FACTORS INFLUENCING STUDENTS' CHOICE OF COMPUTER STUDIES IN PUBLIC AND PRIVATE SECONDARY SCHOOLS IN MACHAKOS SUB-COUNTY, MACHAKOS-COUNTY-KENYA.

KITHUNGU ROSE MWIKALI

A Research Project Submitted in Partial Fulfillment of the Requirements for the Award of the Degree of Master of Education in Comparative and Contemporary Issues in Education of the University of Nairobi.

2015

DECLARATION

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

_____

Kithungu Rose Mwikali

E56/75436/2012

This research project has been presented for examination with my approval as university supervisor.

_____

Dr. Daniel K. Gakunga

Lecturer

Department of Educational Foundations

University of Nairobi

DEDICATION

I dedicate this work to my dear husband, Mr Gideon M. Kasivu and my children; Vincent Bahati, Jefferson Baraka and Bruce Fadhili whose support, patience and encouragement in my academic pursuit was a source of inspiration. Kindly accept my appreciation for your endless love.

To my parents; My late father Mr. Jacob K. Makanga (passed on, 1990) for helping me to appreciate the value of education. You indeed gave me the foundation. My mother Mrs. Monicah M. Kithungu who despite being widowed sacrificed her resources and provided invaluable guidance and encouragement which enabled me to succeed in my education.

ACKNOWLEDGEMENT

I am most grateful to the almighty God for blessing me with strength and good health while undertaking my studies.

I profoundly acknowledge my husband for his endless guidance, support and sacrifice during my study period. For walking together with me and providing invaluable input whole heartedly which enhanced the completion of this research project.

My sincere gratitude to my supervisor, Dr. Daniel K. Gakunga, for his constructive criticism and advice that contributed to the timely completion of this research project. Thank you for investing your time in reading numerous drafts, guiding and encouraging me throughout the research project. You strongly laid an irreversible skill and strong commitment towards refining my research project.

I thank all the respondents who participated in the filling of the questionnaires and in the focus group discussion making this work successful. To all the people who were instrumental in making this research project a success, I am greatly indebted.

TABLE OF CONTENT

Content **Page**

LIST OF TABLES

Page

LIST OF FIGURES

Page

ABBREVIATIONS AND ACRONYMS

CRE - Christian Religious Education.

HRE - Hindu Religious Education.

ICT - Information Communication Technology.

IRE - Islamic Religious Education.

KCSE - Kenya Certificate of Secondary Education.

KNEC - Kenya National Examination Council.

MOE - Ministry of Education.

NACOSTI - National Council of Science Technology and Innovation.

SPSS - Statistical Package for Social Sciences.

ABSTRACT

The main purpose of this study was to investigate the factors influencing students' choice of computer studies in public and private secondary schools in Machakos Sub-County. The study was guided by four objectives which focused on students' aspirations, availability of computer facilities, school practices and parents influence. The study reviewed related literature that provided an overview of computer studies in secondary schools and findings from previous researches on factors influencing students' choice of computer studies in public and private secondary schools based on the research objectives. The study used descriptive survey research design. The study embraced census sampling, purposive sampling and simple random sampling techniques to select the sample size for the computer studies students, computer studies teachers, principals/directors of the schools and the parents of the computer studies students.

Data was collected mainly through questionnaires and focus group discussion. Data was analyzed descriptively by use of SPSS programme and presented in percentages and frequency distribution tables. This study established that student's aspirations; the careers which they intended to pursue influenced their choice of computer studies in both public and private secondary schools with 58 percent and 68 percent of the students strongly agreeing to the statement respectively. Further the study found that the acquisition of skills needed in the job market and for self-employment influenced students' choice of computer studies in public and private secondary schools with 55 percent of the principals and 42 percent of the directors strongly agreeing to the statements respectively.

Further the study found that availability of computer facilities, school practices and parental factors influenced students' choice of computer studies in both public and private secondary schools though with variations. Teachers were found to highly influence students' choice of computer studies in public secondary schools with 45 percent of the students and 46 percent of both the computer studies teachers and principals attesting so. In private secondary schools the directors were found to mainly determine subject choice as indicated by 50 percent of both the students and directors and 43 percent of the computer studies teachers.

The study concluded that students' career aspirations, acquisition of skill for the job market and for self employment influenced students' choice of computer studies in both public and private secondary schools. Computer facilities were concluded to highly influence students' choice of computer studies, private secondary schools were found to be better equipped with computer equipments compared to public secondary schools.

Based on the findings and conclusions the study recommended that the computer studies curriculum should be designed to fully equip the students with the computer skills useful in the computer dominated job market. In view of this computer studies should be made compulsory for all the students. Further, research should be undertaken on student's level of adaptability to the work environment after acquiring computer skills in secondary schools.

CHAPTER ONE
INTRODUCTION

1.1 Background to the study

Acquisition of computer skills plays an important role in equipping learners with skills to enable them adapt well in the world of technology. To facilitate this, the Kenyan government through the Ministry of Education Science and Technology introduced computer studies as a subject in the Kenyan education curriculum in 1994 (MOE, 2000). The introduction of computer studies in Kenyan schools was either on societal rationale where students are trained to operate and fit in the computer society or vocational rationale where students are equipped with skills required by the computer driven job market (Kavagi, 2001).

Pearson (1998) asserts that due to technological changes, there is need to prepare students who will be competitive in a world-class work force. Computer studies is vital for it enables students acquire the emerging new technologies and fit in the global community (Kitetu, 2003). The need for enhancement in science and technology led to the introduction of computer studies in the secondary school curriculum in 1994 (MOE, 2002).

Kenyan secondary schools that have adopted the country's official education system 8-4-4 offer a diversified curriculum comprising of 24 examinable subjects (KNEC, 2008). The Kenyan secondary school curriculum consists of five major groups of subjects. Group I- English, Kiswahili and Mathematics Alternative-A/Mathematics Alternative-B. Group II- Biology, Physics, Chemistry and General Science.

Group III- History and Government, Geography, C.R.E, I.R.E and H.R.E. Group IV- Home science, Art and Design, Agriculture, Aviation Technology and Computer studies. Group V- French, German, Arabic, Music, Kenya Sign Language and Business studies. Candidates select at least seven subjects as follows: All the three subjects in group I (Either Mathematics Alternative A or B). At least two subjects from group II. At least one subject from group III. At least one subject from groups II, III, IV and V. Candidates can sit for a minimum of seven and a maximum of nine, the extra one or two subjects can be selected from any of groups III, IV and V (KNEC, 2014). (Refer to Appendix VI).

Kavagi (2001) argues that computer studies' being an optional subject provides an alternative for students to choose from a range of other subjects. There is pertinent need of focusing on students' choice of subjects in both public and private secondary schools to ensure that they are completely aware of all the possible alternatives. Rono (1985) asserts that the Kenyan education system does not provide adequate information to students to guide their decision making with regard to choice of optional subjects. The guidance teachers in both public and private secondary schools are not trained to handle career and subject choices.

Computer studies is classified as a technical subject alongside others and it is important because it is a major source of skills, abilities, attitudes, work habit, knowledge and information required for individual and economic development (Kavagi, 2001). Rono (1985) posits that choosing a subject makes students to assume ownership of their curriculum and reduce chances of being alienated by the over

prescriptive curriculum. He further argues that students' subject choice is a product of students' career aspirations, school policies and practices, infrastructural availability and the family's social-economic background. Austin (2009) alludes that the schools' policy on subject combination clearly defines the subjects to be offered which determines students' subject choice. He adds that the schools subject combination and placement in the timetable for optional subjects influence students' choice of computer studies in both public and private secondary schools.

Olubor (1998) points out that effective teaching and learning requires equitable and wide access to learning materials. Kiptalam & Rodriquez (2010) argues that high costs of computer implementation, internet connectivity and constant updating of the existing infrastructure limits public and private secondary schools from offering computer studies. Internet connectivity in schools facilitates the teaching of computer studies for it is rich in information vital for the education process (Kavagi, 2001).

Mkapa (1986) alludes that the home being the first socializing agent affects the child's later achievement and development. Parental expectations, level of education and the social economic status influence children subject choice and academic performance. Students in public and private secondary schools choose computer studies because their parents expect them to pursue computer related careers (Wailer, 2003). Young (1994) asserts that parents social economic status play a key role in determining the subject opportunities available for their children.

Students from low economic status families tend to choose subjects with minimal financial requirements unlike those from economically stable families (Coleman & Hoffer, 1987). Secondary school candidates taking computer studies are charged extra two hundred shillings for project work in addition to the normal examination fees (KNEC, 2005). This coupled up with other computer studies requirements like printing papers, computer learning software devices, power among others dictate students' choice of computer studies (Kavagi, 2001).

The initial candidature for computer studies when it was firstly examined in Kenya in 1998 was 22 candidates. The enrolment has risen over the years to 6,940 candidates by 2013 (KNEC, 2013). Despite the campaigns done in favour of computer studies hitherto, the enrolment in candidature and the schools offering the subject have continued to be low compared to candidature in other optional subjects. Machakos sub-county has 25 secondary schools which offer computer studies, 12 public secondary schools and 13 private secondary schools.

The Table below shows the trend of form four KCSE candidature in selected optional subjects from 2010 to 2013 in Machakos Sub-County.

Table 1.1 Table showing form four KCSE candidature in selected optional subjects in Machakos Sub-County from 2010 to 2013

Year	Total candidature		KCSE candidature			
	Public schools	Private schools	Public schools		Private schools	
			Computer studies	Agriculture	Computer studies	Agriculture
2010	1,334	881	79	779	102	482
2011	1,427	890	82	824	114	570
2012	1,298	798	85	592	126	372
2013	1,348	742	89	813	135	340
Total	**5,407**	**3,311**	**335**	**3,008**	**477**	**1,764**

Source: Machakos Sub-County examination office

From the above Table it is evident that the candidature of students in computer studies in Machakos Sub-County is low compared to agriculture, however increasing in tandem with the national statistics. The background reveals that the desire to include computer studies in the Kenyan secondary school curriculum has been and is still a dream for the country in order to achieve the goals of education. Many interwoven factors have played a significant role towards the achievement of this desire. However inherent challenges face this endeavor up to date hence the need to explore the factors influencing students' choice of computer studies in secondary schools. This study arose out of the concern that there were various factors that influenced students' choice of computer studies in public and private secondary schools.

1.2 Statement of the problem

Due to globalization and the Information Communication Technology (ICT) driven economy, highly skilled educated workforce with skills and aptitude in the application of ICT is essential. The introduction of computer studies in the Kenyan education system was a step towards the realization of vision 2030 and national education aspirations through the acquisition of ICT skills for the production of globally competitive graduates. Computer skills acquired through teaching of computer studies lead to the acquisition of an array of skills and competencies needed for research, economic growth and individual innovation.

However despite the benefits anticipated from the introduction of computer studies, students lack proper guidance and information on the choice of optional subjects. Computer studies more often than not is relegated to lower cadre subjects. This implies that competing interest among other optional subjects coupled with structural differences in public and private secondary schools influence students' choice of computer studies differently. This has made computer studies unpopular among students in public and private secondary schools in Machakos Sub-County as evidenced by the low candidature in the national examination.

This study therefore sought to establish the factors which influenced students' choice of computer studies in public and private secondary schools in Machakos Sub-County. The study focused on how students' aspirations, computer facilities, school subject combination and parents influence students' choice of computer studies.

1.3 Purpose of the study

The purpose of this study was to investigate factors influencing students' choice of computer studies in public and private secondary schools in Machakos Sub-County, Machakos County, Kenya.

1.4 Objectives of the study

The study was guided by the following objectives;

i) to determine how students' aspirations influence their choice of computer studies in public and private secondary schools in Machakos Sub-County.

ii) to establish how the availability of computer facilities influence students' choice of computer studies in public and private secondary schools in Machakos Sub-County.

iii) to determine how school practice on subject combination influences students' choice of computer studies in public and private secondary schools in Machakos Sub-County.

iv) to establish how parents influence students' choice of computer studies in public and private secondary schools in Machakos Sub-County.

1.5 Research questions

The study sought to answer the following questions;

i) How do students' aspirations influence their choice of computer studies in public and private secondary schools in Machakos Sub-County?

ii) To what extent does the availability of computer facilities influence students' choice of computer studies in public and private secondary schools in Machakos Sub-County?

iii) How does school practice on subject combination influence students' choice of computer studies in public and private secondary schools in Machakos Sub-County?

iv) To what extent do parents influence students' choice of computer studies in public and private secondary schools in Machakos Sub-County?

1.6 Significance of the study

The findings of this study may provide useful information to students on the importance of choosing computer studies to acquire skills relevant to the job market and enhance self-employment. The findings may prove useful to the education sector on the importance of making computer studies a compulsory subject for the countries technological and economic advancement. The study findings and recommendations may be useful as a basis for future research. Researchers can use the study information for comparative studies on various determinants of subject choices in schools. The study might also contribute to the literature review in choice of optional subjects in secondary schools by providing a base line of the determinants of subject choices.

1.7 Limitations of the study

The limitations of the study were; choice of computer studies as an optional subject in group four, the secondary schools which offered computer studies as an examinable

subject, and the form three students who had chosen computer studies as an examinable subject.

1.8 Delimitations of the study

The study was conducted in public and private secondary schools in Machakos Sub-County which offer computer studies up to form four.

1.9 Basic assumptions of the study

The study was based on the following assumptions;

i) Computer studies was offered in both public and private secondary schools in Machakos Sub-County.

ii) There were students who took computer studies in both public and private secondary schools in Machakos Sub-County.

iii) Students faced challenges in choosing computer studies in both public and private secondary schools in Machakos Sub-County.

1.10 Definition of operational terms

Career Aspirations refers to the future profession ambitions and expectations of students' in public and private secondary schools in Machakos Sub-County.

Career Guidance refers to the process of structured intervention aimed at helping students' to benefit from the educational training and occupational opportunities that are available in public and private secondary schools in Machakos Sub-County.

Computer Facilities refers to all the teaching and learning materials used in the teaching of computer studies in public and private secondary schools in Machakos Sub-County.

Curriculum refers to the course content planned for teaching students in public and private secondary schools in Machakos Sub-County.

Optional Subjects refers to the subjects which require the student to make a choice as per individual abilities and preferences taught in public and private secondary schools in Machakos Sub-County.

Parents' Influence refers to the parents' impact on students' decision towards the choice of computer studies in public and private secondary schools in Machakos Sub-County.

Private Schools refers to schools not sponsored by the government in Machakos Sub-County.

Public Schools refers to schools registered and owned by the government through the Ministry of Education in Machakos Sub-County.

School Practice refers to the frame work which defines the subjects to be offered in public and private secondary schools in Machakos Sub-County.

Students' Aspirations refers to the students' desire which they are motivated to work towards in public and private secondary schools in Machakos Sub-County.

Students' Choice refers to the process of students' selection of computer studies in public and private secondary schools in Machakos Sub-County.

Subject Choice refers to an opportunity provided by public and private secondary schools in Machakos Sub-County in the course of study where students carefully select subjects offered in the schools for the purpose of their study.

Subject Combination refers to the subject grouping of optional subjects adopted by public and private secondary schools in Machakos Sub-County.

Technical Subjects refers to the subjects which equip individuals' with skills, abilities, attitudes and knowledge for individual and economic development taught in public and private secondary schools in Machakos Sub-County.

1.11 Organization of the study

The study was organized into five chapters. Chapter one dealt with the background to the study, statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, limitations of the study, delimitations of the study, basic assumptions of the study, definition of operational terms and organization of the study.

