

**THE EFFECTS OF COMPUTER STUDIES ON ACADEMIC
PERFORMANCE OF SECONDARY SCHOOL STUDENTS,
A CASE STUDY OF KAPSABET ZONE,
NANDI DISTRICT- KENYA.**

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**A RESEARCH REPORT SUBMITTED TO THE FACULTY
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DECLARATION.

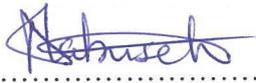
I Jepkoech Rose hereby declare that the work in this research report is my own work and has never been presented for a degree or any other academic award in my University or any institution of higher learning.

SIGNATURE.....
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APPROVAL

This proposal has been moderated with profound commitment of the supervisor and the Student has submitted for examination with my approval as the supervisor.

SIGNATURE.....
MADAM TALIGOOLA DEBORAH

DATE.....24/08/09.....

DEDICATION

This dissertation is dedicated to my beloved husband Gabriel Kiyeny for giving me an opportunity and support to pursue my studies.

ACKNOWLEDGEMENT

I thank the Almighty God for providing me the grace and opportunity to finish this project.

My special thanks go to Madam Taligoola Deborah my research supervisor for the time and support she offered in perusing and correcting this project.

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ABSTRACT

This study is about effect computer science on education in secondary schools in Kapsabet zone, Nandi District Kenya. It was carried out in Kapsabet high school, Nandi Girls and Kapsabet Mixed High School. Through the research it was established computer studies have great effect on education. Research showed that there is an explosion of knowledge the world over which has brought about multiple uses of computer for various purposes such as storage of information, management of production and manufacturing processes among others.

Education depends on efficient handling of information and has been regarded as the key in social and economic mobility. It was established that there was great need and interest in computer studies, though most schools were not equipped with computer facilities. Most respondents (65%) agreed that the few computers they have are always put to use and those who do not own any have to seek for those services elsewhere. They also expressed the need that computer should be taught in schools. Most of the respondents (65%) confirmed that they were not well acquainted with the computer operation.

It was also observed that computer science is relevant to the field of education and others. It was discovered that respondents were fully aware of computer applications. All respondents (100%) mentioned various applications known to them such as information storage, management, control and production. 90% of the respondents believed that the use of computer was widespread and will keep on increasing as development and knowledge increases on every front in the world.

Therefore for effective decision-making, information has to be managed effectively; and this can be achieved if students are provided with training in computer operation and application. This is a machine that will affect their lives and be more used more in every sphere of their lives at home, school and work places. Since Kenya is a growing economy, it needs education infrastructure to be established to support computer studies in schools and tertiary institutions. As confirmed by the education officer in the research, it is the students', the schools' and the governments' responsibility to realize that computer science is fundamental to education and development. Therefore they do well to support the program for greater educational and national development.

LIST OF ACRONYMS

| | |
|-----|----------------------------------|
| ICT | INFORMATION COMPUTING TECHNOLOGY |
| MIS | MANAGEMENT INFORMATION SYSTEMS |
| KIE | KENYA INSTITUTE OF EDUCATION |
| TSC | TEACHERS SERVICE COMMISSION |

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CHAPTER ONE

INTRODUCTION

1.0 Background of the Study.

Modern information systems have plunged into what may be called an “information age” as opposed to the past “book age”. Information is now a vital resource for decision making at international, national and lower levels in all areas including human activity. Even the success and failure of individual activities depends on efficient handling of information. Any area of socio- economic development calls for the timely provision and use of relevant reliable data and information for those involved. It is often stated that information is power.

Educations activities are part of those individual activities which depend on efficient handling of information. Education has been regarded as the key in social and economic mobility.

According to Matovu (1999) education develops physical well being, prepares future leaders of society, nurtures creative talent, and helps students to develop survival skills for functioning on society. A government commitment to scientific, technological, social and economic well being of its people has been a direct bearing on its willingness to spend on education.

The working and status of scientific and technological, social and political institutions of a country our very own, Kenya, depends on the level of development attained by the education sector. Education encompasses quality of information services that has been put in place to support it. At this age, the teen-age learners have reached the level of realistic decision-making in educational activities; problem solving, yet secondary education like any other systems operates in ill structured environments characterized by unpredictable economic, political and technological challenges. (Cowling, 1996)

Dealing with educational challenges requires a well developed and modern information system, because information communication technology can be used to extend the curriculum and

provide a wider access to education (Tearle et al, 1999) ICT will provide well refined data and information outputs tailored to individual users in a very personalized way.

With the help of ICT, the secondary schools are able to execute a wide range of data management operations such as those required by teachers to perform demonstrations, present materials, illustrate how to use systems, access to websites among other activities. It also provides cheap and effective means to produce a wide range of teaching aids. ICT has given a renewed impetus to distance education. The geographical factor is no longer a barrier to learning.

ICT is now widely used in a number of secondary schools in Kenya. However it is not known to what extent these schools have in Kapsabet zone Nandi Central District have been able to integrate ICT in their curriculum. Little is also known about the progress made as far as improvement in educational performance is concerned, and the challenges that are being faced by the computer instructors.

1.1 Statement of the Problem.

In every sphere today, there now exists great need for computer literate person. The world no longer depends on traditional approaches of using mathematical (hard copy tables to solve math problems. In commercial industries, transport systems and manufacturing industries computer has made it easier to control business analyses, flights and manufacturing processes. It is important therefore to prepare students in computer literacy in order to provide hand on use knowledge, as well as build infrastructure in learning institutions for it.

The challenge therefore is how to stimulate the student to study computer science and provide conducive environment needful to achieve a computer literate community. This is the most momentous computer challenge upon students, learning institutions, educationists and governments alike that must be overcome.

1.2 Purpose of Study.

The purpose of this study was to investigate the influence of computer studies on education of Secondary school students in Kenya.

1.3 Objectives of Study.

- a) To investigate the importance and introduction of computer science in the field of education.
- b) To investigate the relevance of computers in learning institutions and the world at large.
- c) To explore the impact and need of computer to students and other fields of computer application.

1.4 Research Questions.

- a) What is the importance of introduction of computer in the field of education in Kapsabet zone Nandi Central District?
- b) What is the relevance and uses of computer to the students in Kapsabet Zone, Nandi Central District?
- c) What is the impact and application of computer science to students in Kapsabet Zone?

1.5 Scope of Study.

This study focused on investigating the impact of computer science (studies) on learners in secondary schools. It covered schools in Kapsabet zone, Nandi Central district of the Republic of Kenya. The researcher's case study sites were Kapsabet Boys, Chepterit Girls and Kapsabet Girls High Schools. The whole research covered the period between May 2009 and July 2009 and involved students, teachers, nearby organizations and the near by community members who use computers in Kapsabet town.

