TEACHER FACTORS INFLUENCING APPLICATION OF INFORMATION COMMUNICATION TECHNOLOGY IN LEARNING OF HISTORY AND GOVERNMENT IN SECONDARY SCHOOLS INBUNGOMA SOUTH SUB-COUNTY, KENYA

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DECLARATION

This research Project is my original work and has not been presented for any award in any other university.

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E55/78632/2012

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

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To my husband Mr. Francis Simiyu Wekesa and my children Effie, Mercy, Allan and Linet for their support to make me achieve my dreams.

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ABSTRACT

Over the last few decades, Information ICT has become increasingly important in all organisations in modern societies including schools (World Bank, 2014). Expectation about ICT and its role in developing and transforming the educational process through its inclusion in the daily school environment is increasing in many developed and developing countries. The study aimed at investigating teacher factors influencing the application of ICT in teaching and learning of history and government in public secondary schools in Bungoma South Sub-County, Bungoma County, Kenya. The specific objectives includes, to establish the extent to which teachers' level of education, teachers' training in ICT, teachers attitude towards ICT and teachers experience in teaching using ICT influences application of ICT in learning of history and government in secondary schools in Bungoma South Sub-County. This study adopted a descriptive methodology design where by quantitative tools were used to collect data. The population comprised of the 51 public secondary schools in Bungoma South Sub-County, 51 principals, 112 teachers of history and government, 1100 students of history and government and 20 teachers of computer studies. A random sample of 120 form three students of history and government, 24 teachers of history and government, 12 principals and 12 teachers of computer studies were interviewed using a semi-structured questionnaire and interview guide. Questionnaires were used to collect data from teachers and head teachers, Qualitative data was analyzed using descriptive statistics as well as inferential statistics which included Chi Square. The findings from different data sets were synchronised during the presentation and discussion.From the foregoing, the results indicate that the level of education and training in ICT determined the extent to which the teachers used ICT in learning of history and government. The teachers with masters level of education were utilising ICT in learning of history and government much more compared to their counterparts without. The training in ICT software also played an important role with Microsoft word being used by the highest number, followed by spreadsheets, internet then Email. The most commonly used ICT tools were desktop computers and mobile phones. The study revealed that student–oriented pedagogical approach, teachers positive attitude towards computers, computer teaching experience, and personal entrepreneurship of the teacher educator have a direct positive influence on the innovative use of ICT by the teacher. The accessibility to ICT tools is crucial since their availability enable teachers to utilise them. The results provide additional information in formulating policies which will enhance the application of ICT in learning of History and Government

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LIST OF ABBREVIATIONS AND ACRONYMS

ESP	Economic Stimulus Programme
GOK	Government of Kenya
ICT	Information Communication Technology
KCSE	Kenya Certificate of Secondary Education
KICD	Kenya Institute of Curriculum Development
KNEC	Kenya National Examination Council
LAN	Local Area Network
LCD	Liquid Crystal Display
NACOSTI	National Commission for Science Technology and Innovation
UNESCO	United Nations Educational Scientific and Cultural Organization

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Information Communication and Technology (ICT) is a global network in which ideas are exchanged or information and knowledge is shared through using communication tools like cell phones and technology like computers, to connect people (Mdlongwa, 2012).The rapid growth in ICT has brought remarkable changes in the twenty-first century, as well as affected the demands of modern societies (Buabeng-Andoh, 2012). Therefore, there is a growing demand on educational institutions to use ICT to teach the skills and knowledge students need for the twenty-first century (Buabeng-Andoh, 2012).

According to Hennessy, Ruthven and Brindley(2005), teacher practices play an important role in adoption of ICT in teaching and learning. In United Kingdom, ICT tools are used in teaching English whereby emphasis is placed on word processing, desktop publishing, multimedia resources and the internet. In Mathematics, teachers use spreadsheets, graphing tools and internet revision sites while in science, teachers use data logging facilities, multimedia resources and the internet. Prestige (2012) found out that in Australia, ICT practices ranged from foundational level where emphasis was on personal and student competency to developing level where teachers were adding ICT to existing curriculum and finally to digital pedagogies where ICT is a learning tool to enhance curriculum.

Drent and Meelissen (2008) conducted a study in the Netherlands and found out that positive attitudes, computer experience and personal entrepreneurship of the teacher

have positive influence on the innovative use of ICT by the teacher. According to Papanastasiou and Angeli(2008) teachers' actual knowledge and use of various computer software for professional or personal purposes, teacher confidence and attitudes towards technology enhance adoption of ICT in teaching. Kay, (2006) argues that more males have higher ICT competence than females. However studies have revealed that the gender variable was not a predictor of ICT integration into teaching (Norris, Sullivan, Poirot and Soloway,2003). Kay, (2006), found out that there is no difference between males and females regarding computer attitude and ability after the implementation of technology. He believes that quality preparation on technology can lessen gender inequalities.

The evaluation conducted by the Department of Education and Training in Western Australia, (2006) found out that ICT competence decreased with the increase of the teacher's age. Buabeng-Andoh, (2012) contends that teachers' professional development is a key factor to successful integration of computers into classroom teaching. Studies have shown that ICT related training programs develop teachers' competences in computer use and influence their attitudes towards computers and how new technology tools are significant in student learning (Plair 2008, Bauer & Kenton, 2005). According to Hennessy, Harrison and Wamakote, (2010), teachers in Ghana, Rwanda, South Africa and Tanzania use ICT because they feel that it benefits the learners. The use of ICT tools in teaching and learning enhances the recall of previous learning, provide new stimuli and activates learners' response.

In Kenya, the Government through the Economic Stimulus Programme (ESP) has provided eleven computers, one laptop, one LCD projector and LAN to seven secondary

schools in every Sub-County. This is in line with the National ICT Policy of 2006 which calls for improvement of education delivery through the use of ICT. However, implementers of the school ICT programme indicate that teachers find integrating ICT into teaching as an added burden since it is not examinable. Bullock (2004) and Angondi(2013) agree that if teachers feel that they are inadequately prepared, then there is a high likelihood that they will not use the technology.

History and government is an optional subject offered in the Kenyan system of education. History and government equips learners with knowledge that enhances their understanding of social, economic and political developments of the world (KNEC Report 2013).According to Bungoma South Sub-County Education Office, KCSE examination analysis in 2013, history and government is popular optional subject since more than a third of the students enrol for it (Table 1.1). Although the enrolment has shown an upward trend, the performance is wanting as over the last three years it has portrayed a downward trend between 2013-2015.

Table 1.1:

Bungoma South student enrolments in History and Government in KCSE: 2013-2015.

Year	Total student entry	Subject entry	Performance %
2013	2399	1120	46.68%
2014	2404	1150	47.83%
2015	2671	1280	47.92%

1.2 Statement of the problem

Over the last few decades, Information Communication Technology (ICT) has become increasingly important in all organisations in modern societies including schools (World Bank, 2014). Expectation about ICT and its role in developing and transforming the educational process through its inclusion in the daily school environment is increasing in many developed and developing countries. Information Communication Technology being the foundation of economy and a driving force of social change in the twenty first has been widely recognized as a vital resource in economic, social and political development. In the present world the skills of information technology are more than ever in great demand in all sectors including education, government, business and commerce (World Bank, 2004)., For this reason the Government of Kenya came up with ICT policy in 2006 which among other things aims to improve education delivery. Moreover, through the Economic Stimulus Programme (ESP), the government has availed ICT facilities to one thousand and fifty (1050) schools in the country. Each school received eleven desktop computers, one laptop, printer, local area network facilities and an LCD

projector. In each of the constituencies, one teacher, referred to as ICT champion, was trained and is expected to conduct capacity building of other teachers from schools that benefited from this programme. Besides, a number of schools have acquired ICT facilities through funding from the constituency development fund (CDF), Board of Management (BoM) and Parents Teachers associations (PTA).Secondly, the government mandated the Kenya Institute of Curriculum Development (KICD) to digitalise the secondary school science content and avail it to schools (Ratemo, 2009). This has been done and the digitised science content from Form 1 to 4 in the form of Compact Disks (CDs) is now available to schools at a cost of Ksh. 500 ($5.95). The ICT equipments are supposed to be used by teachers in their lesson preparation and delivery. This is in a bid to achieve the Kenya Vision 2030. The KICD has also prepared digital content in all subject areas. The digital content was given to the seven schools alongside ICT equipment. The government further organized capacity building in ICT to the teachers of the schools that benefitted.

Despite the efforts taken by the GOK to improve lesson delivery, traditional methods of lesson delivery have persisted (Bungoma South Education Office, 2015).It is against this background therefore that a study should be carried out on teacher factors influencing the application of Information Communication Technology in teaching and learning of History and Government in Bungoma South Sub County.

1.3 Purpose of the study

The study aimed at investigating teacher factors influencing the application of ICT in teaching and learning of history and government in secondary schools in Bungoma South Sub-County, Bungoma County, Kenya.

1.4 Objectives of the study

The study was guided by the following objectives:

1. To establish the extent to which teachers' level of education influences application of ICT in learning of history and government in secondary schools in Bungoma South Sub-County.
2. To establish the extent to which attitude of history and government teachers towards the use of ICT influences the application of ICT in learning of history and government schools in Bungoma South Sub-County.
3. To establish the extent to which teachers' training in ICT influences application of ICT in learning of history and government in secondary schools in Bungoma South Sub-County.
4. To determine the extent to which teaching experience influences the application of ICT in learning of history and government schools in Bungoma South Sub-County.

1.5 Research Questions

The study was guided by the following research questions:

1. To what extent do teachers' level of academic qualification influence ICT application in learning of History and Government in secondary schools in Bungoma South Sub- County?

2. How do attitudes of teachers towards ICT software influence application of ICT in learning of History and Government in secondary schools in Bungoma South Sub- County?
3. To what extent do teachers' training in ICT influence the application of ICT in learning of History and Government in secondary schools in Bungoma South Sub- County?
4. How do teachers' period of teaching experience influence ICT application in learning of History and Government in secondary schools in Bungoma South Sub- County?

1.6 Significance of the study

The study aimed at investigating teacher factors influencing the application of Information Communication Technology in teaching and learning of History and Government in secondary schools. The findings of this study may provide insights as far as best practices and teacher preparedness are concerned. This study will assist policy makers in making informed decisions on training needs assessment, capacity building, appropriate deployment of teachers and provision of suitable ICT tools to schools. The findings may help curriculum planners to develop and review syllabuses for teacher training institutions. The Teachers Service Commission may use the findings to set the qualities of teachers required on entry to the service. The Education Quality Assurance and Standards Council may use the findings to effectively carry out monitoring and evaluation of the curriculum. The teachers may use the findings to improve on lesson delivery as they would have departed from the traditional methods of teaching.

1.7 Limitations of the study

Mugenda and Mugenda (2003) indicate that limitations are aspects of research that may influence the research negatively but which the researcher has no control over. The anticipated limitations may include the following: According Best and Khan (2004), limitations are conditions beyond the control of the researcher that may place restrictions on the confusions of the study and their application to other situations. Most public secondary schools are located in the rural areas, where accessibility of the institutions is a challenge. This was a hindrance to the researcher in reaching such schools if they are selected to be part of the study sample. To curb this challenge, adequate time was created for data collection in these areas. The researcher made a pre-visit to mitigate the possible factors.

The researcher used data provided by the schools' department of history and government and the Sub-County Director of Education records. This might not have been well up-dated or current expected by the researcher. However, the researcher used the available records and compared with the current expected standards by the Ministry of Education.

The respondents may not give true information. To mitigate this, the researcher assured the respondents that their identity would not be disclosed and confidentiality observed.

1.8 Delimitation of the study

According to Mugenda and Mugenda (2003), delimitations are the boundaries of study. The researcher used teachers, students and principals as the only respondents.

However, there may be other members or individuals who may offer useful information to the study who are not in this category. It was hoped that the respondents gave the information that could be used to generalize the ideas.

Information was sought from principals, teachers of English and students of the public schools in Bungoma South sub-County. Factors outside work environment were not sought. The study dwelt on ICT usage in public secondary schools only leaving behind other important institutions like the universities, colleges and others therefore the findings might not reflect the situation of ICT across all levels. The study concentrated on teacher factors influencing application of ICT in learning of History and Government in secondary schools in Bungoma South Sub-County. These factors include teachers' knowledge in ICT software, teachers' training in ICT, teachers' level of academic qualification and teaching experience. This is because the teachers are the implementers of any given programme.

The study concentrated on public secondary schools in Bungoma South Sub-County because they draw teachers from Teachers Service Commission (TSC). Bungoma South Sub-County was chosen to be the study area because many schools are in the urban setting and therefore many students are aware of ICT application in learning. The respondents were teachers of History and Government, form three students of History and Government, principals and teachers of computer studies in the sampled secondary schools in Bungoma South Sub County. The teachers of computer studies were able to help make the findings more reliable by giving their views on application of ICT.

1.9 Basic assumptions of the study

While carrying out the study the researcher assumed the following:

1. That teachers, students and SQASO give accurate and honest information
2. That the respondents have adequate knowledge on ICT

1.10 Definition of significant terms

These are the terms that were utilised in this study. Their operational meaning is as stated below.

