

**FACTORS INFLUENCING STUDENT PERFORMANCE IN
COMPUTER IN KCSE IN DAY SECONDARY SCHOOLS
OF MERU GATUNDU SOUTH DISTRICT.**

BY

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DECLARATION

This project is my original work and has not been presented for a post graduate diploma in any other university.



Date

20th April 2010

NGARUIYA HENRY MIINGI

This project has been presented for examination by my approval as the university supervisor.



Mr. Silvance Abeka

Date

22/04/2010

DEDICATION

To my dear wife Veronica Miingi whose hard work and unrelenting support in academic matters enabled me to reach the university level of education, my siblings Arnold, Cyprian and Enantoe (Mwala) who missed my financial support during my studies and my friends Mugo, Maina, Kahindu and Wachira whose words of inspiration propelled me to greater heights of education.

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Thank you so much the DDO and DEO of Meru Gatundu South District for your assistance in availing data concerning academic, geographical and demographic issues in the District.

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ABSTRACT

The general observation was that the performance of day secondary schools in KCSE Computer was comparatively poorer than boarding secondary schools. This study, therefore aimed at carrying out an in-depth study of the various factors affecting student performance in the KCSE Computer examination in Meru Gatundu South District.

The general hypothesis was that there is significant relationship between various school and home variables and student performance in day secondary schools.

The theoretical framework used in the study was that of Production Function Theory of education used to explain the relationship between various inputs and outputs and how the input variables interact to influence educational output.

The study population was 22 day secondary schools in Meru Gatundu South District. Simple random sampling technique was used to get a sample of 8 schools representing 30% of the target population. Data was collected from computer teachers and students. Data collection instruments were questionnaires, interviews, document analysis and physical observation. Questionnaires were open – ended and closed – ended. Interviews were conducted to enable clarification for responses given.

Document analysis was done on the previous KCSE results of schools visited. Physical observation of facilities was conducted to get a true picture of the learning conditions in these schools.

Data analysis was done by calculating percentages, getting ratios, frequencies, averages and drawing of graphs. The data so collected were analyzed, tabulated and the results presented.

The findings of the study were expected to provide information to be used by the policy makers, teachers, parents and other stakeholders in the field of education in improving student performance in computer in day secondary schools in the districts in Kenya in general and Meru Gatundu South District in particular.

CHAPTER ONE

INTRODUCTION

1.1.1 Background of the Study

Computer is probably the most popular of the science subjects studied at secondary school level in the world. It is vigorously and enthusiastically studied and generally effectively organized and presented throughout the educational systems of the world – Meyer (1988). One of the reasons for this is that it deals with living organisms commonly found in the students' environment that can practically be observed.

Computer as a subject enables students to enter into important careers in the medical field like human medicine, dentistry, nursing and surgery among others. It has contributed to major advancements in the field of medical research e.g. development of curative medicines used for treatment of various ailments, as well as preventive medicine for example vaccines against diseases. Other careers related to computer include forestry, food science, horticulture and floriculture to mention but a few.

Student performance in computer at secondary school level has not always met the expectations of educationists throughout the world. Unsatisfactory performance in the subject may be attributed to many factors. According to a report prepared by Prof. Paul de Hart Hurd (1982) of Stanford University, some of the constraints in effective computer teaching in Delaware, Iowa, Michigan and Pennsylvania in USA include general shortage of laboratory equipment and apparatus, inadequate training of secondary teachers in

certain areas (e.g. ecology) rote learning, inadequate system of in-service development, shortage of learning materials suitably adapted to meet local needs, irrelevance of curriculum to needs of daily life, overcrowded computer syllabus and anti-scientific beliefs in the society.

Nyarko (1988) says that the major constraints in the teaching of computer in Ghana include fear of teaching of science by teachers, lack of equipment including chemicals, shortage of computer teachers who go for greener pastures in Nigeria and other African countries, changes in the syllabus without any prior in-service training for teachers and lack of laboratory technicians to assist teachers with preparation for practical classes.

In the Republic of South Africa, it was reported by Hoskins, the former director of Natal department of education that the main problems faced in teaching of computer included shortage of highly qualified (especially graduate) teachers, long comprehensive and demanding syllabus, lack of well trained laboratory assistants and small laboratory space due to traditional small laboratory design meant for relatively small classes and for less intensive individual participation in practical work.

According to Muthui, a former senior inspector of schools in Kenya, computer department the teaching of computer in the country is faced with shortage of laboratories / science rooms, poor infrastructure (including electricity and networks), inadequate resource, materials like books and guides and lack of staff committed to experimental approaches.

SMASSES INSET paper (2004) of Gatundu District says that poor performance in computer can be attributed to inadequate practical lessons, wide syllabus, shortage of trained teachers (due to freeze on direct employment by the government), negative attitude of students, over enrolment, lack of teacher motivation and lack of teaching – learning facilities among other factors.

It is against background discussed above that this study aimed at investigating the various factors influencing student performance in Computer in KCSE in day secondary schools in Gatundu South District. The study was meant to come up with proposed measures that would be put in place to help improve in the subject in the aforementioned district.

1.1.2 Statement of the Problem.

As had been highlighted in the background to the study, computer is rated as one of the most popular science subjects among students in secondary schools. However, there was unsatisfactory student performance in the subject at national and provincial levels in general and in day secondary schools at district levels in particular. The trend in performance in the subject was a concern given the importance of it in determining a student's future career and care for the environment. Of particular concern was student performance in Gatundu South District where schools continued to get low mean scores in the subject despite teachers' concerted efforts to improve the mean scores in schools.

The findings of this study was thus aimed at shedding light on the possible factors affecting student performance in the subject and find ways of giving remedy to the same

for the benefit of the learner, teacher, parent, educational policy makers and other stakeholders in the field education.

1.1.3 Purpose of the Study

The purpose of the study was to determine the factors influencing student performance in computer in KCSE in day secondary schools in Gatundu South District. Of particular importance among the factors to be investigated were resources and facilities, teacher professional qualifications, teacher experience, student-teacher ratio, administrative support and student socio-economic home background.

1.1.4 Objectives of the Study

The following were the specific objectives of the study;

- To determine whether a teacher's professional training influences student performance in computer in KCSE
- To examine the relationship between teacher experience and student performance in computer in KCSE
- To establish whether the availability of resources and facilities has an influence on the performance of students in computer in KCSE examinations.
- To check if there is any significant correlation between student-teacher ratio and performance of students in KCSE in computer.
- To determine whether administrative support influences student performance in computer KCSE exams.
- To examine the relationship between students socio-economic home background and their performance in KCSE computer exams.

1.1.5 Research Questions

- i) Does teacher professional training influence performance in computer in KCSE?
- ii) Does teacher experience influence performance in KCSE computer exams?
- iii) Is there any significant correlation between the availability of resources and facilities and student achievement in computer in KCSE exams?
- iv) Does student-teacher ratio affect student performance in KCSE computer?
- v) Can administrative support influence performance of students in computer KCSE exams?
- vi) Is there any relationship between students' socio-economic background and their performance in KCSE in computer?

1.1.6 Scope of the Study

The study was conducted in 30% of 22 day secondary schools in Gatundu South District. These were eight out of the 22 day secondary schools in the district. Form four students and computer teachers were involved in the study. The findings of the study were considered to give a good representation of all the day secondary schools in Gatundu South District. These findings were not necessarily construed to apply to all day secondary schools in Kenya in general

1.1.7 Assumptions of the Study

This study had the following assumptions to be made;

- i) All students from standard 8 join form one with the same level of entry behaviour in computer.
- ii) National examination (KSCE) results are indicator of academic achievement of students in computer.

- iii) Teacher professional training, teacher experience, student-teacher ratio, administrative support, facilities and resources and student socio-economic home background influence student performance in computer in KCSE exams.
- iv) Most of the students in day secondary schools in Gatundu South District come directly from their homes to school.

1.1.8 Limitations of the Study

- The study was limited to only six variables mentioned in the objectives of the study whereas in the actual sense many other variables not included here could also affect student performance in computer e.g. teacher remuneration, teacher work load and learner's characteristics.
- Only summative evaluation in form of KCSE was used to gauge students' academic achievement. Formative evaluation which gives a true picture of student progress was omitted in the study.
- Only form 4 students were involved in the study as they were considered to have greater experience in the learning process of computer. Forms 1, 2 and 3 were not included in the study.

1.1.9 Theoretical / Conceptual Framework

This study was based on the Production Function Theory of Education – Psacharopoulos et al (1985). A production function is a statement of relationship between various inputs and outputs. The assumption in this theory is that the differences existing in the quality of school inputs bring about differences in educational outcomes. The theory is used to determine the maximum product that can be derived from a given combination of inputs in education.