Chapter two focused on review of related literature, summary of the reviewed literature and the conceptual frame work. Chapter three dealt with the research methodology which included the study design, target population, sampling procedure and sampling size, research instruments, pilot study, validity of the research instruments, reliability of the research instruments, data collection procedures, data analysis techniques and ethical considerations. Chapter four focused on data analysis, data presentation and interpretation, while chapter five focused on summary of the study, major findings of the study, conclusions from the study, recommendations from the study and suggestions for further research.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter focused on review of the literature related to this study. First an overview of computer studies in secondary schools. It also covered the factors which influenced students' choice of computer studies in public and private secondary schools. The factors reviewed were students' aspirations, availability of computer facilities, school practice on subject combination and parents' influence. It ended with a summary of the reviewed literature and the conceptual framework.

2.2 An overview of computer studies in secondary schools

The need for enhancement in science and technology in Kenya led to the introduction of computer studies in the Kenyan secondary school curriculum in 1994 (MOE, 2002). The Kenyan secondary school curriculum comprises of five major groups of subjects. Computer studies is classified as a technical subject in group four (KNEC, 2014). Group four consists of five optional subjects with students' supposed to choose at least one amidst subjects from groups two, three and five. Wailer (2003) opines that there is need for secondary school educators in public and private secondary schools to guide students on subject choice as per their interests, abilities and relevance to their future career aspirations.

A study by Lukalo (2008) revealed that the Cameroonian government in its efforts to advance in information technology made computer science a compulsory subject in the secondary school curriculum. He further found that lack of understanding of the

centrality of computer technology in economic development coupled with disparities in geographical regions, school resources and infrastructure obstruct efforts of making computer studies a compulsory subject in Kenyan secondary schools.

The introduction of computer studies in the Kenyan education system was a major step in the realization of Kenya's vision 2030 which recognizes the vital role of science, technology and innovation as a basis for rapid social economic transformation (MOE, 2002). Kavagi (2001) opines that the education sector should consider making computer studies a compulsory subject in secondary schools for Kenyan youths to acquire computer skills to enhance the realization of vision 2030. Kibos (2000) argues that most secondary schools in Kenya do not only offer computer studies as a subject but have integrated computers in their teaching programmes. The laptop project in primary schools was a government initiative to ensure computer literacy amongst the young generation for the countries future technological advancement (MOE, 2012). Computer technology plays a central role in a country's economic and technological development hence the need to find out the factors which influence students' choice of computer studies in secondary schools.

2.3 Influence of students' aspirations on their choice of computer studies in secondary schools

Ainley, Robinson, Harvery, Beavis, Elsworth & Fleming (1994) assert that students' preference and career aspirations dictate their choice of technical subjects especially computer studies because they fix them to particular careers. Students understand the realities of the world of work and practically choose subjects which help them build

and realize their future career plans (Wailer, 2003). The entire need of computer skills in the job market influences students' choice of computer studies in public and private secondary schools (Wailer, 2003). Evans & Ashworth (2001) state that students regard computer studies as simulative and offer practical skills suitable to their future career aspirations. They argue that students in public and private secondary schools perceive the computer as an object of study, more exciting and potentially rewarding.

Computer studies lead to the acquisition of skills and knowledge relevant to the job market (Siann, Lightbody, Nicholson, Tait & Walsh, 1998). Students in public and private secondary schools choose computer studies on the basis of perceived future career aspirations, relevance to the job market and to acquire skills for self-employment (Wikeley & Stables, 1999). Students with well-defined career aspirations in public and private secondary schools make right subject choices unlike those without definite career goals which influence the choice of computer studies (Adey & Biddulph, 2001).

Students in public and private secondary schools feel that computer skills are interwoven in every day's life and will place them in their envisioned future careers (Cooney & Warton, 1997). Different subjects are rated and weighed differently for specific jobs, thus teachers should expound the relationship between the subjects taught and the students' career aspirations (Austin, 2009). He further adds that students should be provided with opportunities to take part in experiences that relate the subject matter and career occupations. Siann et al. (1998) observed that majority

of students' in public and private secondary schools choose subjects they liked, compulsory or facilitated their future careers.

Ainley et al.(1994) argue that students' made subject choices with short term focus without considering their options beyond school, majority choose computer studies because they disliked the other subjects in the group despite having different career perspectives. Kibos (2000) posits that computer studies lead to the acquisition of skills in computer technology, exposes students to new information and experiences applicable to the world of work which enhanced students' choice and preference to the subject. Students' perceptions on the importance of a subject are centered on its usefulness in future careers hence students in public secondary schools choose computer studies to acquire skills for self-employment (Wikeley & Stables, 1999). Kitetu (2003) argues that the acquisition of computer skills and technology affects every institution in the globe thus important for students' to undertake computer studies to acquire the emerging new technologies.

Students in private secondary schools choose computer studies because they are exposed to more information about careers and the requirements of the job market (Evans& Ashworth, 2001). Austin (2009) argues that students' in both public and private secondary schools chose computer studies because without computer skills in today's world one is doomed; the opportunities available in the job market require computer skills. Student's view computer studies as meaningful and important because it entails the potential to have a significant consequence on their professional pursuit (Ainley et al., 2009). The fore reviewed literature shows that student'

aspirations and relevance to the computer dominated job market determines their choice of computer studies hence the need to investigate the extent to which these factors influence students' choice of computer studies in public and private secondary schools in Machakos Sub-County.

2.4 Influence of availability of computer facilities on students' choice of computer studies in secondary schools

Lukalo (2008) argues that provision and improvement of infrastructure for teaching technical subjects in schools was found to increase students' participation in the subjects. Though computer technology is entirely viewed as a facilitator for change, many public and private secondary schools do not offer it due to the high costs of purchase, installation and maintenance of the equipment's (Smyth &Hannah, 2006). Wikeley & Stables (1999) assert that public secondary schools depend primarily on county and national governments for funds which are inadequate and whose disbursement is often delayed which makes acquisition of sufficient computers and servicing impossible hence high ratio of students' to computers which affects their choice of computer studies.

Wikeley & Stables (1999) posit that availability of computer facilities ensure students access to equipment's and materials for teaching and learning of computer studies. They add that proprietors of private secondary schools acquire advanced computer facilities for their schools which enhance the subjects' provision and choice compared to public secondary schools which may lack adequate funding hence inadequate computer facilities. The teaching of computer studies has been left to those schools

and geographical regions where appropriate infrastructures are available especially in well-structured public and private secondary schools (Lippman, Burns & McArthur, 1996).

Students to a larger extent fail to choose computer studies due to inadequate computer infrastructural facilities, teaching and learning cannot be meaningful without educational materials (Smyth & Hannan, 2006). Private secondary schools' proprietors equip the schools with adequate computer facilities hence low ratio of students' to computers which influences students' choice of computer studies (Erickson, 1986). Computer studies should be taught using the guided discovery method because mastery of concepts cannot be achieved fully without the practical use of computers thus well-equipped computer laboratories influence students' choice of computer studies in both public and private secondary schools (Olubor, 1998).

Private secondary schools have technologically advanced computer equipment's and internet connection, parents can afford personal computers for their students' for private practice, tackling assignments and access to internet which enhances students' choice of computer studies (Lippman et al., 1996). Public secondary schools lack adequate funds to provide modern computer equipment's, internet connection and many students' access computers only at school which influences their choice of computer studies (Wailer, 2003).

Coleman & Hoffer (1989) allude that majority of public secondary schools are located in low income minority communities with limited resources hence they cannot offer a

wide curriculum for lack of access to adequate internet connectivity due to the geographical location, installation and subscription expenses. Kiptalam & Rodriquez (2010) argue that many private secondary schools are situated near towns where there is internet connectivity which ensures access to educational information thus influencing their choice of computer studies. The reviewed literature shows that availability of computer facilities influences students' choice of computer studies. This study sought to investigate how these factors influence students' choice of computer studies in public and private secondary schools in Machakos Sub-County.

2.5 Influence of school subject combination practice on students' choice of computer studies in secondary schools

Austin (2009) opined that school policies/practices clearly define the subjects to be offered which constrain or facilitate students' choice of computer studies in both public and private secondary schools. Schools' subject packaging of optional subjects and assumptions about the needs and abilities of students influence students' subject choice indirectly by encouraging the choice of particular subjects (Smyth & Hannan, 2006). Siann et al. (1998) allude that the placement of computer studies in the time table against other optional subjects, its' availability in the schools' curriculum affects its' choice in public and private secondary schools.

Cooney & Warton (1997) posits that guided explorations of educational opportunities help students develop a clear concept of their potential hence boost their preference to the subject. Students preferred computer studies due to the information and guidance availed to them and the range of educational opportunities available. Students in public and private secondary schools choose computer studies out of personal

preferences such as teachers who instruct them, the peers in their class, subject orientation or to be associated with a certain cohort of students in the school (Hasting, Justine & Jeffret, 2008). Though students' preference determines subject choice, it is important for the students to clearly understand their mental abilities, special abilities and interests to make intelligent choices because computer studies require practical skills and high cognitive abilities (Splaver, 1977). Students in public and private secondary schools chose computer studies because they viewed it as their favourite optional subject, had perceived ability to do well while to others subject choice was an unplanned exercise due to lack of sufficient and meaningful information (Blenkinsop, McCrone, Wade & Morris, 2006).

Public secondary schools have more racially and ethnically diverse students population hence provide a wide curriculum, are responsive to the concerns and needs of students and parents thus students choose subjects freely as per ability and preference which determines their choice of computer studies (Austin, 2009). Private secondary schools offer attractive subject packaging which enable students to choose subjects as per their abilities and preference which determines choice of computer studies (Blenkinsop et al., 2006). The reviewed studies show that school practice on subject combination determines students' choice of computer studies. This study sought to establish how these factors influence students' choice of computer studies in public and private secondary schools in Machakos Sub-County.

2.6 Parents' influence on students' choice of computer studies in secondary Schools

Evans & Ashworth (2001) posit that students need parental guidance and counseling in their life choices and decisions at successive stages which shape their life patterns. Parents by the virtue of age, experience and education equip their children with skills to solve problems and make independent decisions (Moon & Shelton, 1995). Parents bring up their children with defined principles in mind which can influence the learners' choice of subjects (Young, 1994).

Parents enroll their children in private secondary schools voluntarily despite the financial obligations due to their economic ability and the careers they hold for them (Ogbu, 2003). Disadvantaged parents enroll their children in public secondary schools in the poor neighborhood which are geographically accessible, have poor infrastructure and lack electricity hence cannot offer computer studies which limit students' subject choice (Lippman et al., 1996). Owoyele & Toyobo (2008) assert that parents with low economic power discourage their children from choosing computer studies due to the extra expenses incurred in the subject study which influences students' choice of computer studies in public and private secondary schools.

Kavagi (2001) argues that computer studies acts as a discriminatory investment that does not benefit all due to the additional fee of two hundred shillings for examination registration and other costly peripherals which negatively influence students' choice. Mkpa (1986) recognized that parents should be sensitized about schools broadly for they may not properly advice their children on subject choice due to lack of sufficient information.

Educated parents of high social economic status understand the curriculum hence can direct their children in public and private secondary schools to choose subjects suitable and relevant in the labour market (Coleman & Hoffer, 1987). Illiterate parents of low social economic status may lack any idea of the curriculum hence do not consider any subject or career important which influences students' choice of computer studies in both public and private secondary schools (Wikeley& Stables, 1999). Parental expectation is often the strongest factor in determining children educational plans and subject choice for they help students to choose relevant subjects and make progress towards achieving their goals (Ogbu, 2003).

Parents hold unrealistic expectations about their children which may precipitate anxiety and fear hence affect their subject choice and performance (Owoyele Toyobo, 2008). Young (1994) asserts that though the acquisition of computer skills is highly adored amongst the youths, majority attend low status public secondary schools which lack adequate facilities to offer computer studies which is catalyzed by the family's social economic status. This study intended to investigate the extent to which parental factors influence students' choice of computer studies in public and private secondary school in Machakos Sub-County.

2.7 Summary of the reviewed literature

The reviewed literature has shown that there are several factors which influence the choice of computer studies in public and private secondary schools. The factors reviewed are related to the students' aspirations, computer facilities, school subject combination practice and parents' influence. Different studies have shown that

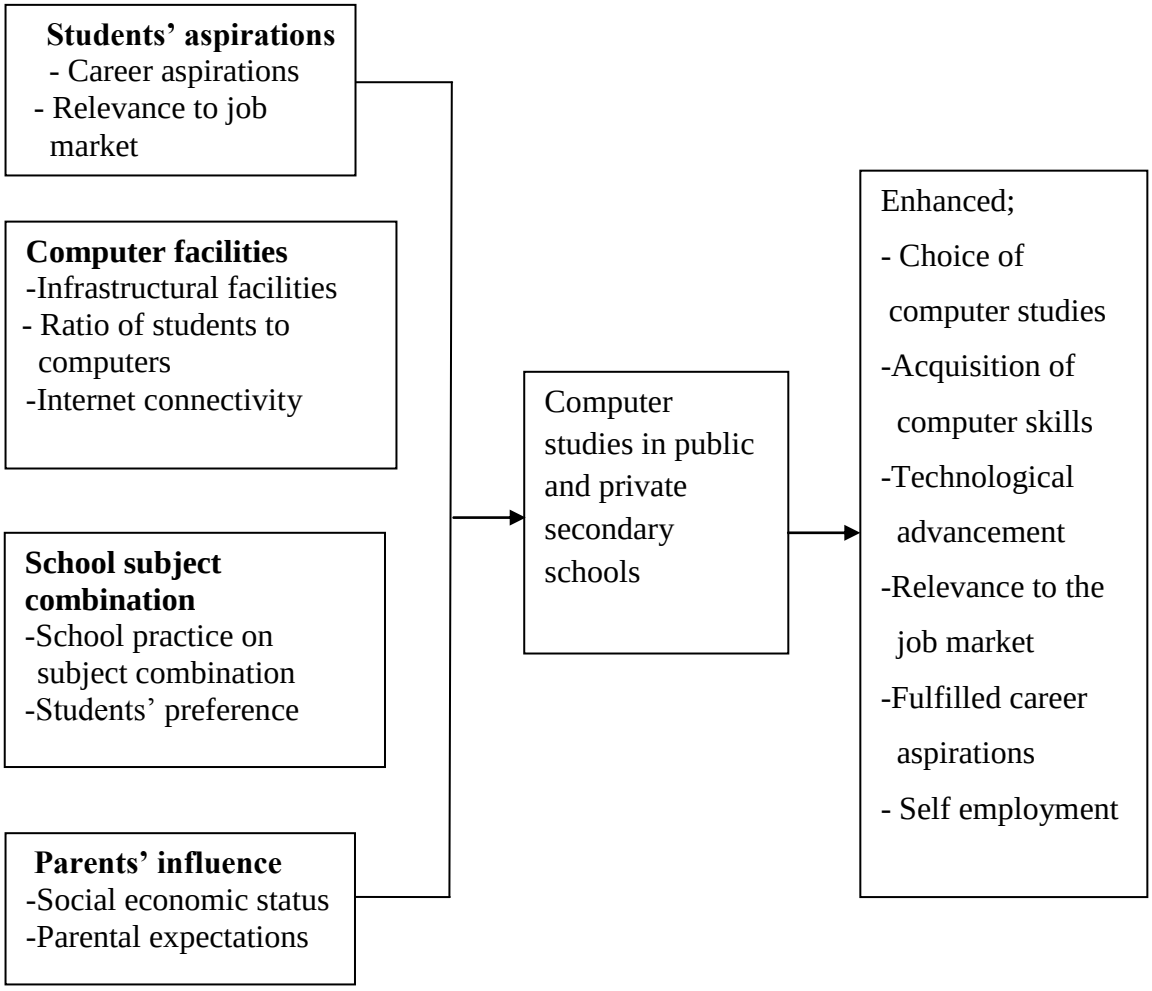
students' career aspirations and relevance to the job market influence their choice of computer studies. Studies by (Wailer, 2003; Adey et al., 2001; and Austin, 2009) found that students' choice of computer studies in public and private secondary schools is influenced by the mentioned factors.