1.6 Significance of Study.

It was expected that the findings in this study would be of use to the following categories of people:

School teachers and administrators: would be encouraged to introduce computer studies in their respective schools to enhance computer literacy.

Students: would be inspired to learn the computer and its application as a necessary business automatic machine of the 21st century.

School proprietors would be enabled to invest in computers and computer learning as a knowledge and income generating asset.

Policy makers and the government would be assisted to draft favorable policies for the computer learning, make curriculums for the Ministry of Education and draft laws that support computer learning in schools right from Primary Schools to Institutions of Higher Learning.

1.7 Limitations of the Study.

This study experienced hindrances in the following ways:

Lack of computers: Most schools didn't own computers. Therefore interview for information about computers and its importance was limited.

Ignorance of most people about computers was a big limitation so they couldn't speak up for what you had not used or experienced before.

Due to the researcher's busy schedule and nature of work, time was a major constraint on the fulfillment of the project.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction.

This chapter will review related literature on the subject of the impact of Computer Studies on secondary school students and the computer learners in learning institutions. It will comprise what is the computer, the relevance of computer to the learner and the user in learning institutions and beyond, and the impact of computer in the world today.

2.1 Theoretical Framework.

Hutchinson and Sawyer (2000) have put forward that the computer as an automatic machine has an impact and relevance to every field ranging from education, manufacturing, transport, and business, legal, medical, agricultural and so forth. He explains that the computer has a great impact in the following ways:

Jean- Paul Trembley (1989) defines a computer as a collection of hardware and software components designed to provide an effective tool for computation.

Bruce Presley (1996) defines a computer as an electronic machine that accepts information (called data), processes it according to specific instructions and provides results as new information.

2.2 Literature Review

The literature will be reviewed guided by the Objectives of the Study.

2.2.1 The Importance of Introduction of Computer Science in the Field of Education.

When a person is computer literate he is able to benefit from the computer by mastering the terminology used to talk about the computer and how to use one.

The user learns to identify and describe the functions of various components of the computer and the information system.

The user learns to use a computer to produce the information he needs. All the above enables the user to achieve a level of computer literacy and skill to use in business and in one's creative life. (Hutchinson, Sawyer 1992)

According to Hutchinson and Sawyer (2000) the computer has great impact in a various fields such as education, manufacturing, transport and business among many others. He discusses the following as the most conspicuous ones:

Data collection: before computers were invented, data was collected manually by hand in a variety of ways. The computer has made this easy now.

Production of information is easier, faster and better. Computers facilitate easy production of accurate information.

Information presentation in usable forms: For the computer and the user, the automatic computer has facilitated the retrieval, manipulation and analysis of data in usable forms on diskettes and CDs (storage software) for use to meet specific needs.

This way the computer has had relevance in every sphere of production.

2.2.2 The Relevance of Computers in Learning Institutions

Service reliability: most errors done by computers are human errors. The computer in itself is a reliable machine.

Storage capability: The computer has great capability of storing large amounts of information which can easily be located, retrieved and used. Hence the above increases on productivity, easy decision-making and reduces costs of production of goods and services in the economy.

Hutchinson submits that the computer has had a great impact on the learners and more than that on the world we live in today. In this connection people enroll for training to acquire computer literacy because it has become a necessity. They enroll to:

Satisfy job requirements: Employees now demand and encourage their employees to learn more of computer skills.

Increase job skills and marketability: it provides additional skills for employees necessary to keep their jobs, or be considered for advancement or change to a more desirable job.

Multiply uses in various fields: learners want to learn a computer as personal resource. The other remaining people indicate that they want to learn to use computer as a personal resource at home or on job for efficient job performance.

2.2.3 The Impact and Application of Computer Science

Hutchinson and Sawyer (2000) say that computer studies have been instrumental in creation of jobs for millions of people as computer programmers, computer operators, information managers, system analysts, data entry clerks, data base managers and other technical workers. The computer has created jobs in retail sales and marketing of computers and repair parts

Opportunity for users has been created to use computers in managers' offices, accounts, administration departments and schools. Schools have instituted computer extension courses to meet the demand for computer literacy and hands on skills.

Ned Chaplain, (1971), in Justifications of computer learning has submitted the following argument in justification of computer, computer studies, information systems and its application saying, "These factors emerge from the very fabric of the way men live, and how they use tools and organize life. These factors include:

Explosion of knowledge: Growth is so rapid; many discoveries are made adding to already existing knowledge. Computers must be adopted to manage and correlate this knowledge.

Growth of organizations: The number of organizations has grown and as it does so information grows; the burden of maintaining, coordinating and controlling become formidable. Each department or organization acts in many ways like a separate organization in its gathering and producing data. This has made it imperative to employ computer application in organizations.

Technological complexity: Multiplies data processing and communication. As products grow more and more data are needed to describe their design, production, distribution and maintenance. Increased also are contacts with customers, suppliers, planning, research and development, assembly and many others. These processes necessitate the study and use of computer.

Diversification: Variety of data is varied due to diversification in organization, with increase of more interests far widespread than before. For instance this is the case for wide products, new customers and new market fronts.

Responsiveness: This refers to pace of life for most businesses and government organizations that have accelerated over years. Therefore management has become the premium upon them to respond effectively and quickly in response to changing conditions. Convenience and accuracy at a lower cost is the reason why computers are used.

External requirements: Are those demands from such agencies as governments for reports and such as tax information, social security, and statistics financial and non financial to stake holders such as credit bureaus, stock brokers, trade assistants and stock exchangers.

Severe environments: These environments come up when man extends his area of action beyond the normal. Then he encounters environments that are dangerous to life. Examples include the heat of a kiln, conditions of outer space, observation of climate at an antarctic site, and need to respond to things that cannot be seen or felt like nuclear processes.

Cost trends: Costs of handling information have gone high. For instance clerical workers rose by 725% while costs of handling data rose by 330% between 1900 through 1950. To keep these costs in line computers must be adopted.”

However Hutchinson and Sawyer (2000) say that though computer has been well received on several fronts, it has several negative implications on its learners and users.

The computer demeans the humane qualities of thinking and creativity (creative art). It doesn't add on the thinker any new information.

The computer controlled nuclear weapons are a threat to the users' existence and this providence is prone to abuse.