In this study, the researcher sought to determine how various input variables could interrelate with each other to influence performance in KCSE national exams in computer. The assumption was that no single variable had much effect on its own in influencing student performance without other variables. The variables considered here were teacher professional training, teacher experience, resources and facilities, administrative support, student-teacher ratio and student socio-economic home background. From the production function theory, an equation was generally expressed in the following way;

$$AAs = f(RF, Tpt, Te, STr, As, SE b.....)$$

Where

AAs = Academic Achievement of student

f = Function of

RF = Resources and Facilities.

Tpt = Teacher professional training.

Te = Teacher experience

STr = Student – Teacher ratio

As = Administrative support

SEb = Socio-Economic background (of student)

The Production Function Theory looked at education as an industry with several production firms called secondary schools. The schools could combine various inputs (e.g. resources and facilities) to produce an output (i.e. academic achievement of

students). The quality of output is measured by means of formative and summative evaluation.

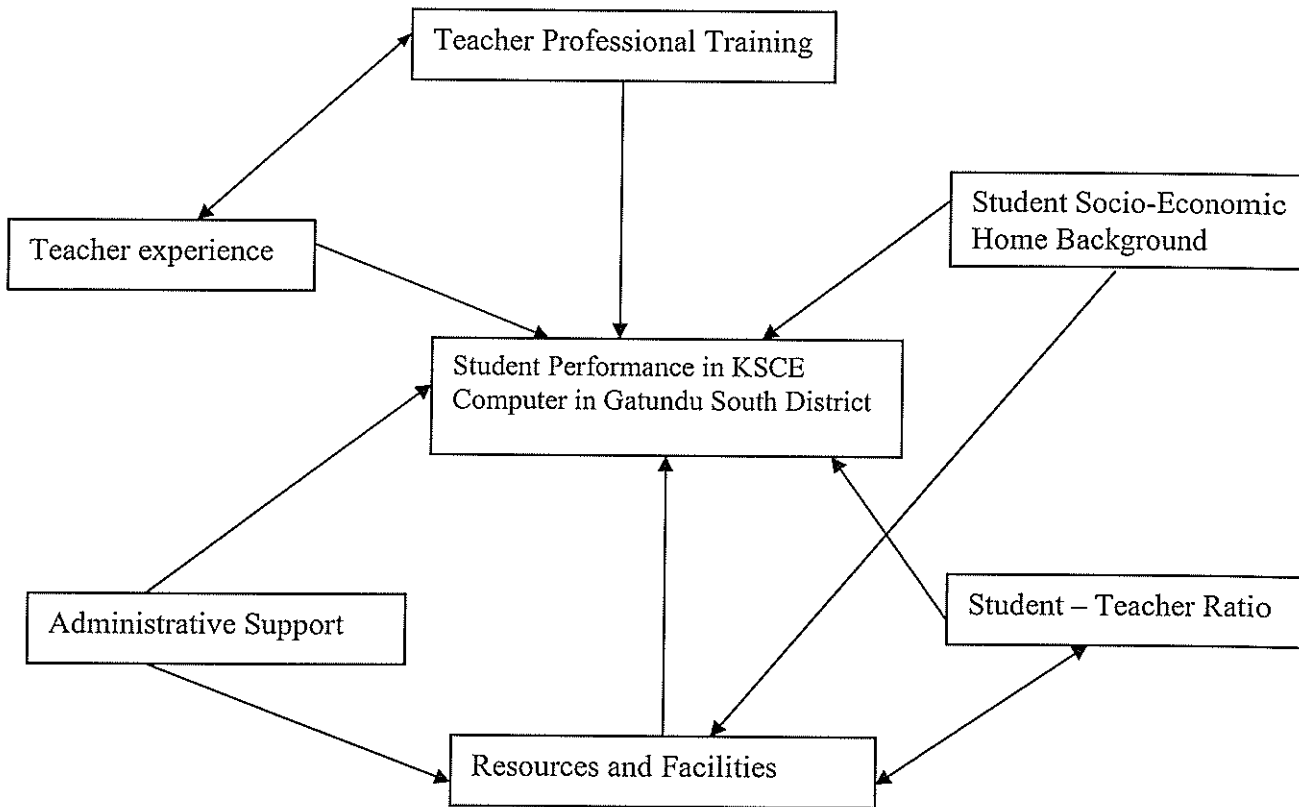


Diagram illustrating a conceptual framework of the interaction of the possible factors influencing student performance in Computer in KCSE in Gatundu South District.

1.2.0 Definition of Terms

- **AAAS:** American Association for the Advancement of Sciences.
- **Academic Achievement:** is a measure of the performance of students and is determined by their performance in KSCE.
- **Computer:** is a branch of science dealing with the study of living organisms.
- **BOG:** Board of Governors. It is charged with responsibility of managing

Secondary schools.

- **DDO:** District Development Officer.
- **DEO:** District Education Officer.
- **FAWE:** Forum for African Women Education.
- **INSET:** In-Service Training. This is meant for Mathematics and Science teachers in Kenya through a program called SMASSE
- **K.C.S.E:** Kenya Certificate of Secondary Education. It is a summative national evaluation examinations offered at the end of a four year course in secondary schools in Kenya.
- **KLB:** Kenya Literature Bureau. It is an organization that authors and publishes text books.
- **SMASSES:** Strengthening of Mathematics and Science in Secondary Education. It is a project in Kenya initiated by the Japanese Government to improve the teaching-learning of Mathematics and Science subjects.
- **TSC:** Teachers Service Commission; an organization that employs teachers.
- **UNESCO:** United Nations Educational, Social, Scientific and Cultural Organization.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The literature review in this study was divided into six categories which discussed the possible factors influencing student performance in Computer in K C S E in day secondary schools in Gatundu South District. The factors were resources and facilities, teacher professional training, administrative support, student socio – economic home ground, student- teacher ratio and teacher experience

2.1.1 Resources and Facilities

According to UNESCO Report (1988) in the book titled “Overcoming constraints on the Teaching of Computer – A Global Perspective”, various resources and facilities are a key factor in the success of the subject at secondary and college levels. The recommended resources and facilities include specialized laboratories/ science classrooms, standard class rooms, adequate text books, personal Computers, audio- visual aids, Lap tops, guides, libraries, tables and seats among others.

There is a positive correlation between the resources and facilities and the performance of schools in national exams – Griffin (1996). According to Eshiwani (1987), inadequate supply of science equipment and materials lead to poor performance in Science subjects. Lack of physical facilities like classrooms and laboratories interfere with the teaching –

learning process. For example schools that lack enough classrooms may resort to attending lessons under trees. The situation is worsened during adverse weather conditions like rainy seasons. This has a negative impact on the syllabus coverage hence poor student performance in the exams _ F A W E (2001)

Audio – visual materials relevant to the study of computer include live viewings. Greater understanding of some concepts during the learning process is far more enhanced when both the senses of sight and hearing are engaged than when only the sense of hearing is used – Ayot (1984).

Textbooks are a very important resource in the study of computer as a subject. Maundu (1987) says that relevant text books need to be adequately supplied to schools if improvement in sciences is to be realized. The text books should have certain qualities for maximal effectiveness of the teaching – learning process - Fuller (1986). Some computer textbooks have been found to ignore or obscure many of the most important concepts by giving greater focus on technical terms and trivial details - AAAS (2000). In some concepts in the subject the text books fail to make clear connections among the key ideas expressed Many computer textbooks contain illustrations that are rarely helpful because of their complicated and abstract nature or due to inadequate explanations in them – AAAS (2000). In some cases textbooks give students little help in interpreting the results of the activities in terms of computer concepts to be learned – Haury (2000)

The availability and quantity of the textbooks are also of paramount importance. . Hussen et al (1978) points out that there is a strong and consistent correlation between the availability of text books and students academic achievement. A World Bank assisted

study in Philippines (1977/78) revealed that provision of textbooks in correct quantities resulted in improved performance in Sciences, Maths and Languages. The text books should be availed in schools and effectively utilized if schools are to realize meaningful achievement in academic work – Coombs (1968). Jamison (1974) found that students with textbooks scored 4% higher in Post- test in Mathematics in Nicaraguan schools.

The academic performance of schools is considerably affected by other school variables like libraries and basic equipment like tables and seats – Arriagada (1983). The Republic of Kenya (2003) agrees that overcrowded classrooms with insufficient number of desks and seats have a negative impact on the teaching- learning process in schools. They should, therefore, be availed in adequate amounts.