Studies have shown that computer facilities influence the choice of computer studies in public and private secondary schools. (Evans et al., 2001; Wikeley et al., 1999; Erickson, 1986) found that computer infrastructural facilities, ratio of students to computers and internet connectivity influence students' choice of computer studies. Reviewed literature further showed that school subject combination practice determines students' choice of computer studies. Studies by (Cooney et al., 1997; Siann et al., 1998; Ainley et al., 1994) show that students' preference and the schools' practice on subject combination influence their choice of computer studies in both public and private secondary schools.

Further review of literature revealed that parental expectations and their social economic status influence their children choice of computer studies. (Ogbu, 2003; Lippman et al., 1996 and Mkpa, 1986) found that parents directly influence their children choice of subjects to meet their expectations in both public and private secondary schools. From the reviewed studies it is evident that several factors influence students' choice of computer studies. However there is no evidence that research has been carried out to investigate the factors influencing students' choice of computer studies in public and private secondary schools. The study therefore intended to fill the knowledge gap left by the preceding studies.

2.8 Conceptual framework

Figure 2.1: Factors influencing students' choice of computer studies in secondary schools



The conceptual frame work for this study presents the variables and how they interact with each other. The independent variables in this study are the factors which influence students' choice of computer studies. They include students' aspirations, computer facilities, school subject combination and parents' influence.

The interplay of the four variables increases the stake of offering computer studies in secondary schools thus enhance students' choice of computer studies which forms the dependent variable. Students' career aspirations, relevance of computer skills to the job market as well as computer infrastructural facilities, ratio of students to computers and internet connectivity determines students' choice of computer studies. School practice on subject combination, students' preference as well as parental expectations and their social economic status influence students' choice of computer studies. The frame work also highlights the indicators of students' choice of computer studies

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter focused on the methodology used in this study. This section highlighted the study design, target population, sampling procedure and sampling size, research instruments, pilot study, validity and reliability of the research instruments, data collection procedures, data analysis techniques and ethical considerations in data collection.

3.2 Study design

This study aimed at establishing the factors which influence students' choice of computer studies in public and private secondary schools in Machakos Sub-County. The study therefore employed descriptive survey research design to achieve its objectives. Orodho (2005) states that survey design enable the collection of information about people's attitudes, opinions, values and behaviours on educational or social issues. It is a systematic method of studying behaviours that cannot be observed or experimented without manipulating the environment. This design is suitable in investigating and collecting information about the attitudes, opinions and experiences of students, teachers, principals, directors and parents on the factors which influence students' choice of computer studies.

3.3 Target population

Lokesh (1984) defines a target population as a large population from which a sample population is to be selected. Machakos Sub-County has a total of 25 secondary schools which offer computer studies, 12 public and 13 private.

The target population for this study included; 107 form three computer studies students from the public secondary schools and 110 from the private secondary schools. 12 computer studies teachers from the public secondary schools and 13 from the private secondary schools. 12 principals from the public secondary schools and 13 directors from the private secondary schools. 12 parents of the computer studies students from the public secondary schools and 13 from the private secondary schools.

3.4 Sampling procedure and sampling size

The study employed census sampling and purposive sampling in choosing the sample size. Census sampling was used in sampling the students, teachers, principals and directors of the secondary schools. According to Kothari (1985) census is the procedure of systematically acquiring and recording information about all the members of a given population. The study sampled 23 secondary schools which offer computer studies, 11 public and 12 private. The sample included 100 form three computer studies students from the public secondary schools and 100 from the private secondary schools. 11 computer studies teachers were sampled from the public and 12 from the private secondary schools. The sample included 11 principals of the public and 12 directors of the private secondary schools.

Purposive sampling was employed in sampling the parents. According to Orodho (2009) purposive sampling involves expert selection of units that are believed to have the information required with respect to the study objectives. The technique was deemed appropriate because only the computer studies student's parents had the information suitable for this study.

At school level the study employed simple random sampling technique to select the parents. Papers bearing the students admission numbers were folded, rolled over, put in a basket, churned and one picked randomly. The admission number in the picked paper represented the students' parent to be included in the sample. A total of 11 parents were eventually sampled from the public secondary schools and 12 from the private secondary schools.

3.5 Research instruments

The study used questionnaires to gather information in this study. The questionnaires brought out the feelings, attitudes and perceptions beyond the researchers reach on the factors that influenced students' choice of computer studies in public and private secondary schools in Machakos Sub-County. There were three questionnaires: one for the principals and directors of the schools, the teachers who taught computer studies and the form three students taking computer studies. The questionnaire collected demographic information in section one and factors influencing students' choice of computer studies in section two to five.

The study also used focused group discussion schedule to collect information from the parents. The focus group discussion guide for the focus groups was carefully planned and designed to obtain information on the beliefs, opinions and perceptions of the respondents on the research problem.

3.6 Pilot study

The pilot study was conducted to act as a pretest of the research instruments. It was carried out in one public secondary school and one private secondary school which

offered computer studies. It involved one principal, one director, one computer studies teacher from both school categories, seven computer studies students from the public secondary school, ten computer studies students from the private secondary school and their parents.

It helped to determine: Whether there was ambiguity in any of the items, whether the instruments collected the anticipated data, whether the statements in the research instruments were clear and the questions were correctly worded.

3.6.1 Validity of the research instruments

Validity is the degree to which an instrument measures what it purports to measure (Smith, 1992). For face validity the study pre-tested the tools and for content validity the instruments were subjected to analysis by supervisors and specialists in the area of study. They assessed the relevance of the content in the instruments, offered structural advice for the purpose of improvement of the instruments before the actual data collection.

The focus group discussions were audio-recorded and transcribed into texts for comparison with field notes during analysis.

3.6.2 Reliability of the research instruments

Gay (1992) describes reliability as a measure of the degree to which a research instrument yields consistent results of data after a repeated trial. A pilot study was conducted to detect any weakness in the instruments and allow for necessary corrective measures.

The study used test-retest technique to ascertain the coefficient of reliability. The same instruments were administered twice to the same respondents in the pilot study after two weeks. A follow up focus group discussion was conducted to clarify on any unclear issue arising from the pilot study.

3.7 Data collection procedures

The researcher sought research permit from the National Council for Science Technology and Innovation (NACOSTI) before embarking on the study. The researcher then paid a courtesy call to the Machakos Sub-County Director of Education and explained the intention to carry out the research. The researcher made appointments with the public and private secondary school principals and directors. On arrival at the schools on the agreed dates, the researcher created rapport with the respondents and explained to them the purpose of the study and then administered the research instruments.

For the focus group discussion the researcher requested the principals and directors of the secondary schools to provide contacts for the sampled parents. The researcher contacted the respondents, explained the purpose of the study and requested them to participate in the focus group discussions. The researcher made arrangements with the respondents to meet at one of the schools. The questions and topics of discussion were given to the participants before the actual date for familiarization. The discussions were audio-recorded and later transcribed; field notes were also taken.

3.8 Data analysis techniques

This is the process of summarizing the collected data and putting it together so that the researcher can meaningfully organize, categorize and synthesize information from

the data collecting tools. The collected data was analyzed using Statistical Package for Social Sciences (SPSS). The results were presented by use of percentages and frequency distribution tables.

For the focus group discussion, the audio-recorded responses were listened to, transcribed into texts and compared with the field notes. The results were reported by the researcher and direct quotations were also used.

3.9 Ethical considerations

The study upheld the following ethical issues; It ensured justice and respect of human dignity by maintaining honesty and openness with the respondents. Obtained informed consent and voluntary participation by creating rapport with the respondents and explaining to them the purpose of the study. Ensured confidentiality and anonymity by assuring the respondents that their identities would not be publicized. Ensured exposure of respondents to harm by protecting the respondents against physical and psychological harm. Observed the principle of beneficence by informing the respondents the results and findings of the study.

CHAPTER FOUR
DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter focused on data analysis, interpretation and presentation of the data collected. The data analysis was aimed at addressing the purpose of the study which was to investigate the factors influencing students' choice of computer studies in public and private secondary schools in Machakos Sub-County. The data analysis was based on the research objectives. The main issues discussed in this chapter included the questionnaire return rate, demographic information of the respondents and responses to the research questions.

4.2 Questionnaire return rate

Questionnaire return rate is the percentage of the questionnaires returned after they have been filled by the respondents. The researcher distributed 246 questionnaires for completion. 122 questionnaires to the public secondary schools; 11 to the principals, 11 to the computer studies teachers and 100 to the computer studies students. 124 questionnaires to the private secondary schools; 12 to the directors, 12 to the computer studies teachers and 100 to the computer studies students. All the questionnaires administered were returned. This was possible because the researcher administered the questionnaires and waited for them to be filled. In schools where the principal/director or the computer studies teacher was absent, the questionnaires were left behind and arrangements made to pick them later. Hence the return rate was 100 percent.

4.3 Demographic information of the respondents

The demographic information of the respondents such as the age, gender, highest academic qualifications, years of teaching experience and level of training on teaching computer studies was sought and presented in subsequent tables.

4.3.1 Age of the computer studies students

Students were asked to indicate their age. The data collected was as presented in Table 4.1.

Table 4.1 Age of the computer studies students

	Public schools		**Private schools**	
Age	**Frequency (F)**	**Percentage (%)**	**Frequency (F)**	**Percentage (%)**
Below 15 yrs	3	3	3	3
15-17 yrs	53	53	56	56
18-20 yrs	43	43	40	40
Above 20 yrs	1	1	1	1
Total	**100**	**100**	**100**	**100**

The information presented in Table 4.1 showed that 53 percent and 43 percent of the form three students in public secondary schools were of age 15-17 years and 18-20 years as attested by the respondents respectively. In private secondary schools the trend was similar at 56 percent 15-17 years and 40 percent 18-20 years. The rest 3 percent were below 15 years and 1 percent above 20 years in both public and private

secondary schools. This implied that the form three students were in their teens hence were able to make independent decisions pertaining subject choice.

4.3.2. Gender of the computer studies students, computer studies teachers and principals/directors

The gender of the computer studies students, computer studies teachers and the principals/directors was sought. The results were presented in Table 4.2.

Table 4.2 Gender of the computer studies students, computer studies teachers and the principals/directors

	Computer studies students				**Computer studies teachers**				**Principals/Directors**			
	Public schools		**Private schools**		**Public schools**		**Private schools**		**Public schools**		**Private schools**	
Gender	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Male	56	56	53	53	6	55	7	58	7	64	9	75
Female	44	44	47	47	5	45	5	42	4	36	3	25
Total	**100**	**100**	**100**	**100**	**11**	**100**	**12**	**100**	**11**	**100**	**12**	**100**

The data captured in Table 4.2 showed that male computer studies students were slightly more than the female students at 56 percent and 44 percent in public secondary schools. For the private secondary schools male students were 53 percent and female 47 percent. This indicated that either gender partook the subject and saw the need of acquiring computer skills by the end of secondary school education. Computer studies is attractive to girls because many professions which require computer skills application like typing attract females than males.

The same trend applied to the computer studies teachers. However, among the computer studies teachers the gender difference was minimal an indication that either

gender taught computer studies in secondary schools. This was as indicated by 55 percent male and 45 percent female in public secondary schools compared to 58 percent male and 42 percent female in private secondary schools. This was an implication that none wanted to be locked out of the computer dominated job market. The male principals/directors were more than the female principals/directors in both public and private secondary schools at 64 percent and 75 percent male and 36 percent and 25 percent female respectively. This showed that most of the secondary schools offering computer studies were boys headed by male principals. Most of the private secondary schools were mixed headed by male directors.

4.3.3 Academic qualification of the principals/directors and the computer studies teachers

Academic qualification was of interest to the study. This aimed at establishing whether the principals/directors of the schools were qualified to head them on merit and also whether the computer studies teachers were hired on merit.

Table 4.3 Academic qualifications of the principals/directors and the computer studies teachers

	Principals/Directors				**Computer studies teachers**			
	Publics schools		**Private schools**		**Public schools**		**Private schools**	
Level of education	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Masters Degree	6	55	4	33	0	0	0	0
Bachelors Degree	3	27	6	50	4	36	4	33
Diploma in Education	2	18	2	17	7	64	8	67
Total	**11**	**100**	**12**	**100**	**11**	**100**	**12**	**100**

The data contained in Table 4.3 showed that 55 percent of the principals in public secondary schools had masters degree as the highest academic qualification compared to 33 percent of their counterparts in private secondary schools. Diploma in education holders were the least in both public and private secondary schools at 18 percent and 17 percent respectively.

For the computer studies teachers, none had a masters degree while diploma in education holders constituted the highest percentage at 64 percent and 67 percent in public and private secondary schools respectively. This was an indication that a diploma in education course qualified one to teach computer studies in secondary schools just like their counterparts who taught other subjects.

4.3.4 Teaching experience of the principals/directors and the computer studies teachers

The study also sought to establish the teaching experience of both the principals/directors and the computer studies teachers. This aimed at establishing whether the responses given by the principals/directors and the computer studies teachers were based on experience.

Table 4.4 Teaching experience of the principals/directors and the computer studies teachers in years

	Principals/Directors				Computer studies teachers			
	Public schools		Private schools		Public schools		Private schools	
Years of teaching	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
0-5 years	0	0	0	0	6	55	8	67
6-10 years	2	18	3	25	4	36	3	25
Over 10years	9	82	9	75	1	9	1	8
Total	**11**	**100**	**12**	**100**	**11**	**100**	**12**	**100**

As indicated in Table 4.4, 82 percent of the principals of public secondary schools and 75 percent of the directors of private secondary schools had taught for over ten years, none had taught for less than 6 years. This can be attributed to the criteria of appointing the principals/directors of the schools which is based on the job group and the years of service in the teaching career. However, the computer studies teachers had a different trend were majority 55 percent and 67 percent had taught for less than 6 years from public and private secondary schools respectively. Those who had taught for over ten years were at 9 percent in public and 8 percent in private secondary schools.

This implied that the computer studies teachers had less years of teaching than the principals/directors. This can be attributed to the fact that computer studies was introduced in the Kenyan secondary school curriculum in 1994 (MOE, 2002).

4.3.5 Teachers level of training on teaching computer studies

The computer studies teachers were asked to indicate whether they were trained to teach computer studies in schools. The results were as presented in Table 4.5.

Table 4.5 Computer studies teacher's level of training on teaching computer studies

	Computer studies teachers			
	Public schools		Private schools	
Trained to teach computer studies	**F**	**%**	**F**	**%**
Yes	7	64	8	67
No	4	36	4	33
Total	**11**	**100**	**12**	**100**

The analysis captured in Table 4.5 revealed that 64 percent and 67 percent of the computer studies teachers from the public and private secondary schools respectively were specifically trained to teach computer studies. 36 percent from the public secondary schools and 33 percent from the private secondary schools had training on computers but not on teaching computer studies. This was an indication that secondary schools employed any person with computer training but not necessarily with teaching skills/ methodology to teach computer studies.

