

**TEACHER-BASED FACTORS INFLUENCING
INTEGRATION OF INFORMATION COMMUNICATION
TECHNOLOGY IN TEACHING OF ENGLISH LANGUAGE IN
PUBLIC SECONDARY SCHOOLS IN VIHIGA SUB-COUNTY,
KENYA**

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Requirements for Award of a Degree in Master of Education in
Curriculum Studies**

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DECLARATION

This project report is my original work and has not been presented for any award in any university.

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This project report has been submitted for examination with our approval as university supervisors.

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DEDICATION

This project is dedicated to my beloved wife Eunice Usideh, children Maurine, Tracy, Cecilia, Eubene Kadiri, and my mother Esther Muhonja.

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ABBREVIATIONS AND ACRONYMS

AECT	Association for Education Communication and Technology
BOM	Board of Management (formerly Board of Governors)
CD's	Compact Discs
CD-ROM	Compact Disc, containing data accessible but not writable.
DVD's	Digital Versatile Discs
DQASO	District Quality Assurance and Standards Officer
HoD	Head of Department
IEC	Integrated English Curriculum
ICT	Information Communication Technology
ICT's	Information Communication and Technologies
KCSE	Kenya Certificate of Secondary Education
KICD	Kenya Institute of Curriculum Development
KNEC	Kenya National Examinations Council
MoEST	Ministry of Education Science and Technology
NCALT	National Centre on Adult Literacy Technical Report
NCES	National Centre for Education Statistics
NCOSTI	National Council of Science, Technology and Innovation
SPSS	Statistics Package for Social Science

ABSTRACT

Integration of Information Communication Technology in teaching English language in public secondary schools is dependent on various related factors. The purpose of this study was to establish teacher-based factors influencing integration of ICT in teaching of English language in public secondary schools in Vihiga sub-county, Kenya. The study was guided by the following objectives: determining influence of teachers' gender, ICT competency, attitude and workload on ICT integration in teaching of English language. The study was guided by the Rand Change Agent Theory of curriculum implementation. A descriptive survey design was adopted, utilizing both qualitative and quantitative research methods. The study targeted population was 109 participants comprising of 26 Head teachers, 26 Heads of Department, and 57 Teachers of English. A sample size of 67 participants was sought using purposive and random sampling technique. Data collected using two types of instruments; questionnaire for teachers of English and English Heads of Department while interview schedule was used for head teachers. Data were analyzed using both descriptive and inferential statistics. Gender was established to have no significant influence on integration of ICT in teaching English. Teachers' attitude was established to be one of the main factors influencing integration of ICT in teaching, most teachers had a negative attitude towards ICT. On ICT competency, many teachers were found to have inadequate skills for ICT integration. Teachers' workload was a barrier to effective ICT integration, all the teachers under study indicated having a high number of lessons per week, an indicator of overload. From the findings, the study concluded that teacher's gender did not influence integration of ICT in teaching of English. On ICT competency, the study concluded that majority of teachers of English did not have the required knowledge and skills needed for effective integration of ICT in teaching English. Teachers positive attitude was concluded to be one of the main factor influencing integration of ICT in teaching English, for a positive attitude led to frequent ICT integration unlike a negative one. Teachers workload affected integration for the lesser the number of lessons per week the more frequent ICT could be integrated while the higher the number of lessons per week the lesser the integration of ICT in teaching English. The study therefore recommended for equal opportunities and utility of ICT equipment to both teachers' gender. A recommendation was made for there to be frequent capacity building courses for in-service teachers as well as intensifying pre-service training in ICT matters. A recommendation was done for school administrators to create a conducive working atmosphere that motivated teachers of English integrate ICT in their teaching. The study recommended for hiring of more teachers to reduce teachers' lesson load. The study also recommended that further research be carried out focusing on students to establish their views on ICT integration in learning. Final recommendation was on the study being carried out in other selected parts across the country as the study was only carried in Vihiga sub-county.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Education has been identified as one of the public sectors most influenced by technological development (Kozman, 2005). There is a growing demand on educational institutions to use Information Communication Technology (ICT) to teach skills and knowledge students need for the 21st century. Today's educational institutions try to restructure their education curricula and classroom facilities, in order to bridge the existing technology gap. This restructuring requires effective adoption and integration of technology in order to provide learners with knowledge of specific subject area as well as professional meaningful productivity (Tumei, 2005).

Language teaching is one area in which application of technology has been encouraged. Technologies such as digital video discs, radio, television, audio-visual cassettes, CD ROMS, projectors, smart phones, and communicative tools such as e-mails, chat rooms, discussion boards and internet conferences are being used in language classes (Kozman, 2005). These technological devices help instructors in language classes by providing them with a good opportunity to develop and create different, enjoyable tasks (Usun & Komur, 2009).

Teachers are considered to be important for effective curriculum change and innovation in the education sector. According to Orsten and Hunkins (2004), any curriculum innovation requires change agents, key among them being the teacher. English language positions itself as a key subject of medium of instruction in curriculum matters in most countries in the world. It is used as second language in many countries, for example, in India, English language enjoys a high prestige while in Kenya, and it is the official language of communication as well as the main medium of instruction in schools, colleges and universities (The Constitution of Kenya, 2010). It is also one of the compulsory subjects in determination of university admission and of well job placement in commercial sectors.

Teachers' skills and attitude count for great deal more in curriculum renewal than do changes in content and methods (Law, 2008). It is believed that if teachers perceived technology programs as neither fulfilling their needs nor their students' needs, it is likely that they will not integrate technology into teaching process (Hew & Brush, 2007; Keengwa & Onchwari, 2008). It is noted that teachers' qualification tends to influence ICT integration. One study in Britain found out that people with more education have higher ICT skills (NCALT, 2005). On teachers' experience, a survey on almost 3,000 teachers revealed that the quality of ICT integration was related to the years of teacher's service (Russell, Bebell & Tao, 2007). However, Baek, Jong & Kim (2008), claim that experienced teachers are less ready to integrate ICT into their teaching.

Teachers' self efficacy builds confidence in the teacher on use of ICT in teaching. Jones (2004) cites that teachers feel reluctant to use computer if they lack confidence. 'Fear of failure' and 'lack of ICT knowledge' have been cited as some of the reasons for teachers' lack of confidence for adopting and integrating ICT in their teaching. (Balanskat, 2006).

Gender is also a variable that influences integration of ICT in teaching of English language. Kay (2006) study revealed that male teachers used more ICT in the teaching process, but majority still taught in the traditional manner. Notably, none of these traditional manners of teaching are bad or damaging to the students. Kay (2006) further indicates that the traditional manners of teaching, till to date are proving to be useful also. This means teachers need to use ICT in more creative and productive ways in order to create more engaging and rewarding activities resulting to more effective lessons (Birch & Irvine, 2009).

Worldwide, countries are highly investing their resources in education for establishment of technology-based instruction. In most developed countries, schools have integrated ICT into the curriculum and demonstrated high level of effective use in support of teaching and learning activities. For instance, in the United Kingdom, the government spending on ICT in 2000-2009 was £ 2.5 billion (Nut, 2010). In Africa, many counties have integrated ICT into education system. Nigeria Ministry of Education (2006) reports that the use of ICTs in achievement of education goals leads to rapid expansion of knowledge, improved examination

outcomes, and technical efficiency. Rwanda’s integration of e-learning has highly succeeded. Its lap top program has seen even primary school pupils’ access computers (MOE, 2010). Kenya ICT Trust Fund, formed in 2004 to initiate ICT in education has led to an average of six public secondary schools, from every sub-county in Kenya acquiring computers for integration of ICT in their operations including teaching (<http://www.education.go.ke/ICT Fund. htm/>).

In Vihiga sub-county, 13 public secondary schools have embraced the integration of ICT in curriculum implementation. Most of these schools acquired the technologies through government ICT Trust Fund while others acquired through own initiative. Table 1.1 gives a summary of the number of computers, projectors and laptops per secondary school.

Table 1.1: Summary of ICT’s in Vihiga sub-county e-secondary schools

School	Computers	Laptops	Projectors	School	Computer	Laptop	Project
Vihiga	15	2	1	Gilwatsi	12	1	1
Vigina	12	1	1	Masana	12	1	1
Magui	12	1	1	St. clares	15	2	1
Chavavo	12	1	1	Kegoye	12	1	1
Kidinye	12	1	1	Chango	12	1	1
Madira	12	1	1	Mudavad	12	1	1
Mbihi	12	1	1				

Source: Vihiga sub-county Education office (2015)

Vihiga sub-county had an average KCSE examination mean score of 4.796 in English language for the past 4 years, of which 5.259 mean was for schools with computers while 4.337 mean score was for schools without computers. This indicates weak performance that is below expectation on a twelve (12.00) point scale comparison.

Appendix VI, gives a summary comparison of English performance in KCSE between ICT schools and non ICT schools within Vihiga sub-county for the years 2011-2014 (Vihiga sub county Education Office, 2015). The table reveals a decimal difference in performance between schools integrating using the available ICTs and those without computers. It is on this background that this study seeks to establish and address teacher-based factors influencing integration of ICT in teaching of English language, for if not addressed through such a study, performance in the affected schools will continue declining.

Teachers are known to be key components in the process of any successful implementation of designed and developed curricula. This study narrows down to teacher-based factors such as teachers' gender, level of ICT competency, attitude, and workload that influence integration of ICT in teaching of English language in public secondary schools in Vihiga sub-county, Kenya.

1.2 Statement of the problem

Despite the availability of Information Communication Technologies in various public secondary schools in Vihiga sub-county, meant to enhance teaching and learning of English language, performance in English language has remained

below average. This reveals that the Information communication technologies available in schools are under-utilized towards effective integration in the teaching process.

It is evident that students using an on line service perform better than those who do not and multimedia format can lead to higher attainment than a traditional format (Evans, 2008). The government of Kenya, through the National ICT Policy launched in 2006, has put in place mechanism towards some secondary schools acquiring ICT equipment (MoEST, 2007). Other schools have acquired their ICTs through self initiatives and philanthropic donations.

More so, some teachers have been trained and given the title 'ICT champions'. They are located in strategic schools with mandate of offering expertise assistance to neighbouring schools that integrate ICT in their teaching process. Likewise, Kenya Institute of Curriculum Development has prepared electronic broadcasting media lessons and resources well researched and passed down to teachers and students through both audio and audio-visual format.

The continued decline in performance of English language besides all these efforts on integration of ICT in teaching for improved outcome indicates that there are various factors mitigating against use of ICT in teaching English language (Sang, 2010). The study seeks to establish teacher-based factors influencing integration of ICT in teaching of English language in public secondary schools in Vihiga sub-county.

1.3 Purpose of study

The purpose of this study was to investigate teacher-based factors influencing integration of Information Communication Technology in teaching of English language in public secondary schools in Vihiga sub-county, Kenya.