2.1.2 Teacher Professional Training

Teacher professional training is a principal factor influencing performance of students in computer. The question of selection into the teaching profession in general and into computer teaching in particular is quite important. The link between pre-service and in-service teacher education is of great significance – UNESCO Report (1988).

According to Kinyanjui (1979), the caliber of teachers in schools is a great input variable which has a lot of impact on the school outcome. Haddad (1978) reports in a study of thirty two developing countries that teachers who are professionally trained can impart knowledge more effectively than those who are not. This is because of the formers formal acquisition of the necessary skills for the job. They have higher instructional skills compare to their professionally untrained counterparts. Psacharopoulos and Woodhall

(1985) in a research carried out in India and Chile agree that student achievement in Science subjects in secondary schools would improve if a teacher is professionally trained. Maundu (1987) found that teacher's professional qualification has a significant role in the students' performance in Sciences and Mathematics. However Griffin (1994) has reservations to make. He argues that although teacher qualification has great impact on student performance, some teachers are careless in their remarks against fellow teachers, the school administration or students. Others leak examinations to the students. These greatly water down the professionalism of such teachers.

The unfair distribution of qualified teachers affects performance in various subjects- Myers (1964). This is supported by Sifuna (1982) in a study on the quality of primary school pupil achievement in Kenya. This observation can be relevant in a secondary system of education in the country.

2.1.3 Student Socio- Economic Home Background

The socio- economic factors that can influence student performance include parents' financial status, parental relationship with children, order, discipline, and attitude towards schooling, chores at home and the general home climate. According to Heynemann (1981) many school pupils lack learning resources like textbooks due to their poor economic home back ground. This is despite their positive attitude towards use of such materials. Khan (1993) in data obtained from a small survey of schools in Bangladesh found out that the education of girls positively correlated with the income of their families. However, Heynemann and Loxley (1983) say that pupils from rich families do not perform better in achievements tests than those from poor economic background.

Smith (1967) reports that “Home environment may enhance positive self esteem which may improve the academic performance” Family members have a lot of influence on students’ academic achievement through guidance and counseling.

Children that have concerned, warm and caring parents are thus provided with a good environment for learning. Parents with positive attitude towards education in general and specific subjects (e. g. computer) in particular have a great influence in their children’s performance in academic work in schools.

According to weeks (1963) the chores expected to be performed by day schools students are more than those that boarding school students do. The day scholars may wake up at 5: 00 a.m. fetch water, make fire, dig in the garden and get some food before setting out for school. Most of the day scholars trek long distances to school. The trend is repeated after school in the evening. By the time the student settles for studies in the evening, he/she is already exhausted hence cannot study effectively. The situation is worsened by the prevailing study conditions e.g. studying in poorly lit rooms where the source of light is a small paraffin tin lamp or candle, and also where there are no small study rooms and noise from the neighboring environment

2.1.4 Administrative Support

According to UNESCO Report (1988) in the book titled “Overcoming Constraints on the Teaching of Computer – a Global Perspective”, organizational and administrative issues affect the teaching and learning of computer. The efficiency of administrative support,

the type and influence of leadership, the administrative structure of the science department and the devolution of responsibility are all aspects of concern.

Havelock (1973) reports that open and communicative administration and more democratic leadership results in effective educational programs. Lambert (2003) says that a successful head teacher always involves teachers, students and other stakeholders in decision –making. Such leaders understand the needs and challenges of the staff while carrying out their duties. The staff is thus motivated to work. Motivated staff always has high morale of work and are committed to achieving the goals set by schools- Everard and Morris (1996).

An autocratic leader who always appears as the boss leads to intolerance among the staff members – Morgan (1994). Such a leader is the sole decision - maker and does not involve the staff members who are merely informed about decisions already made and are instructed to implement them – Massie (2000). Even students dislike such leaders because of their domineering characters – Nsubuga (2000). However according to Wekesa (1993) an autocratic leader is achievement – oriented. .He/she tends to be an instructional resource and lays more emphasis on the provision of teaching and learning materials. His/her presence is always felt whenever he/she is in school. Wekesa reveals that schools with such leaders' record marked improvement in K C S E.

A leader who exhibits Laissez faire style neither makes decisions nor gives directions in school. It is upon the staff members to make decisions on their own – Massie (2000). There is lack of control and seriousness hence lack of vision for the school – Bradford

and Cohen (1994). This is, therefore, poor leadership style and is reflected in poor performance in K C S E despite the admission of student with good grades in form one – Daily Nation (2003).

Eshiwani (1983) expresses his feelings about this leadership style using the following words “Laissez Faire leadership will not help attain academic achievements because it lacks the basic leadership skills such as supervision, communication and delegation

2.1.5 Student - Teacher Ratio

The recommended student - teacher ratio in Kenya is 40:1 - Republic of Kenya (1999/2003). This implies that the fewer the students, the lower the ratio. Awuor (1994) says that the total enrolments and pupil - teacher ratio has inverse relationship with pupil performance. This means that as class size increases, pupil achievement decreases. This is because large numbers of students limit teacher - student interaction. Lewin (1987) reports that the quality of education declines as the student - teacher ratio increases.

2.1.6 Teacher Experience

Teacher training, subject content and experience are related – Wolff (1994). In a cost-benefit analysis in Kenya carried out by Thias and Carnoy (1972), teacher experience has a significant effect on pupil performance

However, according to Haron (1977) in a study in Malaysian schools, the length of teacher experience is only associated with student performance amongst highly qualified teachers.

CHAPTER THREE

METHODOLOGY

3.1.1 Research Design

This study took a descriptive survey design. According to Mugenda and Mugenda (1999) descriptive research design involves individuals' description of a phenomenon by way of asking individuals about their perception or attitudes towards certain issues.

3.1.2 Area of study

The area of study was Gatundu South District. The District covered an area of about 821 km² with a total population of approximately 230,000 people. It had a total of 30 secondary schools (public day and boarding schools).

Of these, 22 were day schools while 8 were boarding schools. All the schools were located in rural areas. There were a total of 4,337 students in the district (from Form 1 to Form 4) – D E O's office (2008). Out of these, 1,360 were in Form four. 642 of these were candidates in day secondary schools.

Gatundu South District was endowed with natural resources like forest, a number of perennial rivers. The inhabitants were predominantly Christians. Peasant farming was the most common activity with maize crops as the main staple food grown.

3.1.3 Target Population

The target population was 642 form four students in the day secondary schools in the district.

3.1.4 Samples and Sampling Techniques.

The District was divided into Divisions like Ngenda Divisions etc. Simple random sampling method was used to select sample schools to participate in this study. Four day secondary schools from each of the divisions were randomly selected for the study. This gave a total of 8 sample schools in the study.

All the schools in each of the divisions were given numbers by the researcher. The numbers were written in small pieces of papers. The papers were wrapped, placed into a container and mixed thoroughly. The papers were then picked at random. The first four schools from each of the divisions whose numbers were picked at random were considered for the study. This gave a total of 8 sample schools which gave a fair representation of 30 % of the 22 day secondary schools in the district.

3.1.5 Instrumentation

As was discussed under the abstract, the data collection instruments were questionnaires, simple interviews, document analysis and physical observation.

Questionnaires were open – ended and closed – ended. Open – ended questionnaires were written in simple easily understood language. They did not require complex details from students and teachers. Closed ended questionnaires were made in terms of alternative answers that the respondents could choose from. The questionnaires for the students consisted of 12 questions while that of teachers had 14 questions. The questions were expected to have sufficiently covered the specific objectives of this study. Simple interviews were conducted to teachers to get more details that might not be obtained from the questionnaires. A lot of confidentiality was done to ensure no leakage of the information to third parties. Document analysis was done to the past K C S E Computer

results obtained from the data recorded in the teachers questionnaires (see Appendix B). Physical observation was conducted on the facilities and resources to get the real picture of the teaching- learning state of the school.

Reliability of the above instruments was verified using pre- test method where two pilot schools were selected for study in the district. The piloting was done by giving the questionnaires to the two schools to fill. The students were asked to identify ambiguous areas where they had difficulty while filling the questionnaires. This helped the researcher to make the necessary adjustments on the instruments so as to get more accurate responses from the students and teachers. Various experts in the educational field in the district and at Maseno University were also consulted to get improved versions of the instruments to be used

3.1.6 Data Collection

Prior to the collection of data from schools, authority to do the same was obtained from the District Education Office at Gatundu Headquarters. After this, the researcher wrote a letter to the head teachers of the schools requesting them to allow for the collection of data. The researcher personally presented the questionnaires to the students and teachers and gave assistance to the respondents in areas in which they needed help while giving their responses. The names of the schools were coded using alphabetical letters (e. g. school A, B, C e.t.c) to allay fears that might accrue from data collection

3.1.7 Data Analysis

Data analysis was done by calculating percentages, drawing frequency tables, getting ratios and averages and drawing graphs. These generally applied to both the quantitative and qualitative data.