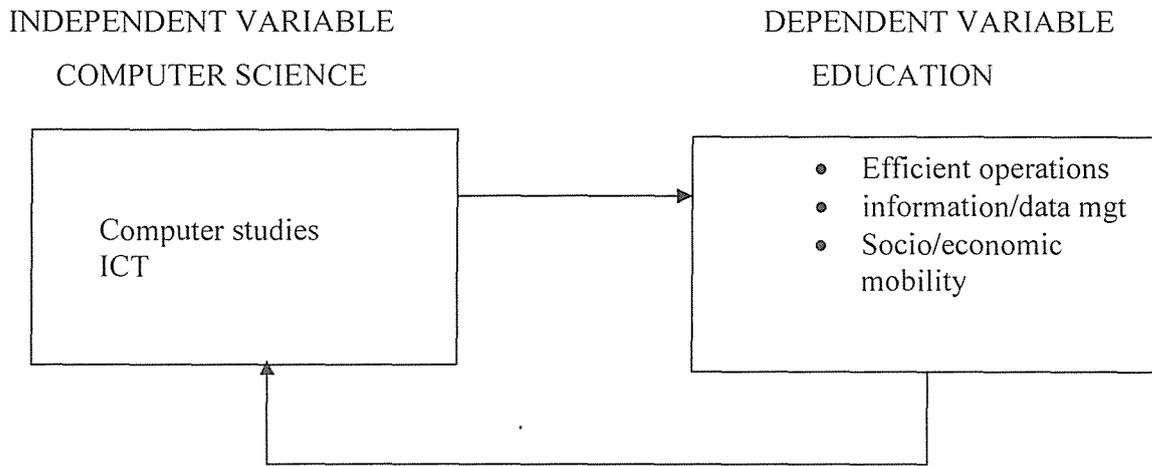
Most people's privacy is taken away, for example in the case where all data concerning people is stored up and accessible by all and sundry.

The entry of computers has taken away the jobs of many people who used to perform menial jobs. Mc Donald's restaurants rejected the use of computerized cashier and maintained the front cashiers to maintain human contact in business.

Monitor computers take away the dignity of workers as human beings when they motor the pauses, mistakes and speed in the name of improving efficiency. But this essentially demoralizes workers who feel hindered to perform their tasks freely.

With coming of the computer there comes computer piracy with it. People copy and use or sell software without permission. This wrong practice has necessitated the introduction of Ethics as a study course in most learning institutions. Man must extend his imagination through study, Research and development. He must study to invent better ways of using the computer to solve his problems and this becomes the essence and backbone of computer studies.

2.3 Conceptual Framework



Source: Self initiation.

The above figure shows the relationship that existing between computer science (independent variable) and education (dependent variable). It shows that if computer science is taught, computer studies and ICT, it will enhance education by facilitating efficient operations, good information management and socio/economic mobility in the education industry.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter is about research methodology. It dealt with the methods that were used in carrying out the research study such as research design, research site, population, sampling techniques, research instruments, data collection procedures and data analysis

3.1 The Research Design.

The study was conducted through survey design. The study was conducted through survey design, to study the impact of computer and computer studies on education. Both qualitative and quantitative research designs were used to collect numerical the attitudes and opinions data respectively. The researcher used both primary and secondary data obtained using interviews and questionnaires and secondary data from the internet, journals and documentaries.

3.2 Research Site.

The research site chosen for this study was Kapsabet zone with focus on Kapsabet Boys, Chepterit Girls and Kapsabet Girls in Nandi Central District of the Republic of Kenya. The researcher chose them due to proximity to Kapsabet town, their image as premier schools in the zone and the population of students that is ever looking for study opportunities in them.

3.3 Research Population.

Both centers of study have a population of 1500, 900 and 800 students in Kapsabet Boys, Chepterit Girls and Girls respectively, a total of 3200 students. Kapsabet town has a general population of 6500 people. The respondents were drawn from this population using simple random sampling for some and purposive sampling for others. Simple random sampling was used to raise the sample population among the students met at random while purposive sampling was used to choose the Ministry of Education Officer and teachers to be interviewed.

3.4 Sample size, Selection and Techniques.

For convenience of study the sample size was limited to 20 students and 5 teachers from each school using stratified sampling and simple random sampling methods respectively. These methods were employed because it was convenient to the researcher given the time available and economic constraints she experienced.

3.5 Research Instruments.

The researcher used questionnaires and interview wherever applicable. Interviews were used for illiterate respondents where as questionnaires were for the literate. Interviews were used wherever need arose. The questionnaire was organized in two sections A and B. Section A contained personal data while section B questions related to the study topic.

3.5.1 Interview

Interview was used to get information subjective information the respondents such as attitudes and feelings. Other information was collected through observation by the researcher.

3.5.2 Questionnaire

Questionnaire was used to collect information related to the work situation/ environment using objective questions.

3.6. Data Analysis and Processing.

Once data has been collected, it was edited and analyzed to eliminate errors and unwanted data. Each response form the questionnaires was analyzed to make it more relevant, valid, and understandable. Any notes gathered by the researcher through personal observation were considered.

CHAPTER FOUR

DATA PRESENTATION ANALYSIS AND INTERPRETATION

4.0 Introduction.

This chapter analyses data collected from respondents based on the questions set in the first chapter. The research focused on the effect of computer studies on education in secondary schools in Kapsabet zone, Nandi Central District. The research involved analyses, interpretations and presentations of collected data. Presentations were done using tables, charts and graphs. All data was subjected to analysis to eliminate bias and unwanted data from the reported findings.

4.1 The Importance of Introduction of Computer Science/ ICT in the field of education.

Computer science has been found to have tremendous effects on education field.

In order to determine the importance of introduction of computer science/ICT the respondents were asked the following questions:

“Is computer science one of the subjects taught in your school?” This information was presented in the table below.

