">• Powerpoint• Web resources• Youtube• computer		
Lesson preparation <ul style="list-style-type: none">• Computer• Printer• Power point		
Lesson delivery <ul style="list-style-type: none">• PowerPoint• Projector• Television• Radio• Mobile phone		

Appendix V: LEARNERS OBSERVATION CHECKLIST

The researcher will observe the learners as they interact with ICT tools of the choice of their teacher and note down as indicated on the table.

Activities	Able to use ICT tools	Unable to use ICT tools
Learners interaction with ICT tools <ul style="list-style-type: none">• computer• internet• mobile phones		
Learners access content in ICT tools <ul style="list-style-type: none">• Internet• Television• Mobile phones• Computer		
Learners do assignment with ICT tools <ul style="list-style-type: none">• Computer• Laptop• CDs / DVDs		

Appendix VI: Authorization Letter by Machakos University



MACHAKOS UNIVERSITY OFFICE OF THE DEAN GRADUATE SCHOOL

Telephone: 254-(0)735 247939, (0)723805929
Email: graduateschool@machakosuniversity.ac.ke
Website: www.machakosuniversity.ac.ke

P.O.Box 136-90100
Machakos
KENYA

REF.MksU/GS/SS/011/VOL.1

5th July, 2018

The Director,
National Commission for Science, Technology and Innovation
P. O Box 30623,
NAIROBI

Dear Sir

RE: MARTIN M NGAVANA – REG NO.E55-7362-2016

The above named is a Master's student in the second year of study and has cleared his course work. The University has cleared him to conduct a research entitled: "The extent of integration of information communication technology tools and its influence on teaching and learning of Kiswahili language in public secondary schools in Kilungu Sub-County, Kenya."

Kindly assist him with a Research Permit in order to undertake the research.

Thank you.



DR.KIMITI RICHARD PETER, PhD
DEAN GRADUATE SCHOOL
KRP/ann



ISO 9001:2015 Certified Soaring Heights in Transforming Industry and Economy

Appendix VII: Research Clearance Permit by NACOSTI



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

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

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref. No. **NACOSTI/P/18/13914/23916**

Date: **26th July, 2018**

Martin Mwalili Ngavana
Machakos University
P.O. Box 136 – 90100
MACHAKOS.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *“The extend of integration of Information Communication Technology tools and its influence on teaching and learning of kiswahili language in Public Secondary Schools in Kilungu Sub-County, Kenya”* I am pleased to inform you that you have been authorized to undertake research in **Makueni County** for the period ending **25th July, 2019.**

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

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit a **copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.


BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The County Commissioner
Makueni County.

The County Director of Education
Makueni County.

National Commission for Science, Technology and Innovation | ISO9001:2008 Certified

CONDITIONS

1. The License is valid for the proposed research, research site specified period.
2. Both the Licence and any rights thereunder are non-transferable.
3. Upon request of the Commission, the Licensee shall submit a progress report.
4. The Licensee shall report to the County Director of Education and County Governor in the area of research before commencement of the research.
5. Excavation, filming and collection of specimens are subject to further permissions from relevant Government agencies.
6. This Licence does not give authority to transfer research materials.
7. The Licensee shall submit two (2) hard copies and upload a soft copy of their final report.
8. The Commission reserves the right to modify the conditions of this Licence including its cancellation without prior notice.



REPUBLIC OF KENYA



National Commission for Science,
Technology and Innovation

RESEARCH CLEARANCE
PERMIT

Serial No.A 19743

CONDITIONS: see back page

THIS IS TO CERTIFY THAT:
MR. MARTIN MWALILI NGAVANA
of **MACHAKOS UNIVERSITY, 489-90130**
Nunguni, has been permitted to conduct
research in *Makueni County*

Permit No : NACOSTI/P/18/13914/23916
Date Of Issue : 26th July,2018
Fee Received :USD 9

on the topic: **THE EXTEND OF
INTEGRATION OF INFORMATION
COMMUNICATION TECHNOLOGY TOOLS
AND ITS INFLUENCE ON TEACHING AND
LEARNING OF KISWAHILI LANGUAGE IN
PUBLIC SECONDARY SCHOOLS IN
KILUNGU SUB-COUNTY, KENYA**



for the period ending:
25th July,2019


.....
**Applicant's
Signature**


.....
**Director General
National Commission for Science,
Technology & Innovation**