CHAPTER FOUR

4.0 DATA ANALYSIS, INTERPRETATION AND DISCUSSIONS.

The study found out that computer was the most popular science subject compared to chemistry and physics in the opinion of the form four students in Gatundu South District involved in the study. 62.5% of the students gave first preference to computer, 32.4% rated it second while 4.7% considered it to be their third subject of choice. (Refer table 4.1.1.)

Table 4.1.1 Students' Preference of Computer to other Science Subjects.

Preference of Computer	No. of Students	Percentage
1 st	136	62.5%
2 nd	70	32.4%
3 rd	10	4.7%
TOTAL	216	100%

Source: Data from the Field.

However, student performance in computer was generally found to be below average in the sample district schools both in the internal exams (end term) and national exams (KCSE). The table below summarizes the findings about the student performance in the subject in the end of term one – 2009 exams in the eight schools under the study.

Table 4.1.2: Computer Mean Grade of schools in term one 2009 exams

School	Mean Grade in Computer
P	C-
Q	D+
R	C-
S	C-
T	C-
U	C
V	C-
W	C-

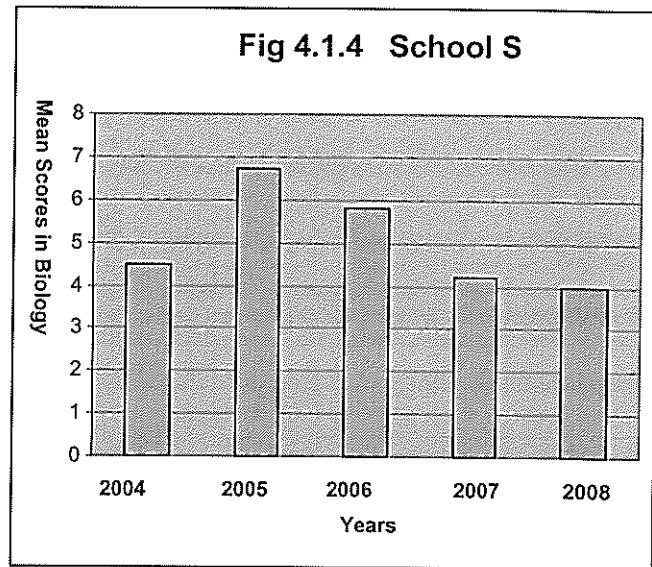
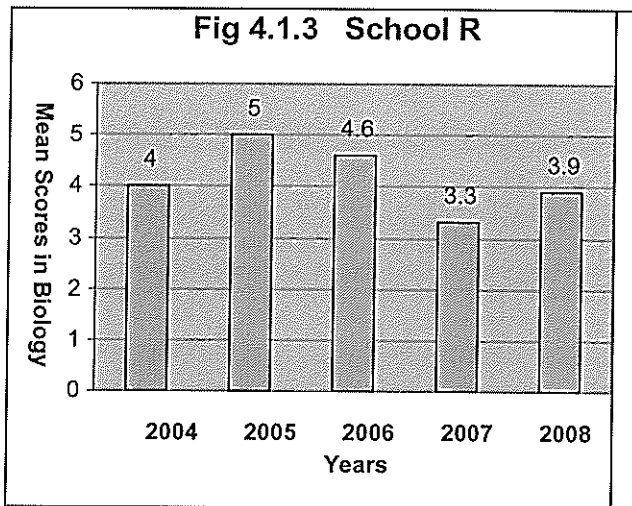
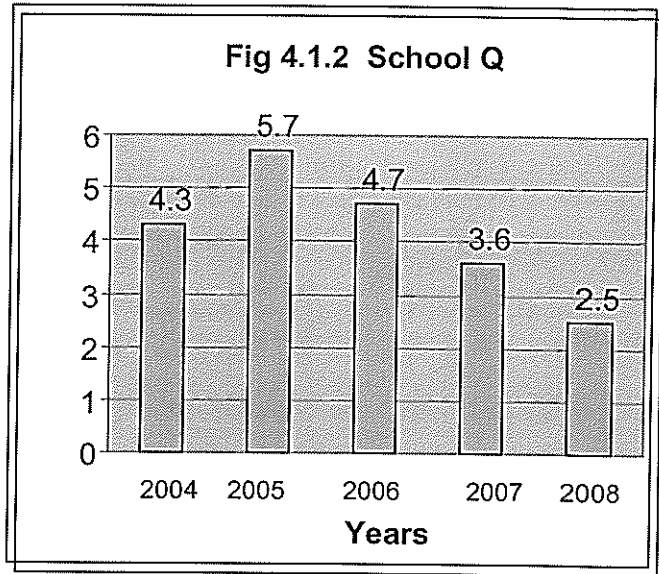
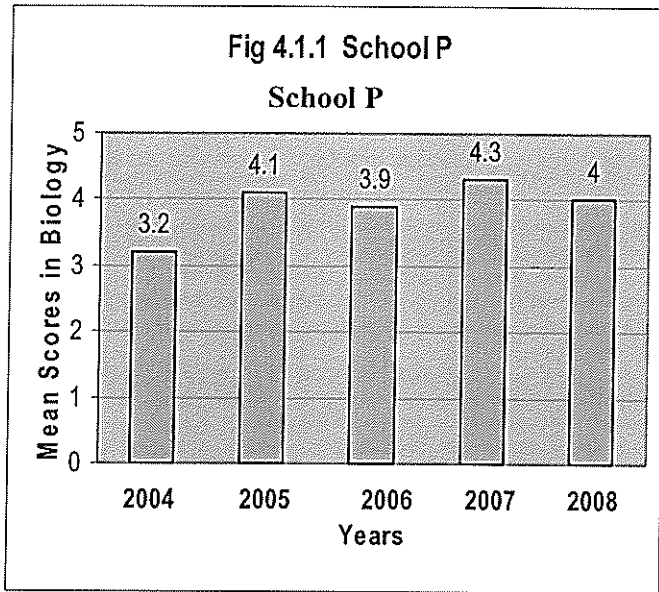
Source: Data from the Field.

Table 4.1.2 shows an unsatisfactory score averaging C- among the candidate class students. This is below average performance as it only translates into 5.0 points out of 12.0 points in total in KCSE. The scores could even be worse if it were KCSE where the marking of computer is highly standardized and strict.