Academic level of qualification refers to the highest evidence of official academic achievement of a teacher.

Application of ICT refers to the use of technology in communication, data processing and data storage to impact the knowledge on teaching and learning of History and Government.

History and Government refers to one of the optional subjects offered in the Kenyan educational system.

ICT training refers to the process of learning skills that are required to apply technology in the teaching and learning of History and Government.

Knowledge of ICT software refers to proficiency in the use of basic computer packages such as Ms Word, Excel, Access and PowerPoint, email and internet.

Teaching experience refers to the number of years the teacher has been providing tuition to students

Teacher factors refer to the teachers' background characteristics influencing integration of ICT in teaching and learning of History and Government.

1.11 Organization of the study

The study was organized in five chapters. Chapter one comprised of introduction, 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, delimitation of the study, basic assumptions of the study, definition of significant terms and organization of the study.

Chapter two encompasses literature review in the following sub sections of introduction, the concept of ICT, knowledge and practices related to integration of ICT in teaching and learning, influence of exposure to training on usage on ICT integration, influence of academic level on ICT integration, summary of literature, theoretical framework of the study and conceptual framework of the study.

Chapter three comprise of research methodology in the following sub sections of introduction, design of the study, study population, sampling procedure and sample size, description of research instruments, reliability and validity, administration of research tools and data analysis techniques.

Chapter four deal with discussion of data analysis, work presentation and discussion of findings. Chapter five contain the summary of research findings, conclusion and recommendation for further research areas.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The literature discusses the concept of information communication technology, teachers level of education and use of ICT in learning, teachers level of ICT training and application of ICT in teaching and learning, teaching experience and ICT application in learning and teachers attitudes towards ICT training and application of ICT in teaching and learning, summary of literature review, theoretical framework and conceptual framework.

2.2 The concept of Information Communication technology

Information Communication Technology involves transfer and use of all kinds of information. According to Kuo (2011) Information Technology uses computers to gather, process, store, protect and transfer information. ICT is the foundation of economy and a driving force of social changes in the 21st century. This involves a comprehensive system of people, information and devices that enable learning, problem solving and higher order of collaborative thinking, that is, ICT as key elements underpinning a sharable workspace (Gokhe, 2012). Distance is no longer an issue when it comes to accessing information, for example working from home, distance learning, e-banking and e-government are possible from any place with an internet connection and a computing device.

Over the past decade, ICT has gradually become an important aspect of teaching and learning at all levels of education. In various parts of the world, efforts have been made to integrate ICT into teaching and learning process. This move has been

accompanied by provision of ICT infrastructure, hardware and software, teacher access to professional development in ICT application in teaching and learning.

2.3 Teachers' level of education and application of ICT in learning

Personal characteristics such as educational level, age, gender, educational experience, and experience with the computer for educational purpose influence attitude towards computers can influence the adoption of a technology, Schiller (2003). Teachers are implored to adopt and integrate ICT into teaching and learning activities, but teachers' preparedness to integrate ICT into teaching determines the effectiveness of the technology and not by its sheer existence in the classroom (Jones, 2001). The attitudes of teachers towards technology greatly influence their adoption and integration of computers into their teaching. In respect to student teachers, it is widely agreed that they begin their education with a wide range of different educational experiences, resulting in varying opinions, beliefs and conceptions about teaching and learning (Booth, Abdulla, Lingham et al., 1998).

Pre-service teachers' beliefs about teaching are well established and developed during what Lortie (1975) terms as the apprenticeship of observation (Fang, 1996; Richardson, 2003). Some authors state that most pre-service teachers already possess a well-developed and established set of beliefs upon entering teacher education programmes (Kagan, 1992; Nespor, 1987; Pajares, 1992). For instance, it is suggested that pre-service teachers who have been taught in a directive didactic learning environment are likely to hold on to traditional beliefs about teaching and learning and continue to adopt instructional practices supporting these beliefs (Applefield, Huber, & Moallem, 2001; Holt-Reynolds, 1992). Kagan (1992) confirms that pre-service teachers

enter teacher education programmes with personal beliefs about what a good teacher are, images about themselves as future teachers, and memories of themselves as students. According to Kagan, 1992, pre-service teachers' beliefs act as filters through which others' teaching performance is interpreted. Thus, information from teacher education courses and even classroom observations are filtered, translated and absorbed into students' own pedagogy, making the experience potentially miseducative (Kagan, 1992).

Nevertheless, some authors also stress that the teacher education experience can affect the educational beliefs of student teachers (Dart, Bouton-Lewis, Brownlee et al., 1998). Grade levels of student teachers also have been connected to teacher beliefs. For instance, Brousseau, Book and Byers (1988) also state that the number of years of classroom experience "reduces" certain teacher beliefs. Shulman (1986) started research about the relationship of subject matter with knowledge and argued that the way teachers understand the subject matter and their subject matter mastery, is "the missing paradigm" in many belief studies. In teaching a subject, the teacher is expected to convey content which can be an influencing factor on teachers' educational beliefs (Wood & Floden, 1990).

According to (Russell & Bradley, 1997), education level of a teacher, anxiety, lack of confidence and competence and fear often implies ICT takes a back seat to conventional learning mechanisms. Therefore, an understanding of education level that influence teachers' adoption and integration of ICT into teaching is relevant strongly on the teachers' support and attitudes. 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 the technology into their teaching and learning.

2.4 Teachers' attitude and application of ICT in learning

Among the factors that influence successful integration of ICT into teaching are teachers' attitudes and beliefs towards technology Hew and Brush, 2007; Keengwe and Onchwari, 2008). If teachers' attitudes are positive toward the use of educational technology then they can easily provide useful insight about the adoption and integration of ICT into teaching and learning processes. Demici (2009) conducted a study on teachers' attitudes towards the use of Geographic Information systems (GIS) in Turkey. The study used questionnaire to collect data from 79 geography teachers teaching in 55 different high schools. The study revealed that though barriers such as lack of hardware and software existed, teachers positive attitudes towards GIS was an important determinant to the successful integration of GIS into geography lessons. In a similar study, Teo (2008) conducted a survey on pre-service teachers' attitudes towards computer use in Singapore. A sample of 139 pre-service teachers was assessed for their computer attitudes using questionnaire with four factors: affect (liking), perceived usefulness, perceived control, and behavioural intention to use the computer. He found that teachers were more positive about their attitude towards computers and intention to use computer than their perceptions of the usefulness of the computer and their control of the computer.

Also, Drent & Meelissen (2008) conducted a study about factors which influence the innovative use of ICT by teacher educators in the Netherlands. A sample of 210 teachers was used for the study. Their study revealed that student–oriented pedagogical approach, positive attitude towards computers, computer experience, and personal entrepreneurship of the teacher educator have a direct positive influence on the innovative use of ICT by the teacher. Research has shown that teachers' attitudes

towards technology influence their acceptance of the usefulness of technology and its integration into teaching, Huang & Liaw (2005).

In European School net (2010) survey on teachers' use of Acer net books involving six European Union countries, a large number of participants believed that the use of net book had had positive impact on their learning, promoted individualized learning and helped to lengthen study beyond school day. However, evidence suggests that small number of teachers believe that the benefits of ICT are not clearly seen. The Empirical survey revealed that a fifth of European teachers believed that the use of ICT in teaching did not benefit their students' learning, Korte & Hüsing (2007). A survey of UK teachers also revealed that teachers' positivity about the possible contributions of ICT was moderated as they became 'rather more ambivalent and sometimes doubtful' about 'specific, current advantages', Becta (2008, p.45).

Teachers' computer experience relates positively to their computer attitudes. The more experience teachers have with computers, the more likely that they will show positive attitudes towards computers (Rozell & Gardner, 1999). Positive computer attitudes are expected to foster computer integration in the classroom (van Braak, Tondeur & Valcke, 2004). According to (Woodrow, 1992) for successful transformation in educational practice, user need to develop positive attitudes toward the innovation.

According to Hismanoglu, (2012), ICT presents a powerful learning environment for learners in the classroom. ICT is viewed as an effective tool for renewing educational practice in any field. Therefore teachers being the main characters to employ ICT in educational context, should be trained on how ICT can be integrated into the teaching

process at all levels. This means that the level of education does not matter but what matters is the skills one has to be able to integrate ICT in teaching and learning of all subject matter.

According to UNESCO ICT competency for teachers, knowledge deepening and knowledge creation depends on the level of education at which the teacher is working. Teachers with higher academic credentials may be in position to apply ICT because of the nature of training they are exposed to. Capacity building for teacher training institutions in adapting curriculum and improving the capacity for teacher educators is required in order to step up ICT application in learning. Teachers' computer experience relates positively to their computer attitudes. The more experience teachers have with computers, the more likely that they will show positive attitudes towards computers (Rozell & Gardner, 1999). Positive computer attitudes are expected to foster computer integration in the classroom (van Braak, Tondeur & Valcke, 2004). According to (Woodrow, 1992) for successful transformation in educational practice, user need to develop positive attitudes toward the innovation.

2.5Teachers' level of ICT training and application of ICT in teaching and learning

According to SOIED,(1999) and Acun (2003) as portrayed by Yucel, Acun, Tarman and Mete,(2010), studies on ICT identify some important points about training in ICT: that it should be appropriate to classroom use, hands on practice, provide on the spot help and provide opportunities to work and share with other teachers. Training must be timely and appropriate for both teacher professional development and school resource development. This view is also shared by Unal and Ozturk, (2012).Teachers can only

change the way they realize the potential for improving learning through the effective use of technology if their competencies in ICT are improved then they become competent technology users (Altun, 2002).

There is need to produce teachers who are comfortable with the adoption of technology in their lesson design and delivery (Termit and Ganisha, 2014). This has to be carried out during initial teacher training and regularly through continual professional development to help teachers stay up to date. Findings by Hennessy, Ruthven and Brindly,(2005) show that offering opportunities for exploration and familiarization with technology, in order to build teacher confidence and iron out un even levels of access and experience is essential. The findings further indicate that supportive attitudes alone are not enough and therefore some degree of organizational change is required. It is also useful to clarify the reasons, departmental responsibilities and mechanisms for integrating ICT into schemes of work.

According to Ritchie and Wiburg (1994), the development of the staff is crucial to technology integration in schools as teachers frequently complain of inadequate training resources and insufficient time. This will enable the teachers to use and master technological resources effectively in any teaching subject. Once mastery of technological resources has been achieved then integration of technology will automatically follow. Teachers' professional development is a key factor to successful integration of computers into classroom teaching. Several studies have revealed that whether beginner or experienced, ICT-related training programs develop teachers' competences in computer use (Bauer & Kenton, 2005; Franklin, 2007; Wozney et al., 2006), influence teachers' attitudes towards computers (Hew and Brush, 2007; Keengwe

and Onchwari, 2008) as well as assisting teachers reorganize the task of technology and how new technology tools are significant in student learning (Plair, 2008). Muller and his colleagues (2008) related technology training to successful integration of technology in the classroom. In a study of 400 pre-tertiary teachers, they showed that professional development and the continuing support of good practice are among the greatest determinants of successful ICT integration.

Sandholtz & Reilly (2004) claim that teachers' technology skills are strong determinant of ICT integration, but they are not conditions for effective use of technology in the classroom. They argue that training programs that concentrate on ICT pedagogical training instead of technical issues and effective technical support, help teachers apply technologies in teaching and learning. Research studies revealed that quality professional training program helps teachers implement technology and transform teaching practices (Brinkerhoff, 2006; Diehl, 2005). Lawless and Pellegrino (2007) claim that if training program is of high quality, the period for training lasts longer, new technologies for teaching and learning are offered, educators are eagerly involved in important context activities, teamwork among colleagues is improved and has clear vision for students attainment. Teachers may adopt and integrate ICT into their teaching when training programs concentrate on subject matter, values and the technology.

Similarly, research has shown that teachers require expert in technology to show them the way to integrate ICT to facilitate students' learning (Plair, 2008). Teachers' understanding of content knowledge and how to apply technology to support students' learning and attainment are joined to their increase in knowledge level, confidence and attitudes towards technology. Educators who integrate technology with new teaching

practices gained through professional training can transform the performance of the students (Lawless & Pellegrino, 2007). According to (Chen, 2008), professional training courses must be designed to identify beliefs about successful teaching, policies for enhanced teaching and learning and syllabus design for teaching purposes. Teachers who are committed to professional development activities gain knowledge of ICT integration and classroom technology organization (Wepner, Tao & Ziomek, 2006).

Clearly, it is imperative to allow teacher trainees to apply ICT in their programs when in school in order to be able to use the technology to supplement their teaching activities. Teachers when given time to practice with the technology, learn, share and collaborate with peer, it is likely that they will integrate the technology into their teaching. Training programs for teachers that embrace educational practices and strategies to address beliefs, skills and knowledge improve teachers' awareness and insights in advance, in relation to transformations in classroom activities (Levin & Wadmany, 2008). According to the Department of Education and Training in Western Australia, (2006), improving the ICT competence levels of teachers will increase teacher integration of ICT within the classroom. Findings by Rosnaini and MohdArif, (2010) as cited in Termit and Ganisha, (2014), show that a minority group of teachers were knowledgeable in basic ICT. The majority of them only had average knowledge in ICT. This scenario clearly shows that the key factor in making ICT programs successful in school is to upgrade the level of ICT knowledge among teachers (Moganashwari and Parilah,2013) (as cited in Termit and Ganisha 2014).

