FACTORS INFLUENCING FINANCING OF INFORMATION AND COMMUNICATION TECHNOLOGY USE IN PUBLIC SECONDARY SCHOOLS IN BUSIA DISTRICT, KENYA

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A Research project submitted in partial fulfillment for the requirements of the Masters of Education in Economics of Education,

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DECLARATION

This Research project is my own original work and has never been presented for a degree in any other University.

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This work is dedicated to my parents, Janeth Vitsengwa and Peter Muhinji; my wife Sylvia Masinde and our two daughters, Claret Vitsengwa and Arshley Akwera.

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LIST OF ABBREVIATIONS AND ACRONYMS

CDF	Constituency Development Fund
D.E.O	District Education Office
EFA	Education for All
FTSE	Free Tuition Secondary Education
ICT	Information and communication Technology
KESSP	Kenya Education Sector Support Program
MDGs	Millennium Development Goals
MOE	Ministry of Education
MOEST	Ministry of Education Science and Technology
NEPAD	New Partnership for Africa's Development
NGOs	Non-Governmental Organizations
PSSs	Public Secondary Schools
PTA	Parents Teachers' Association
PTTCs	Primary Teachers Training Colleges
SMASSE	Strengthening Mathematics and Science in Secondary Schools
TTCS	Teachers Training Colleges
UNESCO	United Nation Education Science and children Organization

ABSTRACT

The purpose of this study was to establish the factors influencing financing of information and communication technology use in public secondary schools in Busia District, Kenya. The objectives of the study were; to determine the influence of school enrolment, to examine the influence of government policy, to determine the influence of support from development partners and to establish the influence of parents' socio-economic background on financing of information and communication technology use in public secondary schools. Four research questions were formulated to guide the study. The questions sought to establish the factors influencing financing of information and communication technology use in public secondary school in Kenya. The study was conducted in Busia District Secondary Schools using descriptive survey design. Data on financing of ICT use in secondary schools was collected from the principals, teachers and students using questionnaires, a document analysis guide and an observation schedule. The document analysis and the observation schedule were used to collect information to verify the data collected through the questionnaires. Reliability of the instruments was determined by piloting the instruments at Busiada Girls' Secondary School in the neighbouring Butula District since it had similar characteristics with most of the Busia District Secondary Schools. Validity was enhanced by requesting experts in research methods to examine the instruments for content validity. The study sample included 17 Principals, 70 teachers and 541 students from form one to form four. Qualitative and quantitative data collected was analyzed and presented using tables of frequencies, percentages and figures. The study assumed that; Public secondary schools in Busia district face financing challenges in their bid to use ICT in management, teaching and learning activities; school enrolment, government policy, development partners and parents' socio-economic background are the only factors that influence financing of ICT use in public secondary schools and that respondents gave objective and reliable information concerning financing of ICT use in their respective schools. Key findings revealed that; many schools do not have ICT facilities, the government had successfully financed three schools to provide ICT literacy skills to all students in the schools, the Government ICT policy had not been disseminated to schools; NGOs and private Companies had not sponsored teachers for training nor financed ICT facility acquisition in schools; many teachers had sponsored themselves to acquire ICT skills for use in schools; all parents supported ICT use in schools on request and school enrolment was not a challenge to schools. Based on the research findings the researcher made the following recommendations; that the government should finance schools to provide ICT facilities and provide a clear government ICT policy to all schools, Teachers Service Commission to recruit qualified ICT teachers in schools with the ICT facilities. Parents should be actively involved in financing of ICT use in schools. Based on the recommendations, further research is suggested on;, effectiveness of financing ICT in public secondary schools, factors influencing investment in use of ICT in private institutions, school based factors influencing effective government investment in use of ICT in public primary schools and replication of the same study elsewhere in the country for generalizations to be made with a lot of certainty.

CHAPTER ONE

INTRODUCTION

1.1. Background to the study.

Information and communication technology (ICT) has become an integral component of the global life style. Almost all formal and informal activities worldwide are powered by ICT. It has become one of the major contemporary factors producing rapid changes in society and shaping the global economy. The social and economic development of the less developed nations may inevitably depend on their ability to adopt and integrate ICT in their economies (Abdullateef, 2008 as cited in Ukpakukpong, 2010).

Education being the tool for development of the necessary human resources that will bring about the national technological and economical development should not be left out in the use of ICT. Information and communication technology based technologies are able to improve the quality of teaching and learning to provide opportunities for lifelong learning and professional development through e-learning, internet facilities, virtual classroom and data base (Nwosu & Udofia, 2010).

The Republic of Kenya (2003) noted that education is externally efficient if it has the ability to use scarce resources to produce educational outputs which are

socially and economically productive. Armstrong and Allan (2009) agree with the Republic of Kenya (2003) when they observed that a country's education system in terms of quality has a direct correlation with the country's social, economical and political health which calls for the education system to provide knowledge and skills relevant to the needs of the individual and the nation.

Ayot and Briggs (1992) observe that any country's resources are limited, some severely, and demands upon them are great. Therefore, this calls for careful investment in order to obtain maximum returns. It is in recognition of the importance of ICT sector that countries world over have made a revolution of their economies by embracing knowledge-based economy as the new frontier for development. Many countries have redefined the ways in which secondary education addresses the diverse pupil interest and societal needs (UNESCO, 2007).

Developed countries have adopted ICT use through deliberate investment programmes set up by their respective governments. In 1988, the British government introduced ICT in the national curriculum, and made computers compulsory instruments to equip all students with tools for employment (Sue, 2005). Computers were provided by the government to schools in order to carter for quality access to education (Clark & Millard, 1998). At the same time, the British government declared education and training to be compulsory by 2015 for

those above 18 years in 2008 and encouraged teachers to procure personal computers for self-practice at home and offices (UNESCO, 2011).

Many African and Latin American countries reported inadequacy of physical and material resources due to increased student enrolment in schools. As a result, in 2000, countries ratified the harnessing of ICT at the world education forum held in Dakar Senegal to help solve these problems (UNESCO, 2007).

The government of post genocide Rwanda focused on offering computer education to the primary schools numbering 1020 and 2040 teachers trained by 25 trainers. After the training, more than 2170 primary schools received desktops and laptops. The programme was so successful that teachers and students expressed appreciation to the government of the day (Afolabi, Afolabi & Adedapo 2010).

The government of Kenya has formulated policies to adopt quality knowledge-based economy through provision of ICT facilities to educational institutions (Republic of Kenya, 2008). The Ministry of Education (MOE) policy on ICT is to integrate ICT education into education and training systems in order to prepare the learners and staff of today for the Kenyan economy of tomorrow and therefore enhance the nation's ICT skills. The strategy is to integrate ICT in teaching and learning by providing the requisite ICT infrastructure (Republic of Kenya, 2005).

The Kenya government has created initiatives to help schools acquire ICT facilities as a way of bridging the digital divide through government grants to schools and collaborating with development partners like donors, NEPAD, NGOs and private companies to alleviate ICT challenges (Republic of Kenya, 2011). The government development expenditure at the secondary school level declined from Kshs. 2.877 billion in 2010/2011 financial year to Kshs. 1.021 billion in the 2011/2012 financial year. This has affected the computer supply programme to schools (Republic of Kenya, 2012).

Studies show that there has been efforts spearheaded by the government, private public sector partnerships, NGO's, donors and individual schools to install ICT facilities in schools. However, these initiatives have been frustrated by lack of adequate finance as depicted by the consistent problems of inadequate ICT infrastructure, high cost of ICT and lack of teacher preparedness in terms of ICT training skills (Omufwoko, 2009; Kirunjah, 2002; Waiti, 2010).

Parents' socio - economic background influence their participation in school programmes. The social background determines the attachment a child would have to learning and education. Parents who have schooled well insist on their children achieving academic pursuits (Juma, 2010). Likewise, parents with ICT background in schools, support such programmes financially. According to the Republic of Kenya (2011), the provision of resources for the purpose of financing

and planning of an efficient education system is a challenge to the government. This requires the involvement of all stakeholders; the state and non-state actors in the quest to putting up the facilities and mobilization of resources for the realization of secondary education.

The school enrolment influences the quantity and quality of ICT facilities acquired by an educational institution. Kirunjah (2002) observes that the introduction of computers in schools yet they are expensive to buy and maintain have increased costs of education yet they are needed by students in order to fit in today's world. Some schools charge mandatory high computer fees to all students. She however, proposed involvement of other stakeholders like NGOs in order to reduce financial burden to students.

In Busia County many schools have relatively high enrolment with a few using computers in their management and processing of school records. Busia District in Busia County is a region with fertile soils and receives reliable rainfall throughout the year. It has a mixture of peasant farmers, small scale farmers, self-employed traders as well as people employed by both the government and the informal sector. Some schools have benefitted from Government grants for ICT use. However, majority of the schools in the District are particularly disadvantaged in terms of having adequate ICT facilities for management, teaching and learning as tabulated in Table 1.1.

Table 1.1

Busia County public secondary schools with computers

	District	Secondary Schools	Schools using computers	Schools with computer studies	TSC computer teachers
1	Busia	18	11	03	01
2	Butula	24	13	03	01
3	Nambale	13	08	02	00
4	Samia	14	09	05	02
5	Bunyala	07	04	01	01
6	Teso South	13	09	02	01
7	Teso North	17	13	02	02
	Total	**106**	**68**	**18**	**08**

Source: Busia County TSC Director's Office (2012).

Busia District has 61 % of the schools using some computers and 16.67 % offering computer studies at K.C.S.E. level of education while only one school (5.56 %) has a TSC computer teacher. The easy accessibility of the region due to navigable roads and the composition of schools using ICT made Busia District an ideal location for conducting the study to establish factors influencing financing of ICT use in public secondary schools.

1.2. Statement of the problem.

Efforts by the government, development partners, individual institutions and other stakeholders have been stepped up to install ICT facilities for use in public secondary schools (Republic of Kenya, 2011). Despite all the concerted efforts by the government and development partners to equip schools with ICT facilities for use in public secondary schools, the government has been unable to accomplish its ambitious programme to supply a million computers at a cost of 16.3 billion Kenya shillings as budgeted for in the 2009/2010 financial year to students due to lack of funds after benefiting just 1300 students (Republic of Kenya, 2012a). At the same time Kenya has not fully exploited the ICT potential as a development catalyst due to inadequate ICT infrastructure, weak collaborations between the government and private sector; limited ICT talented people; inadequate financial resources and effects of slowdown of the global economy….poor access and availability of ICT infrastructure and learning content limitations (Republic of Kenya, 2011).

The ICT situation status is not any better in Busia District. According to the Busia District D.E.O's office, despite all the government and development partners' efforts to facilitate acquisition of ICT facilities for use in public schools, the background paints Busia District as a region with low use of information and communication technology as depicted by the few TSC computer teachers, low number of schools using ICT facilities and offering computer studies at K.C.S.E.

level of education. It is against this background that there was need to conduct a study to establish factors influencing financing of information and communication technology use in public secondary schools in Busia District in Kenya.

1.3. Purpose of the study.

The purpose of this study was to establish the factors influencing financing of information and communication technology use in public secondary schools in Busia District in Kenya.

1.4. Objectives of the study.

The specific objectives that guided this study were:

i) To determine the influence of school enrolment on financing of information and communication technology use in public secondary schools in Busia District.

ii) To examine the influence of government policy on financing of information and communication technology use in public secondary schools in Busia District.

iii) To determine the influence of support from development partners on financing of information and communication technology use in public secondary schools in Busia District.

iv) To establish the influence of parents' socio- economic background on financing of information and communication technology use in public secondary schools in Busia District.

1.5. Research questions.

The research questions that guided this study were:

i) To what extent does school enrolment influence the financing of information and communication technology use in public secondary schools in Busia District?

ii) In what ways does government policy influence the financing of information and communication technology use in public secondary schools in Busia District?

iii) What is the influence of support from development partners on financing of information and communication technology use in public secondary schools in Busia District?

iv) What is the influence of parents' socio- economic background on financing of information and communication technology use in public secondary schools in Busia District?

1.6. Significance of the study.

This study attempts to establish the factors influencing financing of information and communication technology (ICT) use in public secondary schools in Busia District, Kenya. This is an important area of study that has attracted limited studies so far.

The results of this study, when replicated in other regions of the country, may be used to effectively finance ICT in education in order to expose majority of the learners in our learning institutions to information and communication technology as a means of achieving the Kenya vision 2030 objective of a globally competitive quality education, training and sustainable development (Republic of Kenya, 2008).

The replicated findings of the study may inform Ministry of Education and county government planners, school administrators, parents, teachers and other stakeholders in education on the sustainable ways of financing use of information and communication technology in public secondary schools.

The findings and recommendations of the study if published may act as a source of reference by other nations and future researchers interested in financing of information and communications technology in schools.

1.7. Delimitations of the study.

The study mainly focused on public secondary schools in Busia District. Under normal circumstances, the study should have been carried out in the entire country for generalizations to be made. The study was confined to the factors influencing financing of ICT use in public secondary schools only. This study may therefore, not give a true reflection of the situation in other regions of the country, which do not have similar circumstances to Busia District.

1.8. Limitations of the study.

The study was affected by fear of respondents to give honest and objective responses on suspicion of intrusion especially on economic activities and financial aspects of households and public secondary schools. The researcher explained the importance of the study and assured the respondents about the confidentiality of their identities and promised them access to the final findings and recommendations once the research is over in order to win their confidence.

1.9. Basic assumptions of the study.

The study was based on the following assumptions:

(i) Public secondary schools in Busia district face financing challenges in their bid to use ICT in management, teaching and learning activities.

(ii) School enrolment, government policy, development partners and parents' socio-economic background were assumed to be the only factors that

influence financing of ICT use in public secondary schools in Busia District.

(iii) Respondents gave objective and reliable information concerning financing of ICT use in their respective schools.

1.10. Definition of significant terms.

Development partners: Refers to all donor countries, non-governmental organizations, private companies and individuals that donate ICT facilities either in kind or monetary terms to schools for management, learning or teaching activities.

Finance factors: In this context it will refer to school enrolment, government policy, development partners' support and parents' socio-economic background that facilitate use of ICT in schools.

Government policy: refers to guidelines and grants to schools to help support various programmes like bursaries and ICT use (Abel & Ben, 2001).