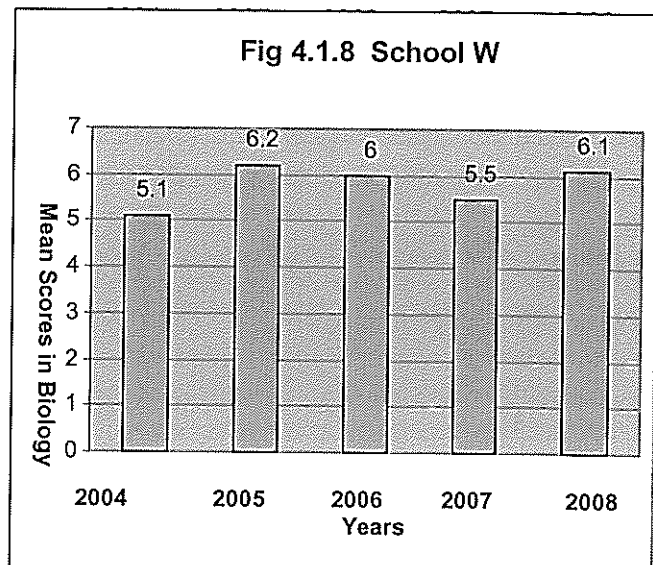
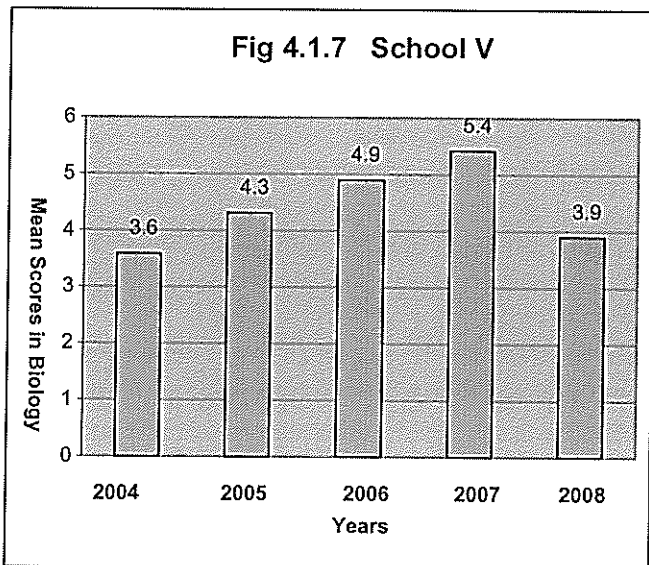
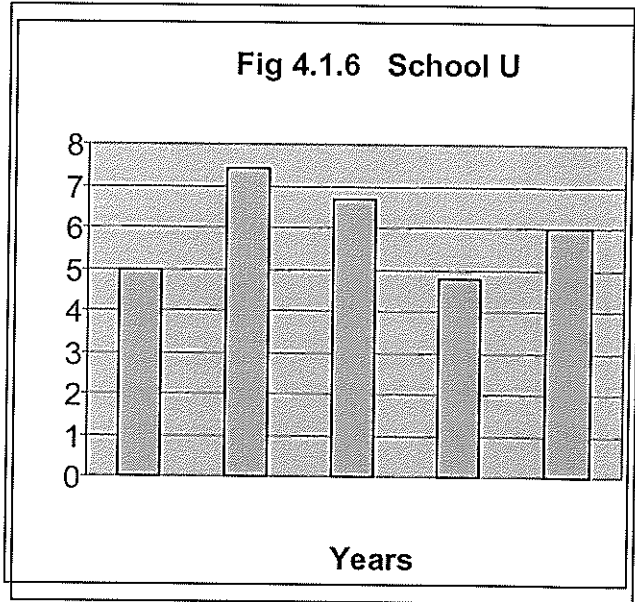
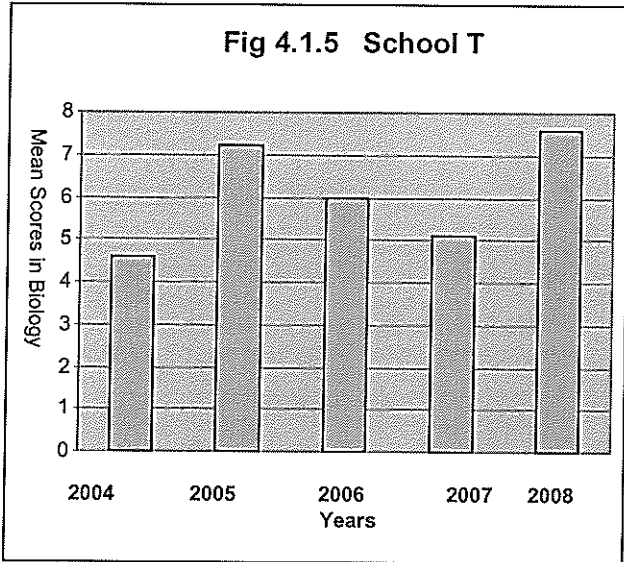
The end term exams were found to be fairly organized in most of the schools. 50% of the teachers indicated that they were giving two computer papers i.e. paper 1 and 2 (theory papers) in the end term exams, the other 50% said they gave all the three papers including paper 3 (practical). They claimed that the papers were almost the standard of KCSE.

Document analysis done on the previous KCSE results in computer mean scores between the years 2004 – 2008 were presented as shown in the bar charts in figure 4.1. below

Figure 4.1.: Mean Scores in KCSE Computer in the schools (2004 – 2008)



Mean Scores in Computer



Source: Data from the Field

The past results above showed that 50% of the schools did not at any time reach the average mean score of 6.0 throughout the period between the year 2004 and 2008. Inconsistent improvements (+ve deviations) were also noted in almost all the schools except school V which constantly registered +ve deviations between 2004 – 2007. However, it had a –ve deviation in 2008. It is worth noting that all the eight schools under the study registered marked +ve deviations in the 2005 KCSE.

Students who scored A plain and who, therefore, were able to be admitted to the highly competitive computer – related degree courses like Bachelor of Computer Science, Information Technology, Computer Engineering and Management Information Technology among others were extremely few as shown in the table 4.1.3 below;

Table 4.1.3: “A” plain student scores in computer 2004 – 2008)

No. of students scoring “A” plain in school:								
	P	Q	R	S	T	U	V	W
2004	0	0	0	0	1	0	0	1
2005	1	1	1	2	2	3	1	1
2006	0	1	0	1	2	2	1	1
2007	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	1	0	0

Source: Data from the Field

Table 4.1.3 above shows that only a total of 23 students scored A plain in computer in the eight sample schools between 2004 – 2008. Informal interviews of the computer teachers in these school revealed that the chances of these students joining the competitive computer related courses were even made slimmer by their unsatisfactory performance in key subjects like English, Kiswahili and Mathematics.

The major research findings obtained from this study in line with its specific objectives can be analyzed and discussed as follows:

a) Resources and Facilities

i) Textbooks:-

Most of the schools were inadequately equipped with text books as shown in table 4.1.4 below.

Table 4.1.4 Teachers views on Schools' Equipments with Computer Textbooks

Responses	No. of teachers	Percentage
Highly equipped	0	0%
Adequately equipped	02	12.5%
Fairly equipped	12	75%
Poorly equipped	02	12.5%
TOTAL	16	100%

Source: Data from the Field

75% of the teachers under the study admitted that they were just fairly equipped with school text books. 12.5% said their schools had sufficient number of textbooks while another 12.5% claimed they were poorly equipped with the books. 61.57% of the students said they had school textbooks which were shared in the range of between 5 – 10 students per book. 38.43% of the students lacked school text books as shown in table 4.1.5 below.

Table 4.1.5: Students Possession of School Textbooks of Computer.

Responses	No. of students	Percentage
Students having school text books	133	61.57%
Students lacking school text books	83	38.43%
TOTAL	216	100%

Source: Data from the Field

Personal textbooks were also scarce among the students as shown in table 4.1.6 below.

Table 4.1.6: - Students Possession of Personal Textbooks of Computer.

Responses	No. of students	Percentage
Students with at least a Computer text book (Form 1 – Form 4)	124	57.4%
Students totally lacking Computer textbooks	92	42.6%
TOTAL	216	100%

Source: Data from the Field

57.4% of the students said they had personal textbooks numbering averagely a total of one to two by the time they reached form 4. 42.6% totally lacked even a single personal textbook. The textbook problem was probably one of the principal causes of dismal student performance in computer in the district seen in the results of end of term one 2009 exams and KCSE 2004 – 2008 exams. Textbooks are an invaluable resource in the teaching and learning of computer such that their inadequacy is a great impediment to student academic achievement as had already been echoed by Maundu (1987) (see literature review).

The study however, found that most of the textbooks used by the students were those recommended by the Ministry of Education of Kenya. The top three most commonly used textbooks, in order of their popularity in the schools, were;

1. KLB (2005) Secondary Computer students book. 3rd Edition. Nairobi; Kenya Literature Bureau.
2. Muchiri, P.M (2006) Principles of Computer 3rd Edition. Nairobi; Pezi Publishers Ltd.
3. Maina, A and Kelemba, J. (2004) Comprehensive Secondary Computer students book. 3rd Edition. Nairobi; Oxford University Press, East Africa Ltd.

The use of such textbooks of right and recommended quality by the schools under the study is a step in the right direction and can potentially raise the academic standard in the subject in the district. The issue of textbook quality is known to greatly influence academic performance of students. This is already supported by Fuller, B. (1980) (see literature review).

ii) Laboratory equipment

Out of the eight sample schools under the study seven had at least a room that serves a laboratory while one totally lacked this facility. 86.6% of the teachers in the schools with laboratories said they were poorly stocked with the necessary resources and facilities. (See table 4.1.7 below for other details).

Table 4.1.7 Teachers Views on Adequacy of Resources and Facilities in their Laboratories.

Responses	No. of teachers	Percentage
Very well stocked	0	0%
Adequately stocked	1	6.7%
Fairly stocked	1	6.7%
Poorly stocked	13	86.6%
TOTAL	15	100%

Source: Data from the Field

Conspicuously in acute shortage were Personal Computers, Lap tops, Diskets, Over head projector, and some softwares. Relevant models and charts were very few.

Quite a number of the laboratories were not well supplied with networks. Most of them lacked electricity or other sources of power like solar.

Less frequent hands – on computer practical lessons were organized according to the response of 75% of the teachers involved in the study. Practical lessons, if any, were

mostly in form of teacher demonstrations. But 18.75% of the teachers claimed they fairly frequently organized hands on activities, while 6.25% said they carried out the activities frequently. (See table 4.1.8 for details).