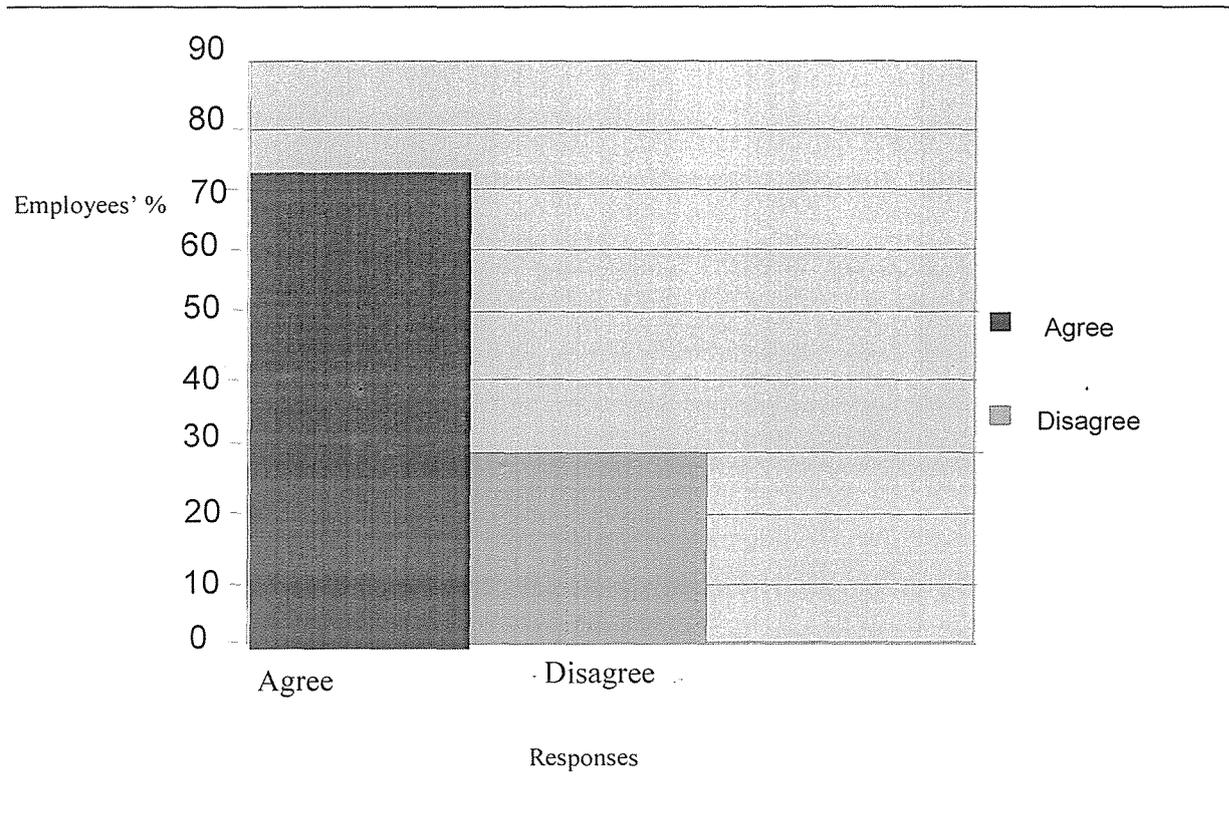
4.1.1 Table showing whether computer science is taught in schools in Aldai zone.

| QUESTION | Is computer science one of the subjects in your school? | | | |
|-------------|---|----------|----------|-------|
| RESPONSES | AGREE | DISAGREE | NOT SURE | TOTAL |
| RESPONDENTS | 6 | 14 | - | 20 |
| PERCENTAGES | 30% | 70% | - | 100% |

Source: interview output of respondents of Kapsabet high school, Nandi Girls and Kapsabet Mixed High School.

This information was also presented on the bar graph below.

4.1.1 Bar chart showing whether computer science is taught in schools in Aldai zone



Source: interview output of respondents of Kapsabet Boys, Chepterit Girls and Kapsabet Girls' High schools.

The above figures show that 14 (70%) respondents agreed that computer lessons had been introduced in their school. Only 6 (30%) respondents said it had not been introduced although they had the interest, due to lack of facilities and required infrastructure saying that though they were interested the schools lacked equipment and finances for facilitation.

4.1.2 Schools' Ability to obtain Computer Equipment.

In most countries especially in the developed world, institutions that teach computer science normally equip this department fully. As it is asserted by Tearle et al, (1999) dealing with educational challenges requires a well developed and equipped modern information system, because information communication technology can be used to extend the curriculum and

provide a wider access to education ICT will provide well refined data and information outputs tailored to individual users in a very personalized way. The researcher wanted to find out how much equipped these schools were. He thus asked the respondents whether they had computer library in their school.

4.1.2 Table showing whether schools were equipped with computer libraries

| QUESTION | Does your school have a computer library in your school? | | | |
|-------------|--|----------|----------|-------|
| RESPONSES | AGREE | DISAGREE | NOT SURE | TOTAL |
| RESPONDENTS | 2 | 18 | - | 20 |
| PERCENTAGES | 0 | 100% | - | 100% |

Source: interview output of respondents of Kapsabet Boys, Chepterit Girls and Kapsabet Girls' High schools.

From the above information it was observed that no school was equipped with enough computers for computer lessons. All the respondents from the three schools denied. Only 2 schools that owned two computers each and were in the process of raising financial support from the government, the Parents and other well wishers to be used for equipping them with computer facilities.

4.1.3 The Frequency of Computer Use in Schools

The computer is an automatic machine that is often used to perform various functions. According to Hutchinson and sawyer (2000) the computer has many uses such as data collection, information production information presentation in usable forms among many others. For the computer and the user, the automatic computer has facilitated the retrieval, manipulation and analysis of data in usable forms on diskettes and CDs (storage software) for use to meet specific needs. This way the computer has had relevance in every sphere of production.

In order to establish how often computers are engaged respondents were asked the following question, "How often are the school computers engaged?" The following table shows the responses provided.

4.1.3 Table showing how often the available computers were engaged.

| QUESTION | Does your school have a computer library? | | | |
|-------------|---|-------------|----------|-------|
| RESPONSES | Engaged | Not engaged | Not sure | TOTAL |
| RESPONDENTS | 13 | 5 | 2 | 20 |
| PERCENTAGES | 65% | 25% | 10% | 100% |

Source: interview output of respondents of Kapsabet Boys, Chepterit Girls and Kapsabet Girls' High schools.

The 13 respondents from 2 schools said they were fully engaged daily either in lecture sessions or official duty. 5 The one school that did not have a computer relied on services from a local typing bureau near the school while 2 were not sure. This showed that computers are highly used and computer knowledge is applied daily in the schools to perform important duties like printing, typing, editing and storing important information.

4.1.4 Relevance of Computer Science in Schools.

It has been observed that computers are used to perform various functions. These include storage of important office information, printing and typing among many. Ned Chaplain, (1971), in Justifications of computer learning has submitted the following argument in justification of computer, computer studies, information systems and its application saying, "These factors emerge from the very fabric of the way men live, and how they use tools and organize life". He says that due to explosion of knowledge, diversification of operations and technological complexity, the computer has found use in organization that wish to be more responsive to ever growing problems to solve, data to store; and information to store and manage.

To examine the relevance attached to computer studies and, use and application the respondents were asked whether ICT had such relevance that warranted introduction in every school. Below is the table that illustrates the answers given to the question above.