1.4 Objectives of the study

The study was guided by the following objectives;

- i. To determine the influence of teachers' of English gender on integration of ICT in teaching English language in public secondary schools in Vihiga sub-county.
- ii. To determine ICT competency level of teachers of English on integration of ICT in teaching of English language in public secondary schools in Vihiga sub-county.
- iii. To establish the influence of teachers of English attitudes toward ICT integration in teaching of English language in public secondary schools in Vihiga sub-county.
- iv. To examine the extent to which teachers' of English workload influence integration of ICT in teaching English language in public secondary schools in Vihiga sub county.

1.5 Research questions

The research questions were as follows;

- i. How does gender of teachers of English influence integration of ICT in teaching of English language in public secondary schools in Vihiga Sub County?
- ii. What is the level of competency inhibited by teachers of English and its influence on integration of ICT in teaching English language in public secondary schools in Vihiga Sub County?
- iii. To what extent does attitude of teachers of English influence integration of ICT in teaching English language in public secondary schools in Vihiga Sub County?
- iv. To what level does workload of teachers of English influence integration of ICT in teaching of English language?

1.6 Significance of the study

The findings of this study may have both practical and theoretical influence on the future of integrating ICT in teaching English language in Kenya secondary schools. Practically, the study may result to proper integration of ICT in teaching of English by teachers of English. This may result into improved performance in English language examinations. KICD may use the findings to monitor and evaluate the use of their multimedia resources for future renovation and innovation. The MoEST may use the findings to carry out advisory exercise aimed at quality determination on ICT integration by teachers. The BOM may use

the findings to make informed decision on hiring of teachers with adequate knowledge in ICT facilitation of capacity building courses in ICT integration in teaching and learning process. Theoretically, the study is expected to contribute to the body of knowledge on the learning methodology of English language. It outlines teacher based factors ICT integration relation in teaching of English language. Finally, the study may provide a base on which other researchers can develop their studies.

1.7 Limitations of the study

Limitations of a study refer to constrains a researcher has little or no control over. The study was limited to 13 schools that acquired ICTs through Economic Stimulus Programme or individual initiatives. Questionnaire used to collect data had a ceiling effect, limiting amount of information collected. The researcher addressed this limitation by triangulation method of involving use of interview schedule and document analysis guide for cross checking and beefing up responses from the questionnaire. More so, some respondents tending to avoid response to some research questions perhaps due to their level of ICT competency. To counter this challenge, the questionnaire and interview schedule used were validated by the supervisors for effective data collection. On fear of victimization, the respondents were briefed on the purpose of the study as being purely academic. This created of a rapport reducing on inaccurate responses for fear of victimization.

1.8 Delimitations of the study

This study was carried out in purposely selected public secondary schools in Vihiga sub county, Vihiga County which integrate ICT in teaching of English language. This was because public schools are managed by government personnel and are open for public utility. Only teachers of English language, English HoD, and head teachers from the schools under study were involved in the study due to their respective key role they play in teaching and learning of English language. There are other factors influencing integration of ICT in teaching English language, but this study only focuses on teacher-based factors such as gender, ICT competence, attitude and workload. This is because teachers act as key agents of change in implementation of any education policy.

1.9 Basic assumption of the study

The study was based on the following assumptions

- i. That Kenya Certificate of Secondary Education was an acceptable and reliable measure of performance.
- ii. Respondents in the study were willing to participate in the study and it was presumed that they willingly gave the correct information.

1.10 Definitions of significant terms

The following significant terms were used in the study.

Teachers' attitude refers to the state of teachers' tendency to respond to a situation positively or negatively.

Curriculum refers to all that is planned by educational institution to enable the learner develop desired knowledge, skills and attitude.

Economic Stimulus Programme refers to a short to medium-term; high intensity programme aimed at jumpstarting the economy towards long-term growth

E-Schools refer to schools integrating ICT in the teaching and learning process.

ICT competency refers to the knowledge and skills an individual possess at a recognized level of ability in specific ICT area.

ICT integration refers to use of Information Communication Technology in implementation of the curriculum, using a variety of technological devices that support and enhance students' engagement in meaningful learning situation.

In-service training refers to capacity building to those teachers already in the profession with an aim of improving their competence.

Integration refers to the horizontal inter-relationship that exists between the subject matter and learning experiences within subject area in order to bring out the perceived reality of knowledge unity.

Information Communication Technology refers to a wide range of software technology components such as computers, projectors, internet, digital audio visual devices used by teachers to support their work.

Pre-service training refers to teacher training in college and university before graduation.

Teacher based factors refer to the issues that are teacher oriented and do influence integration of ICT in implantation of Integrated English Curriculum.

Teachers' gender refers to the state of being male or female with reference to biological difference.

Teachers' workload refers to the total number of lessons assigned to a teacher to teach per week.

Teaching of English language refers to the pedagogy of English language, aimed at imparting desired knowledge, skills and attitude.

1.11 Organization of the study

The research report contains five chapters. Chapter one is the introduction giving background to the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, limitations of the study, delimitations of the study, basic assumptions, definitions of significant terms and organization of the study. Chapter two covers literature review, sub divided into the concept of ICT integration in teaching English language, teacher based factors influencing integration of ICT in teaching of English , summary on literature review, theoretical and conceptual framework.

Chapter three deals with research methodology. This includes research design, the target population, sample size and sampling procedures, research instruments: validity of instruments and reliability of instruments, data collection procedures, data analysis and data presentation techniques, and finally ethical considerations.

Chapter four presents data analysis, interpretation and presentation of the findings. Chapter five covers a discussion of the research findings, conclusions, recommendations, and suggestions for further study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents the literature review concerning the proposed study on teacher-based factors influencing integration of ICT in teaching English language in public secondary schools in Vihiga sub-county. The literature review is under the following sub-headings: the concept of ICT integration in teaching, ICT policy in schools, teachers' gender and integration of ICT, teachers' ICT competency level and its integration in teaching, teachers' attitude on integration of ICT in teaching, and teachers' workload and integration of ICT in teaching of English language in public secondary schools in Vihiga Sub County. It also discusses a brief summary of literature review, the theoretical framework and conceptual framework on which the study was based. The literature review guides the study in reviewing the gap under investigation.

2.2 Concept of ICT integration in teaching process

The concept of ICT integration in education provides a fundamental theoretical basis for research and practice in teaching and learning. The EACT defines educational technology as the study and ethical practice of facilitating learning and improving performance by creating; using and managing appropriate technological processes and resources (Richey et al., 2008).

The 21st century classroom is networked, adequately provided with a rich internet connection to support media streams, personal Skype and group/video

conferencing communications. It is able to upload and download students work and research to suitable structures to support 'anywhere anytime' learning and collaboration. For effective ICT integration, facilities need be in place to enable media production, using projectors that have the facility to support wireless networking enabling the users (teachers and students) to easily connect and then switch between users (Anderson, 2004).

ICT intends to expand access to education. Through ICT, learning can occur anytime and anywhere. Online course materials, for example, can be accessible 24 hours a day, seven days a week. Teleconferencing classrooms allow both learner and teacher to interact simultaneously with ease and convenience. Based on ICT, learning and teaching no longer depend exclusively on printed materials. Multiple resources are abundant on the internet, and knowledge and knowledge can be acquired through video clips, audio sounds, and visual presentations and so on. Current research has it that ICT assist in transforming a teaching environment into a learner-centered one (Castro Sanchez & Aleman, 2011)

Language teaching is one area in which the application of multimedia technology has been encouraged. Integrating technology as a meaningful learning tool involves much more than simply providing equipment. ICT provides a good opportunity to develop and create different enjoyable tasks (Usun & Komur, 2009). Multimedia technological equipment such as digital video discs, radio, television, audio-visual cassettes, projectors, smart phones, and communicative tools such as e-mails, Skype, chat rooms, discussion boards, and internet

conferences are being used in language classes by instructors using computers (Sara , Brown , Kiforo , & Wamakote , 2010).

The production and introduction of calculators and computers in education system worldwide has helped in simplifying teaching in schools. This has led to promotion of national stability and economic survival (Nukwe, 2006). The advantage of computer technology as a means of ICT integrated in classroom teaching and learning include: its ability to grab students' attention, focuses and retains students' concentration, does generate interest in class work, creates a sense of anticipation, energizes students for a learning exercise, also draws students' imagination improving attitude towards content and learning process. Mutuma (2005) urges that integration of ICT in teaching and learning results to rising of the quality of education since interactive radio instruction project has been found to be the most comprehensively analyzed, saving time and money used on excursions and promoting a lifelong learning experience for both the teachers and the learners.

Several factors influencing the adoption and integration of ICT into teaching have been identified by researchers. Rodgers (2003) identified five technological characteristics or attributes that influence the decision to adopt and integrate an innovation. This was user characteristics (teachers and students), content characteristics, technological considerations and organizational capacity as factors influencing ICT adoption and integration into teaching. Balanskat, Blamire & Kefalla (2007) identified the factors ads teacher-level, school-level and system-

level. Chen (2008) adds that teachers' integration of ICT into teaching is also influenced by organizational factors, attitudes towards technology among other factors.

Makhanu (2010) study found out that there was a relationship between the teachers' computer literacy and academic qualification for teachers with good computer skills readily accept integration of ICT in the schools. This study reviewed gender, ICT competency level, attitudes and workload as the teacher-based factors influencing integration of ICT in teaching of English language in public secondary schools in Vihiga Sub County.

According to Usun and Komur (2009), technological devices help instructors in language classes by providing them with a good opportunity to develop and create different, enjoyable tasks. Teachers are considered to be important for effective curriculum change and innovation in the education sector. That any curriculum innovation requires change agents, key among them being the teacher (Orsten and Hunkins, 2004). The use of technology as a tool to develop the different language skills has received great attention of English are frequently exposed to new practices (Melor and Yunus, 2008). Worldwide, in that teachers.

Conlon (2005) is somewhat pessimistic about the potential for ICT to transform learning and teaching. He questions whether the introduction of broadband connectivity will lead to the developments in online discussion, web browsing, promised. The impact of ICT is mitigated by elements such as the curriculum,

assessment demands, the structures of the school, and by beliefs systems of teachers, which change far more slowly than does the technology; technology will be used to support existing practices and cultural values unless some of these structural impediments to change are tackled.

The advantage of computer technology as a means of ICT to used in classroom learning situation include: its ability to grab students' attention, focuses and retains students' concentration, generate interests in class, creates a sense of anticipation, does energies or relax students for a learning exercise, draws students' imagination, improves attitude towards content and learning process.

Furthermore, computer use by teachers builds amicable connection with students, increase memory of content, increase understanding of the subject matter, fosters creativity, stimulates the flow of ideas, fosters deep learning, provides opportunity for freedom expression and participation, and serves as a link for collaboration decreasing anxiety and tension on 'scary' topics (Berk R.A, 2009). However, instructional technologies have been barely used by teachers in classes and little attention has been made to integrate technology in teaching and learning the language.