Teachers' computer experience relates positively to their computer attitudes. The more experience teachers have with computers, the more likely that they will show

positive attitudes towards computers (Rozell& Gardner, 1999). Positive computer attitudes are expected to foster computer integration in the classroom (Van Braak, Tondeur&Valcke, 2004). According to Woodrow (1992) for successful transformation in educational practice, the user needs to develop positive attitudes towards the innovation.

Kozma andCroninger(1992), pointed out the benefits that technology confers upon education can only be realized if both teachers and students have access to this technology. Stetson and Bagwell (1999) noted that during initial training, integration into methods, courses and accessible adequate resources need to be present. Teachers must not only have access to hardware and software but they must be trained to use them. Angeli and Valenides (2009), contends that effective technology integration depends on a consideration of the interactions among technology, content, and pedagogy. Technology integration requires that pre-service and in-service teachers understand: the technology tools themselves, combined with the specific affordances of each tool that, when used to teach content, enable difficult concepts to be learned more readily, thus resulting in the achievement of meaningful student outcomes. Teachers need knowledge of technology itself. If teachers are to prepare the students to be technologically capable, they need to have at their very least, basic technology skills (Ertmer & Ottenbreit-Leftwich, 2010).To use technology to support meaningful student learning, teachers need additional knowledge of the content they are to teach, the pedagogical methods that facilitate student learning, and the specific ways in which technology can support those methods, (Ertmer & Ottenbreit- Leftwich, 2010).

Research has been conducted on teacher's self-efficacy and reported to have greater effect on their use of ICT. Self-efficacy is defined as a belief in one's own

abilities to perform an action or activity necessary to achieve a goal or task (Bandura, 1997). In real meaning, self-efficacy is the confidence that individual has in his/her ability to do the things that he/she strives to do. Thus teachers' confidence refers both to the teachers' perceived likelihood of success on using ICT for educational purposes and on how far the teacher perceives success as being under his or her control (Peralta &Costa, 2007). Teachers' computer self-efficacy is described as a judgment of their capability to use a computer (Compeau & Higgins, 1995). According to Liaw, Huang and Chen (2007), teachers' computer self-efficacy influences their use of ICT in teaching and learning. Similarly, (Yuen & Ma, 2008) revealed that the Hong Kong teachers' implementation of ICT was depended on simplicity of computer use and perceived teacher self-efficacy. Christensen and Knezek (2006) described computer self-efficacy as computer confidence in competence. Knezek and Christensen (2002) revealed that teachers' competence with computer technology is a key factor of effective use of ICT in teaching.

Peralta and Costa (2007) conducted a study on 20 teachers' competences and confidence regarding the use of ICT in classrooms. They revealed that in Italy, teachers' technical competence with technology is a factor of improving higher confidence in the use of ICT. In addition, teachers in Greece reported pedagogical and personal factors as those which mostly contribute to their confidence in ICT use. Also, innovative teachers in Portugal linked the perception of confidence in using ICT with the loss of fear of damaging the computer and at the same time possessing absolute control over the computer. However, they reported plenty of available time to work and practice ICT,

support of experienced teachers and training as favourable conditions for gaining confidence in ICT usage

2.6 Teachers' period of teaching experience and application of ICT in teaching and learning.

According to the Department of Education and Training Western Australia (2006) ICT competence scores decrease as the duration a teacher has taught increase. Teachers who are aged over 50 years old were more likely to express negative attitudes about ICT application in teaching and learning. Buabeng-Andoh (2012) posits that experienced teachers are less ready to integrate ICT into teaching and learning while teachers with less experience in teaching were more likely to integrate ICT in teaching and learning. This scenario may be due to the fact that young teachers naturally like to interact with technology while the old teachers feel self-sufficient and have no interest to interact with technology. Teaching experience of pre-service and in-service teachers seems to affect their beliefs about the role and position of learners in the instructional context; i.e., to what extent can we hand over responsibilities to learners (Brousseau, Book & Byers, 1988).

The level of teaching experience also determines the extent to which teacher reflect on their own practices. Also, teacher beliefs appear to be heavily influenced by actual teaching practices (Zahorik, 1987). The levels of study years of pre-service teachers also have been connected to teacher beliefs and then their intention to integrate ICT into their future teaching. For instance, Brousseau et al. (1988) state that the number of years of classroom experience "reduces" certain teacher beliefs: "experienced teachers were more likely to believe that classrooms should be teacher centred and that learning did not

always need to be fun" (p.38). By referring to age and computer experience, study years of pre-service teachers may also influence ICT integration (Teo, 2008).

The teaching subject a teacher is specialized in, is also expected to be an influencing factor on teachers' educational beliefs. Teacher beliefs are expected to be mediated by epistemological differences that are inherent to respective content areas or by the instructional materials (Wood & Floden, 1990). Teaching subject has also been associated with ICT integration (Hennessy et al., 2005). In this context, many refer to the close link between ICT use and mathematics. Though some research reported that teachers' experience in teaching did not influence their use of computer technology in teaching (Niederhauser & Stoddart, 2001), most research showed that teaching experience influence the successful use of ICT in classrooms (Wong & Li, 2008; Giordano, 2007; Hernandez-Ramos, 2005). Gorder (2008) reported that teacher experience is significantly correlated with the actual use of technology. In her study, she revealed that effective use of computer was related to technological comfort levels and the liberty to shape instruction to teacher-perceived student needs. Also, Baek, Jong & Kim (2008) claimed that experienced teachers are less ready to integrate ICT into their teaching.

Similarly, in United States, the (U.S National Centre for Education Statistics, 2000) reported that teachers with less experience in teaching were more likely to integrate computers in their teaching than teachers with more experience in teaching. According to the report, teachers with up to three years teaching experience reported spending 48% of their time utilizing computers, teachers with teaching experience between 4 and 9 years, spend 45% of their time utilizing computers, teachers with experience between 10 and 19

years spend 47% of the time, and finally teachers with more than 20 years teaching experience utilize computers 33% of their time. The reason to this disparity may be that fresh teachers are more experienced in using the technology. Further, Lau & Sim (2008), conducted a study on the extent of ICT adoption among 250 secondary school teachers in Malaysia. Their findings revealed that older teachers frequently use computer technology in the classrooms more than the younger teachers. The major reason could be that the older teachers having rich experience in teaching, classroom management and also competent in the use of computers can easily integrate ICT into their teaching. The result is in agreement with Russell, Bebell, O'Dwyer, & O'Connor, (2003) who found that new teachers who were highly skilled with technology more than older teachers did not incorporate ICT in their teaching. The researchers cited two reasons: new teachers focus could be on how to use ICT instead of how to incorporate ICT in their teaching. Secondly, new teachers could experience some challenges in their first few years of teaching and spend most of their time in familiarizing themselves with school's curriculum and classroom management. But in a survey of almost 3000 teachers, Russell, O'Dwyer, Bebell and Tao (2007) argued that the quality of ICT integration was related to the years of teacher service.

However, Granger, Morbey, Lotherington, Owston and Wideman (2002) conducted a qualitative survey on factors contributing to teachers' successful implementation of ICT in Canada. They interviewed 60 respondents from 12 schools. The findings found no relationship between teachers' teaching experience and experience in the use of ICT implying that teachers' ICT skills and successful implementation is complex and not a clear predictor of ICT integration.

2.7 Summary of literature review

Information Communication Technology (ICT) involves the transfer and use of all kinds of information. ICT is the foundation of the economy and the driving force of social change in the 21st century (Gokhe, 2012). ICT has become an important aspect of teaching and learning at all levels. Research has revealed that ICT competence levels of teachers will increase teacher integration of ICT within the classroom. Training in ICT should be appropriate to classroom use; hands on practice, provision of on the spot help and provide opportunities to work and share with other teachers (Yucel, Acun, Tarman& Mete, 2010). Research has also indicated that ICT competency for teachers, knowledge deepening and knowledge creation depends on the level of education at which the teacher is working. Finally the competence scores decrease as the duration a teacher has worked increases (Department of Education and Training Western Australia, 2006).

Against this background therefore, the current research was carried out to provide insights about best practices and teacher preparedness on application of ICT in teaching and learning History and Government in secondary schools in Bungoma South Sub-County.

2.8 Theoretical framework

This study viewed ICT implementation as an example of innovation adoption and thus invokes one innovation diffusion theory, Rogers‟ (2003) Perceived Attributes Theory which stipulates that if the perceived advantage to the use of an innovation is positive, there is a greater likelihood that it will be adopted rapidly. The perceived attributes are the characteristics of innovation that have an impact on the likelihood of acceptance and adoption, and also on the rate at which this process develops. Innovation

attributes supporting diffusion are: relative advantage, compatibility, complexity, observability and trialbility. Rogers (2003:229) defines relative advantage as "the degree to which an innovation is perceived as being better".

Rangaswamy & Gupta, (2000) describes adoption as the decisions that individuals make each time that they consider taking up an innovation. Similarly, Rogers (2003) defines adoption as the decision of an individual to make use of an innovation as the best course of action available. Rogers (2003) argues that the process of adoption starts with initial hearing about an innovation to final adoption. For the purpose of this study, Rogers' definition of adoption is used. Earle (2002) linked ICT integration with the concept of wholeness, when all elements of the system are connected together to become a whole. For instance, the two important elements of teaching and learning which are content and pedagogy must be joined when technology is used in lesson. In other way, if students are offered series of websites or ICT tools (e.g. CD ROMs, multimedia, etc) then the teacher is not integrating ICT into teaching since he/she is not tackling the pedagogical issues.

Similarly, Williams (2003) described ICT integration as the means of using any ICT tool (Internet, e-learning technologies, CD ROMs, etc) to assist teaching and learning. For the purpose of this study, Williams' definition of ICT integration is adopted. Several factors influencing the adoption and integration of ICT into teaching have been identified by researchers. Rogers (2003) identified five technological characteristics or attributes that influence the decision to adopt an innovation. Stockdill and Moreshouse (1992) also identified user characteristics, content characteristics, technological considerations, and organizational capacity as factors influencing ICT adoption and integration into teaching. Balanskat, Blamire & Kefalla (2007) identified the factors as teacher-level, school-level

and system-level. Teachers' integration of ICT into teaching is also influenced by organizational factors, attitudes towards technology and other factors (Chen, 2008, Tondeur; van Braak & Valcke, 2008; Lim & Chai, 2008; Clausen, 2007). Sherry & Gibson (2002) claim that technological, individual, organizational, and institutional factors should be considered when examining ICT adoption and integration. Neyland (2011), factors such as institutional support as well as micro factors such as teacher capability influencing the use of online learning in high schools in Sydney. This article reviews studies on the use of ICT by teachers and identify factors that included and categorized in the framework of Sherry & Gibson (2002).

2.9 Conceptual framework of the study

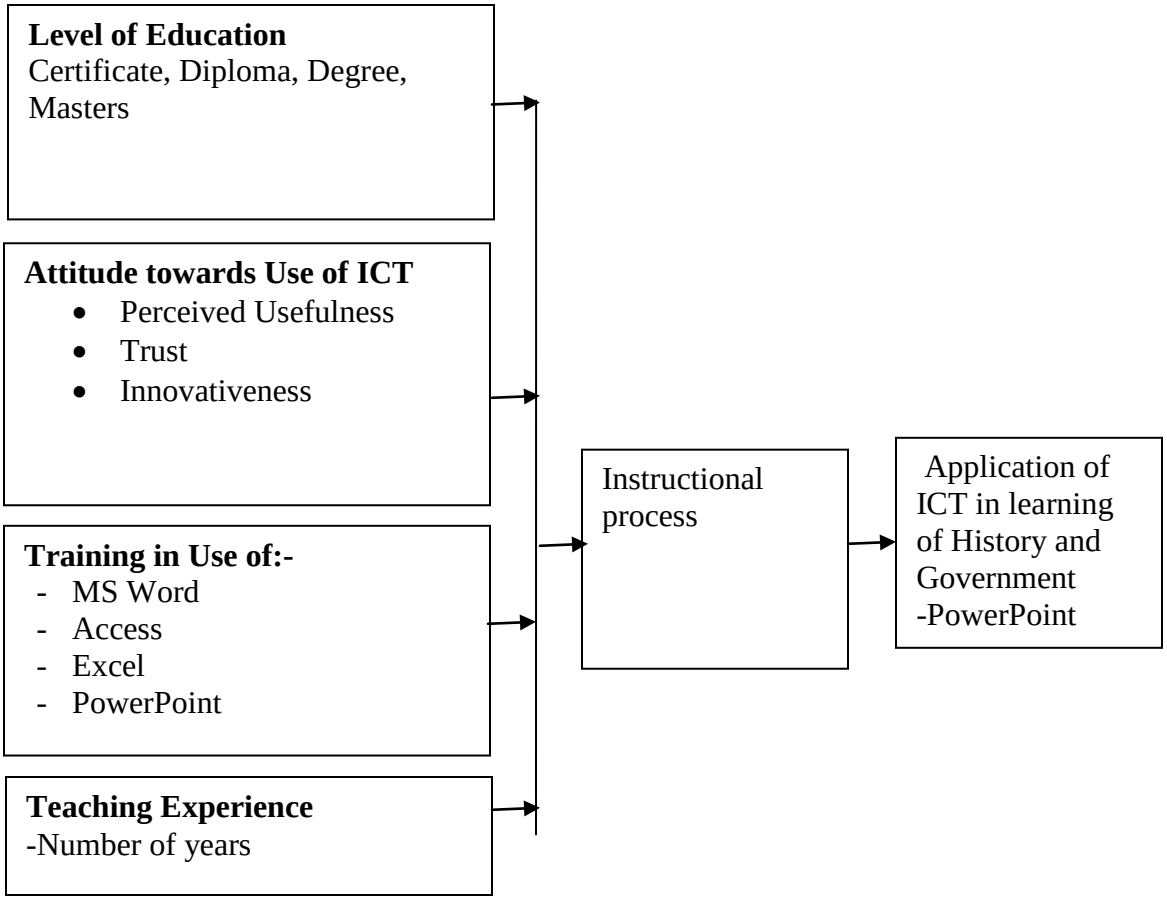

Figure 2.1: Conceptual framework of the study

The independent variable is teacher factors influencing use of ICT in teaching and learning, while the dependent variable is the application of ICT in teaching and learning of History and Government. The study hypothesise that application of ICT depends on teacher factors such as teachers level of education, attitudes towards use of ICT, training in ICT and teaching experience, whereby if the teacher factors influencing use of ICT in teaching and learning is positive then it is expected that application of ICT in teaching