ICT Infrastructure: Refers to information and communication technology components electricity, computer laboratory and peripherals like radios, televisions, computers, computer application programmes, and internet connectivity for use in management, learning or teaching activities in an institution (Republic of Kenya, 2005).

ICT use: Refers to utilization of computers and related technologies in management, learning or teaching activities.

School Enrolment: This is the total number of students admitted in a school over a period of one financial year.

1.11. Organization of the study.

The study is organized into five chapters. Chapter one covers the introduction to the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, delimitations of the study, limitations of the study, assumptions of the study, definition of significant terms and organization of the study. Chapter two presents the relevant literature reviewed under the subtopics: introduction, school enrolment and financing of ICT use, government policy and financing of ICT use, development partners' support on financing of ICT use, parents' socio-economic background and financing of ICT use, summary of the literature reviewed, Theoretical framework and conceptual framework. Chapter three covers research methodology which contains an introduction, research design, target population, sample size and sampling procedures, research instruments, validity and reliability of the research instruments, data collection procedures and data analysis techniques. Chapter four presents analysis of the data that was captured from the field and interpretation of the research findings. Chapter five presents the summary of the study, conclusions, recommendations of the study and suggestions for further research studies.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction.

The purpose of this study was to establish the factors influencing financing of information and communication technology use in public secondary schools in Busia District in Kenya. This chapter reviews the existing literature related to the factors that influence the financing of information and communication technology (ICT) use in public secondary schools. The review is examined under the subtopics; school enrolment and financing of ICT use, government policy and financing of ICT use, development partners' financial support on ICT use, parents socio- economic background and financing of ICT use, summary of the literature gaps to be filled, theoretical framework and conceptual framework.

2.2. School enrolment and financing of ICT use.

Increased student population in schools calls for increased ICT facilities for teaching and learning in schools all factors held constant. In developing countries, too many children are learning far too little due to poorly trained, resourced and supported teachers (UNESCO, 2011). Many African and Latin American countries reported inadequacy of physical and material resources due to increased student enrolment in schools. This report contends that serious barriers to school enrolment include the direct costs to households, which include school fees, text books, school supplies and compulsory school uniform. To mitigate some of these

challenges, African countries ratified the harnessing of ICT at the world education forum in Dakar Senegal to help solve these problems (UNESCO, 2007).

E-learning allows customization of learning content and examinations, delivery, dialogue and feedback among learners and tutors over the internet. E-education can provide access to the best gurus and the best practices or knowledge available to learners (UNESCO, 2002). In Kenya, the Economic Survey shows that government initiatives through subsidy programmes in form of Constituency Development Fund, Local Authority Transfer Fund, Ministry of Education bursaries and Free Tuition Secondary Education have led to increased access to Secondary education as shown in Table 2.1.

Table 2.1

School enrolment 2007-2011

Year	**2007**	**2008**	**2009**	**2010**	**2011**
Boys	638,690	720,500	787,944	885,537	948,706
Girls	541,577	615,407	684,690	767,847	819,014
Total	**1,180,267**	**1,335,907**	**1,472,634**	**1,653,384**	**1,767,720**

Source: (Republic of Kenya, 2012a: 48)

Table 2.1 shows a (49.77%) increase in school enrolment between 2007 and 2011. The Government intervention programmes have led to this increase.

Selina and Lumuli (2012) contend that provision of learning facilities at all levels of learning including equipment and human resources enhances the quality and relevance of the knowledge imparted to learners. They note that teaching and learning resources include classrooms, libraries, playing fields, text books among others. For effective interaction between teachers and learners, computers are an important interface that cannot be ignored. This review has established that school enrolment has an influence on financing of physical facilities for teaching and learning which include computer laboratories, computer infrastructure and the human resource.

2.3. Government policy and financing of ICT use.

Government policy is a powerful tool for equipping schools and compelling citizens to adopt modern technology. In 1988, the British government introduced ICT in the national curriculum and made computers compulsory instruments to equip all students with tools for employment (Sue, 2005). Computers were provided by the government to schools in order to carter for equality to access (Clerk &Millard, 1998).

Mwiria & Maliyamkono (1999) indicated the importance of Government funding in financing of schools during their study of cost sharing programme in Tanzania. The Tanzania Government was found to have provided (73%) of the total costs of education for its citizens. Although other partners like parents and NGOs contributed towards the cost, the Government proportion was the largest. Government contribution cannot be ignored for any new programme to succeed.
The government of post genocide Rwanda instituted a policy where 1020 primary schools were provided with laptops and desktops for ICT use and became a model for ICT integration in East and Central Africa (Afolabi, Afolabi & Adedapo 2010).

According to the Republic of Kenya (1999), the aim of Secondary School Computer Studies education is to equip learners with relevant skills to enable them use computers in different areas of application. The report went ahead to recommend the entrenching of the computer studies subject in the school's curriculum. The National ICT policy framework for education and training published in 2006 recommended the incorporation of ICT in education institutions as a learning resource (Republic of Kenya, 2006).

Besides the policy documents above, the government has embarked on financing of some schools to initiate ICT projects through the Computer Supply Program which provided funds to a tune of Ksh. 1.06 million each to 400 Secondary

Schools in the 2011/2012 financial year (Republic of Kenya, 2012a). It is apparent that schools with funds from the computer supply program are able to finance ICT projects. To add on that the ICT policy is a legal document for guiding education planners, therefore its presence in an institution guides managers on how to invest in education (Republic of Kenya, 2005).

The main objective of the Government through the Ministry of Education is to incorporate ICT in the education management practices, teaching and learning processes. Efforts have been put in place through computer supply programmes to schools by the Government to increase use of ICT in public Primary and secondary schools (Republic of Kenya, 2012b).

The Kenya Government has realized the decline in the use of the traditional telecommunications like the fixed landlines, wireless systems such as radio calls, and postal services have over the years. Fixed wire line telephones declined from 188 thousand in June, 2011 to 75 thousand in June 2012. Post offices dropped by 9 percent in 2012 due to closure of non performing ones. In the same period the mobile telephony connections rose by 17.4 percent to 29.4 million in June, 2012 while mobile money transfer rose from 17.4 million in June 2011 to 19.5 million in June 2012. Demand for Internet Services has increased leading to the Government licensing 75 additional Internet Service Providers (ISPs) to offer the service (Republic of Kenya, 2013). It is in the light of this that Uhuru Kenyatta

the President of Kenya, announced in his Madaraka Day address to the nation that the Government would provide one laptop to every standard on pupil in public primary school with effect from January, 2014 to fulfill one of the Jubilee Coalition campaign pledge to Kenyans. From the foregoing, it is evident that Government of the day on policy on education has an influence on financing of ICT use in public institutions.

2.4. Development partners' financial support on ICT use.

Maliyamkono & Mwiria (1999), in their study of the cost sharing programme in Tanzania identified donor agencies and self-help schemes as providing 14 % of the education budget in schools. However, the contribution of development partners to ICT financing was not studied yet their contribution cannot be underestimated given the rapid ICT development in the world. In Nigeria, many education institutions have through government assistance and private donations or independently strived to provide ICT facilities for the staff and student use (Nwosu & Udofia, 2010).

Development partners' financial support supplement government budgetary allocations through directly providing the physical facilities like buildings, laboratory equipment or maintenance through NGO's, community fund drives (*Harambees*), religious organizations, and other charitable organizations (Republic of Kenya, 1999). Omufwoko (2009) recommended engagement of

public private partnerships in the provision of ICT infrastructure in technical colleges to reduce the burden of students paying computer fees. Kirunjah (2002), in a study on participation of NGO's in financing of secondary schools in Laikipia District found that (14.3%) of the schools had computers yet she did not declare the source of funding. At the same time, she noted that NGOs were not actively involved in financing of secondary school development activities in the District.

Medina (2004) noted that an NGO that he chairs known as CLIK.org, piloted e-schools projects in Kenya in the year 2004 and donated five computers to few selected schools from Ugenya, Khwisero, Funyula, Nandi Hills, Mwingi North, Lang'ata and Kajiado District. In Busia County, Samia District, five schools benefitted from the programme -Nangina Girls, Sigalame Boys, St. Joseph's Moody Awori, Namboboto and Ganjala Secondary Schools (Medina, 2004). This explains why Samia District has a high percentage of schools offering computer studies at K.C.S.E and using computers in Busia County. It is inevitable that schools with access to development partners' financial support are able to acquire and use ICT facilities in their operations.

2.5. Parents' socio economic background and financing of ICT use.

According to (UNESCO, 2011) report children born of literate parents have access to education and enormous achievement levels while illiteracy traps people in poverty and lives of diminished opportunities. The report continues to note that

learning outcomes are influenced by household circumstances and with poverty and extreme inequality.

There is a direct correlation between parents' economic activities and the level of household education. In communities with high agricultural, business and allied economic activities, there is a similar proportionate growth in academic qualifications due to the capacity of the parents and guardians to pay for it (Waiganjo, 2009).

In Tanzania, Maliyamkono & Mwiria (1999) found out that the contribution of parents to the cost-sharing programme ranged from uniforms, fees and other compulsory contributions, which accounted for 13% of the programme. Republic of Kenya (2011) points out that in Kenya, parents often bear the burden of school fees for secondary education. Education has the capacity to alleviate poverty and catalyse wealth creation due to advancement in technology. Republic of Kenya (1999) identified parents as an integral partner in financing of education through contribution of fees, teaching materials, uniforms and labour.

2.6. Summary of literature reviewed.

The literature reviewed has established that there are a number of studies on implementation and challenges facing information and communication integration in schools in Nairobi Omufwoko (2009) and in Vihiga District Ombajo (2010)

respectively. None of the studies addressed the influence of support from development partners and parents' socio-economic background on financing of ICT use in schools. This study will therefore seek to fill this gap on ICT studies.

Although Mumo (2009) carried out a research on assessment of use of ICT in public secondary schools in Kilungu Division, Makueni District, she did not address factors that influence financing of the ICT use. This study seeks to fill this gap on financing of ICT use in public secondary schools, hence the topic factors influencing financing of information and communication technology use in public secondary schools in Busia District, Kenya.

In addition to that, although Selina and Lumuli (2012) explored the effects of physical facilities on the quality of education in urban primary schools, they did not consider the influence school enrolment has on financing of physical facilities for teaching and learning which include computer laboratories, computer infrastructure and the human resource. This study attempts to fill this gap by looking at the influence of school enrolment on financing of ICT use in schools.

The review also established that the main objective of the Ministry of Education is to incorporate ICT in the education management practices, teaching and learning processes (Republic of Kenya, 2012b). Efforts have been put in place through computer supply programmes. However, no one has done a study on influence of government policy on finance of ICT use. This research will attempt

to fill this gap by establishing the influence of government policy on financing of ICT use in public secondary schools.

Last but not the least, no research has been conducted on factors influencing financing of ICT use in public secondary schools neither in Kenya nor in Busia District in particular. This study intends to fill this missing gap on factors influencing financing of ICT use in public secondary schools in Busia District, Kenya. It is our expectation that this study will spark off an array of other studies on financing of ICT use in other parts of the country to aid in generalization of the study findings.

2.7. Theoretical framework.

This study was guided by the Agrarian Transformation and Socio- cultural Change Theory. Orodho (2005) points out the theory of Agrarian transformation and socio- cultural change that emerged in the 1960s and 1970s to solve the small – holder farmers' problem of agricultural stagnation. He identifies political economists who are proponents of this theory as Johnson and Meller (1961), Hunter (1967) and Owens and Shaw (1972).

The theory entails transition from old and traditional agricultural practices that use crude tools and methods of farming to new and modernized agricultural practices that use high yielding technology. The changes bring with them social structure and organizational changes (Orodho, 2005).

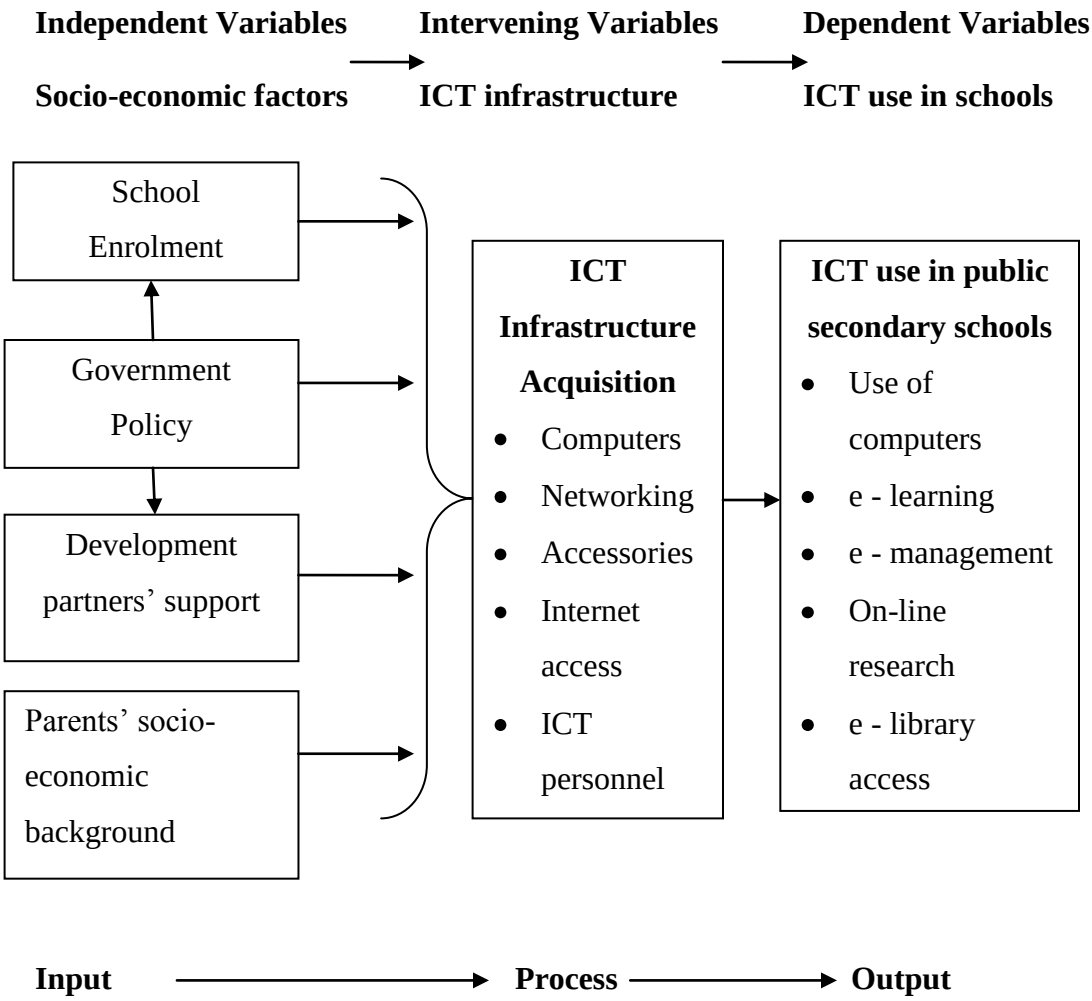
Although this theory describes agricultural transformation, it is applicable to the school transformation from crude traditional ways like use of manual teaching and learning activities to the acquisition of ICT facilities to modernize operations through automation that makes teaching, learning, researching and on-line data management easier and faster.