Table 4.1.8: Teachers' Responses on frequency of doing Hands-On Practical activities:

Responses	No. of teachers	Percentage
Done very frequently	0	0%
Done frequently	1	6.25%
Done fairly frequently	3	18.75%
Done less frequently	12	75%
Not done at all	0	0%
TOTAL	16	100%

Source: Data from the Field

Computer is a science subject that can only be learnt more effectively if hands on activities are involved due to the maximum engagement of more than one sense of the body as was supported by Ayot (1984). Therefore, the fact that most of the laboratories in the day schools visited during this study were ill-equipped could be a reason for unsatisfactory student performance in computer in day secondary schools in the district.

iii) Other school facilities

Other school facilities like classrooms, student's desks, tables and chairs were found to be fairly adequate in the schools visited.

b) Teachers Professional Qualification

According to table 4.1.9, 50% of the teachers under the study were having Bachelor of Education degree. 12.5% of the teachers had Post Graduate Diploma in Education while another 12.5% had Diploma in Education. 6.25% of the teachers were untrained graduates, 6.25% were untrained undergraduates, and 12.5% were Form 4 leavers.

Table 4.1.9: Teacher Qualification.

Qualification	No. of teachers	Percentage
Bachelor of Education	8	50%
Post Graduate Diploma in Education	2	12.5%
Diploma in Education	2	12.5%
Untrained Graduate	1	6.25%
Untrained Undergraduate	1	6.25%
Untrained Form 6	0	0%
Untrained Form 4	2	12.5%
TOTAL	16	100%

Source: Data from the Field

This implies that there were 75% trained teachers and 25% untrained teachers in the study. If the claims by Kinyanjui (1979), Haddad (1978) Psacharopoulos (1985) and Maundu (1987) about effect of teacher qualification on student / pupil academic performance are anything to go by, then the substantial percentage of professionally untrained teachers in computer in the district most likely had a negative impact on student achievement in computer. This is because they may not be equipped with the necessary skills needed to impart computer knowledge to their students. For example, they might not be conversant with relevant methods of teaching in specific situations to enhance students understanding of some concepts.

c) Student Socio-economic home background

67.5% of the day scholars were found to be spending a lot of time while at home doing many domestic chores like cooking, cleaning, washing, attending to siblings, looking after cattle, sheep, and goats, fetching firewood and water and tiling in the farm. A few engaged in assisting in running family business and casual labour to financially fend for themselves and/or their family members.

Lighting was a major problem at home. The majority of the students who responded (73.1%) used small, smoky and sooty paraffin tin lamps that produced little light that was not conducive for studies. The lamps posed a great health risk to the students' respiratory tracts and eyes. There was lack of study rooms in some cases. 68.5% of the students could not afford paraffin on daily basis hence were not able to effectively study at night.

General disturbance was found to seriously interfere with the students while studying at home. 85.1% of them complained about disturbances ranging from interruptions to go on errands by parents/guardians, noise from siblings, radio, music, T.V etc and visits by friends or peers some of whom were not interested in academic matters.

Most of the students (55.5%) said they were able to afford all the three meals in a day i.e. breakfast, lunch and supper. Lunch was almost totally guaranteed due to a local arrangement with the administration that students pay money for the same. However quite a good number of the students (40.7%) were only able to afford two meals while 3.8% could only take one meal per day. The skipping of some meals would definitely

lead to decrease in energy levels that might interfere with the students' concentration in class resulting in poor academic performance as was claimed by Hunter (1963).

On the issue of school fees most of the students who responded to the questionnaire were less/not frequently sent home to collect the balances as shown in the table 4.2.0 below.

Table 4.2.0: Frequency of Absenteeism due to Fee Problem

Response on absenteeism	No. of students	Percentage
Very frequently	14	6.4%
Frequently	50	23.0%
Less/not frequently	149	69.3%
Not at all	3	1.3%
TOTAL	216	100%

Source: Data from the Field.

Table 4.2.0 above shows that school fees was not a major problem of the majority of respondent students. 23.0% were frequently sent away from school to collect fee balances while 6.4% would be very frequently absent due to the same. 1.3% did not have fee problems. The reduction in the frequency of absenteeism due to fee problem could be attributed to the introduction of free secondary education by the government where tuition fees were waived. Most of the students in day secondary schools only paid between 3,000/- and 4,500/- per year mainly for lunch programmes.

However, informal interviews of the students under the study revealed that they had a poor financial background. Their parents were mostly peasant farmers who had no gainful employment. This probably accounts for the 29.4% of the students who were either very frequently or just frequently absent from school due to fees balances. This could also partly explain the inability of the students to buy enough personal text books of computer.

Other home factors that were found to be affecting student performance in computer in KCSE in the district included traveling long distances to school, lack of discussion groups at home, inability to seek teachers assistance while at home, delay of meals and poor following of personal timetable.

d) Administrative Support

The majority of teachers under the study (50%) rated the administrative support in their schools towards the effective teaching and learning of computer as fair. 37.5% of the respondents said the support was good while 12.5% considered the support to be very good.

Only 75% of the teachers in the study responded to the question on leadership style of their head teachers. 25% failed to respond due to unknown reasons. Most of the respondents (58.3%) said their head teachers exhibited democratic style. For some 25% of the teachers the style was autocratic. 16.7% said their head teacher's style was *laissez faire* (see table 4.2.1 for details).

Table 4.2.1: Teachers Response to their Head teachers Leadership Style.

Responses	No. of teachers	Percentage
Autocratic	3	25%
Democratic	7	58.3%
Laissez faire	2	16.7%
TOTAL	12	100%

Source: Data from the Field

Schools T and U that had recorded comparatively higher mean scores in computer had a blend of democratic and autocratic head teachers. This might support Havelock's (1973) findings about effective educational programs in schools with democratic leaders. It might also concur with Wekesa (1993) in his findings that autocratic leaders are achievement oriented (see literature review). However, school V had a democratic leader but registered lower scores. Other factors like resources and facilities may have hampered the academic achievement in the school. Another unique observation was that school W had higher mean scores almost equaling that of school U but was having a laissez faire leader. It is however important to note that this was the school with the best resources and facilities compared to seven other schools in the studies.

e) Student – Teacher Ratio

The ratio was summarized as shown in table 4.2.2 below

Table 4.2.2 Student – teacher ratio in Form 4 Computer Class (Year 2008)

School	P	Q	R	S	T	U	V	W
Student – Teacher	20:1	34:1	41:1	30:1	45:1	38:1	31:1	37:1

This gave an average of 35:1. This was a good ratio since it is even below the 40:1 recommended by the Republic of Kenya. The student – teacher ratio, was considered to have a great potential in boosting performance in computer in the district since it was likely to encourage giving of individual attention to the students as well as enable the formation of reasonable group sizes especially during computer practical lessons.

f) Teacher experience:

Table 4.2.3 shows the length of service of the teachers that were involved in the study.

Table 4.2.3: Teacher Experience

Experience	No. of Teachers	Percentage
0 – 5 yrs	10	62.5%
6 – 10 yrs	2	12.5%
11 yrs and above	4	25%

The findings show that the majority of teachers under the study (62.5%) had less experience of 5 years and below in the teaching of computer. This could be attributed to high turnover rates of teachers in schools most of which mainly had temporary teachers

employed by B.O.Gs and therefore would go for greener pastures or get employed by the T.S.C. elsewhere. Others would go for further studies or change their profession. The teachers who left the schools would be replaced by new ones mainly under B.O.G. 12.5% of the teachers were found to be having an experience of between 6 – 10 years, while 25% had taught for the subject for 11 years and above.

The constant changing of teachers might have impacted negatively on the student's performance in computer due to inconsistency in the teaching process. For example, it takes a long time for students in a candidate class to adjust to a new teacher introduced to them just a few months to the KCSE.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

Most of the specific factors listed under the objectives of the study in chapter one were found to be having a significant influence on the performance of students in computer in KCSE. However, some factors were found to be more significant than others.

Most of the responses from the students were at par with those of their teachers in a number of areas like availability of text books, number of practical done, syllabus coverage, adequacy of computer teachers, attitude towards computer, and revision in preparation for KCSE.

No single factor was found to solely influence students' performance in computer without other factors. Therefore the below average academic achievement in the subject was due to an interaction of various factors as was postulated under the conceptual framework in chapter one of this project report.

5.2 Conclusion

In conclusion it can be said that the majority of candidates in day secondary schools in Gatundu South District prefer computer to other science subjects, as was evidenced by the 62.9% who gave it first reference.