According to Mosesti (2007) he notes that the effectiveness of any curriculum depends on the quality of teachers that are there to translate the syllabus to practical instructional material in class. Bishop (1986) agrees with Mosesti (2007) indicating that for a teacher to be able to educate others he must himself be educated. This competence according to Farrant (2004) is built upon mastery of

subject content, pedagogical training, attitudes and teaching experience. This study sought to establish teacher-based factors influencing integration of ICT in teaching of English language in public secondary schools in Vihiga Sub County.

2.3 Teachers' gender and ICT integration in teaching

Gender difference and use of ICT has been reported in several studies. Research studies reveal that male teachers use more ICT in teaching and learning process than their female counterparts (Kay, 2006). Research conducted on teachers integration of ICT in schools in Queensland state from 925 teachers revealed that female teachers were integrating technology into their teaching less than the male (Watson, 2006). According to Wozney (2006), he agrees with Kay (2006), that male teachers in his study used more ICT than female, citing female teachers' low levels use of ICT due to their limited technology access, skill and interest.

In a research conducted by Kay (2006) on teacher's attitudes on ICT, findings were that male teachers had relatively higher levels of ICT attitude and ability before implementation, but there was no difference between males and females regarding ICT attitude and ability after the implementation of the technology. He claims that quality preparation on technology can help lessen gender inequalities.

Markauskaitie (2006), investigated gender difference in self-reported ICT experience and ICT literacy among first year graduate trainee teachers. The study revealed significant differences between males and females in technical ICT capabilities, and situational and longitudinal sustainability. Male scores were higher compared to females.

However, the situation was different in mid-western US basic schools where Bruiser (2006) found that female teachers' self perception about technology competence improved while males' self-perception about technological dominance remained unchanged. The study was in agreement with Adams (2002) that female teachers applied ICT more than the male teachers. This study confirms report by Yukselturk and Bulut (2009) that gender gap has reduced over the past years, presently, a greater number of females than males have used internet and web technologies.

These revelations according to some studies conclude that gender variable was not a predictor of ICT integration into teaching (Norris, Sullivan, Poirot & Soloway, 2003). Watts-Taffee et al (2003) found that teachers can act as catalysts for the integration of technology through ICT. If the encouragement, equipment, and necessary technological support are available from institutes for the teachers, developing an ICT class will be easier for them. The main responsibilities of these teachers will be changing their course format, creating and explaining the new assignments, and arranging for the lab through their technology-learning specialists or assistants. The study sought to establish whether teachers' gender influences integration of ICT in teaching of English language in public secondary schools in Vihiga Sub County.

2.4 Teachers' ICT competency and its integration in teaching English

Teachers' ICT competency is defined as the confidence and expertise in using ICTs in their teaching process. Teachers' ICT competency with technology is a key factor for effective integration of ICT's in teaching and learning process. Schools that report the highest level of student ICT-related skills and experience are often not those with heavy computer course requirements, but rather ones that made use of ICTs on a routine basis throughout the teacher professional development and the teaching and learning process. Teacher inexperience and skill deficiencies may often be an important factor inhibiting the effectiveness of ICT use in teaching by teachers (Hudson, 2006).

Training programs for teachers that embrace educational practices and strategies to address beliefs, skills and knowledge improve teachers' awareness an insight in advance, in relation to transformation in classroom activities (Levin & Wadmany, 2008). Teachers with little or no training tend to use authoritarian and inefficient methods that make students see school as repressive places with little to enjoy (Fisher, 2006).

There are various studies carried out on influence of teachers' self efficacy to ICT integration in learning. Paralta and Costa (2007) conducted a study on 20 teachers' competence and confidence regarding the use of ICT in classroom. They found out that in Italy teachers' technical competence with technology is a factor of improving higher confidence in the use of ICT.

Similarly, in a survey conducted by Becta (2004), approximately 21% of teachers who were surveyed, reported that lack of confidence influence their use of ICT's in their classrooms. He states that 'many teachers who do not consider themselves to be well skilled in using ICT feel anxious about using it in front of a class of children who perhaps know more than they do' (Becta, 2007, P.7).

Teacher's computer competence is a major predictor of integrating ICT in teaching. Evidence suggests that majority of teachers who reported negative or neutral attitude towards the integration of ICT into teaching and learning processes lacked knowledge and skills that would allow them to make 'informed decision' (Bordbar, 2010). According to Jones (2004) report that teachers' competence relate directly to confidence. Teachers' confidence relate to their perception of their ability to use computers in the classroom particularly in relation to their students' perceived competence.

Teachers' ICT competency level tends to go hand in hand with teachers' qualification. Teachers' academic qualification seems to influence their use of ICT. Veenhof (2006) observes that individuals with less than upper-secondary education are significantly less likely to use computers for a range of purposes and this pattern is most pronounced in Italy and Bermuda. In addition, scales that measure individuals' use of computers, the internet and attitudes towards ICT's tend to increase with the literacy proficiency of individuals.

According to the NCALT report (2005) one study in Britain found that people with more education have higher ICT skills, but suggested that more educated

people tend to work with ICT's, making it difficult to differentiate whether education or employment has the biggest impact on ICT skill levels. The effective use of ICT is directly related to technological comfort levels and the liberty to shape instructions to teacher-perceived student needs (Gorder, 2008). In a survey of almost 3000 teachers, Russell, O'Dwyer, Bebell & Tao (2007) argued that the quality of ICT integration was related to the years of teacher's service.

However, in United States, the NCES (2000) reported that teachers with less experience in teaching were more likely to integrate ICT in their teaching than teachers with more experience. Zidon and Miller (2000) found out that there existed weak relationship between years of service with ICT usage. That teacher's teaching experience does not eliminate computer phobias and many experienced teachers display some worry, discomfort and mild anxiety in relation to ICT's usage. There was need to assist teachers reorganize the task of technology and how new technology tools are significant in student learning (Plair, 2008). In agreement, Muller (2008) related technology training to successful integration of technology in classroom teaching and learning situation. These findings are supported by Keengwe and Onchwari, (2008) that ICT related training programs develop teachers' competence in computer use, and also influences teachers' attitudes towards computers.

Furthermore, Brush, Glazewski & Hew (2008), found that pre-service teacher preparation does not provide efficient ICT knowledge to support technology-

based instruction, nor does it successfully demonstrate appropriate methods for integrating technology within curriculum.

This study sought to determine the influence of teachers' ICT competency level in integration of ICT in teaching of English language in Vihiga Sub County.

2.5 Teachers' attitude on integration of ICT in teaching process

Attitude is an important concept in social judgments and behaviours and thus, is one of the most important concepts in decision making (Venkatesh et al..., 2003).

Teachers are perceived to be active agents in the process of change and implementation of new ideas as their beliefs and attitudes may support or impede the success of any education reform such as utilization of an innovative technology (Levin, T., & Wadmany, R., 2006).

Teachers' skills and attitude count for a great deal more in curriculum renewal than do changes in content and method (Law, 2008). Attitude towards ICT influences teachers' acceptance of the usefulness of technology, and also influence whether teachers integrate ICT into their classroom (Huang, 2005). Research on the attitude of both teachers and students towards the use of ICT in teaching and learning has been done with outcome being either positive or negative. For instance, Becta (2004) reported that negative attitude was a barrier towards use of ICT in teaching and learning process while Rhoda and Gerald (2000) found that positive attitude towards ICT use is widely recognized as a necessary condition for effective ICT use in teaching and learning.

A research carried out by Ng'onga (2002) revealed that Kenyan students continue to perform poorly due to poor teaching methods adopted by teachers. This is because as Andrew (2007) noted instructors develop a teaching style based on their perceived beliefs about what constitutes good teaching, personal preferences, their abilities, and the names of their particular discipline. This is practiced by teachers at the expense of the learners need. MOEST (2006) notes that a skilled of English should willingly and creatively use a variety of learner centered teaching styles like group animation where ICT is applicable, discussion, role-play, simulation debate, hot seating, flow chart technique and brainstorming. These styles are task oriented and participatory on the part of the learner and if well used they facilitate understanding leading to a better outcome.

Palak and Walls (2009) conducted a mixed research to investigate whether teachers who frequently integrated technology and work at technology-rich schools shift their beliefs and practices towards a student-centered paradigm. The result showed that their practices did not change: neither student-centered nor teacher-centered beliefs are powerful predictors of practices. However, it was noted that teachers' attitude toward technology significantly predict teacher and student technology use, as well as the use of a variety of instructional strategies. Similarly Sang et al (2010) conducted a research focusing on the impact of Chinese student teachers' gender, constructivist teaching beliefs, teaching self-efficacy, computer self-efficacy, and computer attitudes on their prospective ICT

use. The findings confirmed the results of the study by Palak and Walls (2009) that the strongest predictor of future ICT use were teachers' attitudes towards it.

In addition to teachers' attitude influence, Sang et al. (2010) further indicate that pre-service teachers with highly constructivist teaching beliefs, have stronger intentions to integrate technology into their future teaching practices.

However, Cheng (2008) has shown that there is no resonance between teachers' beliefs and their actual practice while integrating ICT in the classroom teaching process. It is evident that if teachers attitude towards ICT integration in teaching process then they can easily and willingly provide an effective integration process of the technology. If teacher's perception towards ICT is negative, then ICT integration in teaching process would be not utilized. So far, it has not been established whether teachers' attitude influence ICT integration in public secondary schools in Vihiga sub-county. This study intends to fill the gap.

According to Chen (2008), professional training courses must be designed to identify beliefs about successful teaching, policies for enhanced teaching and learning as well as syllabus design for teaching purposes. Teachers who are positively committed to professional development activities gain knowledge of ICT integration and classroom technology organization (Tao & Ziomek, 2006).

More specifically, Teo et al (2008) investigated a quantitative study examining the possible relationship between Singaporean pre-service teachers' beliefs about teaching and technology use. Constructivist teaching beliefs were significantly and positively correlated with both constructivist ($r = 0.59$, $p < 0.001$) and

traditional ($r = 0.05$, $p < 0.01$) technology use. On the contrary traditional teaching beliefs were significantly and negatively correlated with constructivist technology use. The outcome of the study implies that Singaporean pre-service teachers are not adequately prepared to facilitate student construction of knowledge. Even though technology can foster interactive, self-directed learning and higher order thinking, technology integration is not the most effective way to improve learning. Through a combination of constructivist learning and technology, learners will be assisted in an active learning process and encouraged to organize information by making internal cognitive connections. ICT therefore, will not in itself prove effective in the classroom without teachers who possess knowledge of both the technology and how to use it to meet educational goals (Koc, 2005)

2.6 Teachers' workload and ICT integration in teaching

Many studies have revealed that the workload teachers have affected their acceptance of technology in classrooms. Teachers feel that integrating ICT in teaching is an additional load as it is not stream lined and documented in the curriculum. All teachers apart from classroom teaching process, they have several other outlined appointed duties to execute in school; for instance co-curricular activities management, head of departments, class teacher e.t.c.,

Samarawickrema & Stacey (2007) investigated factors related to the use of learning management system in a large multi-campus urban university in Australia. They adopted case study method and purposive sampling to select 22 participants used web-based methods to teach both on-and off-campus students

for the study. The findings of the research found that increased workload coupled with teaching with technology was critical to the participants of the study. Course maintenance, students' e-mails, the constant upgrades, learning of new skills and the continuous search of suitable strategies are some of the factors reported to contribute to increase of teachers' workload.