4.4 Influence of students' aspirations on their choice of computer studies in public and private secondary schools

In line with the first objective, the study sought to establish whether student's aspirations influence their choice of computer studies in secondary schools**.** To this effect the students were asked to indicate their perception of computer studies.

4.4.1 Student's perception of computer studies

The study sought students' perception of computer studies. The findings were as contained in Table 4.6.

Table 4.6 Student's perception of computer studies

	Public schools		Private schools	
Responses	**Frequency (F)**	**Percentage (%)**	**Frequency (F)**	**Percentage (%)**
Very positive	36	36	28	28
Positive	62	62	42	42
Negative	2	2	30	30
Total	**100**	**100**	**100**	**100**

On the perception of the students regarding computer studies, the results in Table 4.6 indicated that 62 percent of the students from public secondary schools perceived the subject positively compared to 42 percent from private secondary schools. However, 30 percent of the students from private secondary schools had a negative perception compared to 2 percent from public secondary schools. This was an indication that students from public secondary schools perceived computer studies more positively than those from private secondary schools.

The position affirms the study conducted by Ainley, Robinson, Harvery, Beavis, Elsworth & Fleming (1994) who established that students' preference and career aspirations dictate their choice of technical subjects especially computer studies because they fix them to particular careers.

The views of the computer studies teachers and the principals/directors on the student's perception of computer studies were also sought. This was as presented in Table 4.7.

Table 4.7 Computer studies teachers and principals/directors opinions on students' perception of computer studies

	Computer studies teachers				**Principals/Directors**			
	Public schools		**Private schools**		**Public schools**		**Private schools**	
Responses	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Very positive	2	18	2	17	3	27	1	18
Positive	7	64	6	50	6	55	6	50
Negative	2	18	4	33	2	18	5	42
Total	**11**	**100**	**12**	**100**	**11**	**100**	**12**	**100**

As indicated in table 4.7, 64 percent of the computer studies teachers felt that students in public secondary schools had a positive perception of computer studies compared to 50 percent of those from the private secondary schools who felt the same. 33 percent of the computer studies teachers from private secondary schools had the view that their students had a negative perception of the subject compared to 18 percent of their counterparts from public secondary schools.

The results from the principals/directors also reflected the same trend like that of the students and the computer studies teachers that public secondary school students percieved computer studies more positively that private secondry school students. 55 percent and 50 percent of the principals/directors from public and private secondary schools respectively were of the opinioin that students had a positive perception of

computer studies. However, 42 percent of the directors felt that students from private secondary schools had a negative perception of computer studies compared to 18 percent of the principals from public secondary schools who had similar views. This can be attributed to the fact that directors of private secondary schools being the propietors highly deteremined the subject combinations in their schools.

The responses from the parent's focus group discussions indicated that the parents believed that their children had a positive perception of computer studies. Upon probing they indicated that their children had a positive perception of the subject because they chose it among other subjects offered in the schools.

One public secondary school parent stated that;

"The public secondary school where my son is offers five technical subjects and he chose computer studies out of his own volition, this tells that he likes it anyway."

A private secondary school parent commented that;

"When my child joined this school in form one, after they were oriented on the schools' curriculum he was happy computer studies was offered because he had done some introduction in primary school. He was prepared to tackle it."

The study further sought to establish the attitude of the student's towards computer studies and the opinion of the computer studies teachers and the principals/directors on the students' attitude towards computer studies. The results were as contained in Table 4.8.

Table 4.8 Student's attitude towards computer studies, computer studies teachers and principals/directors opinion on students' attitude towards computer studies

	Computer studies students				Computer studies teachers				Principals/Directors			
	Public schools		Private schools		Public schools		Private schools		Public schools		Private schools	
Responses	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Very positive	44	44	4	4	2	18	3	25	1	9	4	33
Positive	54	54	66	66	7	64	8	67	8	73	7	59
Negative	2	2	30	30	2	18	1	8	2	18	1	8
Total	**100**	**100**	**100**	**100**	**11**	**100**	**12**	**100**	**11**	**100**	**12**	**100**

The analysis summarized in Table 4.8 indicated that students in both public and private secondary schools had a positive attitude towards computer studies. However, more students from private secondary schools had a positive attitude compared to students from public secondary schools at 66 percent and 54 percent respectively. Even though more students from private secondary schools had a positive attitude towards computer studies more students 30 percent had a negative attitude towards the subject compared to 2 percent of students from the public secondary schools. This implied that a greater number of private secondary school students chose computer studies because they disliked the other subjects in group four or they were forcefully guided to undertake.

The views of the computer studies teachers and the principals/directors also mirror the views of the students that more students had a positive attitude towards computer studies than those with negative attitude. 64 percent of the computer studies teachers and 73 percent of the principals from public secondary schools attested that their students were positive about the subject. Similarly 67 percent and 59 percent of the

computer studies teachers and the directors from private secondary schools were of the opinion that their students had a positive attitude towards computer studies. Only 2 percent and 1 percent of the students had a negative attitude towards the subject in public and private secondary schools respectively as attested by the computer studies teachers and the principals/directors.

The results of the students who were taking computer studies and still had a negative attitude towards the subject indicated that probably such students were not ready for the subject but were forced by some circumstances to take it. This concurs with the study conducted by Ainley et al. (1994) who found out that students' made subject choices with short term focus without considering their options beyond school, majority chose computer studies because they disliked the other subjects in the group despite having different career perspectives.

During the focus group discussion on students' attitude towards computer studies the parents unanimously agreed that their children had positive attitude towards the subject.

A parent with a child in a private secondary school said that;

"My daughter has great interest in the subject, says it is good and interesting…she finds computer studies very exciting and scores well so far."

A public secondary school parent stated that;

"Though my son claims that the computer studies examination is not easy to handle, he still has a great zeal for the subject. He is improving and I am sure he will excel."

This study went ahead to establish the reasons for the case.

On the reasons for students' choice of computer studies in secondary schools, they were asked to rate the factors that influenced their choice of the subject by either agreeing or disagreeing to the statements. The results were as contained in Table 4.9.

Table 4.9 Student's responses on what influenced their choice of computer studies

The study sought student's views on what influenced their choice of computer studies. They were requested to indicate their responses as; SA=Strongly Agree, A=Agree, D=Disagree, and SD=Strongly Disagree.

	Public schools										**Private schools**									
Responses	**SA**		**A**		**D**		**SD**		**Total**		**SA**		**A**		**D**		**SD**		**Total**	
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Career	58	58	42	42	0	0	0	0	**100**	**100**	68	68	32	32	0	0	0	0	**100**	**100**
Individual Interest	50	50	44	44	3	3	3	3	**100**	**100**	44	44	32	32	14	14	10	10	**100**	**100**
Skills for the job market	44	44	46	46	7	7	3	3	**100**	**100**	46	46	37	37	11	11	6	6	**100**	**100**
Skills for self employment	52	52	44	44	2	2	2	2	**100**	**100**	48	48	42	42	6	6	4	4	**100**	**100**
Peer Pressure	1	1	3	3	40	40	56	56	**100**	**100**	1	1	2	2	46	46	51	51	**100**	**100**

The findings presented in Table 4.9 revealed that the careers that the students intended to pursue influenced their choice of computer studies with 58 percent of the public secondary school students and 68 percent of the private secondary school students strongly agreeing to the statement. Similarly, students from both public and private secondary schools strongly disagreed with the statement that they chose computer

studies out of peer pressure at 56 percent for the public and 51 percent for the private secondary schools. The other factors individual interest, acquisition of skills for self employment and acquisition of skills for the job market influenced students' choice of computer studies though with variations in both public and private secondary schools. This showed that students chose computer studies independently due to their future career prospects and were well versed with the nature of the job market which required computer skills.

Students understand the realities of the world of work and practically choose subjects which help build and realize their future career plans. The entire need of computer skills in the job market influences students' choice of computer studies in secondary schools (Wailer, 2003) which corroborates with the results of this study. Austin (2009) established that students' in both public and private secondary schools chose computer studies because without computer skills in today's world one is doomed; the opportunities available in the job market require computer skills which attest the findings of this study. Students view computer studies as meaningful and important because it entails the potential to have a significant consequence on their professional pursuit (Ainley et al., 2009). These testify the findings of this study.

The views of the computer studies teachers and the principals/directors on the factors that influence students' choice of computer studies were also sought and the results were as presented in Table 4.10 and Table 4.11.

Table 4.10 Computer studies teacher's opinion on the factors that influence students' choice of computer studies

	Public schools		Private schools	
Responses	**Frequency (F)**	**Percentage (%)**	**Frequency (F)**	**Percentage (%)**
Individual interest	2	18	4	33
Career orientation	3	28	3	25
Skills for the job market	4	36	2	17
Skills for employment	1	9	2	17
Peer pressure	1	9	1	8
Total	**11**	**100**	**12**	**100**

The information contained in Table 4.10 has shown that the computer studies teachers were of the opinion that peer pressure least influenced student's choice of computer studies compared to other factors in both public and private secondary schools at 9 percent and 8 percent respectively. They felt that the acquisition of skills for the job market highly influenced students' choice of the subject in public secondary schools at 36 percent compared to individual interest in private secondary schools at 33 percent. This indicated that the computer studies teachers sufficiently oriented computer studies in form one and two and provided proper subject/career guidance to the students before subject choice in form three.

The opinion of the principals/directors also confirmed the opinion of the computer studies teachers and the students. This was as indicated in Table 4.11.

Table 4.11 Principal's/Directors opinion on factors influencing student's choice of computer studies

The study further sought the principals/directors opinions on the factors that influenced student's choice of computer studies. They were requested to indicate their responses as; SA=Strongly Agree, A=Agree, D=Disagree, and SD=Strongly Disagree.

	Principals Public schools										**Directors Private schools**									
Responses	**SA**		**A**		**D**		**SD**		**Total**		**SA**		**A**		**D**		**SD**		**Total**	
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Career	4	36	2	19	3	26	2	19	**11**	**100**	6	50	5	42	1	8	0	0	**12**	**100**
Individual Interest	5	45	4	36	1	9	1	9	**11**	**100**	8	67	3	25	1	8	0	0	**12**	**100**
Skills for the job market	6	55	4	36	1	9	0	0	**11**	**100**	4	33	5	42	2	17	1	8	**12**	**100**
Skills for self-employment	4	36	4	36	2	19	1	9	**11**	**100**	5	42	3	25	3	25	1	8	**12**	**100**
Peer Pressure	0	0	1	9	4	36	6	55	**11**	**100**	1	8	2	17	4	33	5	42	**12**	**100**

The data contained in Table 4.11 indicated that 55 percent of the principals from public secondary schools strongly agreed with the statement that acquisition of skills for the job market drove more students to choose computer studies. 50 percent and 67 percent of the directors from private secondary schools strongly agreed with the statements that career and individual interest overrode other factors that influenced student's choice of computer studies respectively. 55 percent of the principals and 42 percent of the directors strongly disagreed with the statement that students chose computer studies due to peer pressure.

This implied that the principals/directors provided subject/career guidance to the students before subject choice. The principals/directors being the administrators of the schools organized career guidance programmes to ensure that the students made the right subject choices which suited the careers they wanted to pursue after secondary education.

The findings of this study are in line with those conducted by Siann, Lightbody, Nicholson, Tait & Walsh, 1998; Wikeley & Stables, 1999) which established that computer studies lead to the acquisition of skills and knowledge relevant to the job market. Students in public and private secondary schools choose computer studies on the basis of perceived future career aspirations, relevance to the job market and to acquire skills for self-employment.

On career aspirations, the students were asked to indicate the extent to which computer studies prepared them for their future career. The responses were to be rated as Great extent, Moderate extent or Low extent. The results were as presented in Table 4.12.

Table 4.12 Extent to which computer studies prepare students for future career

	Public schools		**Private schools**	
Responses	**Frequency (F)**	**Percentage (%)**	**Frequency (F)**	**Percentage (%)**
Great extent	20	20	38	38
Moderate extent	58	58	28	28
Low extent	22	22	34	34
Total	**100**	**100**	**100**	**100**

The data contained in Table 4.12 indicated that 38 percent of the students in private secondary schools to a great extent were prepared by computer studies for their future career while 58 percent of their counterparts in the public secondary schools were moderately prepared by the subject for their future career. This implied that a large number of students from both public and private secondary schools were prepared for their future careers through the skills they acquired from the learning of computer studies.

The views of the parents from the focus group discussions on whether they were aware of the factors behind their children choice of computer studies indicated that many were aware and affirmed that they were aware of their children career aspirations.

The quotation below from a private secondary school parent further confirmed the views;

"I want my child to acquire computer skills so that when she goes for further studies next year but one…she wants to study financial banking and, as you see, the computer is dictating so many things, she needs the subject."

Another public secondary school parent commented that;

"My son views computer studies as integral to the sense of purpose that accompanies his dreams of upward mobility, thus his choice of computer studies is meaningful and important because it entails the potential to have a significant consequence on his career outcome."

The results of this study are in line with the study conducted by Ainley, Robinson, Harvery, Beavis, Elsworth & Fleming (1994) which asserted that students' career aspirations dictate their choice of technical subjects especially computer studies because they fix them to particular careers. Students understand the realities of the world of work and practically choose subjects which help build and realize their future career plans.

This study established that the need to develop skills for the job market and self-employment together with career choice and individual interest strongly influenced student's choice of computer studies. These results proved (Siann, Lightbody, Nicholson, Tait & Walsh, 1998) who also established that students in public and private secondary schools choose computer studies on the basis of perceived future career aspirations, relevance to the job market and to acquire skills for self-employment.

4.5 Influence of availability of computer facilities on students' choice of computer studies in public and private secondary schools

The other objective of the study was to establish the extent to which computer facilities in the schools influenced students' choice of computer studies. The students were asked to indicate whether they had computer laboratories and all the students from both public and private secondary schools 100 percent said that their schools had a computer laboratory.

Computer studies students, computer studies teachers and the principals/directors were asked to indicate whether their schools had adequate equipment's for teaching computer studies. The results were as presented in Table 4.13.

Table 4.13 Computer studies students, computer studies teachers and principals/ directors opinions on the adequacy of computer equipment's in schools

	Computer studies students				Computer studies teachers				Principals/Directors			
	Public schools		Private schools		Public schools		Private schools		Public schools		Private schools	
Responses	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Very adequate	8	8	34	34	1	9	2	17	1	9	2	17
Adequate	48	48	60	60	3	27	9	75	4	36	9	75
Not adequate	44	44	6	6	7	64	1	8	6	55	1	8
Total	**100**	**100**	**100**	**100**	**11**	**100**	**12**	**100**	**11**	**100**	**12**	**100**

The analysis in Table 4.13 has revealed that 34 percent and 60 percent of the students from private secondary schools said the facilities for teaching computer studies were very adequate and adequate respectively compared to 8 percent and 48 percent of their counterparts from public secondary schools. To the contrary 44 percent of the students from public secondary schools were of the opinion that computer equipment's were not adequate compared to only 6 percent from private secondary schools. This implied that public secondary schools in Machakos Sub-County were less equipped with computer equipment's compared to private secondary schools. The same sentiments were expressed by the computer studies teachers and the principals/directors. 75 percent of the computer studies teachers and directors from private secondary schools were of the opinion that they had adequate computer equipment's compared to 64 percent of computer studies teachers and 55 percent of the principals from public secondary

schools who said that their schools had inadequate computer studies equipments. These views show that public secondary schools lacked adequate computer equipments compared to private secondary schools which influenced greatly students' choice of computer studies.