4.1.4 Table Showing The Relevance Of Computer Science As A Subject In Schools

| QUESTION | Is ICT an important subject that should be taught in schools? | | | |
|-------------|---|----------|----------|-------|
| RESPONSES | Agree | Disagree | Not sure | TOTAL |
| RESPONDENTS | 12 | 6 | 2 | 20 |
| PERCENTAGES | 60% | 30% | 10% | 100% |

Source: interview output of respondents of Kapsabet Boys, Chepterit Girls and Kapsabet Girls' High schools.

12 respondents agreed that it was an important subject considering the extensive use of computer in most fields of work. They also said computer knowledge was a prerequisite for all most organizations and its introduction as an examinable subject was proved that the ministry had recognized that fact. 6 disagreed and said that computer science was an expensive subject that would be a burden on both students and parents. 2 respondents were not sure. They said life would still run normally as it did without computer. Therefore it was deduced that many respondents 12 (60%) felt that computer studies were an important subject that should be taught in schools because of its demand on the labor market. Those who disagreed cited the expenses involved in equipping schools with needed computer facilities and lack of resources to do it.

4.2 The Importance of Introduction of Computer Science in the Field of Education

The field of education remains the most important field among all due to the fact that it fundamentally equips all human resources who provide services in any other field. For people to have technical know how of managing information, organization growth, scientific research and meet deadline on time, it is important for them to learn how to do things more effectively and efficiently. The education industry has taken advantage of the way the computer age has simplified learning and emphasized the relevance of expansion and management of computer studies. Tearle et al, (1999) submits that this will enable learners and workers to combat common information management challenges.

4.2.1 Respondents' acquaintance with the Computer.

It had been observed and established, from study, that computers in schools are used daily as production or teaching tools (E-learning and teleconferencing).

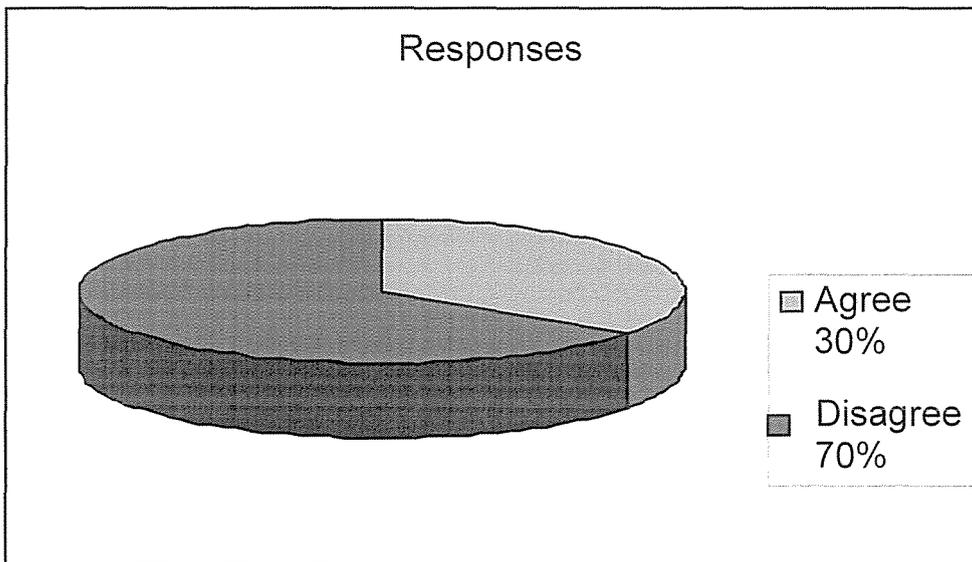
To determine the relevance of computers in learning institutions, respondents were asked the following questions. "Are you acquainted with the computer?" The pie chart below shows how respondents answered the question.

4.2.1 Table Showing Respondents' acquaintance with the Computer.

| QUESTION | Are acquainted with the computer | | | |
|-------------|----------------------------------|----------|----------|-------|
| RESPONSES | AGREE | DISAGREE | NOT SURE | TOTAL |
| RESPONDENTS | 7 | 13 | - | 20 |
| PERCENTAGES | 30% | 70% | - | 100% |

Source: interview output of respondents of Kapsabet Boys, Chepterit Girls and Kapsabet Girls' High schools.

4.2.1 Chart Showing Whether Respondents are well acquainted with the Computer.



Source: interview output of respondents of Kapsabet Boys, Chepterit Girls and Kapsabet Girls' High schools

From the above table and chart it can be seen that many respondents 13 (65%) were not acquainted with computer while 7 (35%) were. This expressed the need for introduction of computer studies in high schools. This proved that acquaintance with the computer was limited. Respondents thought computer knowledge would be important to them both in school and after. All respondents said none of their schools was equipped with computers for teaching except in the headmasters' and accounts offices and these were not accessible for students. All respondents agreed that computer would be useful to them after school saying that most employers and job specifications highlighted computer knowledge as a prerequisite for employment.

4.3 The Impact and Application of Computer Science

In this information explosion age, the most important discovery was the computer. The computer ushered the world into effective knowledge management and control for useful purposes. The computer has had impacts in the field of science for its use in scientific research, analysis and space exploration. Severe environments come up when man extends his area of action beyond the normal. Then he encounters environments that are dangerous to life. Example include the heat of a kiln, conditions of outers space, observation of climate at an ant arctic site, and need to respond to things that cannot be seen or felt like nuclear processes. Also Costs of handling information have gone high. For instance clerical workers rose by 725% while costs of handling data rose by 330% between 1900 through 1950. To keep these costs in line computers must be adopted", said Ned Chaplain, (1971).

4.3.1 The Positive Effects of Computer on the computer Student.

The researcher found it necessary to evaluate the effects of computer science on the student. Respondents were asked how useful they thought the computer is in areas they have visited. They answered as it is shown in the illustrations below.