Neyland (2011) also conducted both quantitative and qualitative research on factors influencing the integration of online learning in high schools in Sydney. The research involved 26 ICT coordinators, its finding revealed that teachers' workload affected effective integration of ICT in implementation of the curriculum. One coordinator stated that increased workload of teachers was alarming; 'Asking them to take on board yet another task in an already overcrowded curriculum and extremely busy work day is pushing many teachers to the limit and in cases beyond' (p.11).

A research carried out in Malaysian Smart schools in 2010 revealed that many teachers felt time was an important factor in ICT integration. The problem of lack of time exists for teachers in many aspects of their works as it affects their ability to complete tasks (Becta, 2004). Ala Iwani (2005) agrees with Becta study on Malaysian Smart schools, in that lack of time affects application of ICT in Saudi Arabia because of teacher's busy schedule. He says that Saudi teachers, work from 7.00 am to 2.00 pm and the average number of lessons taught by teachers have limited number of hours during the day to work on integrating ICT in education.

Elly (1999) investigated on ICT integration in teaching and learning process and found out that ICT integration is likely to fail due to lack of time to prepare ICT teaching materials because of loaded curriculum. For ICT to be integrated in the teaching process, it does not necessarily have to be part of the curriculum but rather act as a tool to help in the teaching process. Elly (1999) also noted that converting teaching notes to ICT requires both time and skill. According to Guha (2000), teacher's lesson workload and time management was a major hindrance to the implementation of ICT in teaching.

Similary, Abuhmaid (2011) conducted study on the conduct and effectiveness of ICT training courses within the Jordanian education system. The findings were that teachers were already overloaded and the pressure from ICT training was an additional load. One teacher in the study stated that 'teachers are overloaded to learn, prepare and practice what they learn within ICT training.' Fullan (2003), states that for teachers to realize the aims of educational system as well as implementing new initiatives, it is necessary to lessen the workload of teachers. This implies that less teachers' workload will positively relate to enhanced integration of ICT in teaching of English language in public secondary schools in Vihiga sub county, Kenya.

2.7 Summary of literature review

This section has dealt with teacher-based factors influencing integration of ICT in teaching of English language. The study was carried in Vihiga Sub County and a similar study is bound to give varied findings because of ICT rapid changes. Teacher-based factors discussed included: gender, ICT competency, attitude and workload. Watson (2006), conducted a research on teachers' gender and integration of ICT in schools in Queensland State, his findings were that female teachers were integrating less ICT technology into teaching than male teachers. The finding concur with this study's findings on male teachers frequently integrating ICT in class than female teachers, but differs on grounds that it does not influence ICT integration when it comes to its application in teaching. Gorder (2008) indicates that the effective use of ICT is directly related to technological comfort levels and liberty to shape to teacher-perceived students needs. This present study agrees with Gorder (2008) findings that teachers' ICT competency relies on the technological comfort perceived and exhibited by the teacher. On teacher's attitude, a study by Rhoda and Gerald (2000) found that positive attitude towards ICT use is widely recognized as a necessary condition for effective ICT integration in teaching, a similar view held by Levin and Wadmany (2000) as well as this study's findings. On teacher's workload, Fullan (2003), concluded that for teachers to realize the aims of educational system as well as implementing new initiatives, it is necessary to lessen their workload. This study finding agrees with Fullan (2003) on time inadequacy due to high number of lesson allocatio

2.8 Theoretical framework

The study was guided by the Rand Change Agent Theory of Curriculum implementation (Berman & Mclaughlin, 1978). The Theory is found on the principle that effective projects are characterized by a process of mutual adaptation rather than uniform implementation, and that local factors dominate project outcomes. This principle underscores the essential contribution of teacher's perspectives as informant and guide to policy. It suggests that the challenge lies in understanding how policy can enable and facilitate effective practice (Milbrey, 1990).

Rand found that federal change agent policies had a major role in promoting local school districts to undertake projects that were strictly laid down by federal categorical guidelines. Local initiatives were generally consistent with what policy makers had in mind in framing broad program objectives. However, Rand analysis found that 'adoption' was only the beginning of the story; that adoption of a project consistent with federal goals did not ensure successful implementation. Further, Rand found that even successful implementation of project did not predict long-run continuation of projects initiated with federal funds.

Rand concluded that the consequences of the various federal policies examined primarily depend on local factors, not federal guidelines of funding levels. That there was need for change agents that could put the project into sustainable practice. Teachers are viewed to be change agents in school matters because they

are compatible with the aspects of district realities. The Rand Change Agent Theory correctly stresses the significance of the actions and choices of teachers in implementation process of educational program.

The theory puts emphasis that any curriculum innovation requires change agents, key among them being the teacher (Orstein and Hunkins, 2004). Teachers are agents of change; they enable implementation of the entire curriculum process.

Therefore, the adoption of ICT in teaching relies on teachers as change agents. Chen (2008) notes that teacher's integration of ICT in teaching is influenced by organizational factors, technological, attitudes towards technology and other factors.

The study adopted this theory because the teacher-based factors such as gender, ICT competency, attitude and workload are important towards effective integration of ICT in teaching of English language on which the study is based.

2.9 Conceptual framework

The conceptual framework is a diagrammatic presentation of the independent and dependent variables of the research study. The conceptual framework for a study forms the basis for the research package and provides conceptual tools to critically analyze and promote realistic approaches to the given variables.

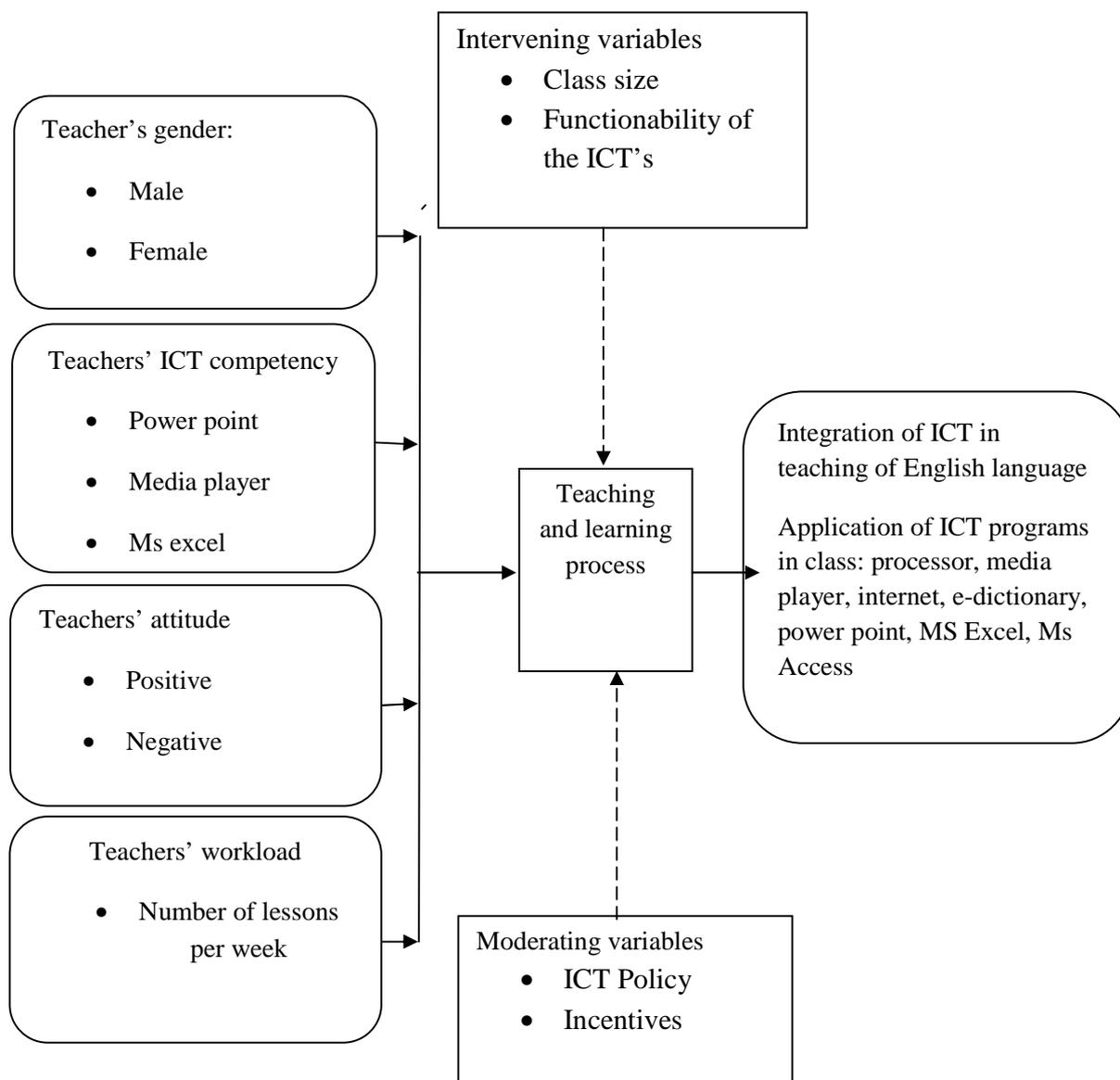


Figure 1: The relation between teacher-based factors and ICT integration

Teachers are significant players in the integration of ICT in the classroom learning, since they organize and implement designed curriculum in class; determining its methodology. The independent variables in the study framework include teachers' gender, ICT level of competency, attitude and workload. The dependent variable for the study is Information Communication Technology being integrated in the teaching of English language. Figure 1 summarizes the relationship between the teacher-based factors and the outcome of integrating ICT in teaching of English language.

The variables are inter-linked and each has an influence during the integration of ICT in teaching and learning process. There is a direct relationship between the teacher-based factors and the integration of ICT into teaching and learning which finally translates into improved performance in KCSE. The integration of ICT is dependent on the teacher-based factors such as gender, ICT level of competency, attitude and workload.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methodology the researcher used in carrying out the study. The chapter describes the research design, the target population, sample size and sampling procedures, research instruments, instruments' validity, reliability of instruments, data collection procedures, data analysis techniques and ethical considerations.

3.2 Research design

A research design is a plan for conducting a research. The study made use of descriptive survey design. Descriptive survey design was used to gather information on teacher-based factors influencing integration of ICT in teaching of English language in public secondary schools in Vihiga Sub County. According to Kothari (2004), the major purpose of descriptive survey design is to describe the state of affairs as it exists at present, using descriptive statistics appropriately to explain population parameters. It is based on assumption that the sample collected and studied shares characteristics with the whole population from where it is drawn. The design was selected to gather information from respondents using a number of data collection methods to gather data at particular point in time, that describe the nature of the existing conditions which was used in preliminary studies to allow researchers gather information, summarize, interpreted and present for purpose of clarification (Cohen, Manion & Marrison, 2000).