Therefore, this study was guided by the theory of agrarian transformation and socio- cultural change of modernization of traditional school teaching and learning activities. A school that complies with government policy and has financial support from development partners, optimum school enrolment and a good socio - economic background of parents transforms manual activities to modern automated ICT use that increases efficiency and enhance development. In line with the theory, the study sought to establish factors influencing financing of ICT use in public secondary schools in Busia District, Kenya.

2.8. Conceptual framework.

This is a model showing the diagrammatic representation of the relationship between variables in a research (Orodho, 2005). The conceptual framework in this study is based on the representation of factors influencing financing of ICT use in public secondary schools as shown in Figure 2.1.

Figure 2.1: Relationship between the variables in the study.



Source: Researcher (2013)

Figure 2.1 illustrates the relationship between independent variables of school enrolment, government policy, development partners' support and parents' socio-economic background and their influence on the capacity of a school to acquire and effectively maintain ICT infrastructure, which is a prerequisite to ICT use. Government policies have an impact on school enrolment and participation of development partners in provision of ICT facilities to public schools. The

government policy of free tuition secondary education introduced by the Grand Coalition Government in 2008 increased school enrolment leading to pressure on school facilities (Republic of Kenya, 2011). At the same time, the Kenya government has created an enabling environment for increasing school enrolment and investment by development partners to participate in the provision of teaching and learning facilities (Republic of Kenya, 2005).

Parent's socio- economic background determines the ability of parents to support ICT projects through payment of the requisite charges and encourage students to enroll for computer studies to facilitate ICT use. Presence of ICT infrastructure determines the level of ICT use in public secondary schools. Therefore, this study sought to establish factors influencing financing of ICT use in public secondary schools in Busia District, Kenya.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Introduction.

The purpose of this study was to establish the factors influencing financing of information and communication technology use in public secondary schools in Busia District in Kenya. This chapter presents the methodology that was used for the study. It describes the research design, target population, sample size and sampling procedures, research instruments, validity and reliability of the research instruments used as well as data collection procedures and data analysis techniques.

3.2. Research design.

The study used a descriptive survey research design to establish the factors influencing financing of information and communication technology use in public secondary schools in Busia District. According to Orodho (2005) a descriptive survey is a method of collecting information by interviewing or administration of a questionnaire to a selected sample of individuals. Scientists usually use the design to ask a random sample of individuals to respond to a set of questions about their background, past experiences, attitudes and opinions in order to yield data used to examine relationships between properties and dispositions (Chava & Nachmias, 2004). This design was deemed suitable for the study because the

researcher collected data, analyzed it and reported the information as it exists on the field without manipulating the variables under study.

3.3. Target population.

According to the Busia District Education Officer's records on staff establishment and structure, the target population for this study consisted of all the 17 principals, 159 teachers and 4914 students in the public secondary schools in Busia District. Mugenda & Mugenda (2003) defines target population as that population to which a researcher wants to generalize the results of a study. Orodho (2005) explains that all items or people under consideration in any field of inquiry constitute a universe. The target population in Busia District for this study is as shown in Table 3.1.

Table 3.1

Target population

Zone	Secondary Schools	No. of principals	No. of Teachers	School enrolment
Bukhayo West	5	5	46	1445
Matayos South	4	4	34	1156
Township	4	4	41	1228
Busibwabo	4	4	38	1085
Total	**17**	**17**	**159**	**4914**

Source: DEO's Office Busia District (2012)

3.4. Sample size and sampling procedures.

Mugenda & Mugenda (2003) defines a sampling design as a research plan that indicates how cases are to be selected for observation or as respondents. According to Gay (1983) as quoted by Mugenda & Mugenda (2003), the general rule of thumb for small populations is that a research needs to have at least 30 cases, but for bigger populations, a sample of 10% is representative enough for generalization to be made. Since Busia District had only 17 public secondary schools offering K.C.S.E. examinations up to the year 2012, the entire target schools' principals participated in the study while teachers and students were randomly sampled using the lottery method at (30%) and (10%) of the population respectively.

The principals are secretaries to school boards, have authority to incur expenses in schools and convene PTA Annual General Meetings to propose and adopt school projects. Therefore, they had information on school development plans. Teachers and students utilize the ICT facilities installed in schools while at the same time had crucial information on parent's socio- economic background and contribution towards financing of ICT use in the public secondary schools. The sample size used in the study from the Busia District public secondary schools is as shown in Table 3.2.

Table 3.2

Sample size

Population description	Target population	Sample size	% of target population
Schools	17	17	100
Principals	17	17	100
Teachers	159	70	44
Students	4914	541	11
Total	**5090**	**556**	**12.34**

Source: Busia District Public Secondary Schools (2013)

Table 3.2 indicates the study had a sample size of 17 principals, 70 teachers, and 541 students as respondents. The teachers and students were sampled using the lottery method where a participant's number was picked one after the other from a container in order to participate. Students sample was (11%), teachers sample was (44%) and all the Principals (100%) participated in order to get findings that were representative as the schools were less than thirty according to Mugenda and Mugenda (2003).

3.5. Research instruments.

The principal's, teachers', and students' questionnaires, the observation guide and document analysis guide were the main instruments used for collecting primary

data. The three sets of questionnaires had both open and closed ended questions. Questionnaires were preferred because information was easily collected from a large sample, was self administered, kept confidentiality of respondents and was standardized for ease of data analysis procedures (Orodho, 2005). The questionnaires sought to collect information on school enrolment and ICT use, compliance with government policy and ICT use, development partners' contribution on ICT use, parent's socio- economic background and ICT use in schools. The advantage of the questionnaire is that it saved the researcher's time and increased independence and accuracy of respondents' responses. An observation schedule and a document analysis guide were used by the researcher to capture the state of ICT infrastructure use and maintenance in the schools and information on school plans on ICT use. This enabled the researcher to verify the information captured through questionnaires.

3.5.1. Validity of research instruments.

Validity is the degree to which results obtained from analysis of the data collected actually represent the phenomenon under investigation (Orodho, 2005). It is the extent to which the instruments cover the objectives of the study. The content validity of the questionnaires and the observation schedule was established through seeking the supervisors' appraisal of the instruments' ability to collect data in conformity with the requirements of the research objectives and research questions. A pilot study was carried out at Busiada Girls' secondary school in the

neighbouring Butula District since it bore similar characteristics as Busia District schools and most of the requirements of the study objectives. Vague and unclear items in the instruments were edited and average time per item estimated. Comments that were made on areas that required changes were made and adjustments done through consultation with the supervisors and included in the final research instruments.

3.5.2. Reliability of research instruments.

Reliability is a measure of the extent to which an instrument will consistently give the same results after being administered several times to the same respondents (Orodho, 2005). According to Mugenda & Mugenda (2003), 1% of the target population is enough for a pilot study when using a descriptive survey study. Since all the 17 public secondary schools in Busia District participated in the study, the pilot study was conducted at Busiada Girls secondary school and repeated on 10 respondents in order to obtain the reliability of the instruments using the test- retest method. The answered questionnaires scored manually. Then the same subjects were given the same questionnaires two weeks later to complete and the manual scoring repeated and comparison made using the Pearson's product moment of correlation formula(r) using raw data.

$$r = \frac{N\sum XY - \sum X \sum Y}{\sqrt{N\sum X^2 - \sum X^2}\sqrt{N\sum Y^2 - \sum Y^2}}$$

Where:

r = Pearson's correlation coefficient

X = result from the first test

Y = results from the second test

N= number of paired first and second scores

The second responses for the instruments were averaged to the nearest whole number and substituted into the formula.

$$r = \frac{10\sum 2032 - \sum 98 \ \sum 84}{\overline{10\sum 2038 - \sum 98^{\ 2}} \ \overline{10\sum 1723 \ - \sum 84^{\ 2}}}$$

Reliability co-efficient for the instrument was 0.98. Mugenda & Mugenda (2003) considers a correlation coefficient of 0.8 to be normally high enough to judge the instrument as reliable for the study. Therefore, there is a high degree of reliability of the data.

3.6. Data collection procedures.

The researcher got an introductory letter from the University of Nairobi to obtain a research permit from the National Council for Science and Technology, which is charged with the responsibility of issuing the research permits in Kenya. The researcher reported to the District Commissioner for Busia for clearance at the District level. The District Education Officer was requested to give an introductory letter to the target schools. The researcher personally visited the

sampled public secondary schools and briefed the principals on the purpose and objectives of the study. The questionnaires were personally delivered and were administered by a cooperating teacher on the staff after a brief from the researcher to the target respondents at a convenient time to them. The questionnaires were collected upon completion. The schools were busy with form four exams and normal learning that could not be interrupted to the convenience of the researcher. The observation schedule was completed by the researcher on different days as he went to collect the administered questionnaires from the principals, teachers and students. Several visits were made to the same schools to collect the completed instruments. This was necessary and ensured a high questionnaire return rate.

3.7. Data analysis techniques.

The completed questionnaires by the respondents were sorted out for completeness, and accuracy. Qualitative data was edited to eliminate inconsistencies, summarized and coded for easy classification in order to facilitate tabulation and interpretation. Quantitative data such as statistical information on school enrolment, development partner support, government policy, and parents' socio-economic background was analyzed using tables and frequencies. The data was presented using tables, frequencies, percentages bar charts and pie charts.

Qualitative data obtained from the observation schedules and open- ended questions was analyzed through content analysis and organized into themes and

patterns corresponding to the research questions. This helped the researcher to detect and establish various categories in the data, which are distinct from each other. Themes and categories were generated using codes assigned manually by the researcher. This data was analyzed using frequencies and percentages. All the information generated was used to evaluate its usefulness in answering the research questions. In order to establish whether there was a relationship between the independent variables and the dependent variable, correlations analysis was used.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSIONS OF FINDINGS

4.1. Introduction.

The purpose of this study was to establish the factors influencing financing of information and communication technology use in public secondary schools in Busia District, Kenya. This chapter presents data analysis, presentation interpretation, and finally discussions of findings at the end of items investigating an objective in order to establish factors that influence financing of ICT use in public secondary schools. The data is presented using tables, bar graphs and description of findings.

4.2. Return Rate of Questionnaires.

After the collection of the questionnaires that had been distributed to 692 respondents, the results were as shown in Table 4.1.

Table 4.1

Return Rate of Questionnaires.

Questionnaire	Delivered	Collected	Percentage
Principals	17	17	100.00
Teachers	85	70	82.35
Students	590	541	91.69
Total	**692**	**628**	**90.75**

Source: Busia District Secondary Schools (2013)

The questionnaires that had been issued to principals in 17 secondary schools in Busia District were all collected after several follow- ups, attaining 100 percent return rate. However, the return rates for teachers and students attained 82.35 and 91.69 percent respectively. According to Mulusa (1990), a return rate of (50%) is adequate, (60%) good and (70%) very good. The return rate was therefore considered very good to provide required information for the analysis purpose. All the returned questionnaires were checked and edited per school to avoid mix up of facts as observed by the researcher before being analyzed as a district. All the collected questionnaires were useful in shading light on financing of ICT use.

4.3. General and Demographic information of the respondents.

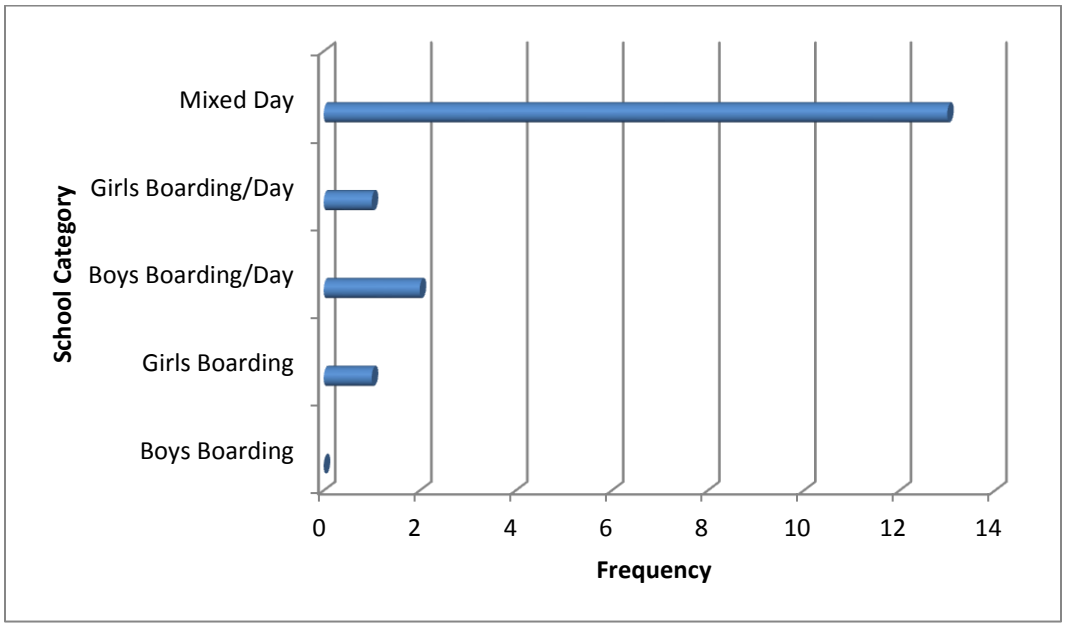
This section presents the general and demographic information of the respondents in order to understand the general characteristics of the population under study.