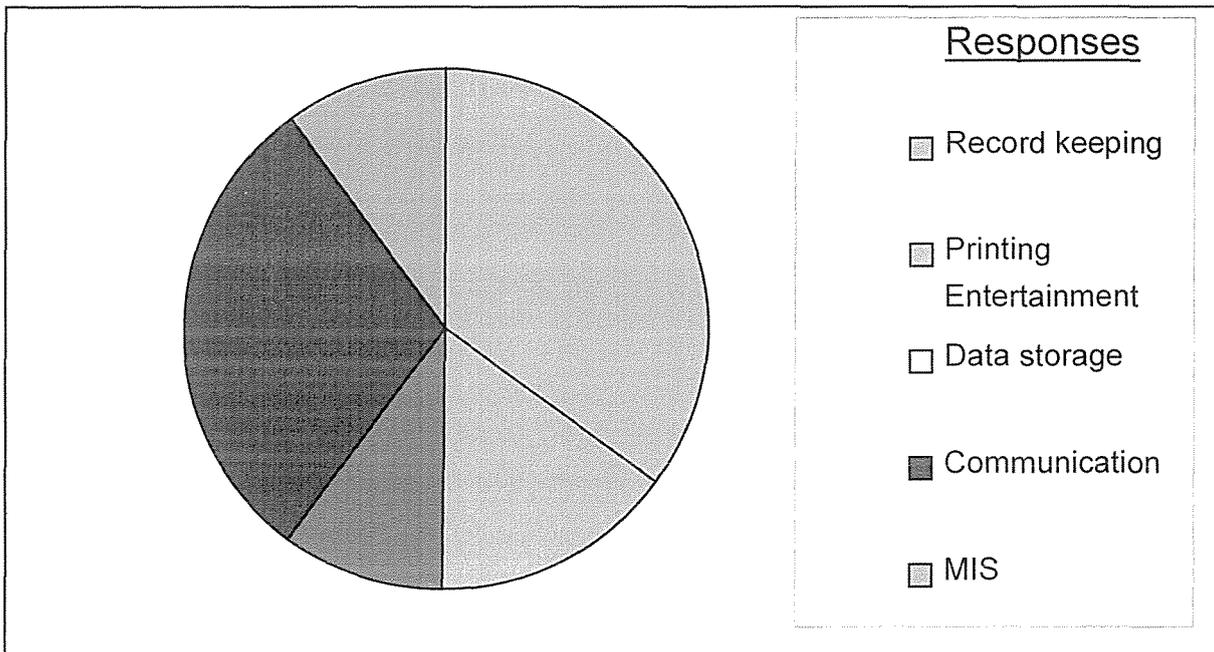
4.3.1 Table showing the uses and applications of computer known to the respondents

| QUESTION | Mention computer uses known to you. | | | | | TOTAL |
|-------------|-------------------------------------|-------------------------|---------------------------|---------------|--------------------------------|-------|
| RESPONSES | Record keeping | Printing, entertainment | Data storage reproduction | Communication | Management Information Systems | |
| RESPONDENTS | 7 | 3 | 2 | 6 | 2 | 20 |
| PERCENTAGES | 35% | 15% | 10% | 30% | 10% | 100% |

Source: interview output of respondents of Kapsabet Boys, Chepterit Girls and Kapsabet Girls' High schools

The above information was presented on pie chart as shown below.

4.3.1 Pie chart showing the uses and applications of computer known to the respondents



Source: interview output of respondents of Kapsabet Boys, Chepterit Girls and Kapsabet Girls' High schools

From the above information all students were aware of at least one or more uses of computers, revealing computer knowledge was applicable in many fields known to them. This therefore highlights the importance of computer studies in learning institutions and its general impact on education. Also each respondent agreed that they have visited organizations such as hospitals, banks and supermarkets where computers were used by secretaries and tellers to dispense services to clients. All the 20 respondents agreed that computer science/ICT was an important subject in the modern business world and employment circles.. Out of the 20 respondents, 7 mentioned recordkeeping, 3 mentioned printing and entertainment 2 mentioned information management while 2 mentioned Information Control Systems in banks, Multi National Corporations and supermarkets.

4.3. 2 Negative Effects of Computer on the Student

Despite the useful application of computer knowledge detrimental sides do come along with it. Hutchinson (2000) says the advent of computer took away privacy, people's jobs and dignity. People can be monitored on screens as they work and what they say or do can be used against them in any arising case against them. Introduction of computer came along with piracy of software and this has led to introduction of Ethics as a subject in many learning organizations.

To explore the negative effects of computer, the respondents were asked whether they knew of any side effects of computer. Among those mentioned are shown in the table below.

4.3.2 Table showing the uses and applications of computer known to the respondents

| QUESTION | Mention the negative uses of computer known to you. | | | | | TOTAL |
|-------------|---|-------------|--------------------|----------------|----------|-------|
| . RESPONSES | Software piracy | Pornography | Killing creativity | Health hazards | laziness | |
| RESPONDENTS | 4 | 10 | 2 | 2 | 2 | 20 |
| PERCENTAGES | 35% | 15% | 10% | 30% | 10% | 100% |

Source: interview output of respondents of Kapsabet Boys, Chepterit Girls and Kapsabet Girls' High schools

From the information recorded above, respondents mentioned negative effects of introduction of computer. They mentioned pornography (10), software piracy (4), killing of creativity (2), laziness (2) and health hazards (2) to the eyes and backs of those who used computer often. However, the above notwithstanding, the respondents emphasized that the computer has more positive than negative effects on the user in the world at large.

4.4 Government's Role in Computer Science/ICT implementation.

Every government in the world has the responsibility towards educating its citizens. This was found to be true in the case of Kenya in which the government employs teachers as learning facilitators through the Teachers' Service commission. The challenge therefore is how to stimulate the student and teachers to both enroll into the computer science program and teach it respectively. This is the most momentous computer challenge upon students, learning institutions, educationists and governments alike that must be overcome.

4.4.1 Interview between the Teachers and the Researcher.

Most learning institutions use facilitators to run programs. This includes computer science/ICT. To determine the effect of computer studies on education in learning institutions the researcher conducted the following interview with the teachers from the sampled schools. Below are the question and answers:

1. **Question:** Does your school teach computer studies/ science?

Response: *2 teachers out of the 2 schools of the 3 confirmed that they had introduced computer studies in their schools. Only 1 said they had not started the study due to lack of needed facilities.*

2. **Question:** If yes, how do you rate students have been receptive and have great interest in computer studies?

Response: *The two teachers confirmed that their students were very receptive and interested in computer science and application packages.*

3. Question: Does the Ministry of Education and government support computer studies in schools in Kenya?

Response: *Yes. They have of late introduced computer studies and ICT as a compulsory subject on in KIE syllabus.*

4. Question: If yes, what kind of support does the government provide to enhance computer studies in high schools?

Response: *They intend to fund all and equip all high schools in the country with computer equipment and find donors to do the same.*

5. Question: What is your rate of computer studies importance

Response: *All the 3 teachers confirmed that computer science was relevant for learners and users in school and in other fields respectively.*

4.4.2 Interview with the Education Officer

The education officer was asked several questions to establish what the Ministry of Education was doing to enhance computer science in schools. Below are the questions and answers:

1. Question: do you consider computer science/ICT as a vital resource in education?

Response: *Absolutely.*

2. Question: What does the Ministry of education do to enhance computer studies in schools?

Response: *We in the Ministry of Education have introduced ICT as an examinable subject and made it mandatory as any other subject such as mathematics or English . We have petitioned the government for more support in form of computer equipment and library to support the curriculum.*

3. Question: What hindrances does the ministry face in introducing and enhancing computer science/ICT in the district and the country?