3.3 Target population

Target population refers to the specific group relevant to a particular case (Sapsford, 2007). Statistics revealed that the sub-county had 26 public secondary schools. This translated to a study population of 26 Principals, 26 English Head of Departments, and 57 TSC Teachers of English language, translating to target population of 109 participants (Vihiga sub-county Education office, 2015).

3.4 Sample size and sampling procedure

Sampling procedure makes it possible to draw valid inferences on the basis of careful observation of variables with a relatively small proportion of the population (Best & Khan, 2008). The sample size of this study was drawn from 26 public secondary schools within Vihiga sub-county. Purposive sampling technique was used to select public secondary schools integrating ICT in teaching of English language, head teachers and English Heads of Department in these schools. Random sampling technique was used to select teachers of English from the schools under study. This was to the convenience of the researcher for purposive sampling allows selection of sampling units subjectively in order to obtain a sample that is representative of the entire population (Nachmias & Nachmias, 2005). Kerligler (1970) suggests that 30% of a sample population is appropriate for the purpose of research. Therefore the sample size for the study comprised of 67 respondents: 13 Principals, 13 HoDs, and 41 Teachers of English language from 13 public ICT secondary schools in Vihiga sub-county.

Table 3.1 Sample Size Frame

Subject	Population	Sample	Percentage
Head teacher	26	13	50
HoDs	26	13	50
Teachers of English	52	41	78.85
Total	106	68	64.15

3.5 Research instruments for data collection

Research instruments are the methods used in conducting research. The research instruments used were questionnaire and interview schedule which were developed by the researcher. These instruments were suitable for descriptive survey design (Orodho, 2003). Kombo and Tromp (2006) states that a questionnaire is an instrument that gathers data over a large sample, saves time, upholds confidentiality and it seals interviewer bias. Two types of questionnaires were used: English Head of Department Questionnaire (HoDQ) and Teachers of English Questionnaire (TEQ).

Interview schedule used targeted Head teachers. HoDQ and TEQ were divided into two parts; on background information and teacher-based factors influencing integration of ICT in teaching. The head teachers' interview schedule focused on background information and teacher-based factors influencing integration of ICT in teaching of English language.

3.6 Validity of instruments

Validity implies the extent to which the data collected constitute accurate measurements of what is supposed to be measured (Sapsford, 2007). The data gathering instruments are validated by corresponding the scores against some outside criterion, which may be scores on data gathering instruments of acceptable validity, successful performance or behaviour. This study relied on face and content validity procedures to establish that the instruments measured what they were supposed to measure. To check on face and content validity, the researcher sought expert assistance from his supervisors at the University of Nairobi. This was aimed at getting rid of ambiguity, biasness, unclear laid down instructions or poorly structured test-items in the instruments. Triangulation was used also to reduce uncertainty in interpretation of results for the purpose of cross-checking the data collected.

3.7 Reliability of the instrument

Reliability of instrument is the degree of consistency that the instrument or procedure used for data collection demonstrates consistent results (Best & Khan, 2003). For this study, test-retest method was used to test the reliability of the questionnaires. The technique is good because it gives a time lapse between tests, and the researcher used it to prove instrument reliability. The questionnaire was administered by the researcher to 12 teachers and 3 English Heads of Department from 3 public schools purposely selected from a neighbouring sub county. The 3 schools were used to test the reliability of the instrument before carrying out the

study. The same questions were re-administered after two weeks and responses recorded. The scores of test-retest technique used in collection of data were correlated to get the coefficient of reliability of the instruments using Pearson's product moment correlation coefficient formulae i.e.

$$r_{xy} = \frac{N \sum xy - (\sum x)(\sum y)}{\sqrt{\{N \sum x^2 - (\sum x)^2\} \{N \sum y^2 - (\sum y)^2\}}}$$

Where

N- Number of respondents

X- Scores from the first test

Y- Scores from the second test

The reliability coefficient (r) of the study was found to be 0.820. Orodho (2004) indicates that when the value of r lies between +1 and -1, the closer the value to +1 the stronger the congruence, implying that there is a high degree of reliability. The researcher found that the instruments were reliable enough to be used in the study.

3.8 Data collection procedures

The researcher paid a visit to the schools with an introduction letter to the Principals seeking their consent on undertaking the intended study within the schools. The researcher then organized with the respective respondents when to administer the questionnaire and interview schedule. Questionnaires were administered using drop and pick method minimizing chances of data

manipulation while interview schedule for Head teachers was conducted with prior arrangement with respondents.

3.9 Data analysis techniques

Data analysis techniques deal with the process of coding, data entry and data analysis (Mugenda, M & Mugenda, G., 2003). Qualitative and quantitative data were collected concerning teacher-based factors influencing integration of ICT in teaching of English language. Quantitative data were analyzed using both descriptive and inferential statistics then coded and entered into computer for analysis using the Statistical Package for Social Sciences (SPSS). The data were summarized using percentages and frequency distribution tables. Qualitative data were analyzed by entering information from respondents and arranging them in themes related to research objectives and then finally analyzed using descriptive statistics.

3.10 Ethical considerations

Ethical considerations in research involve outlining the content of research and what was required of participants, how informed consent was obtained and confidentiality ensured. A research permit was obtained from the NACOSTI through University of Nairobi. The permit was then presented to both Vihiga sub county Director of Education and sub county Commissioner requesting for permission to carry out the research. The researcher undertook to keep private any information given by the respondents. The nature and the purpose of the research were explained to the respondents by the researcher.

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND PRESENTATION

4.1 Introduction

The chapter deals with data analysis, interpretation and presentation based on research objectives. The purpose of this study was to investigate teacher-based factors influencing integration of Information Communication Technology in teaching of English language in public secondary schools. The chapter is organized into the following sections; questionnaire return rate, demographic information, and findings from the research questions based on the study objectives. The data were analyzed using both the descriptive and inferential statistics and findings were presented in terms of tables and figures.

4.2 Questionnaire return rate

The questionnaires were administered to 13 English Heads of Department and 41 teachers of English language from the sampled 13 schools. A total of 13 English Heads of Department returned the questionnaires representing 100 percent return rate. Forty teachers of English language responded to the questionnaire representing 97 percent return rate. The total questionnaire return rate was 96.3 percent. According to Kumar (2005) a questionnaire return rate above 50 percent is considered a good response. This return rate of 96.3% was considered valid and excellent for analysis.

4.3 Demographic information

The researcher sought to establish the personal characteristics of the head teachers, English Heads of Department and teachers of English who took part in the study. This demographic information focused on several aspects of the respondents namely; gender, age bracket, school type, experience and professional qualifications. These aspects were considered important in comprehending the respondents' responses in view of integrating ICT in teaching English language. Frequencies and percentages were used in describing the demographic data and the results presented in tables.

4.3.1 Type of school

The study sought to know distribution of category of schools in the sample. This was important in establishing the relationship that exists between the type of school and teacher-based factors influencing integration of ICT in teaching English language. School characteristics vary to some level and this influence the process of integrating ICT in teaching process. The results are shown in table 4.1

Table 4.1

Type of school

Type of School	Frequency	Percentage %
Girls boarding	3	23.08
Boys boarding	2	15.39
Mixed day school	6	46.15
Mixed boarding and day	2	15.39
Total	13	100

4.3.2 School policy on ICT integration

The study sought to find out whether the schools under study had ICT policy in school and if at all it was in operation. This was important because it was through the availability of such an ICT policy that teachers would have a chance to develop their knowledge and skills in ICT by undergoing capacity building courses. More so, the ICT policy was to enhance smooth distribution and allocation of ICT lessons on the school's master teaching time table. The findings were recorded in Table 4.2

Table 4.2

School ICT policy

School ICT policy	Frequency	Percent
Available in schools	3	23.07
Not available in schools	10	76.93
Total	13	100

The findings revealed that out 13 schools under study 23.08 % had developed school-based policies and regulations on ICT integration in teaching and learning, while 76.92% did not have. This was a revelation on some of the causes of low ICT integration into teaching and learning in public secondary schools in Vihiga Sub County.

4.3.3 Head teachers' gender

The study sought to find out the gender disparities of the respondents. This was important to assist the researcher to understand the respondents' input in integration process of ICT in teaching of English language. The findings are presented in Table 4.3

Table 4.3

Gender of head teachers

Gender	Frequency	Percentage %
Male	8	61.53
Female	5	38.47
Total	13	100.00

The analysis of head teacher's gender distribution revealed that there were more male head teachers (61.53%) than females (38.46%). The explanation towards these finding could be there were more mixed day schools (6) all headed by male head teachers and 2 boys boarding schools, both headed by male head teachers. Girl's schools, which are normally headed by female, were fewer.

4.4.4 Teachers' of English gender and age

The study sought to find out the gender and age of teachers in establishing if it has influence to integration of ICT in teaching of English language in secondary schools. The findings are represented in Table 4.4

Table 4.4**Demographic characteristics of teachers of English**

Gender	Frequency	Percentage %
Male	16	39.02
Female	25	60.98
Total	41	100

Age in years	Frequency	Percentage %
20-30	13	31.71
31-40	14	34.15
41-50	10	24.39
51 and above	04	9.76
Total	41	100

From the findings, it was revealed that majority of teachers of English in public secondary schools in Vihiga county were females representing 60.98%, while 39.02% were male. This could imply female prefer English subject to other subjects compared to male teachers. It is also evident that majority of teachers of English in schools with ICT equipment were youthful, for those aged 40 years and below had 65.86% against those above 41 years who had 34.14%. This implies that the teaching force in schools under study comprise of many teachers who have been trained in ICT era and possess skills of integrating ICT in teaching of

English language. This statement is supported by Kinyanjui (1995) that the caliber of teachers in schools or school system forms an important variable which can have tremendous impact on school outcomes.

4.4.5 Teachers of English academic qualifications

The study sought to find out the influence of teacher’s academic status on integration of ICT in their teaching, and the extent to which the teacher embraces ICT in teaching. Table 4.5 presents the findings on academic levels of the teachers sampled for the study.

Table 4.5

Teachers of English academic qualification

Qualification	Frequency	Percentage
Diploma	3	7.32
Bachelors degree	34	82.93
Masters degree	4	9.76
Total	41	100

From the table 4.5 it is evident that majority of teachers hold bachelors degree accounting to (82.93%) followed by those with Masters Degree (9.76%). The finding revealed that all the teachers had the basic academic requirement to teach in secondary school, as per TSC employment regulations for secondary teachers.