and learning history in public secondary school will improve and the opposite while if the teacher factors influencing use of ICT in reading and learning is negative then it is expected that application of ICT in teaching and learning history in public secondary school will be minimal.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methodology used in the study, the research design, location of the study, population and sampling techniques, research instruments, validity and reliability of the research instruments, data gathering procedures, statistical treatment of the data and ethical considerations to be used by the researcher.

3.2 Research design

The study was based on a descriptive survey research design where data and information was gathered from both primary and secondary sources. Secondary sources comprised of review of relevant literature. Primary data was collected from carefully sampled respondents during the field survey. Orodho (2002) posits that descriptive survey design is the most suitable method for collecting information about people's opinions on various issues that affect them. The current study fits in this design because it relied on the opinions of the respondents and their attitudes.

3.3 Target population

A population is a set of people, service, elements, and events, group of things or households being investigated (Newman, 2000). Kathuri & Pals (1973) defined target population as the large population from which a researcher selects a representative sample for observation and analysis. The total population in this study was 1283 people. The population comprised of the 51 public secondary schools in Bungoma South Sub-County, 51principals, 112 teachers of history and government, 1100 students of history and government and 20 teachers of computer studies.

3.4 Sample size and sampling procedure

The seven secondary schools which received computers under the economic stimulus programme in the Sub-County were purposively selected for the survey. An additional five schools which acquired ICT equipment on their own were selected randomly from the list provided by the Sub County Education Officer. A total of 12 principals out of 51 (24%), 24 teachers of History and Government (21%) out of 112 and 120students (11%) out of 1100 history and government students and12 teachers of computer studies (60%)from the 12 selected schools were respondents.

Table 3.1

Target and Sample

Category	**Target population**	**Sample**	**%**
Schools	51	12	24%
Principals	51	12	24%
Teachers of History and Government	112	24	21%
Students of History and Government	1100	112	11%
Teachers of computer studies	20	12	60%
Total	**1283**	**172**	**30%**

According to Mugenda and Mugenda (2003) a sample of between 10% and 30% of the target population is acceptable.

3.5 Research instruments

The study used several data collection instruments. The questionnaires were constructed for teachers of history and government as well as principals together with students while interview schedules provided a guideline for face to face interviews with the teachers of computer studies. According to Kothari (2003) questionnaires are free from bias, cost effective and give respondents adequate time to give well thought answers. The questionnaire for teachers and students of History and Government contained five parts that is the demographic information, teacher's level of education; teacher's training in ICT, teaching experience and knowledge of ICT software. The questionnaires for principals contained closed ended questions to reduce wide variations in the responses hence ensuring consistency and easy comparison.

The interview guide for teachers of computer studies contained questions to aid in face to face discussion. Interview sessions provided the study an opportunity to get first-hand information from the key implementers of the secondary school ICT policy. The structured nature of the interview schedules enabled the study collect information on the strengths and shortcoming in the implementation of the secondary school ICT policy.

3.6 Validity of research instruments

Validity is defined as the accuracy and meaningfulness of inferences, which are based on the research results Mugenda and Mugenda (2009). Validity is the degree to which results obtained from the analysis of the data actually represents the phenomena under the study.

Validity deals with the adequacy of the instruments (Wiersma 2005). For example, the researcher needs to have adequate questions in the written task in order to collect the required data for analysis that can be used to draw conclusions. The content validity of research instruments was established before data collection by research experts in the Department of Curriculum Studies of University of Nairobi to evaluate the items contained in various instruments. The suggestions and clarifications by the experts were used to improve the instruments designed.

3.7 Reliability of the instruments

To ensure the reliability of the questionnaire, a pilot study was carried out in the schools and respondents that were not participating in the study. The research instruments were administered to the same pilot group twice after an interval of two weeks and the results were compared. According to Mugenda & Mugenda (2003) a reliability coefficient of 0.8 and above implies a high degree of reliability of the data means that the items in the questionnaire measured the required constructs with a high degree of precision. After conducting test –retest using Pearson's product moment formula, the following results were arrived at:

Principals 0.8 and students 0.895as while teachers of History and Government 0.904. The questionnaires were found to be reliable. This is concurs with the view of Mugenda and Mugenda (2003).

The researcher utilised Pearson's product moment formula.

$$r = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{\{N\sum X-(\sum X)]\ [N\sum Y-(\sum Y)]\}}}$$

Where r- The Pearson's correlation coefficient
X- The result from the first test

Y-The result from the second test
N- The number of observations

3.8 Data collection procedures

The researcher sought a letter of introduction from the Department of Educational Administration and Planning, University of Nairobi. The research permit was obtained from the National Commission for Science Technology and Innovation (NACOSTI). The research permit was presented to the County Director of Education, Bungoma County who issued a research Authorization in Bungoma South Sub County. The researcher delivered copies of the research Authorization to the sub-county Education Officer, who gave the researcher an authorizing letter to collect data from schools. The researcher made familiarization visits to schools to book appointments, inform respondents on the purpose of the study, and the expected duration of participation. Questionnaires were administered to principals, teachers and students while teachers of computer studies responded to interviews. After the expiry of the time limit, the researcher collected the questionnaires from selected schools for data analysis. The researcher maintained contacts of the respondents until

3.9 Data analysis techniques

After collection of data, it were coded into computer readable form before the data entry which was preceded by data cleaning to ensure integrity of the data, Qualitative data were organized into various themes which were summarized in a narrative form. Quantitative data were analyzed using descriptive statistical methods such as mean, mode, frequencies, and percentage sand presented in form of tables, charts and figures.

Chi Square statistical technique was used to measure the influence of independent variables on the dependent variables. Statistical Package for Social Sciences (SPSS) and other computer packages such as excel were used for data analysis.

3.10 Ethical considerations

Upon receiving a permit from the National Commission for Science Technology and Innovation (NACOSTI) to conduct research and an introductory letter from the University of Nairobi, the researcher utilized these letters to get permission from principals of sampled schools where the study was carried out. The study was conducted in such a way that the individual identities of respondents was not revealed whatsoever and that no identifying information about individuals or the institution revealed in written or other forms of communication. Private information given by the respondents was kept confidential. The study avoided divulging private or identifying information during data collection, analysis, presentation, interpretation, and discussion of findings. Respondents were assured that they were free to withdraw at any time or stop participating in the study at any point. In addition, respondents were not obliged to answer questions that they were uncomfortable with or required to write their names, addresses, or telephone numbers on the questionnaires.

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND PRESENTATION

4.1 Introduction

This chapter presents a description of analysis, data presentation, interpretation and discussion. The study aimed at investigating teacher factors influencing the application of Information Communication Technology in teaching and learning of History and Government in secondary schools in Bungoma South Sub-County, Bungoma County, Kenya. The following research objectives were formulated for the study; To establish the extent to which teachers' level of education influences application of ICT in learning of History and Government,to establish the extent to which teachers' training in ICT influences application of ICT in learning of History and Government ,to determine the extent to which teaching experience influences the application of ICT in learning of History and Government and to establish extent to which attitude of History and Government teachers towards the use of ICT influences the application of ICT in learning of History and Government. Descriptive and inferential statistics were used to analyse the data where the results were presented in form of frequency tables and charts

4.2 Response rate

The returned questionnaires whose response were used in further processing of the data to come up with the research findings were as tabulated in table 4.1.

Table 4.1:

The return rate of the questionnaires and interview guides

Respondents	Sample size	Returned tools	Percentage
Students	120	103	86%
Teachers of History &Government	24	21	88%
Teachers of computer studies	12	12	100%
Principals	12	10	83%
Total	168	146	86.9

As indicated in Table 4.1, the average return rate was 86.9 % for all respondents. The response can be interpreted to show a willing participation from the sampled respondents. This return rate was considered adequate for study as Mugenda and Mugenda (2003) states that a return rate of above 70 percent can be generalized for a targeted population in the field of social science and education.

4.3 Demographic Background of the respondents

The study probed about the demographic information of the respondent (students, teachers and principals) in terms of gender, age, academic qualification and work experience to assess the background information of the main respondents which was important in order to confirm whether the research reached the targeted audience and whether or not the research captured the information it effectively sought.

4.3.1 Gender of the respondents

The study sought to establish how the sample population was distributed by gender which assisted the research to confirm whether there was gender disparity in distribution.

Table 4.2

Distribution of respondents by gender

	Principals		**Teachers**		**Students**	
Gender	**Frequency**	**Percent**	**Frequency**	**Percent**	**Frequency**	**Percent**
Male	6	64.30	16	49.47	61	60.0
Female	4	35.70	17	50.53	42	40.0
Total	**10**	**100.00**	**33**	**100.00**	**103**	**100.0**

From the findings in Table 4.2, majority i.e. 6 out of 10 (64.30%) principals were males and 2 out of 10 (35.70%) were female. In terms of teachers, the split between genders was even at 49.47% for male to 50.53% for female. However the findings indicated that male students were majority accounting for 60.0%compared to female accounting to 40.0% of the sample. These results explain the social factors that men are given preference for opportunities and learning hence there is need to have equal representation in resources and opportunities for both learners and teachers among secondary schools.

4.3.2 Age of the Respondents

The questionnaires also elicited information on the age of head teachers and teachers. This information assisted the researcher to find out whether the opinions of head teachers or teachers on ICT use and adoption differed between their different age groups.

Table 4.3

Distribution of respondents by age

	Principals		Teachers	
Age	**Frequency**	**Percent**	**Frequency**	**Percent**
18-30 Years	1	11.1	4	12.0
31-40 Years	3	33.3	21	64.0
41-50 Years	4	44.4	6	20.0
51-60 Years	1	11.1	2	4.0
Total	**10**	**100.0**	**33**	**100.0**

From the Table 4.3, it is clear that majority (35.70%) of the head teachers belonged to age bracket of between 40-49 Years, followed by 30-39 years and finally 20-29 year together with age bracket of over 50, Regarding teachers most of the were found to belong the age bracket of 30-39 years and the least were those who belonged to age bracket of 50 and above, Majority of the secondary school principals were in mid – life age gap from the findings. This was an indication that most secondary school principals had the requisite qualifications and experience in leading secondary schools.

4.3.3: Level of education of respondents

The researcher also asked the respondents to state the education level of the respondents.This information also assisted the researcher to find out whether the opinions of head teachers or teachers on ICT use and adoption differed between their levels of education. The respondents' education level ranged from A-level to post graduate level. The information in Table 4.4 presents the findings.

Table 4.4

Distribution of respondents by education Level

	Principals		**Teachers**	
Education Level	**Frequency**	**Percent**	**Frequency**	**Percent**
P1,Diploma	0	0	6	20.0
B.E.D	6	65.0	21	60.0
Masters and Above	4	35.0	6	20.0
Total	**10**	**100.00**	**33**	**100.0**

From the Table 4.4 above, it is clear that all the principals had degree and above while as for teachers the findings indicates that they have different level of education with 60% having an under graduate degree, 20.0% had attained masters while another 20% had a minimum level of diploma, this could have been explained since the sample consisted of both ICT and the other teachers.

4.4 Application of ICT in learning of History and Government

In order to establish the level of use and adoption of ICT by history and government teachers in teaching public secondary schools, the research sought to find out the status of ICT infrastructure in sampled secondary schools, teachers and students ICT preparedness, accessibility and availability of hardware's and software's.

4.4.1 Access to ICT equipment by students

The researcher sought to identify whether the students have accessibility to use ICT tools including computers and internet.