Response: *the biggest hindrance is lack of facilities and sufficient funds to support the new subject whose implementation is expensive.*

4. Question: What in your own view should be done to overcome the problems mentioned in 3 above?

Response: *the government should come in to facilitate and implement the studies. Computer infrastructure needs to be put in place right from primary to secondary schools. Such a move will prepare the students well for relevant advancement in the same subject.*

CHAPTER FIVE

SUMMARY OF FINDINGS AND DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction.

This chapter presented the discussions, conclusion and recommendations related to the effect of computer science/ICT in secondary schools drawn from the findings of the research. Computer science was defined as the study the use and application of computer knowledge. Its effect, relevance and application was thus determined by exploring the importance of introduction of computer science/ ICT in the field of education, the relevance of computer science on learning institutions and the impact of computers in other fields.

5.1 Discussion

The computer has become an important and vital day to day instrument for workers, students and institutions. In determining the effect of computer studies in education in secondary schools, it was revealed that information need and explosion has led to the need to study learn and apply the computer at work and in school. For this reason, the Ministry of Education had considered introducing computer as a compulsory subject in all high schools in Kenya. Moreover it was established that many students had shown interest in the subject and many employment services considered computer knowledge not only as an advantage but a prerequisite for effective service delivery.

It was established that computer was relevant in learning institutions and other fields. This was seen when most of the respondents confirmed that in their schools, organizations and work places, computer is used to perform multiple important functions. Respondents also highlighted the importance of computers saying that the widespread use of computer in places such as schools, banks, hospitals, travel agencies and supermarkets had proved that computer knowledge was on demand.

Its application includes use for information storage, production industries, travel agencies, manufacturing and transport industries. These uses and widespread application has necessitated the introduction and study of ICT as a fundamental subject in the field of education.

5.2 Conclusion.

It has been observed that computer science /ICT has great effect on education. In many organizations most of the work processes are becoming computerized for effectiveness and efficiency. This is as a result of so much information needed in the learning processes at school and work processes in organizations.

The main objective was to examine the effect of computer studies on high school education in high schools in Kapsabet zone, Nandi Central District. It was observed that computer studies are important and needed by students at school and thereafter. It was further noted that since computer knowledge application is relevant in many aspects and fields, its study was imperative. Its use ranges from teleconferencing, computer networks, communication and e-learning facilitation. As students study computer science, they will become more useful and in the development of the country as computer literate human personnel. Therefore students must enroll study and learn how to use computer in their daily work practices. The Ministry of Education had discovered this and plans were underway to introduce it as a compulsory subject in the KIE syllabus for the whole country.

5.3 Recommendations

On the basis of the research findings and analyses, the researcher cited several areas that need improvement in order to enhance the computer science in the field of education.

Equipment and facilitation.

The researcher recommends that both schools and students must be involved in equipping schools with computer facilities through developing interest to learn and provision of materials respectively. This can be done through seeking for funding and donations from relevant stake holders and donors.

Enhancing computer training for teachers.

It fundamental to the success of this program for more teachers to be trained so that they can in turn provide training for students in high schools and other learning institutions. Computer science should therefore be taught in all tertiary and higher institutions of learning in order to achieve this goal.

Government policy and funding

The government through the parliament needs to draft computer friendly policies. This will go along way to augment the syllabus passed by the Ministry of Education to make computer science an affordable subject in all schools. Laws that reduce taxes levied on electronics and especially computers should be discussed and passed by government.

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Office of the Director

TO WHOM IT MAY CONCERN:

Dear Sir/Madam,

RE: INTRODUCTION LETTER FOR MS/MRS/MR.....JEPKOECH ROSE

REG. #.....BED 115578/71/IDF

The above named is our student in the Institute of Open and Distance Learning (IODL), pursuing a ~~Diploma~~/Bachelors degree in Education.

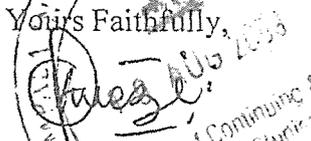
He/she wishes to carry out a research in your Organization on:

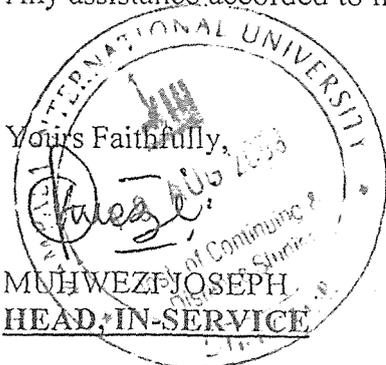
Effects of Computer Studies on
Academic performance of Secondary
School Students. A case Study of
Kapsabet zone Nandi Central District Kenya.

The research is a requirement for the Award of a ~~Diploma~~/Bachelors degree in Education.

Any assistance accorded to him/her regarding research will be highly appreciated.

Yours Faithfully,


MUHWEZI JOSEPH
HEAD, IN-SERVICE



APPENDICES

APPENDIX I

STUDENT'S QUESTIONNAIRE.

Dear respondent,

This questionnaire seeks to gather information on the impact of computer studies on the education. The information is for academic purposes and utmost confidentiality will be observed.

Please feel free to provide the information.

SECTION A:

PERSONAL INFORMATION

Fill in the spaces provided.

1. Gender
2. Age
3. School

SECTION B

4.1 The Importance of Introduction of Computer Science in the Field Of Education

1. Is computer science one of the subjects taught in your school?

Yes No

2. Do you have computer library in your school?

Yes No

3. Considering the number of students enrolling for computer classes, is computer science/ICT is a subject on demand?

Agree Disagree

4.2 The relevance of computer science in learning institutions.

1. You're acquainted with computer use and application

Agree Disagree

1. Most of our school departments are equipped with computers

Agree Disagree

2. In teaching students, computer science/ICT is emphasized as an examinable subject.

Agree Disagree

3. Most employment services, employers and organizations request for computer knowledge as a prerequisite for consideration.

Agree disagree

4.3 The impact of computer application to other fields

1. Computers are used in most business premises, offices and organizations that you visit

Agree Disagree

2. With the widespread use of computers computer science/ICT is a vital subject for students in schools

Agree Disagree

3. Mention some of the computer uses and applications that you know of.

- i.
- ii.
- iii.
- iv.
- v.

APPENDIX II

TEACHER'S QUESTIONNAIRE.

Dear respondent,

This questionnaire seeks to gather information on the impact of computer studies on the education. The information is for academic purposes and utmost confidentiality will be observed. Please feel free to provide the information.

SECTION A: PERSONAL INFORMATION

Fill in the spaces provided.