Wikeley & Stables (1999) found out that public secondary schools depend primarily on county and national governments for funds which are inadequate and whose disbursement is often delayed which makes acquisition of sufficient computers and servicing impossible hence high ratio of students' to computers which affects their choice of computer studies. Further they established that availability of computer facilities ensure students access to equipment's and materials for teaching and learning of computer studies. They add that proprietors of private secondary schools acquire advanced computer facilities for their schools which enhance the subjects' provision and choice compared to public secondary schools which may lack adequate funding hence inadequate computer facilities. This mimics the findings of this study.

During the focus group discussions parents from public secondary schools felt that the government through the Ministry of Education Science and Technology should provide computer facilities to all the secondary schools to enhance the acquisition of computer skills.

One parent commented;

"We wish the government can equip the public secondary schools with computer facilities through the computer for schools kit. Our children get frustrated when the computers break down due to poor maintenance…they are few and shared among many students."

The private secondary school parents however expressed satisfaction during their discussions.

One parent commented that;

"The proprietors of the private secondary schools where our children learn have provided adequate facilities for teaching computer studies…we are more than satisfied with how our children are taught, the equipment's are up to date and modern."

On the teaching materials the study also sought to establish the adequacy of books for teaching computer studies by seeking the opinions of the respondents. The results were as presented in Table 4.14.

Table 4.14 Computer studies students, computer studies teachers and principals/ directors opinions on the adequacy of computer studies books in schools

	Computer studies students				**Computer studies teachers**				**Principals/Directors**			
	Public schools		**Private schools**		**Public schools**		**Private schools**		**Public schools**		**Private schools**	
Responses	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Very adequate	6	16	28	28	2	18	7	58	2	18	8	67
Adequate	52	52	72	72	4	36	5	42	5	46	4	33
Not adequate	32	32	0	0	5	46	0	0	4	36	0	0
Total	**100**	**100**	**100**	**100**	**11**	**100**	**12**	**100**	**11**	**100**	**12**	**100**

The results presented in table 4.14 showed that 72 percent of the students from private secondary schools indicated that they had adequate books. 58 percent of the computer

studies teachers and 67 percent of the directors from private secondary schools said that the computer studies books were very adequate. On the contrary; 32 percent of the students, 46 percent of the computer studies teachers and 36 percent of the principals from public secondary schools said that their schools did not have adequate computer studies books. This implied that private secondary schools are more endowed with computer studies books than the public secondary schools.

This attested to the study conducted by Lippman, Burns & McArthur (1996) who found that the teaching of computer studies has been left to those schools and geographical regions where appropriate infrastructures are available especially in well-structured public and private secondary schools.

The other computer facility that supports the teaching of computer studies is the availability of internet connectivity. The respondents were asked to indicate whether their schools had internet connectivity. The results were summarized in Table 4.15.

Table 4.15 Computer studies students, computer studies teachers and principals/ directors responses on whether there is internet connectivity in their schools

	Computer studies students				**Computer studies teachers**				**Principals/Directors**			
	Public schools		**Private schools**		**Public schools**		**Private schools**		**Public schools**		**Private schools**	
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Yes	44	44	60	60	6	55	8	67	6	55	8	67
No	56	56	40	40	5	45	4	33	5	45	4	33
Total	**100**	**100**	**100**	**100**	**11**	**100**	**12**	**100**	**11**	**100**	**12**	**100**

The findings summarized in Table 4.15 revealed that 60 percent of the students and 67 percent of both the computer studies teachers and directors from private secondary schools indicated that their schools had internet connectivity compared to 44 percent of the students and 55 percent of both the computer studies teachers and principals from public secondary schools. Thus public and private secondary schools are relatively equally equipped with internet connectivity to enhance the teaching of computer studies. However, more private secondary schools had higher internet connectivity than public secondary schools.

The results of this study mirror studies conducted by Coleman & Hoffer (1989) who alluded that majority of public secondary schools are located in low income minority

communities with limited resources hence they cannot offer a wide curriculum for lack of access to adequate internet connectivity due to the geographical location, installation and subscription expenses. Kiptalam & Rodriquez (2010) argued that many private secondary schools are situated near towns where there is internet connectivity which ensures access to educational information thus influencing students' choice of computer studies.

Students were asked to indicate whether internet connectivity influenced their choice of computer studies. The results were as presented in Table 4.16.

Table 4.16 Student's opinion on whether internet connectivity influenced their choice of computer studies

	Public schools		Private schools	
Responses	**Frequency (F)**	**Percentage (%)**	**Frequency (F)**	**Percentage (%)**
Very highly	32	32	4	4
Highly	16	16	24	24
Less highly	18	18	38	38
Low	34	34	34	34
Total	**100**	**100**	**100**	**100**

The data captured in Table 4.16 has shown that 34 percent of the students from both public and private secondary schools were of the opinion that their choice of computer studies was lowly influenced by the availability of internet connectivity. However, 32 percent of the students from public secondary schools were very highly influenced by internet connectivity as opposed to 4 percent of the students from private secondary schools. This shows that private secondary school students had personal modems and smart phones hence accessing the internet were not a problem.

Private secondary schools have technologically advanced computer equipment's and internet connection, parents can afford personal computers for their students' for private practice, tackling assignments and access to internet which enhances students' choice of computer studies (Lippman et al., 1996). Public secondary schools lack adequate funds to provide modern computer equipment's, internet connection and many students' access computers only at school which influences their choice of computer studies (Wailer, 2003). During the focus group discussion parents from both public and private

secondary schools expressed contentment with the internet connectivity in their children schools.

The study also sought to establish whether students were adequately exposed to computer project/practical activities as a mechanism of enhancing their computer skills. The results were as summarized in Table 4.17.

Table 4.17 Extent of student's exposure to computer projects/practical

	Public schools		**Private schools**	
Responses	**Frequency (F)**	**Percentage (%)**	**Frequency (F)**	**Percentage (%)**
Very adequate	20	20	34	34
Adequate	58	58	60	60
Not adequate	22	22	6	6
Total	**100**	**100**	**100**	**100**

The data presented in Table 4.17 has indicated that only 6 percent of the students from private secondary schools said that they were not adequately exposed to computer practical as opposed to 22 percent from the public secondary schools.

This can be attributed to the findings that private secondary schools had more computer facilities compared to public secondary schools. Students from both public and private secondary schools were relatively adequately exposed to computer practical at 58 percent and 60 percent respectively.

Computer studies should be taught using the guided discovery method because mastery of concepts cannot be achieved fully without the practical use of computers thus well-

equipped computer laboratories influence students' choice of computer studies in both public and private secondary schools (Olubor, 1998). This affirms what this study established.

During the focus group discussion a private secondary school parent stated that;

"Performance in computer studies is based on how much practical lessons students are exposed to. Am happy because my child is adequately being exposed to computer projects, he has great enthusiasm to computer studies. Indeed he is getting equipped very well."

The study further sought to establish the influence of various computer facilities on students' choice of the computer studies. The results were as presented in Table 4.18.

Table 4.18 Student's opinion on the computer facilities that influenced their choice of computer studies

The student's opinion on the computer facilities that influenced their choice of computer studies were captured in Table 4.18. They were requested to indicate their responses as; LI=Less Influential, I=Influential, and VI=Very Influential.

	Public schools								**Private schools**							
Responses	**LI**		**I**		**VI**		**Total**		**LI**		**I**		**VI**		**Total**	
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Computer lab		0	40	40	60	60	**100**	**100**	0	0	42	42	58	58	**100**	**100**
Source of power	0	0	33	33	67	67	**100**	**100**	0	0	31	31	69	69	**100**	**100**
Availability of desktops	0	0	35	35	65	65	**100**	**100**	0	0	30	30	70	70	**100**	**100**
Availability of laptops	42	42	30	30	28	28	**100**	**100**	25	25	39	39	36	36	**100**	**100**
Availability of tablets	97	97	2	2	1	1	**100**	**100**	42	42	48	48	10	10	**100**	**100**
Availability of smart phones	96	96	4	4	0	0	**100**	**100**	40	40	52	52	8	8	**100**	**100**
Availability of I pads	70	70	30	30	0	0	**100**	**100**	40	40	55	55	5	5	**100**	**100**
Availability of modems	40	40	30	30	30	30	**100**	**100**	30	30	40	40	30	30	**100**	**100**

The data captured in Table 4.18 revealed that 60 percent, 67 percent and 65 percent of students from public secondary schools said that, computer laboratory, source of power and availability of desktops were very influential towards their choice of computer studies compared to 58 percent, 69 percent and 70 percent of those from private secondary schools who indicated the same respectively.

This implied that computer laboratory, source of power and the availability of desktops were the computer facilities that highly influenced student's choice of computer studies in both public and private secondary schools. Other facilities that had less influence on student's choice of computer studies are availability of lap tops, modems,

tablets, I pads and smart phones respectively in both public and private secondary schools.

Parents were asked whether the schools where their children attended secondary education had computer laboratories which were equipped. A higher proportion of the public secondary school parents expressed that there were inadequate computer facilities in the schools compared to their counterparts in private secondary schools who expressed that the schools had adequate computer facilities. This implied that the parents were aware of the prevailing computer facilities condition in their children schools but despite the inadequacy of facilities in public secondary schools they encouraged their children to take computer studies. This was an indication that the parents were completely aware that computer skills were of great importance in all the professions.

A parent from a public secondary school had this to say;

"We parents have been very helpful in funding the computer project in my child's school. The project started off in 2008 with only two computers and since then parents have added to the present number of forty. Without facilities and a good teacher this subject is not easy to offer."

Another parent added that;

"I am completely aware of the financial implications of offering computer studies. My sons' school is not adequately equipped with computer facilities but I do not want him to be left out of the computer world. We parents support where we can."

A private secondary school parent commented that;

"There is a well-equipped computer laboratory where my son schools. I feel that he is getting the right skills, there is no need of another computer course after school. The school is doing excellent."

The results of this study on availability of computer facilities and its influence on students' choice of computer studies testifies the study conducted by Lukalo (2008) who argued that provision and improvement of infrastructure for teaching technical subjects in schools was found to increase students' participation in the subjects. Students to a larger extent fail to choose computer studies due to inadequate computer infrastructural facilities; teaching and learning cannot be meaningful without educational materials (Smyth & Hannan, 2006).

Private secondary schools' proprietors equip their schools with adequate computer facilities hence low ratio of students' to computers which influences students' choice (Erickson, 1986). This assertion that private secondary schools had more facilities was one of the main finding of this study. The students in private secondary schools indicated that they had more facilities which influenced their choice of the computer studies

This study also established that private secondary schools had technologically advanced computer equipment's and internet connection an assertion which mimics a study done by Lippman et al., (1996) who also established that parents can afford personal computers for their students' for private practice, tackling assignments and access to internet which enhances students' choice of computer studies.

This study further established that public secondary schools had inadequate computer equipment's, internet connection. However, despite the shortage of computer facilities students affirmed that their choice of computer studies is highly influenced by availability of laboratory, computers and source of power. These results supports the work of Wailer, (2003) and Coleman & Hoffer (1989) who alluded that majority of public secondary schools are located in low income minority communities with limited resources hence they cannot offer a wide curriculum for lack of access to adequate internet connectivity due to the geographical location, installation and subscription expenses.

4.6 Influence of school subject combination practice on students' choice of computer studies in public and private secondary schools.

Earlier studies indicated that subject combination influenced students' subject selection. Students were asked to indicate the group four subjects offered in their schools other than computer studies. The results were contained in Table 4.19.

Table 4.19 Group four subjects offered in public and private secondary schools

Subject	**Public schools**						**Private schools**					
	Yes		**No**		**Total**		**Yes**		**No**		**Total**	
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Home science	38	38	62	62	**100**	**100**	46	46	54	54	**100**	**100**
Art and Design	16	16	84	84	**100**	**100**	37	37	63	63	**100**	**100**
Agriculture	100	100	0	0	**100**	**100**	87	87	13	13	**100**	**100**
Aviation Technology	13	13	87	87	**100**	**100**	23	23	77	77	**100**	**100**

The information captured in Table 4.19 has shown that all the group four subjects were offered in both public and private secondary schools. However, the most commonly offered subject was agriculture as indicated by 100 percent and 87 percent in public and private secondary schools respectively. The rest were home science, art and design and aviation technology in that order.

The respondents were asked to indicate the stakeholders who determined subject selection in their schools. The results were as presented in Table 4.20.

Table 4.20 Computer studies students, computer studies teachers and principals/ directors opinions on the stakeholders who determine subject selection in schools

	Computer studies students				**Computer studies teachers**				**Principals/Directors**			
	Public schools		**Private schools**		**Public schools**		**Private schools**		**Public schools**		**Private schools**	
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Principals / Directors	20	20	50	50	2	18	5	43	2	18	6	50
Teachers	45	45	25	25	5	46	2	16	5	46	2	16
Parents	10	10	15	15	1	9	4	33	1	9	3	26
Students	25	25	10	10	3	27	1	8	3	27	1	8
Total	**100**	**100**	**100**	**100**	**11**	**100**	**12**	**100**	**11**	**100**	**12**	**100**

The results presented in Table 4.20 have indicated that teachers mainly determined subject selection in public secondary schools with 45 percent of the students and 46 percent of both the computer studies teachers and the principals attesting so an indication that they were influential as opposed to private secondary schools were the directors of the schools highly influenced subject selection as indicated by 50 percent of both the students and directors and 43 percent of the computer studies teachers.

In public secondary schools the parents were less influential as indicated by 10 percent of the students and 9 percent of both the computer studies teachers and principals whereas the students themselves had lesser influence on subject selection in private secondary schools with 10 percent of them attesting so and 8 percent of the computer studies teachers and the directors.

These findings agree with the studies done by Austin (2009) who opined that school policies/practices clearly define the subjects to be offered which constrain or facilitate students' choice of computer studies in both public and private secondary schools. Schools' subject packaging of optional subjects and assumptions about the needs and abilities of students influence students' subject choice indirectly by encouraging the choice of particular subjects (Smyth & Hannan, 2006).

During the focus group discussions the parents had the following views.

A public secondary school parent commented that;

"We are occasionally called for meetings in the schools to discuss development issues, about the school curriculum and subject combination we are not involved at all but when our children consult we assist where possible."

Private secondary school parents stated that;

"We meet regularly, though the proprietors determine the curriculum to a larger extent, we are completely kept posted on the subjects offered and the subject combinations for optional subjects to bring in our input."

In line with subject selection students were asked to indicate how the orientation of computer studies was carried out. The results were as contained in Table 4.2.

Table 4.21 Students' opinion on how computer studies orientation is carried out

	Public schools		Private schools	
Responses	**Frequency (F)**	**Percentage (%)**	**Frequency (F)**	**Percentage (%)**
Strongly Agree	6	6	14	14
Agree	66	66	71	71
Disagree	14	14	13	13
Strongly Disagree	14	14	2	2
Total	**100**	**100**	**100**	**100**

The data summarized in Table 4.21 revealed that 66 percent and 71 percent of students from public and private secondary schools respectively agreed with the statement that the way computer studies orientation was done in form one and two influenced their choice of the subject. However, 2 percent of the students from private secondary schools strongly disagreed with the statement that they were influenced by the orientation programme compared to 14 percent of the students from public secondary schools. This can be attributed to the finding that public secondary schools lack adequate computer facilities.

The students were also asked to indicate the level at which the orientation carried by the stakeholders influenced their choice of computer studies. The results were summarized in Table 4.22.