4.4.6 Teachers of English teaching experience

The study sought to find out how long the teachers under study had been in service. This was important to establish whether they had required experience in their profession. The findings are tabulated in Table 4.6

Table 4.6

Teachers of English teaching experience

Teaching experience	Frequency	Percentage
1-5 yrs	17	41.46
6-10yrs	7	17.07
11-15yrs	5	12.20
16-20yrs	9	22.00
21-25yrs	2	4.88
Above 26 yrs	1	2.44
Total	41	100

From the findings it was revealed that most of the teachers (41.46%) had served for less than five years while those who had served for a longer period of beyond twenty six years were 2.44%. These findings indicate that most teachers of English in Vihiga sub-county had an average length in service. This could be that it could some of the teachers of English are deployed in other sectors of Ministry of Education as some opt for other jobs on the job market.

4.4.7 Heads of department by gender

The researcher sought to find out the distribution of English Heads of Department by gender. This was important for him to identify if it had any influence on ICT integration in teaching process. The findings were as indicated in table 4.7;

Table 4.7

HoDs gender distribution

Gender	Frequency	Percentage
Male	4	30.77
Female	9	69.23
Total	13	100

From the findings it was revealed that majority of English Heads of Department (69.23%) were female while the minority (30.77%) were male. This could be explained by the assumption feeling of more women undertaking languages at the pre-service training compared to male, hence having more female teachers of English than male in the field.

4.4.8 Heads of department academic qualifications

The study sought to find out the academic qualification of English Heads of Department. This was vital for understanding their ability and knowledge based in leading the department. The findings are tabulated in Table 4.8

Table 4.8

Heads of department academic qualifications

Qualification	Frequency	Percentage
Diploma	1	7.69
Bachelor degree	10	76.92
Master degree	2	15.38
Total	13	100

The findings reveal that majority of English department heads (76.92%) were holders of bachelors degree, followed by Master's (15.38%) then diploma holders with 7.69%. This revealed that English language in the schools under study was lead by qualified personnel, with academic ability to integrate ICT in the department.

4.4 Schools' KCSE result averaged in the past 4 years

The study also sought to established performance of English language in ICT schools under study using KCSE result for the last 4 years. This was important because findings could reveal the influence of ICT integration as in Table 4.9

Table 4.9

KCSE Performance for the past 4 years

Teachers opinions	Frequency	Percentage %
Improvement	31	75.61
No Improvement	10	24.39
Total	41	100

From the revelation, it can be noted that majority of respondents (75.61%) acknowledged that ICT integration in implementation of IEC had led to gradual improvement in KCSE English language results. 24.39% of the respondent felt that ICT had not contributed to performance basing on fact that some schools which did not have ICT equipment performed better than those which had.

4.5 Teachers gender and ICT integration in teaching English language

The study sought to established influence of gender on integration of ICT in teaching process which was the first objective of the study. This was to establish extent to which gender affects ICT integration. The respondents were to indicate the choice by ticking appropriately as validated in table 4.10

Key: SA-Strongly Agree, A-Agree, D-Disagree, U-Uncertain, SD-Strongly Disagree

Table 4.10

Teachers' gender and ICT integration

Statement	SD	D	U	A	SA
	%	%	%	%	%
Males teachers frequently use ICT in class	05.4	24.8	12.2	31.7	29.3
Computer-phobia is higher in female teachers	19.5	17.1	12.2	43.9	07.3
Male teachers are at ease with ICT's	14.6	04.9	14.6	43.9	21.9
Male teachers use variety of ICT applications	07.3	19.5	07.3	51.2	12.2

From the findings it was revealed that male teachers (31.7%) slightly use ICT in class more than to female teachers, for 24.8% disagreed. This implies that gender does not influence ICT integration in teaching process. The study revealed that computer phobia was higher in female (43.9%) as same response of 43.9% indicated that male teachers work with a lot of ease with computers and other ICT devices. The study also revealed that male teachers (51.2) do apply variety of ICT applications in their teaching than female (19.5%). Gender difference and use of ICT has been reported in several studies. Research studies reveal that male teachers use more ICT in teaching and learning process than their female counterparts (Kay, 2006). Research conducted on teachers integration of ICT in

schools in Queensland state from 925 teachers revealed that female teachers were integrating technology into their teaching less than the male (Watson, 2006).

4.5.1 HoDs response on teachers' gender influence on ICT integration

The researcher sought to find out from the Hood's influence of gender on ICT integration. The findings were as shown in the figure 4.11

Table 4.11

HoDs Response on gender with ICT

Gender Influence ICT	Frequency	Percentage
Yes	2	23.08
No	13	76.92
Total	41	100

The results reveal that majority of Heads of Department (76.92%) felt gender does not influence integration of ICT implementation of the English curriculum, while 23.08% of the respondents felt it does affect ICT integration. This could be due to many female respondents in the study that were Hood's. In research conducted by Kay (2006), did find out that male teachers had relatively higher levels of ICT attitude and ability before implementation, but there was no difference between males and females regarding ICT attitude and ability after the implementation of the technology. He claims that quality preparation on technology can help lessen gender inequalities. The study seeks to establish

whether teachers' gender affects ICT integration in the implementation of Integrated English Curriculum.

4.5.2 Head teachers' response on teachers of English gender

The researcher sought to find out from the Hood's influence of gender on ICT integration. The findings were as shown in the table 4.12

Table 4.12

Head teachers' response on teachers of English gender

Gender Influence ICT	Frequency	Percentage
Yes	2	23.08
No	13	76.92
Total	41	100

From findings majority of respondents (77 %) indicated that gender did not influence integration of ICT in teaching of English language. This revealed that the integration of ICT in teaching does not depend on gender but individual initiative a long other factors.

4.6 Teachers of English ICT competency level

The research sought to establish the level of competence teachers of English inhibited in ICT integration process as they implemented the Integrated English Curriculum which was the second objective of the study. Under this section, various aspects were researched on: pre-service training, ICT applications covered

during pre-service training, and ICT applications that require training or further training. Table 4.13 gives the findings

Table 4.13

Teachers of English ICT competency level

Preserves Training	Frequency	Percentage %
Yes	18	43.90
No	21	56.10
Total	41	100

The above findings reveal that majority of teachers of English (56.10%) in the schools under study received no training or inadequate training on how to integrate ICT in teaching during their pre-service studies. 43.90% of the respondents acknowledged to have received training on ICT integration in teaching. From cross examination of the questionnaire part response visa Vis age of respondent, it was noted that majority of those who stated they received ICT training during pre-service training were young. This reveals that ICT in the recent past has been emphasized in all academic training institution unlike in the rear past.

On ICT applications covered during pre-service training, the findings were power point (32.43%), Ms Word (29.73%), media player (8.11%), Ms Excel (8.11%), internet (8.11%), e-dictionary (2.70%), spread sheet (2.70%), MS Access (2.70%).

Table 4.14

ICT applications covered during pre-service

ICT applications	Frequency	Percentage
Ms word	11	29.73
Internet	3	8.11
Power point	12	32.43
Ms excel	3	8.11
Ms access	1	2.70
Media player	3	8.11
Spread sheet	3	8.11
e-dictionary	1	2.70
Total	37	100

The findings reveal that there was inadequate coverage of ICT applications during pre-service training. This could be due to lack of firm ICT policy in our higher learning institutions that could see graduates graduate with sharp ICT knowledge, skills and desired attitude towards ICT integration in their work as trained teachers.

4.6.1 HoDs response on teachers' competency level and ICT integration

The research sought to find out the influence of teachers' competence in ICT with view on how it influences integration of ICT in teaching English language. This was to understand the level of competency the teachers of English inhibited in ICT. The findings are tabulated in table 4.15

Table 4.14

HoDs response on teachers' ICT Competency level

ICT applications	Frequency	Percentage %
Ms word	11	29.73
Internet	3	8.11
Power point	12	32.43
Ms excel	3	8.11
Ms access	1	2.70
Media player	3	8.11
Spread sheet	3	8.11
e-dictionary	1	2.70

The findings reveals that majority (below 40%) of teachers of English have inadequate knowledge and skills aptly required in effective integration of ICT. This is revealed by the low posted percentages from respondents per given ICT

application with the highest (32.43%) for power point and 2.70% for MS Access and e-dictionary.

There are various studies carried out on influence of teachers' self efficacy to ICT integration in learning. Paralta and Costa (2007) conducted a study on 20 teachers' competence and confidence regarding the use of ICT in classroom. They found out that in Italy teachers' technical competence with technology is a factor of improving higher confidence in the use of ICT. Similarly, in a survey conducted by Becta (2004), approximately 21% of teachers who were surveyed, reported that lack of confidence influence their use of ICT's in their classrooms. (Becta, 2007, P.7).

4.6.2 Head teachers' response on teachers' ICT competency

The study sought to find out the influence of teachers' competence in ICT with view on how it influences integration of ICT in teaching English language. This was to understand the level of competency the teachers of English inhibited in ICT. The findings are tabulated in Table 4.15

Table 4.15
Head teachers' response on teachers' ICT competency level

Teacher ICT competency	Frequency	Percentage
Above expectation	04	30.77
Below expectation	08	69.23
Total	13	100

The findings reveal that majority (69%) of teachers of English were having inadequate skills in matters to do with integration of ICT in teaching process. This could be due to lack of proper training during pre-service training and also because of no capacity building courses or workshops.

4.7 Teachers of English attitude

The study sought to establish how teachers of English attitude influences integration of ICT in teaching of English language. This was important in that a positive attitude would make teachers embrace ICT integration while a negative one will lead to dismissal of the innovation in teaching. The teachers under study were required to indicate using a tick, whether their attitude influenced integration of ICT in curriculum implementation. The responses were tabulated in Table 4.16

Key: SA-Strongly Agree, A-Agree, D-Disagree, U-Uncertain SD-Strongly Disagree

Table 4.16
The influence of teacher's attitude and ICT integration

Teachers opinions	SA	A	U	D	SD
	%	%	%	%	%
Attitude influences ICT integration	47.5	45.0	00,0	02.5	5.0
ICT integration is quite tasking	17.1	70.7	12.2	00.0	00.0
ICT integration improves performance	25.0	65.0	02.5	07.5	00.0
Job opportunities are endangered with ICT integration	2.5	05.0	42.5	15.0	35.0

The table shows that majority of respondents strongly agree (45.5%) and that attitude greatly influences integration of ICT in the teaching process. Majority of respondents agreed (70.7%) that integration of ICT in teaching process was quite tasking. This could be in view of time needed in planning and presentation of ICT designed lessons, owing to the fact that many teachers were overloaded with other duties and lessons.

More so, majority of respondents (65.0%) agreed that integration of ICT in teaching process improves performance. This finding could be in view of the many benefits ICT brings to the classroom situation, where monotony of lecture method is broken and variety created which captures and sustains students' interest. Majority of respondents (42.5%) disagreed on ICT integration into teaching process as a danger to teaching job opportunities. This could be in light of teacher's involvement in the process of integration, for it's the teacher to be available in manipulation of the ICT's.

Teachers are perceived to be active agents in the process of change and implementation of new ideas as their beliefs and attitudes may support or impede the success of any education reform such as utilization of an innovative technology (Levin, T., & Wadmany, R., 2006).