They include school category, gender, age, academic qualification, and ICT literacy level.

4.3.1. School category.

The researcher sought to establish the school categories in order to have an understanding of the financial status of the schools in terms of school fees payment. This would help understand the financial circumstances under which the schools operate. The findings on distributions of schools were grouped into five categories as shown in Figure 4.1.

Figure 4.1: School category.



Source: Busia District Public Secondary School Principals (2013)

Figure 4.1, indicates that the schools under study were predominantly mixed day schools at (76.47%). The only boys' boarding school had been converted into a boys' boarding/day school to make it affordable to many poor boys that had opted to join the mixed day schools in the area. The finding is that majority of the schools are mixed day schools that operate as free tuition day schools. This implies that the majority of students attend heavily subsidized schools by the Government since their parents are poor to afford expensive boarding schools.

4.3.2. Gender of the respondents.

In a bid to establish gender parity in recruitment, the respondents were asked to indicate their gender. The findings were as shown in Table 4.2.

Table 4.2

Gender of the respondents

	Principals		**Teachers**	
Gender	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Male	13	76.47	45	64.29
Female	04	23.53	25	35.71
Total	**17**	**100.00**		**100.00**

Source: Busia District Public Secondary School Teachers (2013)

In Table 4.2, among the principals and teachers, the finding is that majority of the respondents were male. Females were the least represented among the respondents. This implies that Teachers Service Commission employs more male teachers than female teachers. Likewise when promotions for headship are made, majority of those considered are male teachers.

This finding concurs with Momanyi (2011) who found that male teachers dominate leadership positions of secondary schools in Borabu District at 81percent. Female teachers are disadvantaged in placement process despite Government affirmative action policy in recruitment being in place.

4.3.3. The age of the respondents.

The teachers' and principals' age distributions were sought to determine their experience and readiness to embrace ICT skills at personal and school level. Their age was distributed as shown in Table 4.3.

Table 4.3

Age of the respondents

	Principals' age		Teachers' age	
Age bracket	**Frequency**	**Percentage**	**Frequency**	**Percentage**
20 – 29	00	0.00	38	54.29
30 – 39	01	05.88	15	21.43
40 – 49	10	58.82	11	15.71
50 – 59	06	35.29	06	08.57
Total	**17**	**100.00**	**70**	**100.00**

Source: Busia District Public Secondary School Teachers (2013)

From Table 4.3, it is revealed that majority of the teachers were in the (20 - 29) year's age bracket. This finding shows that majority of the teachers are relatively young and flexible to adopt ICT use through in-service. Majority of the principals are in the age bracket (40 – 49) years. This is a group of teachers with a lot of experience in education matters and can advice school managers effectively on importance of financing ICT use in their schools.

4.3.4. Age of students.

Students were asked to indicate their gender and age in order to determine if they were of the right secondary school going age and their ability of participation in ICT use activities. The results of the study were as shown in Table 4.4.

Table 4.4

Age of students

AGE IN YEARS	Male	Female	Total	Percentage
12 - 14	22	26	48	08.72
15 - 17	198	165	363	67.10
18 - 20	76	47	123	22.74
Over 20	06	01	07	01.29
Total	**302**	**239**	**541**	**100.00**

Source: Busia District Public Secondary School Students (2013)

The Table 4.4 sought to establish the age distribution of the students that took part in the study. The study finding indicated that majority of the respondents were between (15 – 17) years age bracket. This finding implies that majority of the students attend school at the right school going age and they are able to give reliable information on financing of ICT use in public secondary schools.

4.3.5. Academic qualification of teachers.

Teachers and School Principals were asked to indicate their highest academic qualification to gauge their ability to prepare learners for ICT literacy classes. The study results were tabulated as shown in Table 4.5.

Table 4.5

Academic qualifications of respondents

	Teachers		Principals	
Qualification	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Diploma	21	30.00	00	0.00
Degree	45	64.29	12	70.59
PGDE	02	02.86	01	05.88
Masters	02	02.86	04	23.53
Total	**70**	**100.00**	**17**	**100.00**

Source: Busia District Public Secondary School Principals and Teachers (2013)

From Table 4.5, it can be inferred that majority of the principals and the teachers in the district were first degree holders in education. The least number of principals are PGDE holders while teachers have masters' holders as the least. Therefore, this implies that majority of the teachers and principals are academically qualified to impart quality knowledge and skills to the students at secondary school level.

4.3.6. Respondents' ICT Literacy level.

The principals' and teachers' ICT education level was sought in order to establish how prepared they were on financing and use of ICT in their schools. When the study data was summarized, the results were as shown in Table 4.6.

Table 4.6

ICT Literacy level of respondents.

	Teachers		Principals	
Literacy Level	**Frequency**	**Percentage**	**Frequency**	**Percentage**
None	00	0.00	15	21.43
Applications	10	58.82	19	27.14
Certificate	07	41.18	29	41.43
Diploma	00	0.00	06	08.57
Degree	00	0.00	01	01.43
Total	**17**	**100.00**	**70**	**100.00**

Source: Busia District Public Secondary School Teachers (2013)

In Table 4.6, the study finding is that majority of the Principals were holders of certificate level of ICT literacy while majority of the teachers had applications ICT level of literacy. This finding implies that they are prepared to use ICT facilities schools. The study revealed that a majority of teachers who did not

have any form of ICT training depended entirely on school secretaries to type their examination papers and confidential letters for administrators.

4.4. Data presentation according to research objectives.

This section mainly helped to fill in the gaps of the literature reviewed. To fill the gaps, the study was guided by the following four objectives; to determine the influence of school enrolment, to examine the influence of government policy, to determine the influence of support from development partners and to establish the influence of parents' socio- economic background on financing of information and communication technology use in public secondary schools in Busia District.

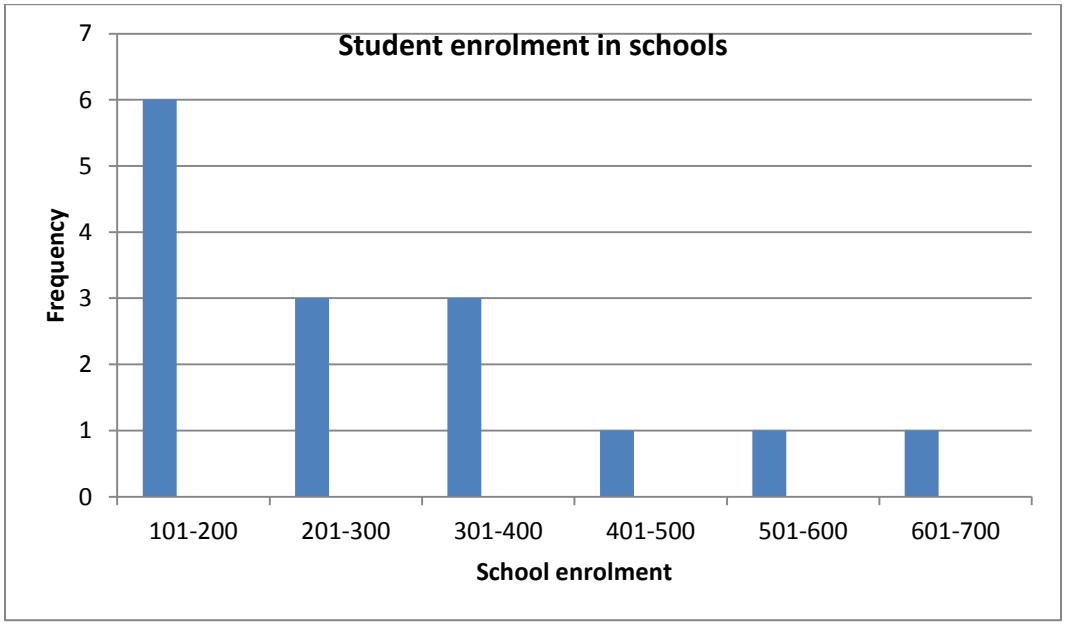
4.4.1. Influence of School enrolment on finance of ICT use in schools.

This objective sought information related to school enrolment such as computer fees, ICT facilities and number of students in a school using structured and objective questions in order to establish the influence of school enrolment on financing of ICT use in the public secondary schools.

4.4.1.1. School enrolment.

School principals were asked to indicate their school enrolment and status of stream registration to establish whether they had over enrolled or under enrolled students and the influence on financing of ICT use. The schools differed in terms of student enrolment as shown in Figure 4.2.

Figure 4.2: School enrolment.



Source: Busia District Public Secondary School Principals (2013)

From Figure 4.2, it can be inferred that majority of the schools in Busia District are under- enrolled with a school population ranging between 101 and 200. A majority of the schools are officially registered single streamed schools with the ministry of Education. This implies that few students are available in schools to influence financing and use of ICT in public secondary schools. Since Government funding is pegged on school enrolment, few schools have the capacity to finance use of ICT in their operations.

4.4.1.2. Schools offering all students ICT literacy.

To establish the number of schools offering ICT literacy to all students as stated by principals for ICT use in schools, teachers were asked to use a yes or no response to show whether their schools offer ICT literacy to all students or not. A few schools offer ICT literacy to all students. A majority (82.35%) of the respondents indicated that their schools did not offer ICT literacy to all students. This finding shows that a majority of the students are not able to access ICT knowledge hence unable to use ICT in their learning process.

4.4.1.3. Reasons for lack of ICT literacy to all students in schools.

The researcher sought to establish reasons that may be making all students not to be exposed to ICT literacy in public secondary schools. The teachers were given a set of reasons to check the ones influencing failure to expose all learners to ICT literacy. The results of the study were summarized as shown in Table 4.7.

Table 4.7

Reasons for lack of ICT literacy to all students in schools

Reason	Frequency	Percentage
Lack of computers	40	48.78
Lack of electricity	11	13.41
Lack of ICT teachers	14	17.07
Inadequate computers	14	17.07
Lack of computer lab	03	03.66
Total	**82**	**100.00**

Source: Busia District Public Secondary School Teachers (2013)

From Table 4.7, there were 82 responses from 70 respondents since the respondents were at liberty to choose more than one response from the list. The findings inferred from the data indicate that the main reason for not offering ICT literacy to all students is lack of computers and equally important are inadequate computers and Lack of ICT teachers in the schools. These findings show that schools are ill prepared for financing ICT and embracing its use in their management, teaching and learning.

4.4.1.4. School fees charged in schools per year.

To establish the computer fees charged in relation to total fees charged as a parameter for the ability of schools to finance ICT use, the researcher asked principals to give an estimation of how much they charged for school fees per year. The results of the study were as shown in Table 4.8.

Table 4.8

School fees charged per school in a year.

Total School fees	Frequency	Percentage
10,000 – 15,000	04	23.53
15,001 – 20,000	08	47.06
20,001 – 25,000	01	05.88
25,001 – 30,000	02	11.76
35,001 – 40,000	01	05.88
40,001 – 45,000	01	05.88
Total	**17**	**100.00**

Source: Busia District Public Secondary School Principals (2013)

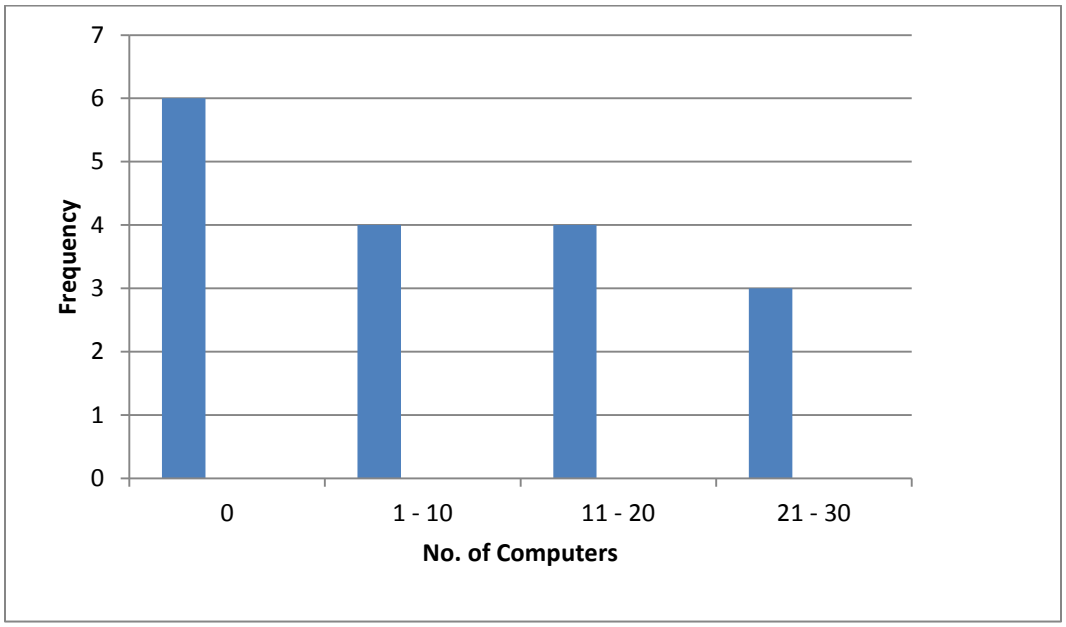
From Table 4.8, the majority of schools charge between 15,000 and 20,000 shillings for fees. A part from that, the study found that a majority of the

respondents did not charge students computer fees since they did not have the facilities. It was observed that a majority of the schools which never charge a fee for ICT use are ill equipped to finance ICT use. The 70 teachers who took part in the study corroborated the principals' responses by giving a similar response on charging computer fees to students.

4.4.1.5. Number of computers available per school.

In a bid to establish the number of computers in schools as an indicator of readiness to use ICT in schools, Principals were asked to give the exact number of computers in the school. The results of the study were as reflected in Figure 4.3.

Figure 4.3: Number of computers available per school.



Source: Busia District Public Secondary Schools Principals (2013)

From Figure 4.3, it is evident that majority of the schools had no computers for use in the school. From the observation schedules used by the researcher, most of the other Busia schools were observed to have inadequate ICT facilities. This revelation makes use of ICT by many schools to be a mere dream. This finding implies that majority of the schools cannot use computers in their school operations due to the absence of the facilities or having inadequate ICT facilities.