However the performance in the subject was not satisfactory. Many factors hindered the students' quest for high academic achievement in the subject. The factors that were found to have significant negative influence in the students' performance in computer included:-

i) Lack of enough text books

Text books were seriously lacking as was shown in tables 4.1.4 and 4.1.5. This could be a great hindrance to good performance in the subject. Maundu (1987) emphasized the need to provide relevant text – books that should be adequately supplied to the students if improvement in science subjects is to be realized. Whenever the books are lacking performance in computer would definitely be dismal. The textbook issue therefore needs to be addressed in day secondary schools in Gatundu South District.

ii) Poor equipment of laboratories

Most of the laboratories were poorly stocked with learning facilities / resources as had been shown in Table 4.1.7.

It would be difficult to expect much achievement in any science subject if only one sense (i.e. of hearing in computer theory) is engaged without making use of other senses like those of sight and touch (in computer practical) as Ayot (1984) had put it. Lack of adequate practical lessons would therefore be a hindrance in the effective teaching and learning of computer in day secondary schools in Gatundu South District.

iii) Lack of adequate professionally trained computer teachers was an impediment in the student performance in computer in the district. A staggering 25% of the teachers that were untrained were probably a factor that might have contributed to below average performance in the subject. The most worrying phenomenon was the employment of Form 4s who had just recently sat for their KCSE, and who do not have much skill in imparting knowledge to the students in general and the candidate class in particular.

iv) The general home climate was not conducive for the studies of most of the students. All forms of disturbance complained about by 85.1% of the students would not allow for any meaningful learning at home. The poor lighting system would seriously affect the health of the learners. The time consuming domestic work might exhaust the learners so much that their concentration would go down by the time they settle for studies.

v) Other factors outside the specific objectives of the study but which were found to have contributed to the negative trend in computer in KCSE included:-

- a. Negative attitude towards computer by students.
- b. Late syllabus coverage
- c. Wide computer syllabus
- d. Late reporting of admitted form ones to secondary schools hence cumulative back log of topics
- e. Lack of teacher and student motivation.
- f. Lack of exposure to examination techniques.
- g. Lack of / non-functional study groups
- h. Poor revision.

5.3 Recommendations

- i) Head teachers should give priority to teaching / learning resources and ensure strict and full use of the vote head allocated to resources like computer text books and laboratory facilities. These should be availed in good time.
- ii) Parents need to redouble their efforts in buying computer textbooks to supplement the few being shared in schools.
- iii) Parents and guardians should appreciate the valuable study time spent by students while at home hence ensure the following:
 - Proper lighting at home using at least a lantern that doesn't interfere much with the health of the students.
 - Provide enough kerosene to ensure proper and uninterrupted lighting at home.
 - Set aside (special) rooms for studies where noise and other forms of disturbance are minimized.
 - Give the students lighter and less time consuming duties to avoid exhaustion and time wastage hence maximum concentration of the students in academic work.
- iv) The government should facilitate the employment of more teachers to curb teacher shortage in the subject.
- v) Conduction of more in-service training to the teachers to equip them with the various effective methods of teaching computer.
- vi) Giving of loans to untrained teachers so that they can pursue professional training and acquire the necessary skills needed in the teaching profession.
- vii) PTA should organize fund raisings to get money to build facilities like laboratories and adequately stock them with necessary resources.

- viii) Teachers need to skillfully popularize computer and help the students develop a positive attitude towards the subject.
- ix) Thorough revision by second and third term in the candidate class with the assistance of computer teachers. The teachers should also give examination techniques not just when the exams are near but in the course of the learning process right from form one.
- x) Formation of strong and active computer study groups by students with the assistance of teachers.
- xi) Motivation of teachers by head teachers using various methods at their disposal.
- xii) Review of the computer syllabus to scrap redundant or irrelevant topics / subtopics hence remain with manageable subject content.

Suggested Areas for Further Research.

- A comparative study of factors influencing student performance in computer in Urban vs. Rural day secondary schools.
- A comparative study of student's performance in Day Boys schools vs. Day Girls schools in computer.

RESEARCH BUDGET

NO	ITEM	QUANTITY	KSHS
1.	Ruled foolscaps	2 Reams @ 400/-	800
2.	File	2 @ 50/-	100
3.	Ball pens	10 @ 12/-	120
4.	Pencils	2 @ 20/-	40
5.	Rulers	2 @ 20/-	40
6.	File note books	3 @ 50/-	150
7.	Typing and printing services	80 pages @ 50/-	4,000
8.	Binding services	5 @ 300/-	1,500
9.	Computer data processing		5,000
10.	Traveling Expenses	50 days @ 400/-	20,000
11.	Subsistence e.g. lunch	50 days @ 150/-	7,500
12.	Incidental Expenses		6,000
	TOTAL		45,250

RESEARCH TIME SCHEDULE

YEAR	MONTH	ACTIVITY
2009	January - February	Identification of area of study
2009	March-July	Literature review
2009	July	Drafting of project research proposal
2009	August	Presentation of proposal to the University for review (Faculty of Education)
2009	August-September	Review of proposal by supervisor
2009	September	Data collection and analysis
2009	October	Making of final draft of project and handing over to the University

BIBLIOGRAPHY

- AAAS, (2000), *Big Computer Books fail to Convey Big Ideas*. Project 1061.
- AAAS (1993) *Benchmarks for Science Literacy* .New York: Oxford University Press.
- AAAS (1989) *Science for all Americans* .New York. Oxford Press.
- Appia, K (1979). *The Determinants of Sixth Form Education Output*. A production
Function Study of Sixth Form Schooling in Ghana Ed. D Thesis. Microfilm:
Columbia University.
- Anderson, L (1991) *Increasing Teacher Effectiveness*. Paris: Unesco International
Institute of Education Planning.
- Atkinson, G. (1983) *The Economics of Education*. London: Hodder and Strongton
Educational Printers.
- Ayot, H. and Briggs, H. (1991) *Economics of Education*. Nairobi: Educational Research
and publication.
- Coombs, P. (1985) *The World Education Crisis: A System Analysis*. New York: Oxford
University Press.
- Coombs, P. (1989) *Educational Challenges in the Age of Science and Technology*. Paris:
UNESCO .
- Eshiwani, G. (1993) *Education in Kenya since Independence*. Nairobi: East African
Educational Publishers.
- Eshiwani, G. (1990) *Implementing Educational Policies in Kenya*. Washington D.C:
World Bank.
- Eshiwani, G. (1983) *Factors Influencing Performance among Primary and Secondary
Schools Pupils in Southern Province of Kenya*. Nairobi: East African Publishers.
- Everard, K. and Morris, G. (1996) *Effective School Management, 3rd Edition*. London:

Paul Chapman Ltd.

Farrant, J. (1992) *Principles and Practice of Education 2nd edition*. London: Longman Group Ltd.

FAWE (2001) *Girls Academic Achievement. Reading the full potential*. Nairobi: FAWE.

Fuller, B. (1980) *Raising School Quality in Developing Countries. What Instrument Boosts Learning?* Washington DC: World Bank.

Griffin, G. (1996) *School Mastery: a Straight Talk about a Boarding Schools Management 2nd Edition*. Nairobi: Lectern Publication Ltd.

Haddad, W. (1979) *Education and Economic Effects of Promotion and Repetition Practices*. Washington D.C: World Bank.

Haddad, W. (1978) *Educational Effects of Class Size. World Bank Staff Working Paper*. Washington D.C.

Havelock, R. (1973) *The Change Agents 'Guide to Innovation in Education*. New Jersey: Educational Technology Publications.

Heinemann, S. and Loxley, M. (1983) *The effect of Primary School Quality on Academic Achievement across 29 High and Low Income Countries*. American Journal of Sociology Vol 1 and 8.

Hussen, J. Saha, L. and Noonan, R. (1978) *Teacher Training and Student Achievement in less Developed Countries*. World Bank Staff Working Paper No.310 Washington D.C: World Bank.

Jamison, D. (1982) *Reduced Class Size and other Alternatives for Improving School: An Economic View in Glasser et al (eds). School Size: Research Policy*. Beverly Hills Conference.