Teachers' skills and attitude count for a great deal more in curriculum renewal than do changes in content and method (Law, 2008). Attitude towards ICT influences teachers' acceptance of the usefulness of technology, and also influence whether teachers integrate ICT into their classroom (Huang, 2005).

4.7.1 HoDs response on teachers' attitude and ICT integration

The study sought to understand the influence of teachers' attitude towards integration of ICT in their teaching process. This was important for justifying the extent to which they use ICT. The findings were as indicated in Table 4.17.

Table 4.17

HoDs opinion on influence of teachers' attitude and ICT integration

Teacher's attitude	Frequency	Percentage
Teachers attitude affects		
ICT integration	11	84.62
Teachers attitude does		
Not affect it integration	2	15.38
Total	13	100

From the findings, it was revealed that majority of respondents (84.62%) agreed that attitude highly influenced ICT integration in teaching process while 15.38% felt that it does not affect ICT integration process. Those that agreed explained by stating that teachers with a positive attitude readily integrated their lessons with ICT unlike those that held a negative attitude. The findings confirmed the results of the study by Palak and Walls (2009) that the strongest predictor of future ICT use were teachers' attitudes towards it.

In addition to teachers' attitude influence, Sang et al. (2010) further indicate that pre-service teachers with highly constructivist teaching beliefs, have stronger intentions to integrate technology into their future teaching practices.

However, Cheng's (2008) findings reveal that there is no resonance between teachers' beliefs and their actual practice while integrating ICT in the classroom teaching process. It is evident that if teachers attitude towards ICT integration in teaching process then they can easily and willingly provide an effective integration process of the technology.

4.7.2 Head teachers' response on teachers' attitude and ICT integration

The study sought to understand the influence of teachers' attitude towards integration of ICT in their teaching process. This was important for justifying the extent to which they use ICT. The findings were as indicated in table 4.18

Table 4.18

Head teachers' response on teachers' attitude and ICT integration

Teacher's attitude	Frequency	Percentage %
Positive attitude	10	76.92
Negative attitude	03	23.08
Total	13	100

The table reveals teacher's attitude has a direct influence on integration of ICT in teaching of English language. Majority (76.92%) of respondents agreed that teachers' attitude influences use of ICT in teaching process. That a positive

attitude leads to frequent and effective use of ICT while a negative attitude undermined integration process of ICT in teaching English language.

4.8 Teachers of English workload

The study sought to establish the influence of teacher’s workload on integration of ICT in the teaching process. This was important so as to establish the number of lessons a teacher had in a week and how they influenced integration of ICT in his or her teaching of English language. The findings were as indicated in Table 4.19

Table 4.19

Teacher’s workload and ICT integration

Weekly no. of lessons	Frequency	Percentage %
Below 20	2	4.88
21-24	8	19.51
25-28	29	70.73
Above 29	02	4.88
Total	41	100

From the findings majority of respondents (70.73%) had between 25-28 lessons per week, while only 4.88% of respondents had less than 20 lessons per week. The ones with less than 20 lessons per week could be possibly Heads of Department or senior teachers. The study established that 95.12% of teachers under study stated that teachers’ workload affected ICT integration in the teaching process. It was found out that the more lessons a teacher had per day the lesser the

time to prepare and integrate ICT in class, while the lesser the lessons the more the time available to plan and integrate ICT in teaching. Many studies have revealed that the workload teachers have affected their acceptance of technology in classrooms. Samarawickrema and Stacey (2007) investigated factors related to use of learning management system in a large multi-campus urban university in Australia. Their study found out that teachers feel that integrating ICT in teaching is an additional load as it is not stream lined and documented in the curriculum.

4.8.1 HoDs response on teachers’ workload and ICT integration

The study sought to find out the effect of teachers’ workload on ICT integration process in teaching. This was important in establishing the extent to which teacher’s lesson load determined the integration of ICT in teaching of English language. The findings are shown in Table 4.20

Table 4.20

HoDs response on teachers’ workload and ICT Integration

Teachers’ Workload	Frequency	Percentage
Workload influences ICT Integration.	10	76.92
Workload does not influence ICT integration	3	23.08
Total	13	100

From the findings it was evident that teachers workload affect integration of ICT in implementation of English curriculum either positively or negatively. Majority

of respondents (76.92%) viewed teachers' lesson-load to be negatively influencing ICT integration, while 23.08% felt teachers' lesson-load did not affect ICT integration process in IEC implementation. With high workload, teachers lacked adequate time to plan, prepare and disseminate ICT materials in class, while on the other hand lower workload led teachers to have time of planning and presetting effectively ICT integrated content.

A research carried out in Malaysian Smart schools in 2010 revealed that many teachers felt time was an important factor in ICT integration. The problem of lack of time exists for teachers in many aspects of their works as it affects their ability to complete tasks (Becta, 2004). Ala Iwani (2005) agrees with Becta study on Malaysian Smart schools, in that lack of time affects application of ICT in Saudi Arabia because of teacher's busy schedule.

4.8.2 Head teachers' responses on teachers' workload and ICT integration

The study sought to find out the effect of teachers' workload on ICT integration process in teaching. This was important basing on the time needed for effective ICT integration. Table 4.21 gives the findings;

Table 4.21

Head teacher's response on teachers' workload and ICT integration

Teachers' Workload	Frequency	Percentage
Influences integration of ICT in teaching English.	11	84.61
Does not influence ICT integration in teaching.	2	15.39
Total	13	100

The findings reveal that majority (84.61%) of respondents indicated that teachers workload influenced integration of ICT in teaching of English language. Time allocated per lesson and high number of lesson overload was a major factor of consideration, as many felt ICT integration needed extra time for preparation and presentation.

4.9 Relationship between dependent and independent variables using Regression

In the study the independent variables in the study framework include teachers' gender, ICT competence, attitude and workload. The dependent variable for the study was Information Communication Technology being integrated in the implementation of Integrated English Curriculum. The conceptual framework had

hypothesizes that there is a relationship between the teacher-based factors and the outcome of integrating ICT in implementation of Integrated English Curriculum.

The variables are inter-linked and each has an influence during the integration of ICT in teaching and learning process. There is a direct relationship between the teacher-based factors and the integration of ICT into teaching and learning which finally translates into improved performance in KCSE. The integration of ICT is dependent on the teacher-based factors such as gender, self-competent, attitude and workload. In Table 4.20 the SPSS regression model summary shows that the four proposed factors in the conceptual framework which include teachers' gender, ICT competency level, attitudes and workload account to 73.0% ICT integration in teaching of English language.

Note that the square of the correlation coefficient is called the Coefficient of determination (R^2), and indicates the percentage of the variation in one variable explained by changes in the other which is $r=0.987$, $R^2=0.73$ in that 73.0% of the variation in X is explained by changes in Y (and vice versa). The other 27.0% of the variation is currently unexplained, and will remain so until we have the opportunity to build multivariate casual models surrounding these variables.

Multiple Regression Statistics

Table 4.22

Model Summary Regression	
<i>Regression Statistics</i>	
Multiple R	0.98776
R Square	0.86.900
Adjusted R Square	0.730000
Standard Error	0.33334
Observations	41

Table 4.23

Test of joint regressors' significance- ANOVA

	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	39	6768.0	890.07	34.90	0.000
Residual	2	3607.0	432.09		
Total	41				

The model ANOVA tested whether the results are significant for the further analysis and findings of ANOVA was $P=0.000$, in the study the p value was set at 0.05 of the significance. The model ANOVA indicate that the sampling was significant for the study $P<0.05$. The more variance that is accounted for by the regression model the closer the data points will fall to the fitted regression line.

Table 4.24**Coefficient for Regression Model for Contribution of each factor**

Model	Coefficients ^a				T	Sig.
	Unstandardized		Standardized			
	B	Std. Error	Beta			
	(Constant)					
Gender	.890	.301	.800	3.890	.000	
Self-Competence	.772	.123	.708	3.300	.030	
Workload	.654	.234	.680	2.000	.022	
Attitude	.809	.234	.789	2.800	.016	

From the findings in the regression it can be concluded that integration of ICT in teaching of English language is affected by several teacher-based factors. Teachers' gender in relation to ICT integration accounted for 0.890 at 95% confidence interval followed by the attitudes of the teachers towards integration of ICT accounting for 0.809 at 95% confidence interval, then teachers' ICT competency level with 0.772 at 95% confidence interval and teachers' workload accounting to 0.654 at 95% confidence interval. The framework establishes the all the factors in the conceptual framework were significant at $P < 0.05$. Therefore, it is evident that teacher-based factors influence integration of ICT in teaching indicating that for effective and meaningful integration of ICT in teaching, there is need for addressing teacher related factors that hinder the integration process.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The chapter provides a brief summary of the study conclusions, recommendations and suggestions for further studies.

5.2 Summary of findings of the study

The purpose of this study was to establish teacher-based factors that influence integration ICT in teaching of English language in public secondary schools in Vihiga sub-county, Kenya. To establish this, the researcher sought to determine the teachers' gender, attitude, ICT competency level, and workload as key factors in response to research questions. The study was guided by the following objectives: To determine the influence of teachers' gender on integration of ICT in teaching of English language in public secondary schools in Vihiga sub-county. To determine teachers' level of ICT competency in integration of ICT in teaching of English language. To establish the influence of teachers' attitude toward integration of ICT in teaching of English. To establish the influence of teachers' work load on integration of ICT in teaching of English language.

The study adopted a descriptive survey design targeting a sample population of 67 participants who were sought using purposive and random sampling techniques. Qualitative and quantitative data analysis and data interpretation revealed that teachers' gender with 0.890 at 95% confidence interval was found to have no significant influence on integration of ICT in teaching of English language.

Teacher's attitude accounted for 0.809 at 95% confidence interval, highly influence ICT integration in teaching. That a positive attitude towards ICT integration led to its effective and meaningful adoption in teaching unlike a negative attitude. On teachers' ICT competency level, which accounted for 0.772 at 95% confidence interval, revealed that majority of teachers lacked adequate ICT knowledge and skills to effectively integrate ICT in their teaching process.

The study also revealed that teachers workload with 0.654 at 95% confidence interval, influenced ICT integration. The high number of lesson load assigned to a teacher, negatively affected integration of ICT. From the stastical analysis carried out, it was found that teachers' gender, ICT competency level, attitude and work load were not the only factors determining the integration of ICT in teaching of English language in Vihiga sub-county.

5.3 Conclusion

From the findings of the study, the researcher came up with the following conclusions; that effective integration of ICT in teaching of English language improves performance in examinations, hence achieving the set English language objectives and goals. The attitude towards ICT was a major factor towards effective ICT integration for it marks the extent to which the teacher utilizes ICT in teaching process. Further training in ICT related courses for capacity building equips teachers of English with appropriate skills on integration of ICT against their prevailing workload.