4.4.1.6. Computers with internet connection for learning.

The principals were also required to indicate the number of computers connected to the internet for on-line research and access to latest information to establish their level of preparedness for ICT use and sharing. The results were as shown in Table 4.9.

Table 4.9

Computers having internet connection for learning

Computers on internet	Frequency	Percentage
00	04	36.36
01	03	27.27
02	01	09.09
05	01	09.09
11	01	09.09
14	01	09.09
Total	**11**	**100.00**

Source: Busia District public secondary school principals (2013)

From Table 4.9, the study found that majority of those schools with computers, did not have internet connectivity for use in management, teaching and learning. A majority of the schools with internet connection to more than five computers were beneficiaries of the Government grants on ICT infrastructure in schools. These findings indicate that majority of the schools lack internet connectivity for use of ICT on on-line research and sharing of content by teachers and students.

4.4.1.7. Adequacy of ICT facilities in schools.

To establish the adequacy of ICT facilities in school for ICT use, the researcher asked principals to express their opinion on how adequate ICT facilities are in their schools. The results of the study were as shown in Table 4.10.

Table 4.10

Adequacy of ICT facilities in schools

ICT facility	%	Very adequate	Adequate	Fairly adequate	Inadequate	Not available
Televisions	**100**	05.9	11.8	0.0	41.2	47.1
Desktop computers	**100**	0.0	05.9	11.8	47.1	35.3
Laptops	**100**	0.0	0.0	05.9	58.8	35.3
Photocopiers	**100**	0.0	05.9	0.0	52.9	41.2
Whiteboards	**100**	0.0	0.0	0.0	35.3	70.6
Internet access	**100**	0.0	05.9	05.9	41.2	47.1
DVDs/CDs	**100**	0.0	0.0	11.8	47.1	41.2
Screen projectors	**100**	0.0	0.0	05.9	17.65	70.6
Smart boards	**100**	0.0	0.0	0.0	0.0	100.0
Total		**05.9**	**29.4**	**06.4**	**36.9**	**52.9**

Source: Busia District Public Secondary Schools Principals (2013)

From the Table 4.10, the findings of the study were that most secondary schools either had totally none of the ICT facilities or those that had, had inadequate facilities for use in schools. Majority of the schools did not have television sets, white boards and screen projectors for learning purposes in their schools. The smart board was not found in any of the schools under study. The study revealed that laptops and photocopies were inadequate for teaching and learning in schools. The findings of this study implies that majority of the schools in Busia District do not have not invested in financing of ICT for use in their management, teaching and learning operations. These findings imply that schools are adversely disadvantaged in use of ICT facilities as a way of modernizing their school activities.

The discussion of key findings on the influence School enrolment has on financing of ICT use.

The study revealed that majority of the schools does not use ICT due to lack of ICT facilities such as computer laboratories, computers, screen projectors, white boards, smart boards and internet connectivity. These findings supports Kirunjah (2002) who found that (85.7%) of the schools in Laikipia District lacked computers for use. Secondly, majority of the schools with ICT facilities do not expose all students to computer studies for ICT use owing to inadequate ICT facilities such as computers computer laboratories and lack of ICT teachers. These findings also concur with the findings of Ombajo (2010) who also observed that

inadequate hardware and software was one of the setbacks to ICT integration in Vihiga District.

Secondly, the study finding is that majority of the schools with inadequate facilities lack internet connectivity. The other finding is that internet connectivity is successful in schools that received Government ICT funding only. This finding is similar to the finding by Gathano (2009) who found that only a few schools taught computer studies and hardly were computers connected to the internet in secondary schools in Thika District.

In addition to that, the study also found that majority of the schools does not charge computer fees for ICT use since they don't have the ICT facilities. However, the few schools that have ICT facilities charge students a fee for purchase of more computers and their maintenance. This finding contradicts the finding by Omufwoko (2009). She found charging of college students for buying computers and maintenance to be a burden to the parents. She recommended Government intervention in provision of ICT facilities. Unlike her findings, this study found charging of computer maintenance fees to students as a sustainable way of using computers in public secondary schools.

4.4.2. Influence of Government Policy on financing of ICT use.

This objective sought to establish the government policy framework and financial participation of the Government in implementation of ICT use in public secondary schools. The respondents were asked to respond to questions on government ICT policy, Government funding and adequacy of ICT facilities in public secondary schools to establish the strategies instituted by the Government in order to create a platform for schools to finance and use ICT.

4.4.2.1. Dissemination of Government ICT Policy in Schools.

Principals were asked to express their opinion on the presence of the ICT Policy in their schools using a yes or no question to determine their school compliance to the policy. The study found that a majority (70.59%) of the schools lack knowledge of the ICT policy document since they have not seen it. Most of the schools whose principals claimed to have knowledge of the policy could not show the circular for verification. This has led to haphazard implementation of ICT use in schools.

4.4.2.2: Influence of Government ICT policy on financing of ICT use.

When those principals who acknowledged having knowledge of the government policy were asked to express their opinion on the influence of the policy on financing of ICT use in schools, the study results were as shown in Table 4.11.

Table 4.11

Influence of Government ICT policy on finance of ICT use.

Influence	%	SA	A	UN	D	SD
Increased use of computers	**100**	0.0	80.0	20.0	0.0	0.0
More computers bought	**100**	0.0	80.0	0.0	0.0	20.0
Increased trained ICT teachers	**100**	0.0	20.0	40.0	60.0	0.0
Increase internet connection	**100**	0.0	60	0.0	40	20
Total	**100**	0.0	54.5	13.6	22.7	09.1

Source: Busia District Public Secondary School Principals (2013)

In Table 4.11, the study finding is that majority of the respondents in the study indicated that the Government policy had led to an increase in the purchase of computers, internet connectivity and general use of computers in public secondary schools that had received Government funding. However, on the influence of the policy on trained ICT teachers, majority of the respondents disagreed and indicated that the policy had not led to an increase in the number of trained ICT teachers. This stand was corroborated through the observation schedules that showed only one trained ICT teacher had been posted by the Teachers Service Commission in one of the schools in the District. Three schools with more than

ten computers had not received a computer teacher from the Government in spite of making several official requests. Although the Government has an ICT policy in place, these findings imply that schools do not have access to the policy owing to poor dissemination of the document.

To establish government's commitment to support its ICT policy, school principals were asked to show how far they had benefitted from Government grants for implementation of ICT use in their schools. The study finding show that only (29.41%) of the schools had received Government grants to finance ICT use in their schools. The remaining majority (70.59%) had not received the Government funding. Coincidentally, the study found that only schools that had received Government funding had indicated having knowledge of the government ICT policy. These findings implies that majority of the schools do not have access to the Government ICT funding for ICT use.

4.4.2.3. Adequacy of government ICT funding received.

To establish how adequate the Government grants were to the schools for ICT funding, the principals were asked to express their opinion on the adequacy of the grants for implementation of ICT use in public secondary schools. The results of the study were as shown in Table 4.12.

Table 4.12

Adequacy of government ICT funding received.

ICT facility	%	SA	A	UN	D	SD
Computer laboratory	**100**	0.0	0.0	0.0	80.0	20.0
Teacher ICT training	**100**	0.0	20.0	0.0	60.0	20.0
Computer facilities	**100**	0.0	0.0	20.0	60.0	20.0
Computer textbooks	**100**	0.0	0.0	0.0	40.0	60.0
Internet connection	**100**	0.0	0.0	20.0	60.0	20.0
Total	**100**	**0.0**	**40.0**	**40.0**	**56.0**	**28.0**

Source: Busia District Secondary Schools Principals (2013)

Table 4.12, shows that majority of the respondents indicated that Government ICT funding was not adequate for construction of a computer laboratory, training of ICT teachers, purchase of more computer facilities and internet connection in public secondary schools. Likewise, the finding showed that majority of the respondents strongly indicated that the funds had been not been adequate for purchase of computer text books. These findings imply that the government funding to schools was not adequate for financing ICT use in public secondary schools.

The discussion of key findings on influence Government policy has on financing of ICT use.

The study reveals that a majority of the schools (70.59%) lack a clear Government ICT policy to schools as a source of reference during planning since most respondents had not received the document in their school. The contribution of the Government policy is a necessary contribution as indicated by (Afolabi, Afolabi & Adedapo, 2010) on their assessment of Rwanda's path to use of ICT in schools. They noted that the success of Rwanda Government Policy to schools was due to its provision of desktops and laptops to all schools after effective in-service training the teaching staff on how to manipulate and use the facilities for teaching and learning. The finding implies that although the Government has an ICT policy, the dissemination of the policy has not been hitherto effective.

To add on that the study revealed that majority of the schools has not received Government ICT funding for ICT use. The study also found out that for those few schools that had the Government funds allocated to them recorded an increase in purchase of computers, internet connectivity and increase in the use of ICT. However, the study also exposed the fact that the Government funding was not adequate for construction of a computer laboratory, purchase of computers, internet connectivity and training of ICT teachers. These findings indicated a close semblance with Migwi (2009) who observed that there was lack of readiness by the Government to implement integration of ICT use because of the lack of

computers and teacher ICT training in Ruiru Division in Thika District. Contrary to the findings of Migwi (2009), the Government has invested ICT funds in (29.41%) of the schools in Busia District as shown on page 48 of this report. However, the funds invested were rated inadequate for effective ICT use. Mwiria & Maliyamkono (1999) also recognized the importance of Government funding in financing of schools during their study of cost sharing programme in Tanzania. Unlike the low contribution of (29.41%) by the Government towards ICT use in Busia District in Kenya, the overall education cost contribution by the Tanzania Government was found to be (73%) of the total costs of education for its citizens.

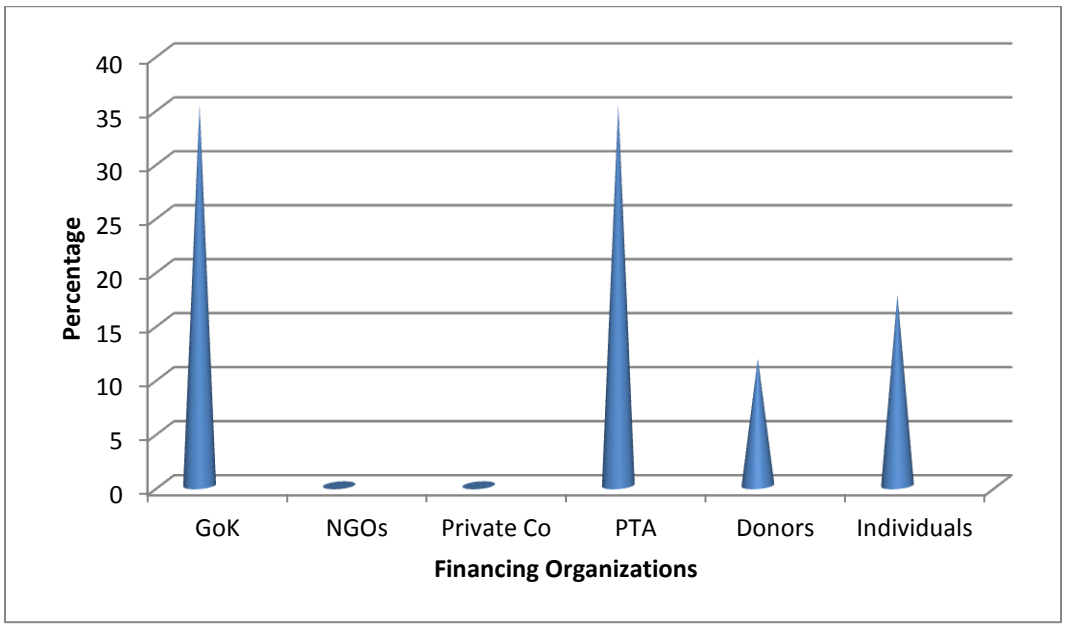
4.4.3. Development partners' support and finance of ICT use.

This objective sought information on financial support from development partners for ICT use in public secondary schools. The respondents were asked to give information on financial and material support received from various funding agencies like the Government, PTA, NGOs, donor countries, private companies for financing of ICT use in public secondary schools.

4.4.3.1. Funding agency for ICT use in schools.

In order to establish the funding agencies for ICT use in public secondary schools, the principals were asked to identify the various organizations that had supported the schools in funding ICT use. The study results were distributed as shown in Figure **4.4.**

Figure 4.4: Organizations funding ICT use in schools.



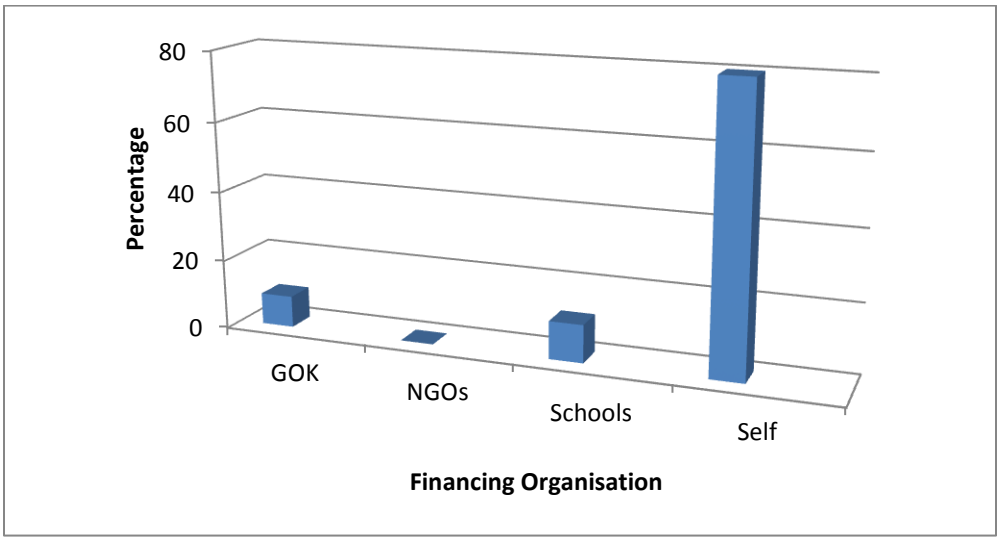
Source: Busia District Public Secondary School Principals (2013)

Figure 4.4 shows the funding support schools receive from various development partners for ICT use in schools. The study found that the major funding agencies happened to be the Government of Kenya and PTA project funding. Other funding agencies are individual personalities and donor countries. The observation schedule indicated that Parents were mainly involved in contributing funds for construction of computer laboratories in schools where the Government had provided funds to acquire ICT facilities for use in the schools. However, it is worth noting that the study found that neither NGOs nor Private Companies had funded any of the schools under survey to acquire facilities for ICT use. These findings indicate that the Government and PTA funding to be the main backbone for financing of ICT use in public secondary school use.