Table 4.5

Access to computers and internet by students

Access to computers and internet	Frequency	Percentage
Yes	93	90
No	10	10
Total	103	100

Findings in Table 4.5 show that 93 (90%) of students indicating that they have accessibility to ICT tools for use by teachers for teaching and learning history and government. They stated that the computers were internet enabled. Buabeng, 2012, also found out that access to computers, updated software and hardware are key elements to successful adoption and integration of technology. The remaining 15(10%) stated that

they could not access the computers in the school because they were very few and were for administration purposes.

4.4.2 Access to ICT equipment by teachers

The researcher sought to identify whether the teachers have accessibility to use ICT tools for teaching history and government in public secondary schools in Bungoma Sub County which are automated with internet facilities.

Table 4.6

Access to computers and internet by teachers

Access to computers and internet	Frequency	Percentage
Yes	30	90
No	3	10
Total	33	100

Findings in Table 4.6 indicates that 131(90%) most teachers have accessibility of computers with internet that they can use for teaching secondary school students in History and Government subject. They stated that the computers were internet enabled. Buabeng, 2012, also found out that access to computers, updated software and hardware are key elements to successful adoption and integration of technology. The remaining 15(10%) stated that they could not access the computers in the school because they were very few and were for administration purposes.

4.4.3 Number of computer laboratories as explained by students

The researcher wanted to identify the number of computer laboratories available for use by students and teachers for teaching and learning purposes which helped to establish level of use of ICT in the sampled secondary schools.

Table 4.7

Number of computer laboratories as explained by students

Number of computer lab	Frequency	Percentage
None	5	5
One	97	95
Two	0	0
Total	103	100

It was evident that majority 139(95%) respondents said that the school had one computer lab. Only 7(5%) respondents said they had no computer laboratory in the school. On the other hand data revealed from 15(10%) respondents that their schools had less than 5 computers in the school while 58(40%) respondents stated that the school had between 6-15 computers and 73(50%) respondents stated that the school had more than 16 computers.

4.4.4 Number of Computers in Laboratory by students

The researcher wanted to identify the number of computer in order to establish their availability of ICT tools for use for teaching and learning in selected secondary schools

Table 4.8

Number of Computers in Laboratory

Number of computers in Laboratories	Frequency	Percentage
None	0	0.0
Less than 5	10	10.0
6-15	40	40.0
16 and above	53	50.0
Total	103	100.0

4.4.5 Average number of students who share a computer as perceived by students

The researcher sought to identify the average number of students who share a computer during History and Government lessons from form one to form four in order to establish the ratio of ICT equipment to students in aids of teaching and learning processes.

Table 4.9

Number of students per computer

Number of students per computer	Frequency	Percentage
1-2	15	15.0
3-4	26	25.0
5 and above	62	60.0
Total	103	100.0

Data revealed that the schools have fewer computers since majority 62(60%) of the students indicated that one computer could be used by 5 or more students. Other 26 (25%) respondents said that a computer could be used by 3-4 people while 15(15%) indicated that one computer could be used by 1-2 people. This findings was deduced to mean that there is inadequate computers for use by students in the sub county

4.4.6 Frequency of use of ICT in learning of History and Government according to students

The researcher sought to establish the frequency of use of ICT in learning history and government in order to establish the extent of use of ICT in selected public secondary schools

Table 4.10

Frequency of use of computers

Use of a computer by respondent	Frequency	Percentage
Never	7	7
Rarely	21	20
Quite often	42	40
Very often	16	15
Always	19	18
Total	103	100

Data revealed that 7 (7%) never used computers in their schools due to the fact that they were very few and meant for specific purposes. Other respondents 21(20%) rarely

used computers, 58(40%) of the respondents used computers quite often, 22(15%) used them very often and 42(18%) always used computers. They may have been caused by the fact that the ratio of students to computers in the sub-county is low which may interfere in teaching and learning processes. This view is shared by Papanastasiou and Angeli, (2008) who said that actual knowledge and use of various computer software for professional and personal purposes play a role in successful integration in schools.

4.4.8 Application of various ICT tools in teaching and learning history and government by teachers

The researcher sought to identify the extent of application of ICT tools by teachers in teaching history and government subjects in various secondary schools that were targeted by the study. This question was specifically directed to 21 teachers since they were the users of ICT in teaching the subjects in secondary schools. The responses were weighed using a 5 level likert scale either to measure the level of agreement or disagreement with the statements provided.

Table 4.11

ICT tools that Teachers use in teaching History and Government

Skill	Completely disagree	Disagree	Neutral	Agree	Completely agree	Total in %
I select appropriate software to use in my teaching	5(24%)	7(33%)	4(19%)	3(14%)	2(10%)	21(100%)
I use power point in my class	10(47%)	3(14%)	2(10%)	4(19%)	2(10%)	21(100%)
I design technology enhanced learning activities for my students	2(10%)	2(10%)	3(14%)	7(33%)	7(33%)	21(100%)
I use email to share knowledge with other teachers in the department	5(24%)	5(24%)	1(5%)	9(42%)	1(5%)	21(100%)
I use internet in my lesson preparation	1(5%)	7(33%)	2(10%)	9(42%)	2(10%)	21(100%)

From Table 4.11the study sought about the level of application of various ICT tools in teaching and learning application in learning of History and Government in secondary schools in Bungoma South Sub- County whereby most teachers disagreed with statement that they normally select the software to use in teaching and learning as indicated by 33% of teachers who strongly disagree while 19.0% also disagree. As per whether teachers use power point in class most teachers disagreed as indicated by 47.0% of the teachers. As per whether teachers are involved in designing technology enhanced learning activities for students the findings showed that most teachers disagreed with the assertion, As to whether teachers used email to share knowledge with other teachers in the department, 5(24%) completely disagreed, 5(24%) disagreed, 1(5%) were neutral, 9(42%) agreed while 1(5%) completely agreed to the statement. With regard to whether teachers uses internet in lesson preparation most teachers similarly disagreed as indicated by 75.0% of

respondents. From the findings in Table 4.11 it was established that the level of application of various ICT tools in teaching and learning history and government subjects by teachers is very minimal and has a room for improvement.

4.4.9 Application of various ICT tools in teaching and learning history and government subject according to schools principals

Similarly the researcher sought to application of various ICT tools in teaching and learning history and government subject. This was necessary in order to establish whether there was difference in opinion of teachers and principals on application level of application of various ICT tools in teaching and learning of history and government subject. The responses were also weighed using a 5 level likert scale either to measure the level of agreement or disagreement with the statements provided.

Table 4.12

Application of ICT in teaching in History and Government

Skill	Completely disagree	Disagree	Neutral	Agree	Completely agree	Total in %
Teachers select appropriate software to use in teaching	5(24%)	7(33%)	4(19%)	3(14%)	2(10%)	21(100%)
Teachers use power point in the class	10(47%)	3(14%)	2(10%)	4(19%)	2(10%)	21(100%)
Teachers design technology enhanced learning activities for their students	2(10%)	2(10%)	3(14%)	7(33%)	7(33%)	21(100%)
Teachers uses email to share knowledge with other teachers in the department	5(24%)	5(24%)	1(5%)	9(42%)	1(5%)	21(100%)
Teachers uses internet in lesson preparation	1(5%)	7(33%)	2(10%)	9(42%)	2(10%)	21(100%)

From Table 4.12 the study sought about the level of application of various ICT tools in teaching and learning application in learning of History and Government in secondary schools in Bungoma South Sub- County whereby most teachers disagreed with statement that they normally select the software to use in teaching and learning as indicated by 33% of teachers who strongly disagree while 19.0% also disagree. As per whether teachers use power point in class most teachers disagreed as indicated by 47.0% of the teachers. As per whether teachers are involved in designing technology enhanced learning activities for students the findings showed that most teachers disagreed with the assertion. As to whether teachers used email to share knowledge with other teachers in the department, 5(24%) completely disagreed, 5(24%) disagreed, 1(5%) were neutral, 9(42%) agreed

while 1(5%) completely agreed to the statement. With regard to whether teachers use internet in lesson preparation most teachers similarly disagreed as indicated by 75.0% of respondents. From the findings in Table 4.12 it was established that the level of application of various ICT tools in teaching and learning history and government subjects by teachers is very minimal and has a room for improvement.

4.5 Education level and ICT application

The first objective of the study was to establish the extent to which teachers' level of education influences application of ICT in learning of History and Government in secondary schools this is because teachers' level of education was thought to be a key factor to that can determine application of ICT in learning of History and Government

4.5.1: Level of Education of Teachers

The researcher also asked the respondents to state the education level of the teachers from the selected schools used for the study. The respondents' education level ranged from A level to post graduate level, this was important since the study sought to establish whether education level of a teachers influence the application of ICT for teaching and learning of history and government subject.

Table 4.13

Education Level of Teachers

	Teachers	
Education Level	**Frequency**	**Percent**
O Level , A Level	6	20.0
Under Graduate	21	60.0
Masters and Above	6	20.0
Total	**33**	**100.0**

From the findings in Table 4.13most teachers accounting to 60.0% were degree holders, 20.0% had attained masters while another 20% had a minimum level of diploma. This indicated that most teachers in selected secondary schools in Bungoma South Sub-Countypossessed adequate education standards which could play a significant role in adoption and application ICT in teaching and learning processes

4.5.1 Teachers' level of education influence application of ICT in learning of History and Government.

The researcher also asked the respondents to state their perception on whether their education level influences their application of ICT in teaching and learning in schools.

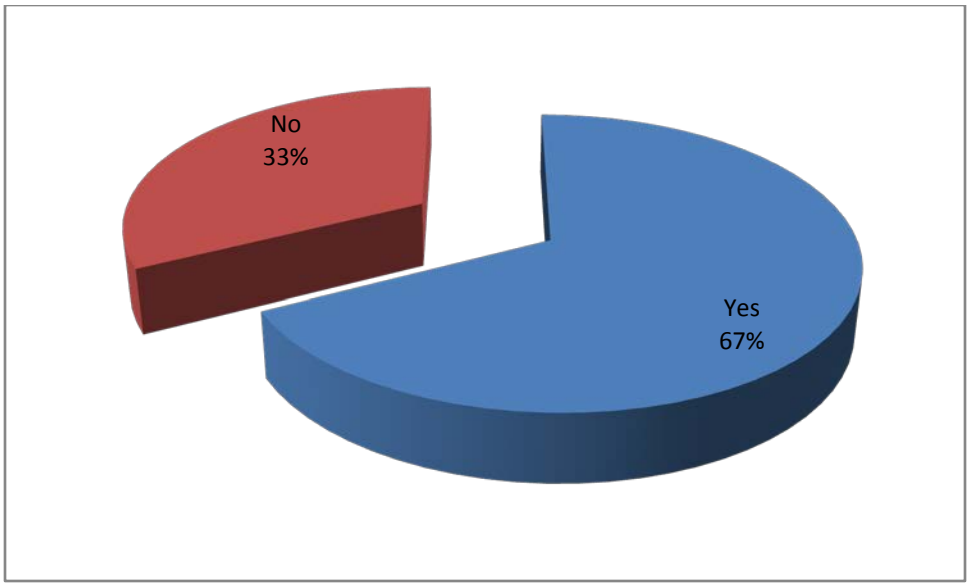

Fig 4.2 Perception of teachers on whether their level of education influence application of ICT in learning of History and Government

Majority of teachers participating in the study accounting to 67.0% indicated that they believe that education level of a teacher influences the level of application of ICT in teaching and learning processes and only 33.0% of respondents do not believe that level of education influences application of ICT in teaching and learning processes

4.5.2 Indicators showing why teachers' believe that their level of education influences application of ICT in teaching of History and Government

The study sought to establish from teachers the specific reasons behind their perception that their level of education influences application of ICT in teaching of History and Government

Table 4.14:

Teachers' level of education and its influence on application of ICT in teaching of History and Government

Reasons	Frequency	Percentage
Education level influence teachers' adoption	9	30
Education level influence integration of ICT into teaching process	6	20
Education reduce teacher anxiety about acceptance of ICT	6	20
The more a teachers is educated the more they have confidence to utilise ICT in teaching and learning process	6	20
The more a teachers is educated the more they have competence to utilise ICT in teaching and learning process	3	10
Education change teachers attitude towards the use of educational technology	3	10
Total	33	100

The study established that the level of education of teachers as expressed by teachers influenced their readiness to use the ICT for teaching students as expressed by 30.0% of the respondents. The study also found that education of teachers influence the integration of ICT in the teaching and learning process in the schools as expressed by 20.0% of respondents, while 20.0% indicated that ICT reduces teachers anxiety while teaching since all materials are available instantly, The other 20% indicated that ICT Improves competence and confidence of teachers as well as improves and ensures that attitudes are positive toward the use of educational technology then they can easily provide useful insight about the adoption and integration of ICT into teaching and learning processes.