5.4 Recommendations

From the findings of this study the researcher came up with the following recommendations, meant to address specific entities to whom may find them relevant for adoption:

- i. Education policy makers should ensure that pre-service training in teacher training colleges and universities impart adequate knowledge, skills and attitude in teacher trainees for their ease in ICT integration after training.
- ii. Kenya Institute of Curriculum Development should incorporate the views of teachers before mapping down an innovation, such as ICT integration in curriculum implementation.
- iii. There is need for Teachers Service Commission to employ more teachers. This will reduce the teachers' lesson load, paving way for adequate time of planning, preparing, and executing ICT integrated lessons in class.
- iv. The Ministry of Education should organize and sponsor teachers for capacity building courses in ICT integration. This will equip the in-service teachers with appropriate skill and knowhow on how best integrate ICT in their subject area.
- v. The administration of ICT-Based schools should ensure their school has an ICT Policy that is in place and fully operational. This will enhance smooth and systematic process of integrating ICT the teaching process.

5.5 Suggestions for further studies

Based on the delimitations of this study, the researcher suggests further related research in the following areas:

- i. The study's locale was in Vihiga sub-county which might have unique characteristics, the researcher suggests a similar study be undertaken in other public secondary schools across the country.
- ii. The study targeted head teachers, HoDs, and teachers of English leaving out students. A similar study should be carried out focusing on students too, for students are the immediate consumers of any curriculum innovation or renovation.
- iii. The study purposely targeted public schools with ICT equipment leaving out those without ICTs, a similar study should be done majorly focusing on English language teaching in schools without ICT equipment.
- iv. The study focused on teacher-based factors namely gender, ICT self-efficacy, attitude, and work load. Further studies should be carried out on other factors influencing ICT integration in public secondary schools.

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APPENDICES

APPENDIX A: Transmittal letter

University of Nairobi

P.O.Box 30197

NAIROBI

27th July, 2015

The respondents,

Dear Sir/Madam,

REF: PARTICIPATION IN RESEARCH

I am a post graduate student at the University of Nairobi, pursuing a Master of Education degree in curriculum studies. Aim conducting research on **‘Teacher-based factors influencing integration of ICT in teaching of English language in public secondary schools in Vihiga Sub-County, Kenya’** your school has been selected to take part in the study. I am therefore humbly requesting you to assist me collect the required information. The information collected is strictly meant for the study and your school’s identity will be treated with a lot of confidentiality. Please give your responses as per the questionnaire or interview interview schedule as guided.

Thank you.

Yours faithfully,

Kadiri Benard M.

APPENDIX B: Teachers of English questionnaire

The questionnaire is for the purpose of carrying out an educational research on teacher-based factors influencing integration of ICT in teaching of English language. Therefore you are requested to respond to the questions below indicating your honest response by putting a **tick** (✓) against your answer that indicates your correct details. The data obtained is strictly for research purpose and will be treated with a lot of confidentiality.

Section I: Background information

1 What is your gender? Male Female

2 Indicate your age bracket

i) 20-30 years ii). 31-40 years

iii) 41-50 years iv). 51 years and above.

3 What type is your school?

i) Girls a) Boarding b) Day

ii) Boys a) Boarding b) Day

iii) Mixed a) Boarding b) Day

Section II: Teachers qualification and Experience

4 Indicate your qualification

Certificate Diploma Bachelors Degree

Masters Degree PhD

5 Indicate your teaching Experience

1-5 years 6-10 years 11-15 years
16-20 years 21-25 years above 26 years

6 i). Do you believe qualification influences integration of ICT in teaching of English language?

Yes No

ii) Explain briefly.....

7 i). Do you believe experience influences integration of ICT in teaching of English language?

Yes No

ii). Explain briefly.....

8 .i). During pre-service training, did you receive training on how to integrate ICT in teaching of English language?

Yes No

ii). Explain briefly.....

.....

Section III: Attitude

Please respond to the statement below on how far you agree or disagree by **ticking** (√) in the appropriate space in the table. Basing on influence of integrating ICT in teaching English language in public secondary schools in Vihiga Sub County.

Strong Agree - SA Agree - A Disagree- D Uncertain- U Strong Disagree- SD

	Statement	SA	A	D	U	SA	
a	Attitude influences the integration of ICT in teaching of English language						
b	The integration of ICT in teaching of English language is quite tasking and involving.						
c	Integrating ICT affects teaching of English language positively						
d	Job opportunities as teachers of English are endangered by integration of ICT in teaching English language						

10. In your opinion, briefly explain how the integration of ICT influence teaching of English language.....

.....

Section IV. Teachers' ICT competency level

10. in the table below guided by the key given are computer programs and components, show using a **tick** (✓) appropriately, how competent you are on use of ICT's in teaching of English language;

Key

Very Competent **VC** Competent **C** Undecided **U**
 Incompetent **I** Very Incompetent **VI**

	Program/Component	VC	C	I	VI
A	Word processor e.g. Microsoft Word				
B	Spreadsheets e.g. Microsoft Excel				
C	Databases e.g. Microsoft Access				
D	Microsoft Power Point				
E	Adobe PageMaker				
F	Media Player				
G	Computer Games				
H	Internet				
I	Other programs (Please specify if any.....)				

Section V: Gender,

11. Please show how far you agree or disagree with the statement below by **ticking** (✓) in the table below against the given initials- SA, A, D, U, and SD.

Strong Agree – SA, Agree – A, Disagree- D, Uncertain- U, Strong Disagree- SD

	Statement	SA	A	D	U	SD
a	Male teachers of English do frequently use ICT in teaching of English language compared to female teachers.					
b	Computer-phobia is higher in female than male teachers of English.					
c	Male teachers of English are likely to make use of computer technology on weekends, at home and during school holidays than female teachers.					
d	Male teachers of English easily manipulate computer gadgets and equipment than female teachers in teaching process.					
e	Out of the many computer programs and applications available for educational purposes, male teachers of English tend to make use of variety of these programs/ application than the female teachers					

Section VI: Teachers' workload

Please respond to the following questions to the best of your understanding on influence of teachers' workload towards integration ICT in teaching of English language.

i. What is your weekly number of lessons?

Below 20 21-25

25-28 29 and above

ii. Are you comfortable with the number of lessons stated above?

Yes No

Briefly explain.....

iii. Apart from weekly lessons allocated to teach, state if any, other assigned responsibilities given within school set up.....

.....

iv. Does teachers' workload influence integration of ICT in teaching of English language?

Yes No

Briefly explain your take.....

.....

v. How best then, can integration of ICT be implemented in teaching of English language by teachers against their working load?.....

.....

APPENDIX C: English Head of Department Questionnaire

The questionnaire is for the purpose of carrying out research on teacher-based factors influencing integration of ICT in teaching of English language. Do indicate your honest response by use of a **tick** (✓) where applicable in the blank spaces. The collected information will be treated with high degree of confidentiality.

Section I: Background information

1. Please indicate your gender Male Female

2. What is your highest professional qualification?

Certificate Diploma

Degree Masters

Others, Specify.....

3. For how long have you served as the English language Head of Department?

Less than 5 years 6-10 years

11-15 years above 15 years

4. a).Does your school have ICT implementation policy in place?

Yes No

b). If yes, briefly explain.....

.....

Section II: Teachers of English

5. a) Do teachers of English in your school integrate ICT in teaching of English language? Yes No

b) If yes, which area (s) of English language is implemented using ICT? your school?

Grammar Oral literature Poetry
Imaginative writing Subscribed set texts

6. a). Do the teachers of English attend refresher trainings on integration of ICT in their teaching process? Yes No

b). If yes, briefly explain.....

8. a) Does teacher's gender influence integration of ICT in teaching of English Language? Yes No

b). If yes, explain.....

9. a). In your opinion does teachers' attitude towards ICT integration affect Teaching of English language? Yes No

b). If yes, explain.....

10. a). According to your assessment does teacher's experience influence ICT Integration in teaching of English language?

Yes No

b). If yes, explain.....

.....

(Thank you).

APPENDIX D: Interview schedule for head teachers

The information to be collected is for research purpose, on teacher based factors influencing integration of English language in public secondary schools, kindly respond to the questions asked honestly. The information given will be treated as confidential.

- a) What are your teaching subjects? And do you integrate ICT in the process of your teaching?
- b) What is the ratio of students' population to teachers of English in your school? Do you think the ratio is sufficient enough? If not how do you manage English language workload in the school?
- c). How competent are your teachers of English towards integration of ICT in teaching of English language?
- d). What is your comment on teachers' qualification towards integration ICT in teaching of English language?
- e).Do you think gender influences integration of ICT in teaching of English language? Briefly explain.
- f). Judging from your observation, how does teachers attitude influence Integration of ICT in teaching English language?
- g). Do you sponsor teachers to attend capacity building courses geared towards ICT integration in their teaching process? If yes, specify

(Thank you)

APPENDIX E: KCSE Performance in Vihiga sub county

Table. 1.2: KCSE Averaged Mean in English for Vihiga Sub-county schools

ICT Schools			Non- ICT Schools		
School	Type	Mean	School	Type	Mean
Madira Girls	Boarding	5.707	Ideleri Sec.	Mixed Day	4.598
Chavavo Sec.	Boarding/Day	5.324	Kerongo Sec.	Mixed Day	4.204
Magui Sec.	Mixed Day	5.037	Gavalagi Sec.	Mixed Day	5.401
Mbihi Sec.	Boarding/Day	4.730	Womulalu Sec.	Mixed Day	4.105
Gilwatsi Sec.	Mixed Day	3.586	Kisienya Sec.	Mixed Day	3.523
Kidinye Sec.	Mixed Day	3.574	Ingidi Sec.	Mixed Day	4.320
St.Clares Girls	Boarding	8.088	Chandolo Sec	Mixed Day	4.480
Vigina Sec.	Mixed Day	4.714	Kitumba Sec.	Mixed Day	4.090
Masana Sec.	Mixed Day	4.495	Idavaga Sec.	Mixed Day	4.229
Kegoye Boys	Boarding/Day	4.932	Kidundu Sec.	Mixed Day	4.932
Chango Sec.	Mixed Day	5.240	Matsyigulu S.S	Mixed Day	4.300
Vihiga Boys	Boarding	7.387	Chambiti Sec.	Mixed Day	4.050
Mudavadi Girls	Boarding	5.550	Emanda Sec.	Mixed Day	4.100
Average mean		5.259			4.333

Source: Vihiga County Education Day Results Booklets (2011, 2012, 2013, 2014)

APPENDIX F: Letter of Authorization



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
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When replying please quote

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

Ref. No. **NACOSTI/P/15/71723/8850**

Date:
25th November, 2015

Benard Mukangura Kadiri
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *“Teacher-based factors influencing Information Communication Technology integration in implementation of integrated English curriculum in public secondary schools in Vihiga Sub-County, Kenya,”* I am pleased to inform you that you have been authorized to undertake research in **Vihiga County** for a period ending **25th November, 2016**.

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

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

DR. S. K. LANGAT, OGW
FOR: DIRECTOR GENERAL/CEO

Copy to:

The County Commissioner
Vihiga County.

The County Director of Education
Vihiga County.