4.4.3.2. Organizations sponsoring ICT training for teachers.

When teachers were probed to establish their source of funding for ICT literacy training as a way of financing ICT use, the results of the study were as shown in Figure: 4.5.

Figure 4.5: Organizations sponsoring teachers' ICT training.



Source: Busia District Public Secondary Schools Teachers (2013)

Figure 4.5 show that the majority of the teachers sponsor themselves by paying fees for ICT training. Minor sponsors of ICT training happen to be the schools and the Government. The study found that NGOs did not sponsor teachers for ICT training.

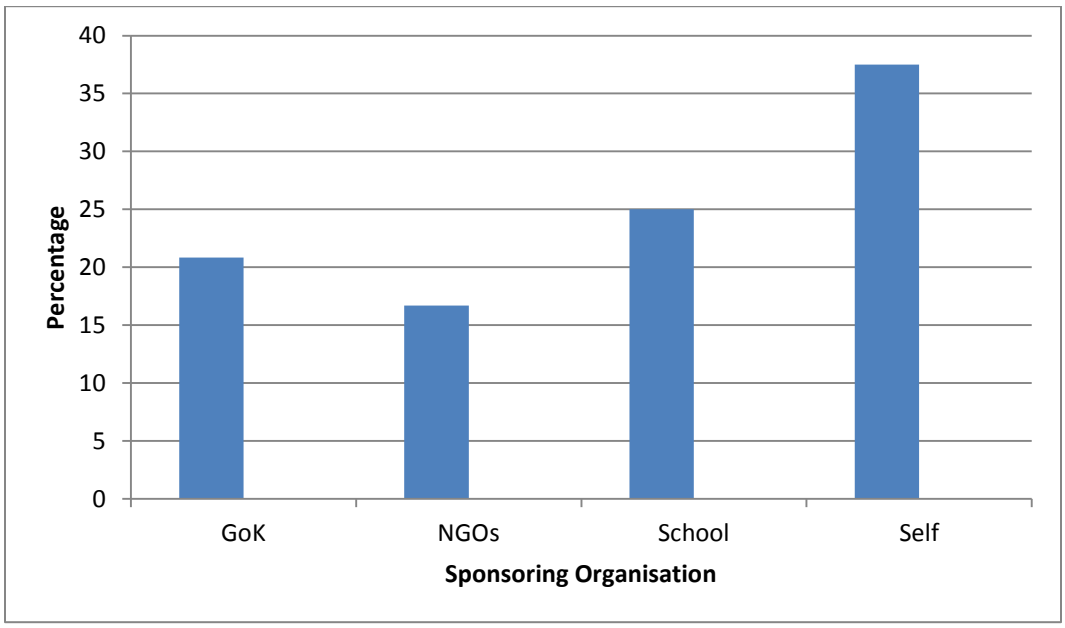
4.4.3. 3. Teachers with ICT in-service training

In a bid to establish how prepared teachers were in use of ICT, their in-service training period was sought. Teachers were asked to state whether they had been exposed to ICT in-service training or not and the duration of the in-service training. A majority (65.71%) of the teachers had not had in-service training on ICT use in schools. The few teachers who had ICT in-service training had an in-service training lasting less than one week. This explains why most teachers are less confident when faced with ICT situations like typing and research on the internet.

4.4.3.4. Organizations sponsoring in-service courses for teachers.

Teachers were asked to state the organizations sponsoring them for ICT in-service courses in order to establish the type of funding partnership for ICT use in schools. The results of the study were as shown in Figure 4.6.

Figure 4.6: Organizations sponsoring in-service courses for teachers.



Source: Busia District Public Secondary School Teachers (2013)

In Figure 4.6, the study findings show that the majority of the secondary school teachers self-sponsor themselves by paying their own fees for ICT in-service training. From the sponsorship distribution, various groups are involved in financing of ICT in-service training for ICT use in public secondary schools in Busia District. These findings imply that the majority of the teachers are keen to keep abreast with ICT skills through self sponsorship for training.

4.4.3.5: Challenges of financing ICT use in schools.

In a bid to establish problems encountered by secondary schools in financing of ICT use, the respondents were asked to express their opinion on the seriousness of

the challenges facing public secondary schools in financing of ICT use. The results of the survey study were tabulated as in Table 4.13.

Table 4.13

Challenges of financing ICT use in schools

Challenge	%	Very serious	Serious challenge	Fairly serious	Minor challenge	Not a challenge
Inadequate computer facilities	**100**	64.4	16.1	16.1	02.3	01.1
No computer trained teachers	**100**	65.5	17.2	05.7	10.3	01.1
Low school enrolment	**100**	14.9	10.3	16.1	17.2	41.4
No clear government ICT policy	**100**	32.2	18.4	12.6	26.4	10.3
Financial procurement difficulty	**100**	56.3	32.2	05.7	04.6	01.1
Total	**%**	46.7	18.9	56.3	60.9	55.2

Source: Busia District Public Secondary Schools Principals and Teachers (2013)

In Table 4.13, the study findings showed that majority of the respondents indicated inadequate computer facilities, lack of computer trained teachers, difficulty in procuring financial support and lack of a clear government ICT

policy as very serious challenges facing schools in financing of ICT use. It is only low enrolment that majority of the respondents in this study declared not to be a challenge in schools. These study findings implies that the challenges are a major hindrance to financing of ICT facilities for use in teaching and learning.

The discussion of key findings on influence development partners' support has on financing of ICT use.

The study findings indicated that the majority of the funding agencies were the Government of Kenya and Parents Teachers' Association (PTA). Parents mainly contributed towards construction of the computer laboratories in schools that received ICT funding. Just like in Kenya, Nwosu and Udofia (2010) established that many education institutions in Nigeria had also strived to provide ICT facilities for use by staff and students through Government assistance and private donations or independently as a school. Apart from that, the cost-sharing case of Tanzania in education in the study by (Mwiria & Maliyamkono, 1999) noted that the Government of Tanzania and parents had also collaborated in financing the education system.

Secondly, contrary to the general expectation, the study exposed an unusual occurrence where none of the schools had received ICT funding from NGOs and Private companies as a private organization social responsibility to the community. However, this finding is similar to the finding by Kirunjah (2002) who also established that NGOs were not actively involved in funding secondary

education during her survey of NGOs participation in financing of secondary schools in Central Division of Laikipia District. These findings also support the Republic of Kenya (2005) which observed that initiatives towards ICT in education were carried out largely by individual institutions with occasional support from the Private Sector. This study finding implies that Participation by development partners in the provision of ICT facilities for ICT use has declined and the Government and parents have taken over the burden of equipping schools with the relevant facilities for quality education.

Although the Government and schools are expected to develop their own human resources, the finding by the study shows that majority of the teachers self-sponsoring themselves by paying their fees for ICT training and in-service courses. Despite these efforts by the teachers to sponsor themselves to acquire ICT skills, the study also exposed a revelation that majority of the teachers (65.71%) had not received ICT in-service training. This finding concurs with the finding by Abiero (2010) who found that few teachers had self-sponsored themselves for basic computer skills since the Government had no programme to empower teachers in Rarieda District. However these findings were contrary to the findings by Migwi (2009) who found that (91%) of the teachers in Ruiru Division, Thika District had not had ICT training.

The study revealed that inadequate computer facilities, lack of ICT teachers, difficulty in procuring financial assistance and lack of a clear Government ICT policy are very serious challenges among secondary schools in Busia District. This finding agrees with the Republic of Kenya (2005) survey which noted that only (2%) of the schools had a computer, some desk tops and/or limited connectivity to the internet. It is disheartening to note that the scenario observed in 2005 is still replicated in many schools eight years later. This finding on funding agrees with UNESCO (2011) when it observed that overall donor funding commitments by 2010 had fell short of the pledge made by developed countries. The reduction in donor funding to developing countries aggravate the challenges to financing of ICT use in schools.

4.4.4. Parents' socio – economic background and finance of ICT use.

This objective sought to establish the influence of parents' socio-economic background on financing of ICT use in public secondary schools. Information sought was on parents' occupation, economic activities, school fees payment and support for financing of ICT use in the school.

4.4.4.1. Relationship between occupation and ICT finance.

To establish the parents' socio-economic background influence on financing of ICT use in schools, the Principals were asked to indicate whether they extract information on parents'/ guardians' occupations from students on admission using

a yes or no question. Secondly, they were to declare if they noted any relationship between a parent's occupation and a parent's willingness to finance ICT use in the schools. A majority of the respondents (88.24%) indicated that they extract information on parents' occupation from learners during admission. In addition to that, (73.33%) endorsed existence of a relationship between a parent's occupation and willingness to support finance of ICT use. These findings imply that parents have an influence on the capacity of a school to finance ICT use in the school.

4.4.4.2. Parents' financial support for ICT use.

To establish the nature of relationship between a parent's socio-economic background and influence on financing of ICT use, the principals were asked to rank parents' financial support of ICT use on the Likert Scale. The results were as shown in Table 4.14.

Table 4.14

Parents' financial support on ICT use is adequate.

ICT facility	%	SA	A	UN	D	SD
Purchase of computers	**100**	05.9	17.6	11.8	11.8	52.9
Built computer laboratories	**100**	0.0	23.6	11.8	05.9	52.9
All students learn computers	**100**	0.0	23.6	17.6	05.9	52.9
PTA give funds for ICT use	**100**	05.9	17.6	17.6	0.0	58.8
Total	**100**	**02.4**	16.5	11.8	04.7	43.5

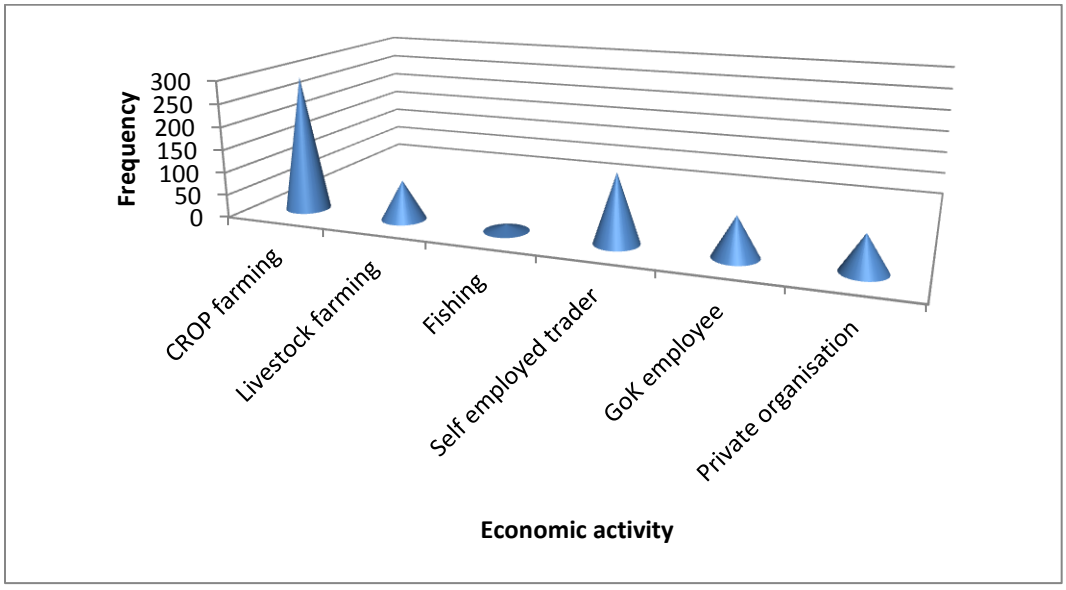
Source: Busia District Public Secondary School Principals (2013)

From table 4.14, generally the majority of the respondents indicated that parents' financial support for purchase of computers, construction of computer laboratory, contribution of PTA funds for ICT use and support for all students to learn computers for ICT use is adequate. This implies that schools lack parents' financial support for ICT use in public secondary schools.

4.4.4.3. Students' Parents' economic activities.

Students were asked to indicate the economic activity of their parents/guardians do for a living in order to determine the socio – economic background of their parents and the influence it has on financing of ICT use in public schools. The results of the survey were distributed as shown in Figure 4.7.

Figure: 4.7: Parents' economic activities.



Source: Busia District Public Secondary School Students (2013)

From Figure 4.7, the study reveals that majority of the parents are crop farmers. Other occupations in order of popularity are self-employed traders, Government employees and livestock farming. The least number of respondents chose fishing as their parents' occupation. These findings imply that majority of the parents are low income earners since farming in Busia is majorly done for subsistence since the collapse of the cotton industry.

4.4.4.4. Effect of economic activity on school fees payment.

In a bid to establish how a parents' source of income affected fee payment, students were asked to express their opinion on the influence of their parents' economic activity on fee payment a yes or no question. The finding showed that a majority of the respondents (50.28%) indicated that their parents had difficulty paying school fees. This finding can be inferred to indicate that a majority of the parents find it difficult to pay fees and therefore make financing of ICT use in public secondary schools difficult.

4.4.4.5. Students' views on adequacy of ICT facilities in schools.

Among the students who indicated that their parents' economic activity did not hinder their ability to pay fees, they were asked to express their degree of agreement on adequacy of ICT facilities in order to determine their parents' financial support towards acquisition of ICT facilities for use at school. The results of the study were as shown in Table 4.15.