4.5.3 To what extent do teachers' level of academic qualification influence ICT application in learning of History and Government in secondary schools in Bungoma South Sub- County

A cross tabulation between dependent variable which was ICT application in learning of History and Government and Teachers level of education (Diploma, Degree, Masters) was done where Chi-square value at a significance level of 0.050 was used to interpret whether teachers' level of academic qualification influence ICT application in learning of History and Government in secondary schools in Bungoma South Sub-County

Table 4.15

Chi Square for Teachers education level and extent of ICT adoption and use by teachers for teaching history and government

Chi-Square Tests

	Value	df	Asymp. Sig. (2 sided)
Pearson Chi-Square	140.369[a]	4	.000
Likelihood Ratio	124.870	4	.000
N of Valid Cases	33		

a. 3 cells (33.3%) have expected count less than 5. The minimum expected count is 1.22.

Table 4.15 shows a Chi-square value of $\chi^2 = 140.369$ at a significance level of 0.000 the calculated statistic $\chi^2 = 140.369$ was found to be greater than the tabled critical value of $\chi^2 = 124.870$. It can be interpreted that, statistically, there was a relationship between teachers' level of academic qualification and ICT application in learning of History and Government at $\alpha = 1.22$. The result thus depicts that there was found to be a relationship

between teachers' level of academic qualification and ICT application in learning of History and Government whereby more educated teachers were found to be using ICT more than the less educated teachers. Research has also indicated that ICT competency for teachers, knowledge deepening and knowledge creation depends on the level of education at which the teacher is working. Finally the competence scores decrease as the duration a teacher has worked increases (Department of Education and Training Western Australia, 2006).

4.6 Teachers' training and ICT application

The second objective was to establish the extent to which teachers' training in ICT influence the application of ICT in learning of History and Government in secondary schools in Bungoma South Sub- County.

4.6.1 Teachers formal training in ICT

In order to establish whether the sampled teachers from selected secondary schools in Bungoma South Sub- County had acquired formal training in ICT the researcher sought to establish whether teachers possessed any formal training in ICT where the findings are as shown in Figure 4.3

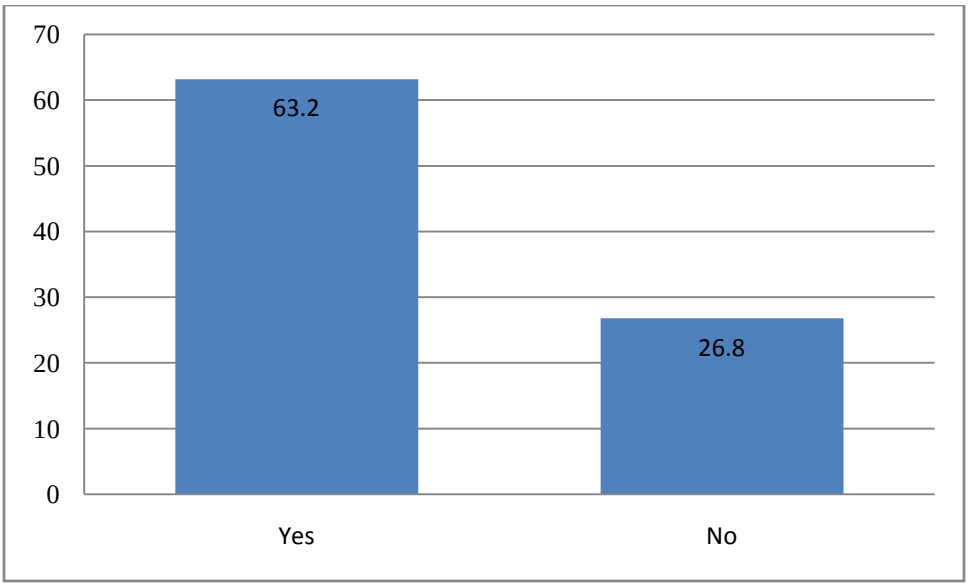

Fig 4.3: Teachers formal training in ICT

The study established that most teachers 63.2% possess a formal training in ICT where they were found to have attained several levels of certifications including certificates, diploma, higher diploma, degrees and post graduate qualifications.

4.6.2: Level of training of teachers in ICT

The researcher also asked the respondents to state the skills level in ICT of the teachers from selected schools. The respondents' skills and training ranged from certificate to post diploma level. The information in Table 4.16 presents the findings.

Table 4.16

Training and Skills I ICT

	Teachers	
	Frequency	**Percentage**
Certificates in ICT	20	80.0
Diploma in ICT	10	20.0
Total	**33**	**100.0**

From the Table 4.16 indicated that most teachers have a certificate in ICT as shown by 80.0% of teachers while only 20.0% possess Diploma in ICT. Therefore indication was that most teachers possess average training in ICT

4.6.3 Specifics ICT skills that possessed by teachers

The study sought to establish about the types of ICT skills that teachers have undertaken in order to indicate their level of proficiency in the use of computer software in teaching of History and Government subject

Table 4.17

Variety of ICT Training that teachers have undertaken

Skill proficiency	Frequency	Percentage
Word processing	9	2
Databases(access)	2	6
Spreadsheet(excel)	3	9
Graphics	1	3
PowerPoint	3	9
Internet	5	15
Email	6	18
Publishing software	2	6
Simulation	1	3
File navigation	1	3
Total	33	100

It was revealed from 9(28%) of teachers can use Word processing satisfactory and very well whereby most teachers explained that word-processing skills enable them to access and produce soft copies for the students to read. It was also found out that most teachers' skills in databases management (access) was enough and aided them to use electronic filing procedure. Other teachers 3(9%) were found to be in a position to use Spreadsheet (excel) very well. They did explain that calculations were done very well using the spreadsheet skills when needed. As per the graphics, data revealed that few 1(3%) respondents could use it. Most students could not use graphics. Also most teachers Other 3(9%) could not use PowerPoint satisfactorily, therefore the presentation of their work was being affected, 5(15%) were able to use internet very well, 6(18%) as well as

the use of email. On average it was therefore deduced that though teachers have been trained in most ICT skills, there was a room for improvement.

4.6.4 Effectiveness of ICT training that teachers undertook

The study sought to establish from teachers who participated in the study on whether the training was effective

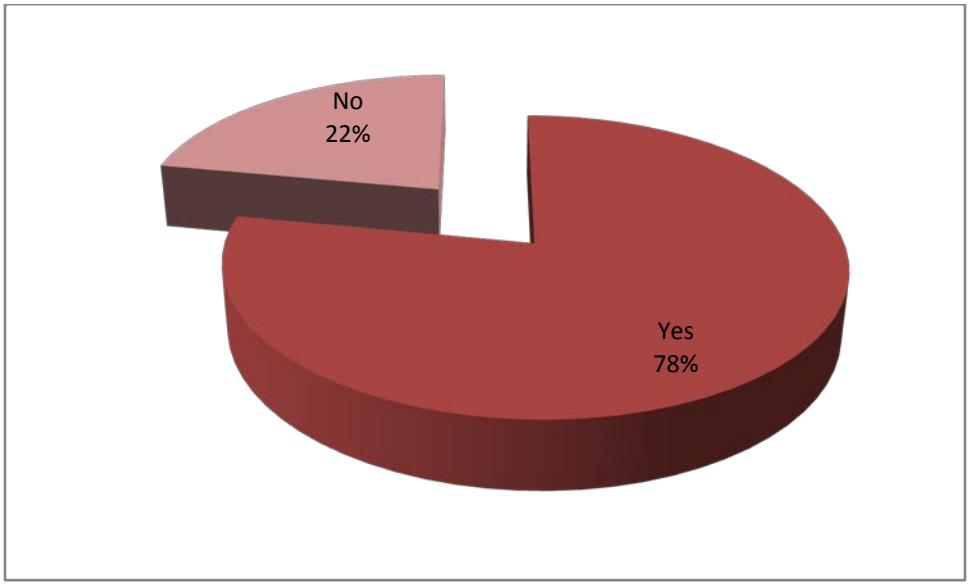

Fig 4.4 Opinion of Teachers on Whether the ICT Training was Effective

The research established that most of teachers found the ICT training they undertook as being effective as indicated by 78.0% of the respondents and only 22% did not find the ICT training as effective**.**

4.6.5 Indicators of Effective ICT training

The researcher sought to establish the kind of parameters that could be used to assess effectiveness of ICT training that teachers undertake

The study sought to establish the common indicators of effective ICT training where the results are as shown in Fig 4.4

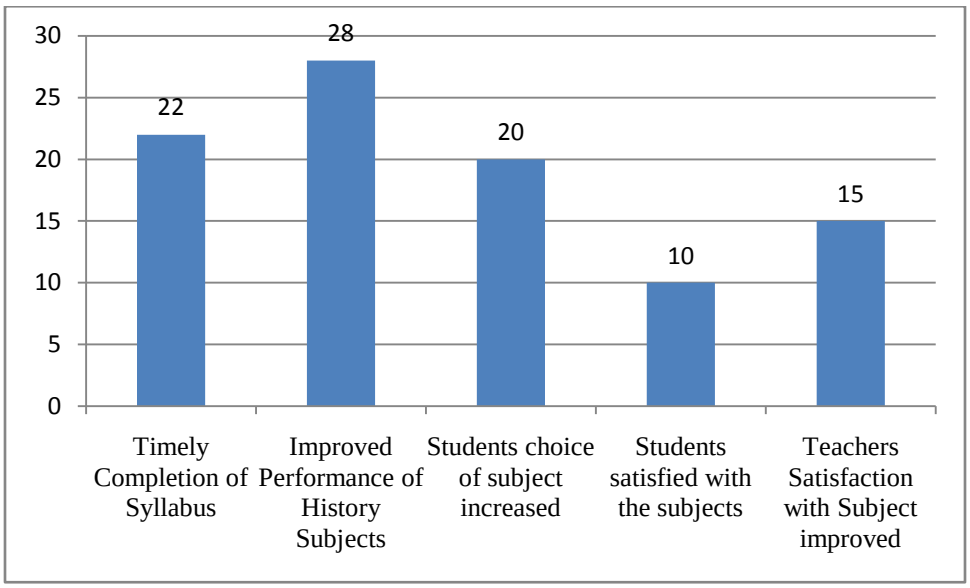

Fig 4.5 State the indicators of effective ICT training

From the findings the most common indicators of effective training as indicated by most of teachers was the improved performance of the history subjects indicated by 28.0% of teachers, 22% of teachers indicating the timely completion of the history syllabus, 20% indicating improved enrolment in history as a subject, 15% indicating

improved teachers satisfaction as well as 10.0 as improved students satisfaction with the subjects

4.6.6 Extent to which teachers' training in ICT influences application of ICT in learning of History and Government in secondary schools in Bungoma South Sub-County.

A cross tabulation between dependent variable which was ICT application in learning of History and Government and ICT training that teachers had undertaken was done where Chi-square value at a significance level of 0.050 was used to interpret whether teachers ICT skills influence ICT application in learning of History and Government in secondary schools in Bungoma South Sub- County.

Table 4.18

Chi Square between teachers' training in ICT and application of ICT in learning of History and Government

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	140.369[a]	4	.000
Likelihood Ratio	124.870	4	.000
N of Valid Cases	33		

a. 3 cells (33.3%) have expected count less than 5. The minimum expected count is 1.22.

Table 4.18 shows a Chi-square value of $\chi^2 = 140.369$ at a significance level of 0.000 the calculated statistic $\chi^2 = 140.369$ was found to be greater than the tabled critical value of $\chi^2 = 124.870$. It can be interpreted that, statistically, there was a relationship between teachers training in ICT and the actual application of ICT in teaching and learning of

history and government. The ICT skills level was at α = 1.22. The result thus depicts There is need to produce teachers who are comfortable with the adoption of technology in their lesson design and delivery by regular training in ICT (Termit and Ganisha, 2014). This has to be carried out during initial teacher training and regularly through continual professional development to help teachers stay up to date.

4.7 Attitudes of teachers and ICT application in teaching

The study sought establish the attitude of teachers in application of ICT in teachings history and government in various schools, teachers' attitudes towards technology influence their acceptance of the usefulness of technology and its integration into teaching.

4.7.1 Rating teachers attitude towards ICT application in teaching

The study sought to establish teachers' attitudes towards ICT application in teaching technology influence their acceptance of the usefulness of technology and its integration into teaching,

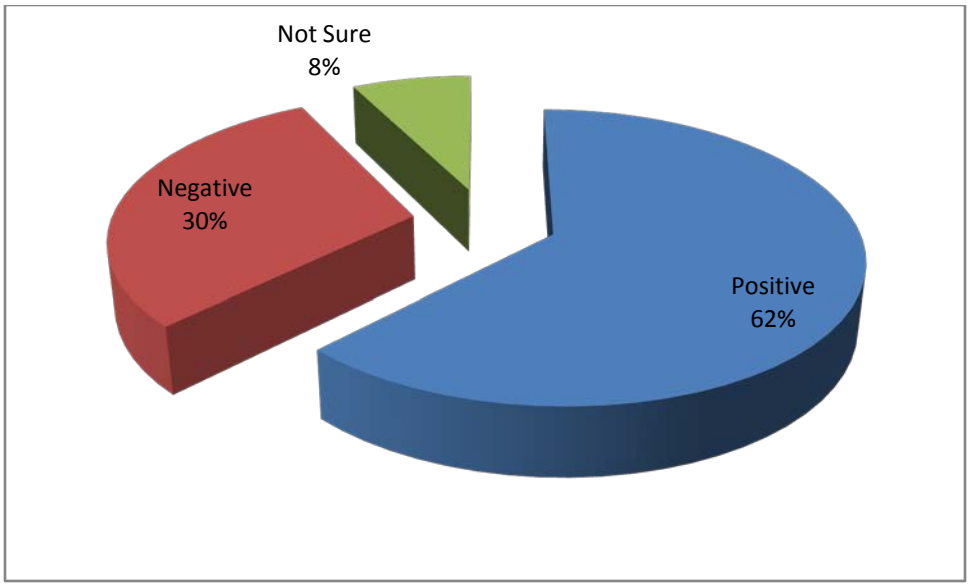

Fig 4.6 Rating Teachers Attitude towards ICT application in teaching

The study found out that most teachers had positive attitudes towards application of ICT in teaching and learning of history and government subject as indicated by 62% of the respondents, 30 % of teachers were found to have a negative attitude towards ICT while 8% were not decided.