1. Gender
2. Age
3. School

SECTION B.

1. Does your school teach computer studies/ science?

Agree Disagree

2. If yes, how do you rate students have been receptive and have great interest in computer studies?

Agree Disagree

3. the Ministry of Education and government support computer studies in schools in Kenya

Agree Disagree

4. If yes, what kind of support does the government provide to enhance computer studies in high schools?

i.....

ii.....

5. What is your rate of computer studies importance

Relevant

May be relevant

Neutral

Not relevant

THANK YOU FOR YOUR CONTRIBUTION

APPENDIX III

QUESTIONNAIRE FOR DISTRICT EDUCATION OFFICER

Dear respondent,

This questionnaire seeks to gather information on the impact of parenting on the education of children with special reference and interest on the girl child. The information is for academic purposes and utmost confidentiality will be observed. Please

SECTION A: PERSONAL INFORMATION.

Fill in the spaces provided.

1. Gender
2. Age
3. Occupation

SECTION B

Fill in the spaces provided

1. What does the Ministry of Education do to enhance computer studies in schools?
 - i).....
 - ii).....
 - iii).....
2. What is the main attitude of students in your district concerning computer studies?
Receptive Not receptive

3. Is computer studies part of the curriculum in Ministry of Education?

Yes No

4. What hindrances is the government facing in enhancing computer studies in schools

.....
.....

5. Is there anything that can be done apart from the above to promote computer studies in Kenya?

Yes No

6. If yes mention what.

.....
.....

7. What is the government doing to solve the problems in 3 above?

ii).....

iii).....

THANK YOUR FOR YOUR CONTRIBUTION

APPENDIX IV

DEFINITIONS OF TERMS.

Computer hardware: The physical component equipments that make up the computer that can be touched and seen by the eye without intelligence and is of no use unless it's commanded or told what to do. (H.L Capron 2002)

Computer software: These are programs/instructions written to provide services to the users of the computer system. (Trembley, 1989).

Computer program: These are lists of instructions that the computer understands and uses to solve problems.

A computer professional: Is a person in the field of computers. Example are a programmer, a systems analyst or computer operator, who has formal education in the technical aspects of computers and is concerned with supporting the computers physical functions to produce information for the user.

A computer user: Is a person without much technical knowledge of computers but who makes decisions based on reports and other results that computers produce.

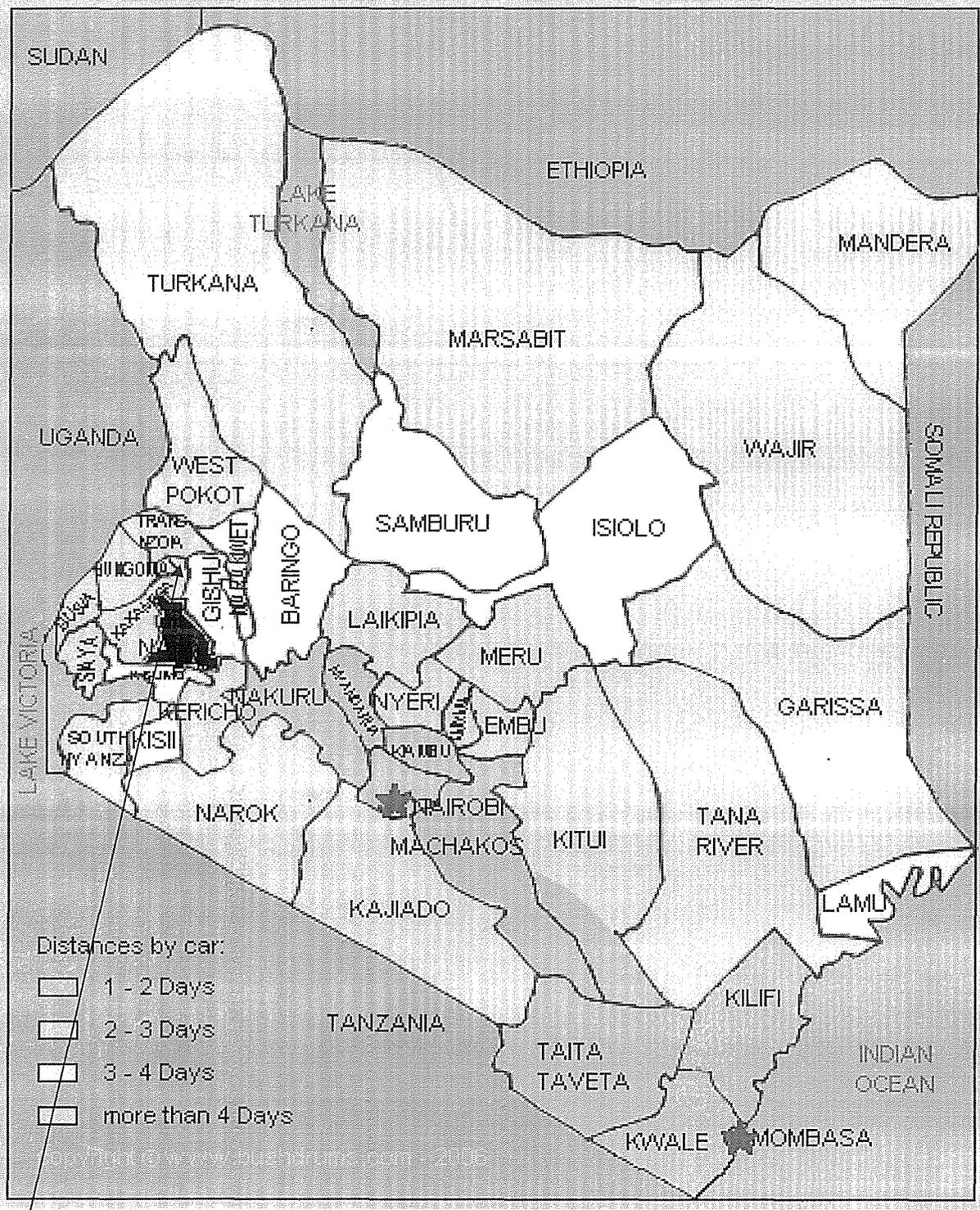
Computer literacy: Means having a basic understanding of what a computer is and how it can be used as a resource to produce necessary information to make intelligent decisions.

Computer awareness: It refers to being aware of the importance, versatility and pervasiveness of computer in our society.

Computer knowledge: Refers to learning what computers are and how they work.

Interaction: Learning computers by interacting with one by using it for simple applications.

MAP SHOWING NANDI CENTRAL DISTRICT OF THE REPUBLIC OF KENYA



Nandi Central District is the area highlighted in black on the map above.