Table 4.22 Students' opinion on the level at which different stakeholders orientation programme influenced their choice of computer studies

The study sought students opinion on the level at which different stakeholders orientation programme influenced their choice of computer studies. They were requested to indicate their responses as; LI=Less Influential, I=Influential, and VI=Very Influential.

	Public schools								**Private schools**							
	LI		**I**		**VI**		**Total**		**LI**		**I**		**VI**		**Total**	
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Principals/ Directors	10	10	45	45	45	45	**100**	**100**	3	3	47	47	50	50	**100**	**100**
Teachers	15	15	36	36	49	49	**100**	**100**	25	25	40	40	35	35	**100**	**100**
Parents	45	45	35	35	20	20	**100**	**100**	10	10	50	50	40	40	**100**	**100**
Students	35	35	40	40	25	25	**100**	**100**	43	43	30	30	27	27	**100**	**100**

The data captured in Table 4.22 indicated that the orientation carried out by the teachers and principals were very influential towards students' choice of computer studies in public secondary schools at 49 percent and 45 percent respectively. The directors and parent's orientation programmes were very influential towards student's choice of computer studies in private secondary schools at 50 percent and 40 percent respectively. Parent's orientation programmes were less influential in public secondary schools at 45 percent as well as the students' orientation programmes in private secondary schools at 43 percent.

This corroborates with the study done by Cooney & Warton (1997) who found that guided explorations of educational opportunities help students develop a clear concept of their potential hence boost their preference to the subject. Students preferred

computer studies due to the information and guidance availed to them and the range of educational opportunities available.

The views of the parents from the focus group discussions concurred with those of the students that the orientation carried out by various stakeholders influenced their children choice of computer studies in both public and private secondary schools.

Besides orientation students were asked to indicate the school practices that influenced their choice of computer studies. This was as presented in Table 4.23.

Table 4.23 Students' opinion on how school practices influenced their choice of computer studies

	Public schools		**Private schools**	
	Frequency (%)	**Percentage (%)**	**Frequency (F)**	**Percentage (%)**
Placement of optional subjects	35	35	26	26
Students own preference	25	25	37	37
Orientation on choosing criteria	22	22	24	24
Subjects combination	18	18	13	13
Total	**100**	**100**	**100**	**100**

The results contained in Table 4.23 showed that placement of alternative optional subjects influenced students choice of computer studies in public secondary schools at 35 percent while in private secondary schools students own preference dominated other school practices at 37 percent. Subject combination had the least influence in both public and private secondary schools at 18 percent and 13 percent respectively.

This was an indication that school practices on subject combination highly dictated students' choice of computer studies. The students were properly oriented which enabled them to choose the subjects they preferred in both public and private secondary schools. These results of this study mirror the study done by Austin (2009) who found that school policies/practices clearly define the subjects offered which constrain or facilitate students' choice of computer studies in both public and private secondary schools. This is as demonstrated in private schools where the students said that subject choice was determined by the directors as the proprietors of the school.

Public secondary schools have more racially and ethnically diverse students population hence provide a wide curriculum, are responsive to the concerns and needs of students and parents thus students choose subjects freely as per ability and preference which determines their choice of computer studies (Austin, 2009). Private secondary schools offer attractive subject packaging which enable students to choose subjects as per their abilities and preference which determines choice of computer studies (Blenkinsop et al., 2006). All this studies verify the findings of this study.

The responses from the parents during the focus group discussion indicated that subject combination, students' own preference, placement of optional subjects on the timetable and orientation on choosing criteria influenced their children's choice of computer studies in both public and private secondary schools.

4.7 Parents influence on students' choice of computer studies in public and private secondary schools

The study also sought to establish the influence of parents on students' choice of computer studies. The parents' education level was sought and the results were as in Table 4.24.

Table 4.24 Parents' level of education

Parents level of Education	Public schools		Private schools	
	Frequency (F)	Percentage (%)	Frequency (F)	Percentage (%)
Primary	6	6	0	0
Secondary	74	74	48	48
Diploma	10	10	14	14
University	10	10	38	38
Total	**100**	**100**	**100**	**100**

As indicated in Table 4.24, 74 percent of the parents with students in public secondary schools had secondary level education compared to 48 percent of the parents with children in private secondary schools. 38 percent of the parents with children in private secondary schools had university education as opposed to 10 percent of the parents with children in public secondary schools. This implied that most of the parents with university education had children in private secondary schools because they were better positioned financially to afford the cost.

The study also sought to establish the parents' attitude towards computer studies. Both students in public and private secondary schools responded and the results were as presented in Table 4.25.

Table 4.25 Students' opinion of their parents' attitude towards computer studies

	Public schools		**Private schools**	
Responses	**Frequency (F)**	**Percentage (%)**	**Frequency (F)**	**Percentage (%)**
Very positive	36	36	10	10
Positive	60	60	90	90
Negative	4	4	0	0
Total	**100**	**100**	**100**	**100**

The data presented in Table 4.25 showed that 60 percent and 90 percent of parents with children in public and private secondary schools had a positive attitude towards computer studies respectively. None of the private secondary school parents had a negative attitude towards the subject compared to 4 percent of their public secondary school counterparts. This was an indication that all the parents understood the technological changes in the world and the need of computer skills in the computer driven job market. This study finding agrees with a study which established that parents bring up their children with defined principles in mind which can influence the learners' choice of subjects (Young, 1994).

On subject selection guidance students were asked to indicate whether their parents guided them on their choice of computer studies. The results were contained in Table 4.26.

Table 4.26 Students responses on whether parents guided them on their choice of computer studies

	Public schools		Private schools	
	Frequency (F)	**Percentage (%)**	**Frequency (F)**	**Percentage (%)**
Yes	84	84	100	100
No	16	16	0	0
Total	**100**	**100**	**100**	**100**

The analysis captured in Table 4.26 indicated that 100 percent of the students from private secondary schools were guided by their parents on their choice of computer studies compared to 84 percent of those from public secondary schools. 16 percent of the students from public secondary schools did not get guidance on computer studies selection. This implied that most of the students were guided on selection of computer studies by their parents in both public and private secondary schools due to the entire need of computer skills in all the professions. This is in line with a study by Kitetu, (2003) which established that computer studies is vital for it enables students to acquire the emerging new technologies and fit in the global community.

The study further sought the extent to which parents' career/subject guidance influenced students' choice of computer studies. The results were as presented in Table 4.27.

Table 4.27 Students' opinion on the influence of parents career/subject guidance on their choice of computer studies

	Public schools		Private schools	
Responses	**Frequency (F)**	**Percentage (%)**	**Frequency (F)**	**Percentage (%)**
Very highly	22	22	8	8
Highly	38	38	58	58
Less highly	2	2	0	0
Low	38	38	34	34
Total	**100**	**100**	**100**	**100**

As presented in Table 4.27, 58 percent of the students from private secondary schools were highly influenced by the parents' guidance on selection of computer studies while 34 percent were lowly influenced. 38 percent of the students from public secondary schools were both highly and lowly influenced by the parents' guidance on selection of computer studies. This showed that a greater proportion of students from both public and private secondary schools chose computer studies due to the guidance they got from their parents. Students in public and private secondary schools choose computer studies because their parents expect them to pursue computer related careers (Wailer, 2003) which concurs with the findings of this study.

The study further sought the extent to which parental factors influenced students' choice of computer studies. The study results were presented in Table 4.28.

Table 4.28 Students' responses on parental factors which influenced their choice of computer studies

Further the study sought student's opinion on the parental factors which influenced their choice of computer studies. They were requested to indicate their responses as; LI=Less Influential, I=Influential, and VI=Very Influential.

	Public schools								**Private schools**							
	LI		**I**		**VI**		**Total**		**LI**		**I**		**VI**		**Total**	
	F	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**	**F**	**%**
Career held for you By parent	18	18	39	39	43	43	**100**	**100**	10	10	38	38	52	52	**100**	**10**
Parent's financial status	28	28	26	26	46	46	**100**	**100**	14	14	38	38	48	48	**100**	**10**
Education level	27	27	26	26	47	47	**100**	**100**	28	28	32	32	40	40	**100**	**10**
Familiarity with curriculum	54	54	32	32	14	14	**100**	**100**	48	48	40	40	12	12	**100**	**10**

The data captured in Table 4.28 showed that 43 percent, 46 percent and 47 percent of the public secondary school students indicated that the career held by their parents for them, parent's financial status and the education level of the parents were very influential towards their choice of computer studies respectively. Similarly 52 percent, 48 percent and 40 percent of the private secondary school students felt that the factors were very influential respectively. Parents' familiarity with the curriculum was less influential on students' choice of computer studies in both public and private secondary schools as attested by 54 percent and 48 percent respectively. This implied that parental related factors greatly influenced students' choice of computer studies in both public and private secondary schools.

The public secondary schools parent's views in the focus group discussion on the parental factors which influenced their children's choice of computer studies concurred with those of their children.

One parent stated that;

"My son touched a computer in this school. I cannot afford a computer at home or pay fee for a private college, so I advised him to choose computer studies. I would like him to be a doctor and I know he will require the skills."

The private secondary schools parent's focus group discussion views echoed those of their children.

One parent commented that;

"I want my child to be an engineer and I am sure he cannot work without using a computer, I pay for all the requirements to ensure that he gets the right skills."

Another parent added that;

"I brought my daughter to this private secondary school despite the cost because they teach and train computer skills excellently. I am satisfied that she will fit well in her career after school."

Evans & Ashworth (2001) posited that students need parental guidance and counseling in their life choices and decisions at successive stages which shape their life patterns. This is in line with the findings of this study.

The study established that efforts were made by all the parents with children in private secondary schools to guide them on career/subject choice. The study also established that parents by the virtue of experience and education equip their children with skills and ideas which enhance better career choices. This concurs with Moon & Shelton, (1995) who also established that parents bring up their children with defined principles in mind which can influence the learners' choice of subjects.

Parents enroll their children in private secondary schools voluntarily despite the financial obligations due to their economic ability and the careers they hold for them (Ogbu, 2003). Disadvantaged parents enroll their children in public secondary schools in the poor neighborhood which are geographically inaccessible, have poor infrastructure and lack electricity hence cannot offer computer studies which limit students' subject choice (Lippman et al., 1996).

Owoyele & Toyobo (2008) asserted that parents with low economic power discourage their children from choosing computer studies due to the extra expenses incurred in the subject study which influences students' choice of computer studies in public and private secondary schools. All these studies attest the findings of this study.

CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarized the findings of the study and presented conclusions, recommendations and suggestions for further research.

5.2 Summary of the study

The purpose of this study was to investigate the factors influencing students' choice of computer studies in public and private secondary schools in Machakos Sub-County. The study was guided by four objectives which focused on the influence of student's aspirations, availability of computer facilities, schools practices and parents on the choice of computer studies. The study reviewed related literature by providing an overview of computer studies in secondary schools and findings from previous studies on factors influencing students' choice of computer studies in public and private secondary schools based on the objectives. In order to achieve these objectives that study used descriptive survey research design.

The target population for the study included 217 form three computer studies students, 25 computer studies teachers, 25 principals/directors and 25 parents of the computer studies students in the public and private secondary schools offering computer studies in Machakos Sub-County. The sample size for the study included; 100 form three computer studies students from the public secondary schools and 100 from the private secondary schools. 11 computer studies teachers from the public secondary schools and 12 from the private secondary schools. 11 principals from the public secondary schools and 12 directors from the private secondary schools.

11 parents of the computer studies students from the public secondary schools and 12 from the private secondary schools.

The study embraced census sampling to get the sample size of the students, computer studies teachers and the principals/directors. Purposive sampling and simple random sampling techniques were used to get the sample size of the computer studies student's parents.

Questionnaires were the major tools for data collection. However, focus group discussion schedule was used to gather data from parents. Data analysis was done by use of SPSS programme where data was coded fed into the computer analyzed descriptively and presented by in percentages and frequency distribution tables. For the focus group discussion, audio-recorded responses were listened to, transcribed into texts and compared with the field notes. The results were presented by the researcher through direct quotations.

This study established that student's aspirations; career choice, acquisition of skills needed in the job market and for self-employment influenced students' choice of computer studies in public and private secondary schools. Further the study found that availability of computer facilities, school practices and parental factors influenced students' choice of computer studies in both public and private secondary schools though with variations. Teachers and directors were found to highly influence students' choice of computer studies in public and private secondary schools respectively.

The study concluded that students' career aspirations, acquisition of skill for the job market and for self employment influenced students' choice of computer studies in both public and private secondary schools.

Computer facilities were concluded to highly influence students' choice of computer studies, private secondary schools were found to be more equipped with computer equipments compared to public secondary schools.

Based on the findings and conclusions the study recommended that the computer studies curriculum should be designed to fully equip the students with the computer skills useful in the computer dominated job market. In view of this computer studies should be made compulsory for all the students. Further, research should be undertaken on student's level of adaptability to the work environment after acquiring computer skills in secondary schools.

5.3 Major findings of the study

This section provided a summary of the major findings of the study based on the research objectives.

5.3.1 Influence of students' aspirations on their choice of computer studies in public and private secondary schools

The findings of the study showed that students from public secondary schools perceived computer studies more positively compared to those from private secondary schools. This is as presented in Table 4.6, where 62 percent of the students from public secondary schools had a positive perception of computer studies compared to 42 percent of those from private secondary schools. The computer studies teachers and the principals/directors had the same views as shown in Table 4.7.

The findings also showed that students from both public and private secondary schools had a positive attitude towards computer studies as indicated by the students, computer studies teachers and principals/directors in Table 4.8. The parents had similar views in their discussion groups.

The study established that the careers which the students intended to pursue influenced their choice of computer studies in both public and private secondary schools with 58 percent and 68 percent of the students strongly agreeing to the statement respectively as contained in Table 4.9.

Further findings indicated that the acquisition of skills for the job market drove more students to choose computer studies in public secondary schools with 55 percent of the principals strongly agreeing with the statement while in private secondary schools career and individual interest overrode the other factors with 50 percent and 67 percent of the directors strongly agreeing with the statements as presented in Table 4.11.

The study revealed that students were not influenced by peer pressure to choose computer studies. The students, computer studies teachers and principals/directors disagreed with the statement as summarized in Table 4.9, Table 4.10 and Table 4.11 respectively.

5.3.2 Influence of availability of computer facilities on students' choice of computer studies in public and private secondary schools

The study found that public secondary schools were less equipped with computer equipments compared to private secondary schools. This is as contained in Table 4.13 where 34 percent and 60 percent of the students from private secondary schools said that the facilities for teaching computer studies were very adequate and adequate respectively compared to 8 percent and 48 percent of those from public secondary schools.

The study established that private secondary schools were more endowed with computer studies books than public secondary schools. This is as attested by 72 percent of the students who said that they had adequate books, 58 percent of the computer studies teachers and 67 percent of directors from private secondary schools who indicated that they were very adequate. On the contrary; 32 percent of the students, 46 percent of the computer studies teachers and 36 percent of the principals from public secondary schools said that their schools did not have adequate computer studies books as indicated in Table 4.14.

Further findings indicated that students from private secondary schools were adequately exposed to projects/practical activities as a mechanism of enhancing their computer skills compared to their counterparts from public secondary schools. Only 6 percent of the private secondary school students said that they were not adequately exposed to computer practical as opposed to 22 percent of those from the public secondary schools as presented in Table 4.17.

5.3.3 Influence of school subject combination practice on students' choice of computer studies in public and private secondary schools

The study established that the directors of private secondary schools mainly determined subject selection in their schools as indicated by 50 percent of both the students and directors and 43 percent of the computer studies teachers while in public secondary schools teachers mainly determined subject selection with 45 percent of the students and 46 percent of both the computer studies teachers and principals attesting so as summarized in Table 4.20.