4.7.2 **Perceived Benefit of application of ICT in learning according to teachers**

The study sought to establish the benefit of application of ICT in learning according to teachers

Table 4.19

Perceived Benefit of application of ICT in learning according to teachers

Benefit	Frequency	Percentage
Competence in lesson planning and research through computer use	2	10
Improves teachers attitude towards use of computers	3	12
Teachers easily gain exposure, knowledge and expertise in the use of various computer software	7	30
Teachers implement technology and transform teaching practices	2	8
Teachers' understand content knowledge and how to apply technology to support students	9	40
TOTAL	23	100

The data from 15(10%) respondents who were history teachers indicated that their educational level has influenced the application of ICT in teaching history and government programs. They stated that competence in lesson planning and historical research was achieved through computers. Other 17(12%) respondents stated that level of education improved their attitude towards computers. It was clear from principals that computers are emerging issues that was not available during their learning period but even though they have embraced the change and integrated ICT in their teaching programs. Other 44(30%) respondents indicated that teachers easily gained exposure, knowledge and expertise in the use of computer software. They did say that the use of internet through E-Mail, Chat, Forum and user groups on Yahoo or Gmail widens the scope knowledge and expertise. Data from 12(8%) respondents said that the level of

education has enabled teachers implement technology and transform teaching practices. The remaining 58(40%) respondents who were the majority and more so students indicated that the level of education enabled teachers to understand content knowledge and how to apply technology to support students.

4.7.3 Perceived bottleneck of application of ICT in learning according to teachers

The study sought to Perceived bottleneck of application of ICT in learning according to teachers

Table 4.20

Perceived bottleneck of application of ICT in learning according to teachers

Perceived Benefit of application of ICT in learning according to teachers	Frequency	Percentage
ICT make students lazy	2	10
ICT can be disruptive to traditional methods of teaching, power reliance	2	12
Most teachers requires continuous training	7	30
ICT make teaching to lack participatory interaction	1	8
ICT can interfere with students oriented teaching methods	9	40
Total	23	100

From the findings it was established that some teachers perceive ICT application in teaching and learning to have several problems with most mentioning that ICT make students to be lazy since all learning materials are provided in advance as opposed to the

traditional teaching methods as indicated by 20.0% of the teachers, some indicate that ICT can be disruptive to the traditional methods of teaching especially where teachers are trained in the traditional methodology as indicated by 20.0% of respondents, others mentioned that ICT requires teacher to be trained continuously since technology change regularly (10.0%), other teachers perhaps used to traditional teaching methods indicated that that ICT do not support participatory interaction and students oriented teaching methods.

4.7.4 How Attitudes of Teachers affect the use of ICT in teaching and learning

The study sought to attitudes of Teachers affect the use of ICT in teaching and learning

Table 4.21

How Attitudes of Teachers affect the use of ICT in teaching and learning

	Frequency	Percentage
teachers were more positive about their attitude towards computers and intention to use computer than their perceptions of the usefulness of the computer and their control of the computer uses ICT More	2	10
Teachers who view perceived usefulness of ICT in teaching end up using ICT to a great Extent	2	12
Teachers who Trust ICT tools as an enabler in their Teaching practices uses ICT to a great Extent	7	30
positive attitude towards computers, computer experience, and personal entrepreneurship of the teacher educator have a direct positive influence on the innovative use of ICT by the teacher	2	8
teachers' attitudes towards technology influence their acceptance of the usefulness of technology and its integration into teaching,	8	40
Total	23	100

These findings established that most of teachers agreed that teachers who were more positive about their attitude towards computers and intention to use computer than their perceptions of the usefulness of the computer and their control of the computer were using ICT for teaching and learning practices in schools as indicated by 54% of teachers. Similarly the study established that those teachers who viewed ICT for teaching and learning to have some perceived usefulness towards teaching end up using ICT to a great Extent as indicated by 40.0% of teachers. It was found that Teachers who were found to Trust ICT tools as an enabler in their Teaching practices used ICT to a great Extent as indicated by 40.0% of respondents, at the same time it was established that positive

attitude towards computers, computer experience, and personal entrepreneurship of the teacher educator have a direct positive influence on the innovative use of ICT by the teacher and that teachers' attitudes towards technology influence their acceptance of the usefulness of technology and its integration into teaching

4.7.5 Teachers' attitude in ICT and application of ICT in learning of History and Government in secondary schools in Bungoma South Sub-County.

A cross tabulation between dependent variable which was ICT application in learning of History and Government and attitude of teachers has undertaken was done where Chi-square value at a significance level of 0.050 was used to interpret whether teachers ICT skills influence ICT application in learning of History and Government in secondary schools in Bungoma South Sub- County

Table 4.22

A cross-tabulation between Attitude of teachers and ICT application in learning of History and Government in Secondary Schools

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	9.000[a]	1	.003		
Continuity Correction[b]	4.144	1	.042		
Likelihood Ratio	9.535	1	.002		
Fisher's Exact Test				.028	.028
N of Valid Cases	23				

a. 3 cells (75.0%) have expected count less than 5. The minimum expected count is .44.

b. Computed only for a 2x2 table

Table 4.22 shows a Chi-square value of $\chi^2 = 9.000$ at a significance level of 0.003. The calculated statistic $\chi^2 = 9.000$ was found to be greater than the tabled critical value of

χ^2 = 4.144. It can be interpreted that, statistically, there was a relationship between positive attitude of teachers towards application of ICT in teaching and their acceptance of the usefulness of technology and its integration into teaching. The response was a confirmation that Teachers who Trust ICT tools as an enabler in their Teaching practices uses ICT to a great Extent in teaching and learning

4.8 Teaching experience and ICT application in teaching

The researcher's fourth objective sought to specifically identify the influence of teachers' teaching experience on application of ICT in learning of History and application ICT in teaching and learning processes

4.8.1 Teachers teaching experience

Teachers' teaching experience on application of ICT in learning of History and application ICT in teaching and learning processes.

Table 4.23

Teachers Teaching Experience

Duration of service	Frequency	Percentage
1-5 years	8	40
6-10 years	7	30
11-15 years	5	20
Above 16 years	3	10
Total	23	100

Firstly, the researcher wanted to identify the number of years the teachers have been teaching and the influence it has on application of ICT in teaching of History and Government. Out of the 43 respondents who participated in the research, 17(40%) had experience of 1-5 years, 13(30%) had experience of between 6-10 years, 9(20%) had experience of between 11-15 years while the rest 4(10%) had more than 16 years of experience. The findings show that the newer and young teachers are bringing ICT skills and knowledge to the profession. This is due to the fact that they encountered ICT skills during their initial training as teachers. Peralta and Coasta, (2007) confirms that teachers with more experience with computers have greater confidence in their ability to use them.

4.8.2 ICT application in teaching history and government

The researcher further sought to identify whether teachers apply ICT in teaching history and government

Table 4.24

Use of ICT in teaching History and Government according to students

ICT is used in teaching history and government	Frequency	Percentage
Yes	67	65
No	36	35
Total	103	100

Data from 51(35%) showed that teachers do not use ICT in teaching History and Government while majority 95(65%) respondents said that teachers used ICT in teaching history and government. This view departs from the general trend whereby teachers were negative about ICT. With perceived usefulness of ICT in their teaching, many teachers have adopted ICT in their day to day lesson delivery. This may be due to the current demands whereby everything is going digital for example online registration of candidates for KNEC examinations.

4.8.3 Duration teachers have used ICT in teaching History and Government

The researcher sought to know for how long the teachers have used ICT in teaching history

Table 4.25 Number of terms taught using ICT

Number of terms	Frequency	Percentage
One term	21	20
More than one term	82	80
Total	103	100

Data from 21 (20%) respondents showed that teachers have taught History and Government for one term using ICT while 82 (80%) respondents stated that they have taught history and government using ICT for more than one term.

4.8.4 Introduction of computers in schools

The researcher wanted to know when the computers were introduced in the school.

Table 4.26

Year of introduction of computers in the school

	Frequency	Percentage
2015	7	5
2014	15	10
2013	22	15
2012	29	20
Before 2012	73	50
total	146	100

Data from 7(5%) respondents said computers were introduced in 2015, 15(10%) respondents said 2014, 22(15%) of the respondents said that computers were introduced in 2013, 29(20%) respondents said that computers were introduced in 2012 while the majority 73(50%) of the respondents said they were introduced before 2012.

4.8.5 Teachers' attitude in ICT and its influence on application of ICT in learning of History and Government in secondary schools.

A cross tabulation between dependent variable which was ICT application in learning of History and Government and teaching experience has undertaken was done where Chi-square value at a significance level of 0.050 was used to interpret whether teachers ICT skills influence ICT application in learning of History and Government in secondary schools in Bungoma South Sub- County

Table 4.27

Cross-tabulation between teaching experience and application of ICT in learning of History and Government schools in Bungoma South Sub-County.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	100.483[a]	1	.000		
Continuity Correction[b]	97.197	1	.000		
Likelihood Ratio	122.641	1	.000		
Fisher's Exact Test				.000	.000
N of Valid Cases	180				

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 22.67.

b. Computed only for a 2x2 table

Table 4.27 shows a Chi-square value of $\chi^2 = 100.483$ at a significance level of 0.000 The calculated statistic $\chi^2 = 100.483$ was found to be greater than the tabled critical value of $\chi^2 = 97.197$. It can be interpreted that, statistically, there was a relationship between teaching experience and application of ICT in learning of History and Government schools in Bungoma South Sub-Countyat $\alpha = 22.67$. The responses by teachers depicted a teaching experience and application of ICT in learning of History and Government schools in Bungoma South Sub-County

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter focuses on the summary of the findings on teacher factors influencing the application of ICT in teaching and learning of history and government in secondary schools in Bungoma South Sub-County, Bungoma County, Kenya and give recommendations and the way forward.

5.2 Summary of the study

The purpose of the study was to determine teacher factors influencing the application of ICT in teaching and learning of history and government in secondary schools. This was done via a series of objectives that were in themselves a key means towards achieving this end. In order to establish the level of use and adoption of ICT by history and government teachers in teaching in public secondary schools, the research sought to find out the status of ICT infrastructure in sampled secondary schools, teachers and students ICT preparedness, accessibility and availability of hardware's and software's.

The respondents strongly indicated that ICT was a major influence on teaching and learning history and government by teachers. This observation is a positive indication that ICT is essential in teaching and learning on teaching and learning history and government by teachers. This is a clear indication that schools appreciate the role of ICT in education. However, there were a small number of respondents who felt that ICT has no major influence on teaching and learning. It is essential to note that the respondents

only differed on the degree of influence of ICT on teaching and learning on teaching and learning history and government by teachers.

The study found out that ICT in fact influenced teaching and learning. The various Education technologies helped the students to understand subject concepts faster on teaching and learning history and government by teachers. The various demonstrations using programmes such as power point generated the student's interests. This also boosted creativity and through ICT students become innovative. ICT was found to influence motivation levels and through it students become confident on teaching and learning history and government by teachers.

On the issue of influence of teachers' level of education and its influence in teachers level of application of ICT in teaching history and government subject it was found that it is an important factors for study, since a correlation was found between teachers with more education in utilizing ICT more, since education was said to influence use of computers, as most teachers did say that it influenced exposure, knowledge acquisition and experience in the use of computer software, and most stated that education level influenced implementation of technology and transformation of teaching practices and talked of education level influenced them to understand content knowledge and how to apply technology to support students. Most of the teachers had acquired education up to degree level and in fact quite a good number are currently undergoing a post graduate course if not completed one, their Education status contributed positively in improving their attitudes.

The second objective sought to find out if the teachers' attitude influenced their level of adoption. The study revealed that the teacher's attitude influenced their levels of adoption of ICT as a tool in teaching and learning. From these findings, it was established that most of teachers agreed that teachers who were more positive about their attitude towards computers and intention to use computer than their perceptions of the usefulness of the computer and their control of the computer were using ICT for teaching and learning practices in schools. Similarly the study established that those teachers who viewed ICT for teaching and learning to have some perceived usefulness towards teaching end up using ICT to a great Extent. It was established that Teachers who were found to Trust ICT tools as an enabler in their teaching practices used ICT to a great Extent as indicated by respondents. At the same time it was established that positive attitude towards computers, computer experience, and personal entrepreneurship of the teacher educator have a direct positive influence on the innovative use of ICT by the teacher and that teachers' attitudes towards technology influence their acceptance of the usefulness of technology and its integration into teaching.