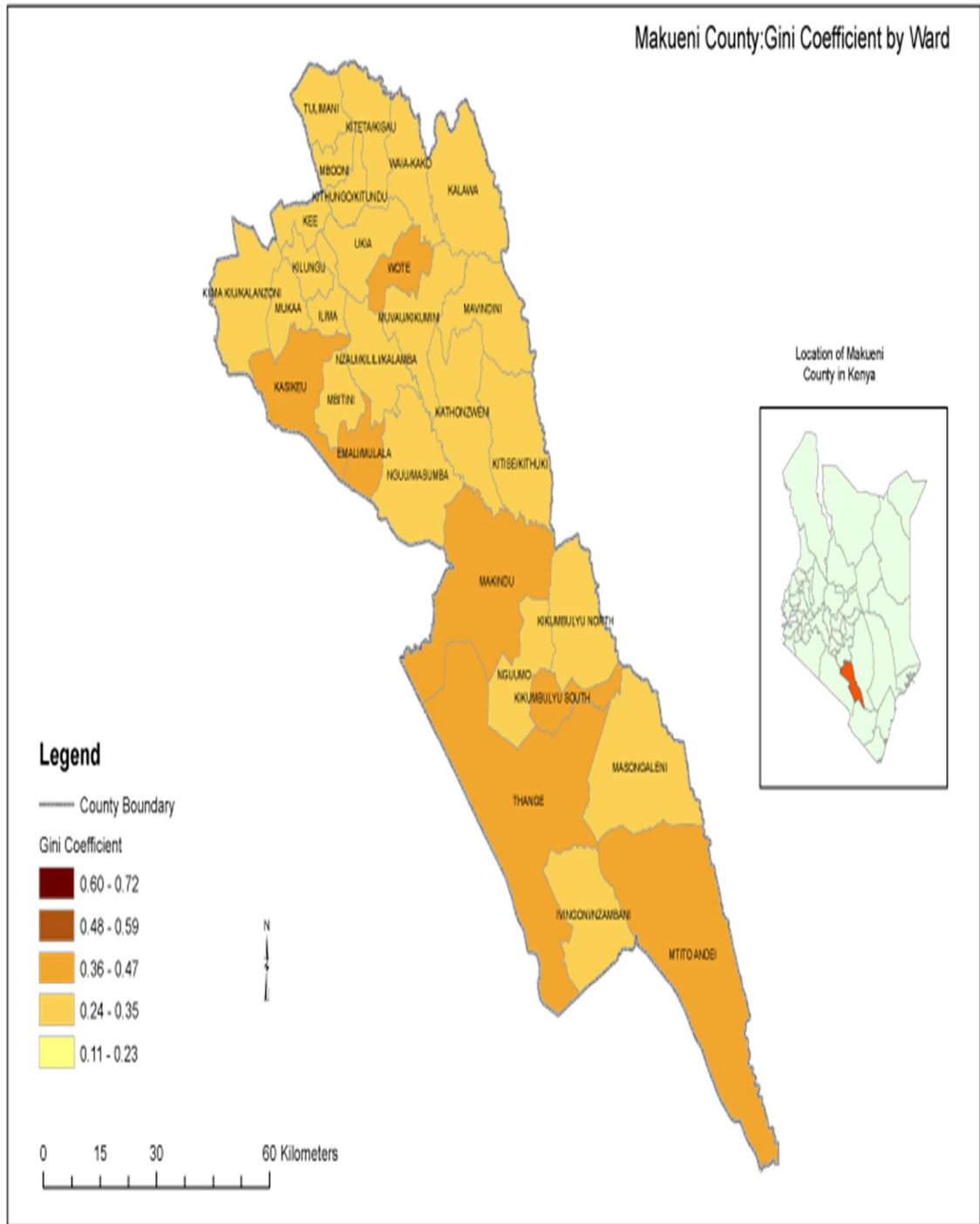
Appendix VIII: Work Plan

ACTIVITY	OCT- JAN 2018	JAN- MAY 2018	JUNE- JULY 2018	AUG- SEP 2018	OCT- NOV 2018	NOV 2018
Concept paper preparation and presentation						
Proposal preparation Proposal presentation Corrections of proposal Proposal defense						
Data collection						
Data analysis						
Report writing Presentation of research Defense; oral presentation Corrections and final sub-mission						
Graduation						

Appendix VIV: Research Budget

PRODUCTION OF RESEARCH INSTRUMENTS	AMOUNT (KSH)
Typesetting	10,000
Printing	10,000
Piloting expenses	5,000
Data collection and analysis	30,000
Binding	5,000
TRANSPORT AND SUBSISTENCE	
Public transport	10,000
Breakfast and lunch	10,000
INCIDENTAL COST	
Stationery	5,000
Miscellaneous expenses	5,000
TOTAL	90,000

Appendix VIX: Kilungu Sub-County in Makueni County Map



SOURCE: Google maps