Further findings showed that in public secondary schools the parents were less influential as indicated by 10 percent of the students and 9 percent of both the computer studies teachers and principals whereas the students themselves had lesser influence on subject selection in private secondary schools with 10 percent of them attesting so and 8 percent of both the computer studies teachers and directors. This is as shown in Table 4.20.

The study revealed that students from both public and private secondary schools were influenced to choose computer studies due to the orientation done in form one and two as indicated by 66 percent and 71 percent of the students who agreed with the statement respectively as contained in Table 4.21.

The study results showed that placement of alternative optional subjects influenced students choice of computer studies in public secondary schools at 35 percent while in private secondary schools students own preference dominate other school practices at 37 percent as presented in Table 4.23.

5.3.4 Parents influence on students' choice of computer studies in public and private secondary schools

The study established that parents with students in both public and private secondary schools had a positive attitude towards computer studies as indicated by 60 percent and 90 percent respectively in Table 4.25.

The study findings showed that most of the students were guided on their choice of computer studies by their parents in both public and private secondary schools. 100 percent of the students from private secondary schools were guided by their parents compared to 84 percent of those from public secondary schools as presented in Table 4.26.

The study further found that the careers held by the parents for their children, education level of the parents and parents' financial status influenced students' choice of computer studies in both public and private secondary schools. 43 percent, 47 percent and 46 percent of the public secondary school students indicated that the factors were very influential respectively. Similarly 52 percent, 40 percent and 48 percent of the private secondary school students felt that the factors were very influential respectively. This is contained in Table 4.28.

Further the study established that parents' familiarity with the curriculum was less influential on the students' choice of computer studies in both public and private secondary schools as attested by 54 percent and 48 percent respectively as shown in Table 4.28.

5.4 Conclusions from the study

This study indeed established that student's aspirations; career choice, acquisition of skills needed in the job market and for self-employment influenced students' choice of computer studies in public and private secondary schools though with variations.

The study also concluded that computer facilities in both public and private secondary schools highly influenced student's choice of computer studies. Private secondary schools were concluded as well equipped with computer equipments compared to public secondary schools.

The study further concluded that school practices such as placement of alternative optional subjects, students' own preference, orientation on choosing criteria and who should guide students on subject selection influenced students' choice of computer studies in both public and private secondary schools. Directors and teachers were concluded as highly influential on students' choice of computer studies in private and public secondary schools respectively.

The study has also established that parental factors influenced students' choice of computer studies in both public and private secondary schools though with some variations. Also concluded was that most of the students in both public and private secondary schools were guided by their parents on their choice of computer studies.

5.5 Recommendations from the study

Based on the major findings of the study, the study recommended the following.

i) There is need to fully equip students with computer skills that can be useful in the computer dominated society after schooling. This can be done by ensuring that the computer studies curriculum is in line with the skills required in the job market and making the subject compulsory for all the students.

ii) There is need to give students the freedom to choose the subjects they want to pursue. This freedom of choice should be guided by thorough subject orientation during the time of subject selection.

iii) Secondary schools should involve all the educational stakeholders in the subject selection exercise with the view of giving guidance and a fair chance to all the students to make proper choice of subjects.

iv) There is need to equip schools especially public secondary schools with adequate computer facilities to have more students choose computer studies and ensure quality of the skills impacted.

v) There is need of ensuring adequate exposure of students to computer projects/practical, to help the students to interact and adapt to the work environment easily.

vi) Secondary schools should offer all the subjects in the curriculum and formulate suitable subject combination of optional subjects to ensure that students have a wide range of subjects to choose.

vii) The parents need to make follow up in order to establish whether their children choose the courses they have been aspiring to pursue. This is based on the finding that in private secondary schools it is the directors of the schools who determines the school curriculum. This kills the morale of the students who are forced to take subjects not of their choice.

5.6 Suggestions for further research

The study based on the major findings and recommendations made the following suggestions for further research.

i) The study suggests that there is need to carry out a study on factors influencing students' choice of computer studies in public and private secondary schools in the entire county with the aim of making generalization.

ii) There is also need to carry out a study on student's level of adaptability to the work environment after acquiring computer skills in secondary schools.

iii) There is need to carry out a study on the factors which influence the offering of optional subjects in secondary schools.

REFERENCES

Adey, K. & Biddulph, M. (2001). The influence of pupil perceptions on subject choice at in computer studies. *Educational Studies, 27* (7), 439-50.

Ainley, J., Robinson, L., Harvey-Bevis, A., Elsworth, G. & Fleming, M.(1994).*Subject choice in years 11 and 12*. Canberra. Australian government publishing service.

Austin, C. (2009). *Factors influencing high school students in career decision related goal intentions*. Minnesota. University of Minnesota.

Blenkinscop, S., McCrone, T., Wade, P. & Morris, M. (2006). *How do young people make subject choices at 14&16? Research report.* R R 773, London. Department of Education and Skills.

Choy, S.P., Horn, L.J., Nunex, and A.M. & Chen, X. (2000) .Low *income students: understanding the subject and college choice of disadvantaged students*. San Francisco: Jossey- Bass Publishers.

Coleman, J.S. & Hoffer, H. (1987).*Public and private high schools:* The impact of communities. New York .Basic Books.

Cooney, G.H. & Warton, P.M. (1997).Information and choice of subjects in the senior school. *British Journal of Guidance and Counseling.25* (3), 389-90.

Erickson, D. (1986). *Choice and private schools: Dynamics of supply & demand. In DC. Levy: Private education: Studies in choice and public policy*.PP.82-109. New York.
Oxford University Press.

Evans, J. L. & Ashworth, J. (2001).Modeling student subject choice at secondary and tertiary level. A cross section study: *Journal of Economic Education 34* (2), pp.311-20.

Gay, L.R. (1992). *Educational research. Competencies for analysis and application.* London. Charles E. Marilla Publishing Company. Columbus.

Hasting, J., Justine, &Jeffrey, W. (2008).Information on subject choice and academic achievement. Evidence from 2 experiments. *Quarterly Journal of Economics. 123* (4), 1373.

Kavagi, L. (2001). *The use of computers in secondary school.* A survey of schools in western province. Unpublished M. Phil. Thesis. Moi University.

Kibos, J. K. (2000). Teacher /pupils perspectives on computer augmented physics lessons on measurement in Kenya secondary schools. *Journal of Information Technology for Teacher Education. 1* (2), 20-35.

Kiptalam, G.K. & Rodrigues, A.J. (2010). Internet utilization: A case of connected rural and urban secondary schools in Kenya. *International Journal of Computing and ICT Research, 4*(1), 49-63.

Kitetu, C. (2003). *Gender in science education. Science and technology*. Dakar Institute of Gender, Science and Technology in Africa.

Kenya National Examination Council, (2008).Circular on the K.C.S.E examination to be offered with the effect from 2009.

Kenya National Examination Council, (2014).K.N.E.C Regulations and syllabuses.

Kenya National Examination Council, (2013).K.C.S.E Examination reports.

Kothari, C.R. (1985). *Research methodology. Methods and techniques.* Second Edition. NewDelhi. Wishwa Prakashan.

Lippman, L., Burns, S. & McArthur, E. (1996).*Urban schools. The challenge of location and poverty.* Washington, DC. U.S. Department of Education, National Center for Education &Statistics

Lokesh, R.V. (1984). *Methodology of educational research.* New Delhi: Educational Books Publishers.

Lukalo, F.K. (2008). *Repositioning computer studies: Cultural context and gendered subject choices in Kenya.* Nairobi: Academy Science Publishers.

Mkpa, M. A. (1986). *Parents' attitude towards their children taking up career in vocational* trades. Benin: Nigeria Educational Research.

Ministry of Education, (2000).*Effective management of secondary school curriculum* – Circular No. 106. Nairobi: Government Printer.

Ministry of Education, (2002).*Secondary Education Syllabus Volume 2:* Mathematics, Physics, Agriculture, Home science and Computer studies. Nairobi: Government Printer.

Ministry of Education, (2012).*Primary education syllabus: Introduction of computer technology.* Nairobi: Government Printer.

Moon, S. B. & Shelton. (1995). *Teaching and learning in the secondary school.* Routledge. London.

Ogbu, J.U. (2003). *Black American students in an affluent suburb: A study of academic disengagement*. Mahwah, NJ: Lawrence Erlbaum Associates.

Olubor, C.I. (1998). *Choice of science and technology subjects among secondary school students.* J. socsci, 22(3).191-198.

Orodho, J.A. (2003). *Essentials of educational and social sciences research methods.* Nairobi: Masola Publishers.

Orodho, J.A. (2005). *Elements of educational and social sciences research methods.* Maseno: Kanedzja Publishers

Owayole, J.W. & Toyobo, O.M. (2008).Parental will, peer pressure, academic ability and school subjects selection by students in senior secondary schools. The school sciences: *Medwell Journals. 3*(8):583-586.

Pearson, D.C. (1998). *The reality of learners' achievements with IT in classrooms: integrating information technology into education.* London: Chapman.

Rono, C.K. (1985). *The reliability of selected secondary schools mathematics and science text books.* Unpublished Med. Thesis, Kenyatta University.

Siann, G., Lightbody, P., Nicholson, S., Tait, L. & Walsh, D. (1998).Talking about subject choice at secondary school and career as pirations: Conversations with students of Chinese background. *British Journal of Guidance and Counseling, 26* (2):195-207.

Smith, H.I. (1992). *Strategies for social research. The methodological imagination* London: Prentice –Hall.

Smyth, E. & Hannan, C. (2006).School effects and subjects choice. The update of science subjects in Ireland. School effectiveness and school improvement. *An International Journal of Research Policy and Practice. Vol 17,* No 3, September, pp.303-327.

Splaver, S. (1977).*Your personality and your career*. New York, NY: Juciam essner.

Wailer, N. (2003).*Reality and career planning in high schools*. Reading, M.A: Addison-Wesley Publishing Company, INC.

Watson, M. B. & Stead, G.B. (1994).A longitudinal study of career decidedness among white South African high school students. *Journal of Vocational behaviour. 45*, 261-269.

Wikeley, F. & Stables, G. (1999): *Child career aspirations and family income*. New York. Joseph Rowntree Foundation.

Young, R.A. (1994). Helping adolescents with career development. The active role parent's. *The Career Development Quarterly.42*, 195-2003.

APPENDIX I

LETTER OF INTRODUCTION

UNIVERSITY OF NAIROBI,

P.O BOX 30197,

NAIROBI.

The Principal/ Director,

_____ Secondary School,

RE: Filling of Questionnaire

I am a post graduate student at the University of Nairobi, Department of Educational Foundations. I wish to carry out a research on Factors Influencing Students' Choice of Computer studies in Public and Private Secondary Schools in Machakos Sub-County. I request you to kindly allow me collect data from your school. Please be assured that all the information gathered will be confidential and will only be used for the purpose of this research.

Thank you.

Yours faithfully,

ROSE M KITHUNGU

APPENDIX II

QUESTIONNAIRE FOR PRINCIPALS/ DIRECTORS

Dear respondents,

Instructions

This questionnaire is designed to gather information about yourself and your school to be used in the study on the factors influencing students' choice of computer studies in public and private secondary schools in Machakos Sub-County. Your identity will be accorded great confidentiality; hence **do not write your name or the name of the institution** on the questionnaire. Please indicate the correct option as correctly and honestly as possible by putting a tick [√] on the options. For the questions that require your own opinion, use the space provided.

Kindly respond to all items.

Section one: Demographic information

1. Kindly indicate your gender? Male [ ] Female [ ]

2. State the type of your school. Public [ ] Private [ ]

3. Kindly indicate your highest academic qualification?

   Diploma [ ] Degree [ ] Masters [ ] PhD [ ] Others (Specify) ……

4. What is your teaching experience? 0-5 years [ ] 5-10 years [ ] Over 10 years [ ]

Section two: Influence of students' aspirations on their choice of computer studies in secondary schools

5. Kindly rate your student's perception about computer studies in your school?

   Very positive [ ] Positive [ ] Very negative [ ] Negative [ ]

6. In your own opinion kindly rate the attitude of your student's towards computer studies?

   Very positive [ ] Positive [ ] Very negative [ ] Negative [ ]

7. To what extent does career aspiration influence students' choice of computer studies in your school? High extent [ ] Moderate extent [ ] Low extent [ ]

8. Kindly by use of a tick [√] indicate the extent of your agreement to the reasons why students choose computer studies in your school. Strongly Agree [**SA]**, Agree [**A**], Disagree [**D]**, Strongly Disagree [**SD]**.

	Response	**SA**	**A**	**D**	**SD**
(i)	Individual interest				
(ii)	Their future career prospects				
(iii)	Acquisition of skills relevant to the job market				
(iv)	Acquisition of skills for self-employment				
(v)	Peer pressure				

Section three: Influence of computer facilities on students' choice of computer studies in secondary schools

9. How many students take computer studies in your school?.....

10. How many computers are available in your school?.....

11. In your own opinion how would you rate the adequacy of computers in your school? Very adequate [ ] Adequate [ ] Not adequate [ ]

12. i)Have you acquired internet connectivity for your school? Yes [ ] No [ ]

    ii) How does internet connectivity influence students' choice of computer studies in your school? Very highly [ ] Highly [ ] Less highly [ ] Low [ ]

13. In your own opinion kindly rate the extent to which the following facilities influence students' choice of computer studies in your school. Indicate by a tick [√] in the relevant column.

	Response	**Very Influential**	**Influential**	**Less Influential**
(i)	Computer laboratory			
(ii)	Source of power			
(iii)	Availability of desktops			
(iv)	Availability of laptops			
(v)	Availability of tablets			
(vi)	Availability of smart phones			
(vii)	Availability of I pads			
(viii)	Availability of modems			

Section four: Influence of school subject combination practice on students' choice of computer studies in secondary schools

14. Which group four subjects does your school offer according to the syllabus?

Home Science [ ] Art & Design [ ] Agriculture [ ]

Aviation Technology [ ]

15. In your own opinion kindly rate the influence of the following stakeholders in determining the subjects to be offered in your school. Indicate by a tick [√] in the relevant column.

	Response	**Very Influential**	**Influential**	**Less Influential**
(i)	Principal/ Director			
(ii)	Teachers			
(iii)	Parents			
(iv)	Students			

16. Kindly by use of a tick [√] indicate the extent of your agreement on how the following statements influence students' choice of computer studies in your school. Strongly Agree[**SA**], Agree [**A**], Disagree [D], Strongly Disagree [SD]

	Response	**SA**	**A**	**D**	**SD**
(i)	School practice on subject combination				
(ii)	Students' own preference				
(iii)	Placement of alternative optional subjects on the time table				
(iv)	Orientation for students on the criteria for choosing subjects				

18. How does the career/subject guidance offered by the following stakeholders influence students choice of computer studies in your school?

	Response	Very Influential	Influential	Less Influential	Not Influential
(i)	Principal/ Directors				
(ii)	Teachers				
(iii)	Parents				
(iv)	Students				

Section five: Parents influence on students' choice of computer studies in secondary schools

19. Kindly rate the parent's attitude towards offering of computer studies in your school? Very positive [ ] Positive [ ] Very negative [ ] Negative [ ]

20. To what extent does parent's involvement in subject choice influence students' choice of computer studies in your school? Very highly [ ] highly [ ] Less highly [ ] Low [ ]

21. How does the career guidance offered by parents influence students' choice of computer Studies in your school? Very influential [ ] Influential [ ] Less influential [ ] Not influential [ ]

22. How does the extra cost/fee associated with computer studies influence students' choice of computer studies? Very highly [ ] highly [ ] Less highly [ ] Low [ ]

23. Kindly rate the parent's attitude towards the payments?

Very positive [ ] Positive [ ] Very negative [ ] Negative [ ]

24. In your own opinion kindly rate the influence of the following parental factors on students' choice of computer studies in your school. Indicate by a tick [√] in the relevant column.