The third objective was to establish the extent to which teachers' training in ICT influences application of ICT in learning of history and government in secondary schools in Bungoma South Sub-County where by training in ICT by teachers was found to be critical in pushing the speed of adoption of ICT by teaching fraternity with the findings indicating the more the teachers improve or harness skills in ICT the more they find it favourable to use ICT for teaching history and government.

Fourth objective was to establish the extent to which teaching experience influences the application of ICT in learning of history and government in schools in Bungoma

South Sub-County. With findings being that, teachers ICT experience, and personal entrepreneurship of the teacher educator have a direct positive influence on the innovative use of ICT by the teacher and that teachers' attitudes towards technology influence their acceptance of the usefulness of technology and its integration into teaching.

5.3 Conclusion

Based on the finding of the study the researcher came up with the following conclusions. There is no gender parity in Information Communication Technology uptake in schools. Majority of teachers have a higher level of education. They have a degree in education. The level of education of the teachers has an influence on application of ICT in learning. It influences the lesson planning, research, attitude of teacher towards computers. It also makes the teachers to gain knowledge and experience in the use of software. The level of education influences the teachers to understand the content knowledge and how to apply technology to support the students.

It can be concluded that apart from the education training, teachers have also trained in computer technology and acquired at least a computer certificate. Majority of the respondents had skills in word processing, internet and email. Respondents had fewer skills in databases, graphics, PowerPoint, simulation and file navigation. The schools have accessible computers that are internet enabled. Majority of the respondents use computers quite often. Schools have one computer lab that has more than 16 computers. The computers are inadequate since in majority of the schools more than five students share one computer. The common ICT tools used in schools are desktop computers and

projectors. Mobile phones are also used. Majority of the respondents have less than five years of experience.

Most of the teachers of History and government had experience of between 6-10 years. It can also be concluded that most of the teachers are not able to select appropriate software to use in teaching. They also found it hard to use power point in class. Most of the teachers are able to design technology enhanced learning activities for students and also use internet in lesson preparation. The level of training in ICT influences the teachers to understand the content knowledge and how to apply technology to support the students. Teacher's attitude influences their adoption of ICT whereby their attitude is determined by their education levels. It was therefore concluded that positive attitude towards computers, computer experience, and personal entrepreneurship of the teacher educator have a direct positive influence on the innovative use of ICT by the teacher and that teachers' attitudes towards technology influence their acceptance of the usefulness of technology and its integration into teaching

5.4 Recommendations

Based on the findings of the study, the researcher came up with the following recommendations;

1. Apart from the professional qualification, teachers should also train in ICT in order to integrate the skills in information seeking and management especially in history and government.

2. In order to improve in computer proficiency, teachers should be trained on how software works. Short courses should be encouraged in schools to assist the teachers
3. School management should purchase adequate computers to meet the needs of both teachers and students. More computer labs should be constructed to contain the large number of the students. Priority should be given to history and government due to the larger scope of the content. Teachers should be trained on how to use PowerPoint due to the large classes of history and government.
4. Students should be allowed to use computers always especially the internet in searching information in History and Government. This will make the work of the teachers concerned easier as the students will be updated with relevant information.
5. The government should provide computers to schools in order to facilitate teaching and learning process. They should also allocate adequate financial resources to assist in the construction of computer laboratories and related facilities.

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APPENDICES

APPENDIX 1

LETTER OF INTRODUCTION

Margaret Wasilwa

University Of Nairobi

P.O Box 30197

Nairobi

5-10-2015

Dear Sir/ Madam,

RE: PARTICIPATION IN RESEARCH

I am a student of the University of Nairobi currently pursuing a Degree of Master of Education in Curriculum Studies. I wish to request you to allow me carry out research in your school. The research topic is entitled 'Teacher Factors Influencing Application of Information Communication Technology in Learning of History and Government in Secondary Schools in Bungoma South Sub-County, Kenya'. The research is to be carried out in partial fulfillment of the requirements for the Degree of Master of Education in Curriculum Studies, University of Nairobi.

Your consideration is greatly appreciated.

Yours sincerely,

Margaret Wasilwa.

APPENDIX 2

QUESTIONNAIRE FOR TEACHERS

The main objective of the survey is to assess the level of ICT application in learning of History and Government in Bungoma South Sub-County.The information will be used only for the purpose of this survey. Your participation is completely voluntary. Please answer each question to the best of your knowledge. Your thoughtfulness, frank and honest responses will be greatly appreciated.

Part 1: Demographic information

1. State your age group (Tick the appropriate age group) a) 18-30 years b) 31-40 years c) 41-50 years d) 51-60 years.

2. State your gender (Tick the appropriate sex) a) Male b) Female

Part 2: Education Level and ICT application

3 Indicate your highest level of education by ticking: a) Certificate b) Diploma c) Degree d) Masters Degree and above

4 Does the level of education influence your application of ICT in learning of History and Government? Yes ( ) No ( )

5 If yes, explain how the level of education influences your application of ICT in teaching of History and Government.....

.....

.....

.....

Part 3:Training in ICT and application of ICT in learning

6 Have you had any formal training in ICT? Yes ( ) No ( )

7. If yes, at what level? a) Certificate b) Diploma c) Degree d) Masters Degree and above

8. Was the training effective? Yes ( ) No ( )

9.If yes, state the indicators of effective ICT training.....

.....

.....

Part 4: Teaching experience and ICT application in teaching and learning

10.For how many years have you been teaching?

(1-5) (5-10) (10-15) (15- above)

11.For how many years have you been teaching History and Government?

……

……

……

12.Have you applied ICT in teaching of History and Government?

Yes ( ) No ( )

13.If yes, for how long have you used ICT in teaching of History and Government?one term ( ) More than one term ( )

Part 5: Knowledge of computer software and ICT application in teaching and learning

Indicate the level of proficiency in the use of the following computer software by circling the appropriate response.

Skill	I cannot use it	I can use it to a small extent	I can use it satisfactorily	I can use it well	I can use it very well
Word processing	1	2	3	4	5
Databases (Access)	1	2	3	4	5
Spreadsheets (Excel)	1	2	3	4	5
Graphics	1	2	3	4	5
Power point	1	2	3	4	5
Internet	1	2	3	4	5
Email	1	2	3	4	5
Publishing software	1	2	3	4	5
Simulations	1	2	3	4	5
File navigation	1	2	3	4	5

Part 6: Access to ICT equipment

14. Do you have access to a computer? Yes ( ) No ( )

15.If yes, do you have access to the internet? Yes ( ) No ( )

16. Do you have a computer at home? Tick your answer.Yes ( ) No ( )

17. How often do you use a computer?

Never…….Rarely….Quite Often… Very Often……. Always ……

18. When were computers introduced in your current school?.....

19.How many computer labs are there in your current school?……..

20 How many computers in the school are used for teaching and learning?.....

21.Which classes do you teach History and Government? Tick your answer. Form 1..... Form 2 ….....Form 3.....Form 4.....

22. What is the average number of students who share a computer during History and Government lessons in Form 1?.....Form 2?.....Form 3?.....Form 4?.....

23. Which other ICT tools do you use in teaching History and Government?----- ……

Part 7: Teacher's level of application of ICT in History and Government

20**.** Indicate the degree of application of the following ICT tools by circling your response.

	Completely disagree	**Disagree**	**Neutral**	**Agree**	**Completely agree**
I select appropriate software to use in my teaching	1	2	3	4	5
I use Power Point in my class	1	2	3	4	5
I design technology enhanced learning activities for my students	1	2	3	4	5
I use e-mail to share knowledge with other teachers in the department	1	2	3	4	5
I use internet in my lesson preparation	1	2	3	4	5

Thank you for your time

APPENDIX 3

QUESTIONNAIRE FOR STUDENTS

The main objective of the survey is to assess the level of ICT application in learning of History and Government in Bungoma South Sub-County. The information will be used only for the purpose of this survey. Your participation is completely voluntary. Please answer each question to the best of your knowledge. Your thoughtfulness, frank and honest responses will be greatly appreciated.

Part 1: Demographic information

1. In which class are you? (Tick appropriately)
2. Form 1..... Form 2 …….....Form 3.....Form 4.....
3. State your gender (Indicate your sex)

   (a) Male (b) Female

Part 2: Knowledge of computer software

Indicate the level of proficiency in the use of the following computer software by circling the

Appropriate response.

Skill	I cannot use it	I can use it to a small extent	I can use it satisfactorily	I can use it well	I can use it very well
Word processing	1	2	3	4	5
Databases (Access)	1	2	3	4	5
Spreadsheets (Excel)	1	2	3	4	5
Graphics	1	2	3	4	5
Power point	1	2	3	4	5
Internet	1	2	3	4	5
Email	1	2	3	4	5
Publishing software	1	2	3	4	5
Simulations	1	2	3	4	5
File navigation	1	2	3	4	5

Part 3: Access to ICT equipment

4. State the ICT tools that you use (Tick all applicable choices)
   Mobile phone ( ) Desktop computer ( ) Laptopcomputer ( ) Printer ( ) Camera ( )

5. Do you have access to a computer?
   Yes…. No……

6. If yes, how often do you use a computer?
   Never ( ) Rarely () Quite Often ( ) Very Often ( ) Always ( )

7. Do you have access to the internet?
   Yes… No…

8. Do you have a computer at home? Tick your answer.
   Yes …… No…

9. When were computers introduced in your current school?.....

10. How many computer labs are there in your current school?……

11. How many computers in the school are used for teaching and learning?.....

12. What is the average number of students who share a computer during History and Government lessons in your class?.....

13. Which other ICT tools are used in your school in the teaching of History and Government?……

Thank you for your time.

APPENDIX 4

QUESTIONNAIRE FOR PRINCIPALS

The main objective of the survey is to assess the level of ICT application in the teaching of History and Government in Bungoma South Sub-County

The information will be used only for the purpose of this survey. Your participation is completely voluntary. Please answer each question to the best of your knowledge. Your thoughtfulness, frank and honest responses will be greatly appreciated.

Part 1: Demographic information

1. State your age (Tick the appropriate age group)

(a) 18-30 years (b) 31-40 years (c) 41-50 years (d) 51-60 years.

2. State your gender (Tick the appropriate sex)

(a) Male (b) Female

Part 2: Education Level

3. Indicate your highest level of education by ticking: a) Certificate b) Diploma c) Degree d) Masters Degree and above

Part 3: ICT training

4. Have you had any formal training in ICT? Yes ( ) No ( )

5. If yes, at what level? a) Certificate b) Diploma c) Degree d) Masters Degree and above

6. Is your staff trained in the use of ICT? Yes ( ) No ( )

7. If yes, how often do your teachers use ICT in teaching of History and Government?

Rarely ( ) Often ( )

Part 4: Knowledge of computer software and ICT application

8. Indicate the level of proficiency of teachers of History and Government in the use of the following computer software by circling the appropriate response.

Skill	**I cannot use it**	**I can use it to a small extent**	**I can use it satisfactorily**	**I can use it well**	**I can use it very well**
Word processing	1	2	3	4	5
Databases (Access)	1	2	3	4	5
Spreadsheets (Excel)	1	2	3	4	5
Graphics	1	2	3	4	5
Power point	1	2	3	4	5
Internet	1	2	3	4	5
Email	1	2	3	4	5
Publishing software	1	2	3	4	5
Simulations	1	2	3	4	5
File navigation	1	2	3	4	5

Part 5: Teaching experience and application of ICT

9. For how many years have you been teaching? ……

10. For how many years have you been a school principal? ……

Part 6: Access to ICT equipment

11. Do you have access to a computer? Yes….. No……

12. If yes, how often do you use a computer? Never…….Rarely…....

Quite Often….. Very Often……. Always ……....

13. Do you have access to the internet? Yes….. No……

14. Do you have a computer at home? Tick your answer. Yes …… No……..

15. When were computers introduced in your current school?.....

16. How many computer labs are there in your current school?……

17.How many computers in the school are used for teaching and learning?.....

18.How many computers in the school are used for administrative purposes?.....

19. Which classes do you teach, if any? Tick your answer. Form 1..... Form 2 ….....Form 3.....Form 4.....

20. What is the average number of students who share a computer during History and Government lessons in Form 1?.....Form 2? .....Form 3?.....Form 4?.....

21. Which other ICT tools are used in the teaching of History and Government in your school?.....

Part 7: Principal's assessment of teachers' level of application of ICT in History and Government

22. Indicate your assessment of the degree of application of ICT tools by teachers of History and Government in the school by circling your response.

	Completely disagree	**Disagree**	**Neutral**	**Agree**	**Completely agree**
They select appropriate software to use in their teaching	1	2	3	4	5
They use Power Point in my class	1	2	3	4	5
They design technology enhanced learning activities for students	1	2	3	4	5
They use e-mail to share knowledge with other teachers in the department	1	2	3	4	5
They use internet in lesson preparation	1	2	3	4	5

Thank you for your time.