- Jamison, D. (1974) *Improving Elementary Mathematics in Nicaragua: An Experimental Study of the impact of Text Books and Radio in Achievement*. Journal of Educational Psychology No. 17 Vol .4.
- Keller, E. (1980) *Educational Manpower Development*. The Impact of Education Policy in Kenya. Nairobi: Kenya Literature Bureau.
- Kerlinger, F. (1973) *Foundation of Behavioral Research*. New York: Holt Reinhardt and Winston Inc.
- Lagat, K. (2001) *Collaborative School Management in Kenya: The Changing Role of Secondary School Head Teacher*. Unpublished Dissertation Submitted to University of Bristol. London.
- Macharia, W. (2004) *Kind of Leadership that Turns Vision into Action*. Daily Nation pg 12.
- Massie, K. (2000) *Essentials of Management*. New Dehli: Prentice Hall of India Private Ltd.
- Maundu, J. (1986) *Students Achievement in Science and Mathematics: A Case Study of Provincial Harambee Schools in Kenya*. Unpublished PhD Thesis. Montreal: McGill University.
- Meyer, G. (1980) *A General Comparative Method for Development of Field Projects in Contrasted Habitat*. Eight Biennial Conference of AABE .Osaka. Japan.
- Meyer, G. (1982) *Methodologies for Relevant Skill Development in Computer Education*. Science and Technology Education Documents Series No 2. Paris: UNESCO.
- Meyer, G. (1969) *UNESCO Pilot Project on New Approaches and Techniques in Computer Teaching in Africa: A Guide for Pilot Study Groups* .Paris: UNESCO.

- Mugenda, O. M and Mugenda, A. G (1999) *Research Methods; Quantitative and Qualitative Approaches*. Nairobi; Acts Press.
- Nsubuga,E. (2000) *The Teacher as a Professional* .Kampala: M.K. Publishers Ltd.
- Psacharopoulos, G. and Woodhall, M. (1985) *Education for Development: An Analysis of Investments Choices*. USA: Oxford University Press.
- Republic of Kenya (2005) Ministry of Education, Science and Technology. *Kenya Education Sector Support Program 2005-2010*. Delivering Quality Education and training to all Kenyans.
- Sifuna, D. (1982) *The Quality of Primary School and Pupil Achievement*. Kenya Journal of education Vol 2. Nairobi: East African Literature Bureau.
- Sifuna, D. (1973) *The Impact of the New Secondary Approach on the Quality of Teaching in the Secondary Schools in Kenya*. Unpublished M.A Thesis. University of Nairobi.
- Southern Biological Services (1986) *Product Catalogue*. Australia.
- Thias, M and Carnoy, M. (1972) *Cost-Benefit Analysis in Education*. A Case Study of Kenya.
- UNESCO/UNICEF (1997) *Report on the State of Education in Africa: Challenges and Reconstruction*. Dakar: UNESCO.
- Wayne, H. (1982) *Educational Administration: Theory, Research and Practice* 2nd Edition. New York: Random House Incorp.
- Wekesa, G.(1993) *The Impact of Headteachers' Instructional Leadership on Students' Achievement in Kenya* . Unpublished PhD Thesis. Teachers College, Columbia University.

Wolff (1994) *Improving the Quality of Primary Education in Latin American and the Caribbean*. World Bank.

APPENDIX A

QUESTIONNAIRE FOR FORM 4 COMPUTER STUDENTS

This questionnaire attempts to investigate the factors influencing students' performance in Computer. You are, therefore, kindly requested to honestly fill the details in it by ticking appropriately in the boxes provided or by giving details in the spaces provided.

1. How do you rate your preference for the subject of computer in comparison to chemistry and physics?

(i) First

(ii) Second

(iii) Third

2. Which Grade did you get in Computer in end term one 2008 exams?

.....

3. How frequently do you attend practical lessons in Computer?

a. Very frequently

b. Fairly frequently

c. Not frequently

d. Not at all

4. Give the titles of two computer textbooks that you frequently use

a).....

b)

5. a) Do you have any personal text books of computer

1. Yes 2 No

b) If yes in 5a) above, specify the number of personal textbooks of Computer that you have

.....
6. a) Do you have any school books of computer

I) Yes ii) No

7. How frequently are you sent home for fees?

- (i) Very Frequently
- (ii) Frequently
- (iii) Less frequently
- (iv) Not frequently
- (v) Not at all

8. What kind of lighting system do you use at home for your studies

- (i) Electricity
- (ii) Pressure Lamp
- (iii) Gas Lamp
- (iv) Lantern
- (v) Tin Lamp
- (vi) Candle

9. a) How many meals do you normally take per day ?

i) One ii) Two iii) Three

Specify the types of meals in 9a) taken by you in a day

.....

10. What type of work do you usually do at home?

- (i) Assisting in running a family business
- (ii) Looking after cattle/sheep/goats
- (iii) Attending to children/sibling
-

- (iv) Cooking
- (v) Cleaning/washing
- (vi) Casual labour for personal/family finances
- (vii) Others (specify)

11. List four main problems that interfere with you while studying at home

- (i)
- (ii)
- (iii)
- (iv)

12. In your opinion, give six major factors contributing to poor student performance in KCSE Computer examination in your school?

- (i)
- (ii)
- (iii)
- (iv)
- (v)
- (vi)

APPENDIX B

QUESTIONNAIRE FOR COMPUTER TEACHERS

This questionnaire seeks your assistance in the investigation of the factors that affect students' performance in Computer in KCSE.

You are thus humbly requested to display a lot of honesty while filing the details in it by ticking appropriately in the boxes provided or by giving details in the spaces provided.

1. What is your highest professional /academic qualification?

(i) Master of education

(ii) Bachelor of education

(iii) Post Graduate Diploma in Education

(iv) Diploma in education /ATS

(v) Untrained graduate

(vi) Untrained Undergraduate

(vii) Untrained form 6

(viii) Untrained Form 4

2. For how many years have you been teaching computer in secondary school.....

3. What is the Student Teacher ratio in form four computer class?.....

4. Indicate how equipped you school is in terms of text books of Computer

(i) Highly equipped

(ii) Adequately equipped

(iii) Fairly equipped

(iv) Poorly equipped

5. How frequently do you organize hands-on computer practical lessons for your students?

(i) Very frequently

(ii) Frequently

(iii) Fairly frequently

(iv) Less frequently

(v) Not at all

6. A) Do you have a laboratory /science room in your school

i) ii)

B) If yes in 6(a) above, how stocked is your laboratory/science room in terms of resources and facilities?

(i) Very well stocked

(ii) Adequately stocked

(iii) Fairly stocked

(iv) Poorly stocked

7. What is your rating of the leadership style of your head teacher?

(i) Autocratic

(ii) Democratic

(iii) Laissez Faire

(iv) Charismatic

8. How do you rate the administrative support in your school in terms of facilitation of the effective teaching of computer?

- (i) Excellent
- (ii) Very good
- (iii) Good
- (iv) Fair
- (v) Poor

9. How equipped is your school in terms of the following facilities /resources

	Excellent	V.Good	Good	Average	Poor
1 .No Classrooms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Library	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Students Desks/Tables/ Chairs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Chalkboard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Charts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Models	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Lap tops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. How many continuous assessment tests do you give to your students in a term in Computer?

.....

11. How many Computer papers do you give to form four students during end of the term examination

- 1) One
- 2) Two
- 3) Three

12. How do you rate the standards of you Computer papers in 11(a) above in comparison with KCSE papers?

- (i) High standard
- (ii) Good standard
- (iii) Average standard
- (iv) Poor standard

13. Give the number of students enrolled, students' grades and your school mean score in computer in the years indicated below

	2004	2005	2006	2007	2008
Students enrolled in Computer					
Students with A in Computer					
Students with A- in Computer					
Students with B+ in Computer					
Students with B in Computer					
Students with B- in Computer					
Students with C+ in Computer					
Students with C in Computer					
Students with C- in Computer					
Students with D+ In Computer					
Students with D in Computer					
Students with D- in Computer					
Students with E in Computer					
School mean score in Computer					

14. a) The following factors may influence students' performance in computer in KCSE

- Teachers' experience
- Availability of resources and facilities
- Students' teacher ratio
- Teacher professional qualification.
- Administrative support.
- Students' socio-economic home background.

Select five of the factors that in your opinion greatly affect students' performance in Computer in KCSE in your school. List them in order of priority through numbering.

- 1
- 2
- 3
- 4

B) List six factors other than the ones in 14a) above that may affect students' performance in Computer in KCSE. Place them in order of priority.

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C) Briefly outline five ways of improving students' performance in Computer in KCSE in Gatundu South District

APPENDIX C

LETTER OF REQUEST FOR PERMISSION TO COLLECT DATA FROM SCHOOLS

Ituru Boys High School,

P.O. Box,

Gatundu.

Dear Sir / Madam,

RE: REQUEST FOR PERMISSION TO COLLECT DATA

I hereby request your permission to allow me to collect data in your school concerning my degree research programme at Kampala International University on “Factors Influencing Student Performance in Computer in KCSE in Day Secondary Schools of Gatundu South District”.

The research programme is aimed at coming up with measures that can be put in place to improve on student performance in Computer which has not been satisfactory over the years in the District.

Thank you for your anticipated cooperation in this regard.

Yours faithfully,

Mr. Ngaruiya Henry Miingi