	Response	**Very Influential**	**Influential**	**Less Influential**	**Not Influential**
(i)	The career the parents hold for their children				
(ii)	The parents financial status				
(iii	The education level of the parents				
(iv)	The parents familiarity with the schools curriculum				

THANK YOU FOR YOUR COOPERATION

APPENDIX III

QUESTIONNAIRE FOR COMPUTER STUDIES TEACHERS

Dear respondents,

Instructions

This questionnaire is designed to gather information about yourself and your school to be used in the study on the factors influencing students' choice of computer studies in public and private secondary schools in Machakos Sub-County. Your identity will be accorded great confidentiality; hence **do not write your name or the name of the institution** on the questionnaire. Please indicate the correct option as correctly and honestly as possible by putting a tick [√] on the options. For the questions that require your own opinion, use the space provided.

Kindly respond to all items.

Section one: Demographic information

1. Kindly indicate your gender? Male [ ] Female [ ]
2. State the type of your school Public [ ] Private [ ]
3. Are you trained to teach computer studies? Yes [ ] No [ ]
4. Kindly indicate your highest academic qualification?

   Diploma [ ] Degree [ ] Masters [ ] PhD [ ] Others Specify)……..

5. What is your teaching experience? 0-5 years [ ] 5-10 years [ ] Over 10

   years [ ]

Section two: Influence of students' aspirations on their choice of computer studies in secondary schools

6. Kindly rate your student's perception about computer studies in your school?

Very positive [ ] Positive [ ] Very negative [ ] Negative [ ]

7. In your own opinion kindly rate the attitude your students towards computer studies? Very positive [ ] Positive [ ] Very negative [ ] Negative [ ]

8. Kindly by use of a tick [√] indicate the extent of your agreement to the reasons why students choose computer studies in your school. Strongly Agree [**SA]**, Agree [**A**], Disagree [**D]**, Strongly Disagree [**SD]**.

	Response	**SA**	**A**	**D**	**SD**
(i)	Individual interest				
(ii)	Their future career prospects				
(iii)	Acquisition of skills relevant to the job market				
(iv)	Acquisition of skills for self-employment				
(v)	Peer pressure				

9. To what extent does career aspiration influence students' choice of computer studies in your school? High extent [ ] Moderate extent [ ] Low extent [ ]

Section three: Influence of computer facilities on students' choice of computer studies in secondary schools

10. How many computers does your school have?.....

11. How many students take computer studies in your school?.....

12. In your own opinion how would you rate the adequacy of computers in your school? Very adequate [ ] Adequate [ ] Not adequate [ ]

13. i) Does your school have internet connectivity? Yes [ ] No [ ]

ii) How does internet connectivity influence students' choice of computer studies in your school? Very highly [ ] Highly [ ] Less highly [ ] Low [ ]

14. Are the practical/project activities you offer to your students adequate to better their computer skills? Very adequate [ ] Adequate [ ]Not adequate[ ]

15. In your own opinion kindly rate the extent to which the following facilities Influence students' choice of computer studies in your school. Indicate by a tick [√] in the relevant Column.

	Response	**Very Influential**	**Influential**	**Less Influential**
(i)	Computer laboratory			
(ii)	Source of power			
(iii)	Availability ofdesktops			
(iv)	Availability of laptops			
(v)	Availability of tablets			
(vi)	Availability of smart phones			
(vii)	Availability of I Pads			
(viii)	Availability of modems			

Section four: Influence of school subject combination practice on students' choice of computer studies in secondary schools

16. Which group four subjects does your school offer according to the syllabus?

Home Science [ ] Art & Design [ ] Agriculture [ ]

Aviation Technology [ ]

17. In your own opinion kindly rate the influence of the following stakeholders in determining the subjects to be offered in your school. Indicate by a tick [√] in the relevant column.

	Response	**Very Influential**	**Influential**	**Less Influential**
(i)	Principal/Director			
(ii)	Teachers			
(iii)	Parents			
(iv)	Students			

18. How does the computer studies orientation done in form one and two influence students' choice of computer studies in your school? Very highly [ ] highly [ ] Less highly [ ] Low [ ]

19. Are there set requirements for choosing computer studies? Yes [ ] No [ ] If Yes, explain…….

20. Kindly by use of a tick [√] indicate the extent of your agreement on how the following statements influence students' choice of computer studies in your school. Strongly Agree [**SA**], Agree [**A**], Disagree [**D**], Strongly Disagree [**SD**]

	Response	**SA**	**A**	**D**	**SD**
(i)	School practice on subject combination				
(ii)	Students' own preference				
(iii)	Placement of alternative optional subjects on the time table				
(iv)	Orientation for students on the criteria for choosing subjects				

21. How does the career/subject guidance offered by the following stakeholders influence students' choice of computer studies in your school?

	Response	**Very Influential**	**Influential**	**Less Influential**
(i)	Principal/ Director			
(ii)	Teachers			
(iii)	Peers			
(iv)	Parents			

Section five: Parents influence on students' choice of computer studies in secondary schools

22. Kindly rate the parent's attitude towards teaching of computer studies in your school? Very positive [ ] Positive [ ] Very negative [ ] Negative [ ]
23. To what extent does parent's involvement in subject choice influence students' choice of computer studies in your school? Very highly [ ] highly [ ] Less highly [ ] Low [ ]
24. How does the career/subject guidance offered by parents influence students' choice of computer studies in your school? Very influential [ ] Influential [ ] Less influential [ ] Not influential [ ]
25. How does the extra cost/fee associated with computer studies influence students' choice of computer studies in your school? Very highly [ ] Highly [ ] Less highly [ ] Low [ ]
26. Kindly rate the parent's attitude towards the payments? Very positive [ ] Positive [ ] Very negative [ ] Negative [ ]

27. In your own opinion kindly rate the influence of the following parental factors on students' choice of computer studies in your school. Indicate by a tick [√] in the relevant column.

	Response	**Very Influential**	**Influential**	**Less Influential**
(i)	The career the parents hold for their children			
(ii)	The parents financial status			
(iii)	The education level of the parents			
(iv)	The parents familiarity with the schools' curriculum			

THANK YOU FOR YOUR COOPERATION

APPENDIX IV

QUESTIONNAIRE FOR COMPUTER STUDIES STUDENTS

Dear respondents,

Instructions

This questionnaire is designed to gather information on the factors influencing students' choice of computer studies in public and private schools in Machakos Sub-County. Your identity will be accorded great confidentiality. Hence **do not write your name or school.** Please indicate the correct option as correctly and honestly as possible by putting a tick [√] on the options. For the questions that require your opinion, use the provided space.

Kindly respond to all items

Section one: Demographic information.

1. Kindly indicate your age? Below 15years [ ] 15-17 years [ ] 18-20 years [ ]

   Above 20 years [ ]

2. State the type of your school. Public [ ] Private [ ]

Section two: Influence of students' aspirations on their choice of computer studies in secondary schools

3. Kindly rate your perception about computer studies?

Very positive [ ] Positive [ ] Very negative [ ] Negative [ ]

4. Kindly rate your attitude towards computer studies?

Very positive [ ] Positive [ ] Very negative [ ] Negative [ ]

5. Kindly by use of a tick [√] indicate the extent of your agreement to the reasons why you chose computer studies. Strongly Agree [**SA]**, Agree [**A**], Disagree [**D]**, Strongly Disagree [**SD]**.

	Response	SA	A	D	SD
(i)	Individual interest				
(ii)	The career you would like to pursue				
(iii)	Acquisition of skills relevant to the job market				
(iv)	Acquisition of skills for self-employment				
(v)	Peer pressure				

6. To what extent will computer studies prepare you for your future career?

   Great extent [ ] Moderate extent [ ] Less extent [ ]

Section three: Influence of computer facilities on students' choice of computer studies in secondary schools

7. i) Does your school have a computer laboratory? Yes [ ] No [ ]

   ii) How would you rate the adequacy of the equipment's for teaching computer studies in your school? Very adequate [ ] Adequate [ ] Not adequate [ ]

8. In your own opinion rate the adequacy of computer studies text books in your school? Very adequate [ ] Adequate [ ] Not adequate [ ]

9. i) Do you have internet connectivity in your school? Yes [ ] No [ ]

   ii) Did internet connectivity influence your choice of computer studies?

   Very highly [ ] highly [ ] Less highly [ ] Low [ ]

10. Are you exposed to adequate practical/project activities to better your computer skills? Very adequate [ ] Adequate [ ] Not adequate [ ]

11. In your own opinion kindly rate the extent to which the following facilities influenced your choice of computer studies. Indicate by a tick [√] in the relevant column.

	Response	Very Influential	Influential	Less Influential
(i)	Computer laboratory			
(ii)	Source of power			
(iii)	Availability of desktops			
(iv)	Availability of laptops			
(v)	Availability of tablets			
(vi)	Availability of smart phones			
(vii)	Availability of I Pads			
(viii)	Availability of modems			

Section four: Influence of school subject combination practice on students' choice of computer studies in secondary schools

12. Which group four subjects are offered in your school according to the syllabus? Home Science [ ] Art & Design [ ] Agriculture [ ] Aviation Technology [ ]

13. In your own opinion kindly rate the influence of the following stakeholders in determining the subjects to be offered in your school. Indicate by a tick [√] in the relevant column.

	Response	Very Influential	Influential	Less Influential
(i)	Principal/Director			
(ii)	Teachers			
(iii)	Parents			
(iv)	Students			

14. How did the computer studies orientation done in form one and two influence your choice of computer studies? Very highly [ ] highly [ ] Less highly [ ] Low [ ]

15. How did the career/subject guidance offered by the following stakeholders influence your choice of computer studies?

	Response	**Very Influential**	**Influential**	**Less Influential**
(i)	Principal/ Director			
(ii)	Teachers			
(iii)	Peers			
(iv)	Parents			

16. Below are school practices which may have influenced your choice of computer studies. Kindly by use of a tick [√] indicate in the relevant column the extent of your agreement. Strongly Agree [**SA**], Agree [**A**], Disagree [**D**], Strongly Disagree [**SD**]

	Response	**SA**	**A**	**D**	**SD**
(i)	School practice on subject combination				
(ii)	Students' own preference				
(iii)	Placement of alternative optional subjects on the time table				
(iv)	Orientation for students on the criteria for choosing subjects				

Section five: Parents influence on students' choice of computer studies in secondary schools

17. Kindly indicate your parents /guardians level of education?

    Primary level [ ] Secondary level [ ] Diploma level [ ] University level [ ]

18. Kindly rate your parents/ guardians attitude towards computer studies?

    Very positive [ ] Positive [ ] Very negative [ ] Negative [ ]

19. Did your parent/guardian guide you on your choice of computer studies?

    Yes [ ] No [ ]

20. How does the career/subject guidance offered by your parent/guardian influence your choice of computer studies? Very highly [ ] highly [ ] Less highly [ ] Low [ ]

21. In your own opinion kindly rate how the following parental factors influenced your choice of computer studies. Indicate by a tick [√] in the relevant column.

	Response	**Very Influential**	**Influential**	**Less Influential**
(i)	The career your parent/guardian hold for you			
(ii)	Your parents/guardians financial status			
(iii)	The education level of the parent/guardian			
(iv)	Your parents/guardians familiarity with the schools' curriculum			

THANK YOU FOR YOUR COOPERATION

APPENDIX V

FOCUS GROUP DISCUSSION GUIDE FOR PARENTS

1. What are your perceptions on your child's choice of computer studies?
2. Are you aware of the reasons which made your child choose computer studies?
3. Did yourchild's career aspiration influence their choice of computer studies?
4. Are you aware whether your child's school has adequate computer facilities to teach computer studies?
5. Do you know if your child's school has internet connectivity for information access?
6. Are your children exposed to adequate practical and project activities to better their computer skills?
7. Are you involved in deciding the school curriculum of your child's school?
8. Are you aware of the school practice on subject combination in your child's school?
9. Do you agree with the subject combinations of technical subjects in your child's school?
10. Are your children offered career guidance before choosing subjects?
11. What are your career expectations for your children?

12. Will the computer skills acquired by your children influence the careers you hold for them?

13. What are your views on the extra fee charged for computer studies?

THANKYOU FOR YOUR COOPERATION

APPENDIX VI

K.C.S.E. SUBJECT GROUPING

A CANDIDATE MUST SIT FOR ATLEAST SEVEN (7) SUBJECTS

GROUP	ABBREV IATION	SUBJECT	
Group I	ENG	English	Three (3)
	KISW	Kiswahili	compulsory.
	MATH A	Mathematics Alternative-A	Only one (1)
	MATH B	Mathematics Alternative-B	may be taken.
Group II	BIO	Biology	
	PHY	Physics	At least Two (2)
	CHE	Chemistry	
	GSC	General Science →	Taken with Math Alt-B
Group III	H&G	History & Government	
	GEOG	Geography	
	CRE	Christian Religious Education	At least One (1)
	IRE	Islamic Religious Education	
	HRE	Hindu Religious Education	
Group IV	H/SC	Home Science	
	A&D	Art & Design	
	AGR	Agriculture	
	AVT	Aviation Technology	
	CMP	Computer Studies	
Group V	FRE	French	
	GER	German	
	ARB	Arabic	
	KSL	Kenya Sign Language	
	MUS	Music	
	BST	Business Studies	

Source: Kenya National Examinations Council 2014.

Candidates select the 7th subject from the remaining subjects in groups II, III, IV or V. Candidates can sit for a maximum of nine (9) subjects. The extra one (1) or two (2) subjects can be selected from the remaining subjects in groups III, IV or V.

APPENDIX VII
RESEARCH PERMIT

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

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

Ref: No.

Date:

11th February, 2015

NACOSTI/P/15/1105/4709

Rose Mwikali Kithungu
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Factors influencing students' choice of computer studies in public and private secondary schools in Machakos Sub-County, Machakos-County-Kenya"*** I am pleased to inform you that you have been authorized to undertake research in **Machakos County** for a period ending **20th August, 2015.**

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

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

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

Copy to:

The County Commissioner
Machakos County.

The County Director of Education
Machakos County.

THIS IS TO CERTIFY THAT:
MS. ROSE MWIKALI KITHUNGU
of UNIVERSITY OF NAIROBI, 585-90100
MACHAKOS,has been permitted to
conduct research in *Machakos County*

on the topic: *FACTORS INFLUENCING STUDENTS' CHOICE OF COMPUTER STUDIES IN PUBLIC AND PRIVATE SECONDARY SCHOOLS IN MACHAKOS SUB-COUNTY, MACHAKOS-COUNTY-KENYA*

for the period ending:
20th August,2015

.....
Applicant's Signature

Permit No : NACOSTI/P/15/1105/4709
Date Of Issue : 11th February,2015
Fee Recieved :Ksh 1,000

.....
for *Secretary*
National Commission for Science, Technology & Innovation

CONDITIONS

1. You must report to the County Commissioner and the County 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 without 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) hard copies and one(1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice

REPUBLIC OF KENYA

National Commission for Science, Technology and Innovation

RESEARCH CLEARANCE PERMIT

Serial No. A 4243

CONDITIONS: see back page