Table 4.15

Adequacy of ICT facilities in schools

ICT facility	%	SA	A	UN	D	SD
Computers	**100**	17.10	17.10	02.97	26.02	36.80
Computer laboratory	**100**	16.36	16.36	03.35	25.28	38.66
Television	**100**	05.95	10.78	06.69	28.25	48.33
Radios	**100**	06.69	08.55	07.43	31.60	45.72
DVDs /CDs	**100**	05.20	10.41	08.55	24.91	50.93
Total	**100**	**10.26**	**12.64**	**05.80**	**27.21**	**44.09**

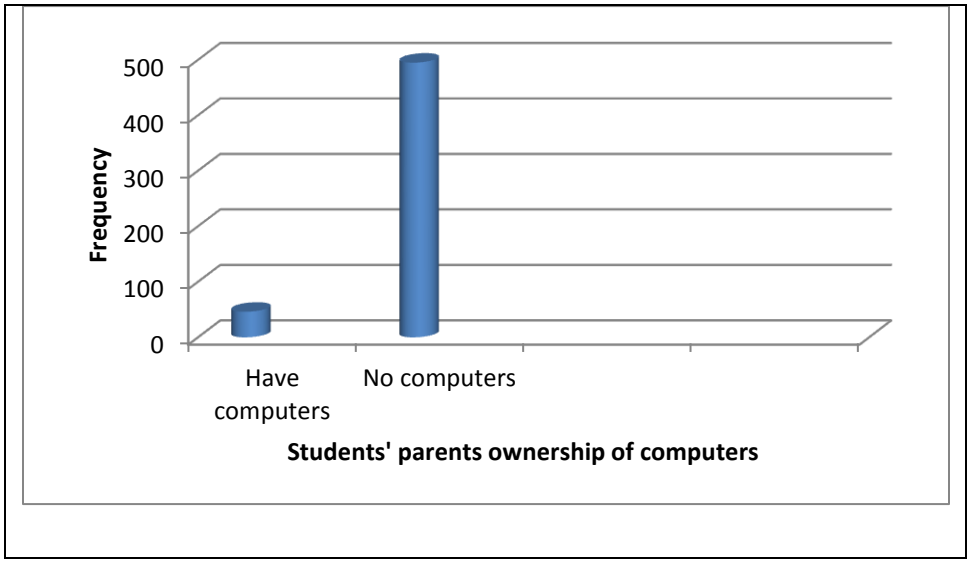
Source: Busia District Public Secondary School Students (2013)

From Table 4.15, majority of the respondents generally indicated that schools had inadequate ICT facilities for learning. The study revealed that computers, computer laboratories, television sets, radios and DVDs/ CDs were inadequate. This observation by students supports the findings among teachers and principals which imply that the parents in Busia District do not financially support their public secondary schools in acquisition of ICT facilities for use in the schools.

4.4.4.6. Parents owning computers at home.

In a bid to establish parents' socio-economic background influence on financing of ICT use in schools, students were asked to indicate whether their parents had a computer at home or not. This study was to determine their background ability and willingness to finance use of computers in schools. The results of the study were as shown in Figure 4.8.

Figure 4.8: Parents with computers at home.



Source: Busia District Public Secondary School Students (2013)

From Figure 4.8, majority 495(91.5%) of the students indicated that their parents did not own any computer at home while 46(8.5%) of the students had parents with computers at home. This finding implies that majority of the students come

from economically and socially disadvantaged backgrounds for their parents to financially support ICT use in public secondary schools.

4.4.4.7. Parents' influence on ICT learning.

To establish the social background influence on students' learning and use of ICT in schools, the study sought to establish the influence parents had on learners' choice of learning computer studies in schools. Students were asked to indicate their parents' support for computer studies' learning in schools using a yes or no question. Yes indicated they are encouraged and no meant they are not encouraged to acquire ICT learning skills. A majority of the parents (83.73%) both those perceived to be poor and those who pay fees comfortably encourage students to take computer studies in their schools whenever possible. This finding implies that both the poor and the rich parents are aware of the opportunities that exist in the knowledge of ICT use by students and are willing to expose their children to ICT use.

The discussion key findings on influence parents' socio-economic background has on financing of ICT use.

Although the Republic of Kenya (1999) identified parents as an integral partner in financing of education through contribution of fees, this study established that majority of the parents find it difficult to pay school fees since a majority of the occupations they engage in such as crop farming and self-employed traders are low paying. Likewise, contrary to the findings of Waiganjo (2009) who indicated

that in communities with high Agricultural activities, business and allied economic activities have children with similar proportionate growth in academic qualifications due to the capacity of the parents and guardians to pay for it, the study found that majority of the Parents' financial support for acquisition of ICT facilities for ICT use is inadequate. Busia is an agricultural district but the study shows majority of them lack the capacity to pay fees and support ICT use adequately. Therefore, this finding contradicts the finding by Waiganjo (2009).

Secondly, unlike Omufwoko (2009) who found that parents in technical collages in Nairobi bore the burden of paying computer fees for buying computers and maintenance, the finding of the study also established that majority of the students do not pay computer fees for ICT use in schools. The few schools with ICT facilities and were charging computer fees had well maintained ICT facilities. This finding contradicts her findings in the technical collages on computer fees payment. Those secondary schools without the fee cannot engage in use of ICT due to lack of finances.

In support of the Republic of Kenya (2011) which pointed out that education had the capacity to alleviate poverty and catalyse wealth creation due to advancement in technology, the study also revealed that majority of the parents does not own their own computers but encourage their children to take computer studies in

schools. It can be inferred that both the rich and the poor parents encourage their children to take computer studies.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

The purpose of this study was to establish the factors influencing financing of information and communication technology use in public secondary schools in Busia District in Kenya. This chapter presents the summary of the findings, conclusions, recommendations of the study and suggestions for further studies. The presentation is done according to the four research objectives, in relation to school enrolment, Government Policy, support from development partners and parents' socio-economic background.

5.2. Summary of the study.

The purpose of this study was to establish the factors influencing financing of information and communication technology use in public secondary schools in Busia District, Kenya. The study sought to examine four specific objectives, namely: to determine the influence of school enrolment, to examine the influence of government policy, to determine the influence of support from development partners and to establish the influence of parents' socio- economic background on financing of information and communication technology use in Busia District.

The study used descriptive survey design using questionnaires, document analysis guide and an observation schedule as instruments to collect data from the field. A sample of 541 students, 70 teachers and all the 17 principals from Busia District was used in the study. The instruments were piloted at Busiada Girls' Secondary School. The reliability of the instruments was arrived at using the test-retest method and Pearson product moment of correlation calculated. The co-efficient of reliability was found to be 0.98. This was considered a reliable measure of consistency.

After analysis of the data, the study established that majority of the schools do not have ICT facilities for use in their schools, most parents were finding it difficult to pay fees hence were not supporting schools in acquisition of ICT facilities, Government policy was not clear among school managers and teachers and NGOs and private companies were not contributing towards equipping schools with ICT facilities for use.

5.3. Summary of the findings.

Through data analysis, the study revealed that:

Influence of school enrolment on financing of ICT use.

The study revealed that majority of the schools did not charge students computer fees. Only (29.41%) of the schools were charging students' computer maintenance fee of sh. 500 and sh. 1500 per year that has enabled them run ICT

use in Schools. The study also found that majority of the schools (64.71%) did not possess any computer facility for learning or administrative purposes. Majority of the respondents (80.5%) ranked lack of computers and computer laboratories as very serious challenges for use of ICT in public secondary schools.

Influence of Government ICT policy on financing of ICT use.

The study revealed that a majority of the schools (70.59%) lack a clear Government ICT policy to schools as a source of reference during planning since most respondents had not received the document in their school. The study also revealed that majority of the schools (70.59%) has not received Government ICT funding. For those few schools that had the funds allocated to them recorded an increase in purchase of computers, internet connectivity and increase in the use of ICT. In addition to that, the study also revealed that the Government funding was not adequate for construction of a computer laboratory, purchase of computers, internet connectivity and training of ICT teachers. The study also found out that only one school had a TSC computer trained teacher yet there were six schools with computers. Generally 16 (94.12%) of the schools did not have an ICT teacher posted by TSC. The study found out that none of the schools (100%) in the entire District, including those that had received ICT grants from the Government had a smart board for interactive learning.

Influence of development partners' support on financing of ICT use.

The study findings indicated that the majority of the funding agencies were the Government of Kenya (35.29%) and Parents teachers' association (PTA) (35.29%). Parents mainly contributed towards construction of the computer laboratories in schools that received Government ICT funding. The study also revealed that none of the schools had received ICT funding from NGOs and Private companies. The study found that majority of the teachers (80%) of those who are ICT literate sponsored themselves by paying their own fees for ICT training and in-service courses. Despite these efforts by the teachers to sponsor themselves to acquire ICT skills, the study also revealed that majority of the teachers had not received ICT in-service training. The study revealed that among the development partners listed, neither private company nor NGOs had participated in providing ICT facilities for ICT use in public secondary schools. The study revealed that schools had serious challenges of financial procurement (77%) for the acquisition of the ICT facilities for use in schools. This is the main set back to schools on implementation of ICT use in public secondary schools.

Influence of parents' socio-economic background on financing of ICT use.

The study established that majority of the parents (50.28%) had difficulty in paying of school fees since a majority of the occupations they engage in such as crop farming and self-employed traders are low paying. In addition to that, the study found that majority of the Parents' financial support for acquisition of ICT

facilities for ICT use is inadequate for ICT use. The study also established that majority of the students (70.59%) do not pay computer fees for ICT use in schools. The few schools (29.41%) with ICT facilities that were charging computer fees had well maintained ICT facilities. The study also revealed that majority of the parents (91.5%) does not own their own computers. However, majority of the parents with and without computers encourage their children to take computer studies and make use of ICT in schools whenever possible.

5.4. Conclusions of the study.

After studying the factors influencing financing of ICT use in public secondary schools in Busia District, it has been concluded that factors such as school enrolment, Government Policy, financial support from Development partners and parents socio-economic status have influence the capacity to finance use of ICT in schools.

School enrolment has a significant influence on a schools' capacity to finance ICT use like low enrolment in the schools leads to most of them to also lack the ICT facilities. Majority of the students don't pay computer fees yet they wish to learn computer studies.

There is no Government ICT policy document to schools in the public domain. Only schools with Government ICT grants inferred the Government's policy

expectation by offering all students an opportunity to have ICT literacy classes. The survey found that many schools implemented based on need and common sense rather than being compelled by Government policy. However, this document was formulated in 2006 for use in public secondary schools.

Financial support from development partners influences the capacity of schools to finance ICT use in their schools. In addition to that there is an acute shortage of computer trained teachers in schools especially Busia District. The NGOs and private companies have not actively participated in financing of schools for ICT facility acquisition as one of their corporate social responsibility. Majority of the ICT literate teachers have taken a personal initiative to sponsor their own training. Last but not the least; schools had acute shortage of ICT facilities like computers, laboratories, white boards and total lack of smart board.

Parents' socio-economic background has an influence on how the school runs its financial programmes. Majority of the parents find it difficult to pay school fees since a majority of the occupations they engage in such as crop farming and self-employed traders are low paying. In addition to that, the study found that majority of the Parents' financial support for acquisition of ICT facilities for ICT use is inadequate for ICT use. Majority of the students do not pay computer fees for ICT use in schools. Against this back drop, majority of the parents do not own a

computer at home. However, majority of the parents with and without computers encourage their children to take computer studies in schools.

5.5. Policy recommendations.

Based on the findings and conclusions of the study, the following recommendations were made:

For the Government:

i. Although there is a clear Government ICT policy formulated in 2006 and available on the Ministry of Education website, the document has not reached the end users. This document should be disseminated through a circular throughout the country in order to increase finance of ICT use in all schools using County Education Directors.

ii. It should mount deliberate spending on investing in ICT facilities in schools since the facilities are too expensive for most of the schools. This will ensure uniformity and avoid discrimination tendencies in provision of ICT knowledge to students across the country.

iii. Through the Teachers Service Commission it should be posting a qualified ICT trained teacher to any school with evidence through Government inspection of adequate ICT facilities to avoid underutilization of the facilities in schools.

iv. It should be motivating the teachers in the Government service to sponsor themselves by enrolling for ICT classes and paying their own fees in acquiring ICT skills by providing them with a salary credit

increment upon certification by Kenya National Examinations Council or any other accredited body.

For the Schools/Parents:

i. Cost sharing programme where parents pay a minimum fee for maintenance of ICT facilities installed by the Government should be introduced in secondary schools to ensure the installed facilities do not become obsolete with time.

ii. The PTA associations may be advised through a decree that only ICT projects be approved across the country for ICT use in schools that are disadvantaged as a way of increasing ICT funding and utilization in public secondary schools.

For the Private sector:

i. Public secondary school management Boards should be advised to formulate ICT project funding proposals to the private sector like NGOs, prominent private companies in order to benefit from companies social responsibilities to the community projects.

5.6. Suggestions for further study.

Based on the recommendations of the study, the researcher suggests the following for further studies.

i) The study only examined public secondary schools in Busia District; hence the findings may not be easily generalized to the entire Busia County. Thus future studies should consider including the rest of the districts in the County.

ii) The study only examined four variables: namely school enrolment, Government Policy, support from development partners and parents' socio economic background. Future studies should consider including other factors such as Cost of acquisition and maintenance of ICT facilities and teachers' perception of ICT use on their job security.

iii) Further studies can be done on Factors influencing investment in use of information and communication in private schools.

iv) School based factors influencing effective Government investment in information and communication technology in public primary schools.

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APPENDICES

APPENDIX I: INTRODUCTION LETTER

Department of Educational administration& Planning,

University of Nairobi,

P.O. Box 92,

Kikuyu

12th April, 2013

Dear Sir/Madam,

RE: REQUEST FOR DATA COLLECTION

I am a graduate student at the University of Nairobi pursuing a master of Education in economics of Education. I am conducting a study on "***Factors Influencing Financing of Information and Communication Technology Use in Public Secondary Schools in Busia District in Kenya."***

I hereby request you to allow me gather information from the principal and students using questionnaires. The questionnaires are meant for this study only. The identities of the respondents will be confidential since the names of the respondents and the schools are not required.

Thank you for in advance for your assistance and cooperation.

Yours Sincerely,

Muhinji Joseph Chitu

APPENDIX II: PRINCIPAL'S QUESTIONNAIRE

Instructions

Please put a tick (√) to indicate your opinion as truthfully as possible to ensure validity of the data collected. All the collected information will be used for this research purpose only. **KEY: SA**—Strongly Agree;

A—Agree; **SD**—strongly disagree; **D**—disagree; **U**- undecided

Section A: Demographic Data

1. What is your gender? Male ( ) Female ( )
2. What is your age bracket?

   Below 30 yrs ( ) 30-39 yrs ( ) 40-49yrs ( ) 50-59yrs ( )
3. What is your highest academic qualification?

   Diploma ( ) Degree ( ) PGDE ( )

   Masters ( ) PhD ( )
4. What is the category of your school?

   Boys Boarding ( ) Girls Boarding ( )

   District Mixed Day ( ) District Boys Day ( )

   District Girls Day ( )

Section A: School enrolment and use of ICT.

5. (a) What is the current school enrolment? _____

   (b) How many streams is the school officially registered to have? _____
6. (a) How much school fees is charged per student per year? Kshs. _____

   b) How much does a student pay for computers/maintenance? Kshs._____

7. How adequate are the following ICT facilities in the school?

	Level of adequacy				
ICT facility	**Very adequate**	**Adequate**	**Fairly adequate**	**Inadequate**	**Not available**
Radios					
Desktop computers					
Laptops					
Photocopiers					
Whiteboards					
Internet access					
DVDs/CDs					
Screen projectors					
Smart boards					

Section B: Compliance with government ICT policy and ICT use.

8. (a) Has your school received any circular from the government on ICT policy in secondary schools? Yes [ ] No [ ]

(b) If yes, the policy has influenced financing of ICT use in the school.

Influence	**SA**	**A**	**UN**	**D**	**SD**
Increased use of computers					
More computers bought					
Increased trained ICT teachers					
Increase internet connection					

(c) If No, do you find it still necessary to use ICT? Yes [ ] No [ ]

9. (a) Has the school received government funding for ICT use?

Yes [ ] No [ ]

(b) If yes, the funding was adequate for the following ICT facilities.

ICT facility	**SA**	**A**	**UN**	**D**	**SD**
Computer laboratory					
Teacher ICT training					
Computer facilities					
Computer textbooks					
Internet connection					

Section C: Funding agency and use of ICT

10. (a) How many computers does your school have? _____

(b) How many of the computers are in good working conditions for use? ____

(c) How many computers have access to the internet? _____

11. (a) Which organizations have funded your ICT use in the school?

	Organization	**Choice**
i)	Government of Kenya	
ii)	NGOs e.g. NEPAD, click org, CFSK	
iii)	Private companies e.g. safaricom specify _____	
iv)	PTA project funding	
v)	Donor countries specify _____	
vi)	Individual personalities	

(b) State other supportive funding agencies not outlined above. _____

Section D: Parents' socio - economic background and use of ICT

13.) (a) Does the school extract information on the occupation of student's parents/ guardian during admission? Yes [ ] No [ ]

b) If yes, is there a relationship between parent's occupation and their willingness to support financing of ICT use in the school?

Yes [ ] No [ ]

14.) Parents' financial support for ICT use in the school is adequate.

	ICT facility	**SA**	**A**	**UN**	**D**	**SD**
i)	Purchase of computers					
iii)	Construction of computer laboratory					
vi)	Introduction of computers to all students					
vii)	Contribute PTA funds for ICT projects					

15. a) Indicate the level of seriousness of the following challenges in financing the use of ICT in your school.

	CHALLENGE	**Serious challenge**	**Finally serious**	**Minor challenge**	**Not a challenge**
i)	Lack of adequate computer facilities				
ii)	Lack of trained computer teachers				
iii)	Low school enrolment				
iv)	Lack of clear government policy on ICT use.				
v)	Constraints in financial procurement				

Thank You for Your Time and Cooperation

APPENDIX III: TEACHER'S QUESTIONNAIRE

The purpose of this questionnaire is to collect information about your opinion on factors influencing financing of information and communication technology use in secondary schools in Busia District.

Please do not write your school or your name anywhere on this questionnaire.

Instructions:

Please put a tick (√) to indicate your opinion as truthfully as possible to ensure validity of the data collected. All the collected information will be used for this research purpose only. **KEY:** SA — Strongly Agree; A — Agree; SD — strongly Disagree; D — disagree; UN — undecided

Section A: Demographic Information

1. What is your gender? Male ( ) female ( )
2. Which age bracket in years do you belong to?

   20-29 ( ) 30-39 ( ) 40-49 ( ) 50-59 ( )
3. What is your teaching experience in years? _____
4. What is your highest academic qualification?

   Diploma ( ) Degree ( ) PGDE ( ) Masters ( ) PhD ( )

SECTION B: School enrolment and finance of ICT use.

5. a) Do all students in your school learn how to use computers in learning?

   Yes ( ) No ( )

6. b) If No, state why all the students do not learn how to use computers

   _____

7. a) Do the students pay for computer classes? Yes ( ) No ( )

   b) If yes, how much is the charge per year in Ksh._____

8. a) Do you have a computer laboratory? Yes ( ) No ( )

   b) If yes, how many computers are in the school laboratory? _____

9. How many computers are connected to the internet in your school?

10. a) Indicate the level of seriousness of the following challenges in financing the use of ICT in your school.

	CHALLENGE	**Serious challenge**	**Finally serious**	**Minor challenge**	**Not a challenge**
vi)	Lack of adequate computer facilities				
vii)	Lack of trained computer teachers				
viii)	Low school enrolment				
ix)	Lack of clear government policy on ICT use.				
x)	Constraints in financial procurement				

(b) What are your recommendations for reducing the above challenges in financing of ICT use in secondary schools? _____

SECTION C: Government policy and financing of ICT use.

11.) Has your school received any circular from the government on ICT policy?

Yes ( ) No ( )

12 a) Has your school received any form of ICT funding from the government?

Yes ( ) No ( )

13. The government policy has influenced the school funding of ICT use.

Area of influence	**SA**	**A**	**UN**	**D**	**SD**
a)Purchased more computers					
b) Constructed computer lab					
c) ICT skilled teachers hired					
d) Increased computer use					

SECTION D: Financing agency and use of ICT.

14. a) Do you have sponsorship for computer classes? Yes ( ) No ( )

b) If yes, which organization(s) sponsors the ICT training programmes?

Government ( ) Individuals ( ) NGOs ( ) Parent/guardian ( )

Others (Specify) _____

15 .a) which is your highest level of ICT training?

Applications ( ) Certificate ( ) Diploma ( ) Degree ( )

None ( ) others (specify) _____

b) If not none, which organization(s) sponsored your ICT skills training?

Government ( ) School ( ) NGOs ( ) Self ( )

Others specify _____

16.a) Have you undergone any form of ICT in- service course?

Yes ( ) No ( )

b) If yes, how long did the in-service course last?

I day ( ) 1week ( ) 1 Month ( )

Others (specify) _____

c) Who sponsored/organized the in-service course?

Government ( ) NGOs ( ) Self ( ) School ( )

others (specify) _____

Thank you for your co-operation

APPENDIX IV: STUDENT'S QUESTIONNAIRE

The purpose of this questionnaire is to collect information about your opinion on factors influencing financing of information and communication technology use in secondary schools in Busia District. **Please do not write your school or your name on the form.**

Instructions

Please tick ( ) to indicate your opinion where appropriate as truthfully as possible. All the information collected will be will be used for this research purpose only. **KEY: SA**—Strongly Agree; **A**—Agree; **SD**—Strongly Disagree; **D**—Disagree; **UN**- undecided

Section A: Demographic data.

1.) Your Gender Male [ ] Female [ ]

2.) Your Age Below 15yrs [ ] 15-17yrs [ ]

18- 20yrs [ ] Above 20 yrs [ ]

3.) Your class Form 1 [ ] Form 2 [ ] Form 3 [ ] Form 4 [ ]

Section B: Parents' socio-economic background & ICT use

4.) Indicate the economic activity your parent/guardian does for a living.

	Economic activity	**Choice**
i)	Crop farming	
ii)	Livestock farming	
iii)	Fishing	
iv)	Self-employed trader	
v)	Government employee	
vi)	Private organization employee	
vii)	Others(Specify)_____	

5.) (a) Does economic activity hinder his/her ability to pay your school fees?

Yes [ ] No [ ]

(b) If No, the following ICT facilities are enough for learning use at school.

	ICT facility	**SA**	**A**	**UN**	**D**	**SD**
i)	Computers					
ii)	Computer laboratory					
iii)	Television					
iv)	Radios					
v)	DVDs /CDs					

If **yes**, does he/she encourage you to enroll in computer classes?

Yes [ ] No [ ]

1. (a) Does your parent/guardian own a computer at home?

Yes [ ] No [ ]

(b) If No, are you encouraged to learn how to use computers?

Yes [ ] No [ ]

Thank You for Your Time and Cooperation

APPENDIX V: DOCUMENT ANALYSIS GUIDE

		COMMITMENT TOWARDS ICT USE IN THE SCHOOL			
	DOCUMENT	**AVAILABLE**	**NOT AVAILABLE**	**ADEQUATE**	**NOT ADEQUATE**
i)	**Fees structure vote heads**				
ii)	**P.T.A Minutes resolutions**				
iii)	**B.O.G Minutes resolutions**				
iv)	**Newsletter to parents**				
v)	**ICT inventories**				

vi)Total class registers' enrolments _____

vii)Subject choices lists to establish the number of students taking computer studies in the school_____

General comments:

_____

APPENDIX VI: OBSERVATION SCHEDULE

Key: NA- Number available; A- Adequate; I- Inadequate; FA- Financing Agency;

	ICT facility	**NA**	**A**	**I**	**FA**
i	Computer laboratory				
ii	T.S.C Computer teachers				
iii	B.O.G computer teachers				
iv	Printers				
v	Scanners				
vi	White boards				
vii	Radios				
viii	Televisions				
ix	Laptops				
x	Photocopiers				
xi	Internet accessed computers				
xii	Screen projectors				
xiii	Computers used by students				
xiv	Computers used by teachers				
xv	Administrative computers				
xvi	Working computers				
xvii	Not working computers				

APPENDIX VII: RESEARCH AUTHORISATION LETTER

REPUBLIC OF KENYA

NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

Telephone: 254-020-2213471, 2241349, 254-020-2673550
Mobile: 0713 788 787 , 0735 404 245
Fax: 254-020-2213215
When replying please quote
secretary@ncst.go.ke

P.O. Box 30623-00100
NAIROBI-KENYA
Website: www.ncst.go.ke

Our Ref: **NCST/RCD/13/013/32**

Date: **29th April, 2013**

Joseph Chitu Muhinji
University of Nairobi
P.O BOX 92-0902
Kikuyu

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on **"Factors influencing financing of information and communication technology use in public secondary schools in Busia District, Kenya."** I am pleased to inform you that you have been authorized to undertake research in **Western Province for** a period ending ***2nd August, 2013.***

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

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

DR.M.K.RUGUTT, PhD, HSC
DEPUTY COUNCIL SECRETARY

Copy to:

The District Commissioner
The District Education Officer
Busia District

"The National Council for Science and Technology is Committed to the Promotion of Science and Technology for National Development".

APPENDIX VIII: DISTRICT COMMISSIONER'S PERMISSION

REPUBLIC OF KENYA

OFFICE OF THE PRESIDENT

Telegrams: "DISTRICTER"BUSIA (K)
Email: dcbusia@gmail.com
Telephone: 055 - 22598
Fax No: 055 - 22231
When replying please quote
REF. No. ADM 15/4 VOL.III/(115)
and Date

DEPUTY COUNTY COMMISSIONER'S OFFICE
BUSIA SUB COUNTY
P.O. BOX 14
BUSIA (K)

6th May, 2013

Joseph Chitu Muinji
C/O University of Nairobi
P.O. Box 92 – 0902
KIKUYU

RE: RESEARCH AUTHORISATION

You are hereby authorized to carry out research on "Factors influencing financing of information and communication technology use in public secondary schools in Busia District, Kenya".
This will take place between 8th May 2013 to 2nd August 2013.

Let me take this opportunity to wish you a nice stay in Busia as you carry out your research.

P. K. CHELIMO
For: DEPUTY COUNTY COMMISSIONER
BUSIA (K)

Copies to:

Assistant County Commissioner
MATAYOS WARD

Assistant County Commissioner
MUNICIPALITY WARD

APPENDIX IX: BUSIA D.E.O'S INTRODUCTION LETTER

REPUBLIC OF KENYA
MINISTRY OF EDUCATION

Telephone: 055-22152
Fax:;055-22152

When replying please quote
Email:deobusia @gmail.com

DISTRICT EDUCATION OFFICER
BUSIA DISTRICT
P.O. BOX 15 - 50400
BUSIA (K)

Ref No. BSA/ED/

7th May, 2013

To All Principals
Busia District

RE: PERMIT TO CONDUCT RESEARCH
MR. JOSEPH CHITU MUHINJI

This is to permit the above named individual to conduct research in Secondary Schools in Busia District.

The topic of his research is **"Factors Influencing Financing of Information and Communication Technology use in Secondary Schools in Busia District, Kenya"**

The research is slated to start on **8th May, 2013** and end on **2nd August, 2013.**

Kindly accord him the necessary assistance.

DISTRICT EDUCATION OFFICER
P.O. Box 15 - 50400
BUSIA (K)
7/5/13
Sign:

DAVID K. KIPSAAT
DISTRICT EDUCATION OFFICER
BUSIA DISTRICT

APPENDIX X: RESEARCH PERMIT

PAGE 2 PAGE 3

Research Permit No. *NCST/RCD/13/013/32*

THIS IS TO CERTIFY THAT: Date of issue *29th April, 2013*

Prof./Dr./Mr./Mrs./Miss/Institution Fee received *KSH. 1,000*

Joseph Chitu Muhinji

of (Address) University of Nairobi

P.O.Box 92-0902, Kikuyu.

has been permitted to conduct research in

Location	
Busia	District
Western	Province

on the topic: Factors influencing financing of Information and Communication Technology Use in public secondary schools in Busia District, Kenya.

.....	.....
Applicant's Signature	for Secretary/ National Council for Science &Technology

for a period ending: 2nd August, 2013.

CONDITIONS

1. **You must report to the District Commissioner and the District Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit**
2. **Government Officers will not be interviewed with-out prior appointment.**
3. **No questionnaire will be used unless it has been approved.**
4. **Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.**
5. **You are required to submit at least two(2)/four(4) bound copies of your final report for Kenyans and non-Kenyans respectively.**
6. **The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice**

REPUBLIC OF KENYA

RESEARCH CLEARANCE PERMIT

GPK6055t3mt10/2011 **(CONDITIONS—see back page)**