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**AN ASSESSMENT OF FACTORS CONTRIBUTING TO
EDUCATIONAL WASTAGE IN SECONDARY SCHOOLS IN
KERICHO COUNTY**

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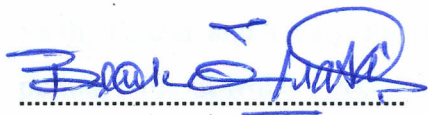
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DECLARATION

This project is my original work and has not been presented for a Degree in any other University or for any other award.



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DEDICATION

This research project is dedicated to the Almighty God, who gave me the physical and mental strength to undertake and accomplish this work in the prescribed period of time, and to my beloved wife Emily Orwasa and our lovely children- Hillary, Fancy, Faith, Fauzia and Hedly for their inspiration and encouragement during my study period, without which I could not have made it to this level.

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LIST OF ACRONYMS AND ABBREVIATIONS

ACM	:	Apparent Cohort Method
BOG	:	Board of Governors
CDE	:	County Director of Education
CWR	:	Cohort Wastage Rate
DEO	:	District Education Officer
EFA	:	Education for All
EPF	:	Education Production Function
FAWE	:	Forum for African Women Educationists
FDSE	:	Free Day Secondary Education
FPE	:	Free Primary Education
GDR	:	Grade Dropout Rate
GER	:	Gross Enrolment Rate
GRR	:	Grade Repetition Rate
KACE	:	Kenya Advanced Certificate of Education
KCPE	:	Kenya Certificate of Primary Education
KCSE	:	Kenya Certificate of Secondary Education
KETEPA	:	Kenya Tea Packers Ltd
KNEC	:	Kenya National Examinations Council
KNUT	:	Kenya National Union of Teachers
KUPPET	:	Kenya Union of Post Primary Education Teachers
MOEST	:	Ministry of Education, Science and Technology.
MDGs	:	Millennium Development Goals
PTA	:	Parents Teachers Association
PTWSD	:	Proportion of Total Wastage Due to Student Dropout
PTWSR	:	Proportion of Total Wastage Due to Student Repetition
RCM	:	Reconstructed Cohort Method
RoK	:	Republic of Kenya
SPSS	:	Statistical Package for Social Sciences

TCM	:	True Cohort Method
TSC	:	Teachers Service Commission
UN	:	United Nations
UNESCO	:	United Nations Educational Scientific and Cultural Organization
UNICEF	:	United Nations Children Education Fund
USAID	:	United States Agency for International Development

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ABSTRACT

The purpose of the study was to assess the factors that contribute to educational wastage in Kericho County. The study sought to achieve the following four objectives: (i) to determine the nature of educational wastage in secondary schools in Kericho County, (ii) to identify school and home-based factors which lead to educational wastage in secondary schools within Kericho County, (iii) to identify socio-economic factors contributing to wastage among secondary school students in Kericho county, (iv) to identify policies and strategies at National, County and at school levels aimed at managing educational wastage in Kericho County. Descriptive survey was used to describe the phenomenon under study. The study was conducted in two districts of Kericho County and involved sampled stakeholders in education. Data was collected through a questionnaire, interview schedule for the principals and observation schedule for the researcher. The data was manually coded and descriptive statistics used for analysis. The statistical package for social sciences, SPSS, was used to analyze data and to determine the correlation co-efficient of each independent variable on the stepwise multiple regression analysis as well as the interactive effect of independent variables. A pilot study was conducted to validate as appropriate the research instruments before the actual research commenced. The researcher used split-half method to determine the reliability of the research instruments which scored, $r = 0.78$. Qualitative data was collected and the findings were presented by use of descriptive narrative, frequencies and percentages. Findings revealed that school and home-based factors contribute to poor performance, repetition and the likelihood of students to drop out of school and the steps that need to be taken to minimize and eventually eradicate educational wastage. The results indicated that the retention rate in all the schools and for all the cohorts is above 78%. The study findings also revealed that repetition rates for boys and girls was 1.7% to 5.1% and 2.2% to 5.1% respectively. The dropout for boys was higher than that of girls at 11.3% to 21.2% and 6.9% to 7.4% respectively for all the cohorts in all the classes. The dropout rates for the base year 2009 were 9% in form 1 and 2. The proportion of Total Wastage due to Student Repetition (PTWSR) was 2.2% to 4.0%, while the Proportion of the Total Wastage due to Students Dropout (PTWSD) ranged between 6.7% and 12.7%. Dropout rates were higher in mixed day secondary schools than in single sex and mixed boarding secondary schools. Dropout rates for boys in all the categories of schools were higher than those of the girls. The County schools performed better, attaining a mean score of 8.283 for the same period. District/Boarding schools had a mean score of 6.4475 over the four year period. From the study, it was concluded that poverty was the main factor influencing educational wastage. Dropout rate for the boys in all the categories of schools was higher than that of the girls. More boys than girls dropped out of schools in the county. The study recommended the introduction of single sex schools and reinforcement of the government's policy on automatic promotion of students to the next class as a prerequisite for reduction of educational wastage. Further, this study recommends that further research should be conducted to establish the factors that influence poor maintenance of records and data and its effects on evaluation of internal efficiency in secondary school level of education.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

This chapter presents the introduction of the study; it begins with a detailed explanation of background of the study, followed by the problem statement, objectives of the study, research questions, significance of the study, the scope of the study, theoretical framework, conceptual framework and lastly, the definition of the significant terms.

1.2 Background of the study

Kenya's guiding philosophy for education is the concern that every Kenyan has the inalienable right to basic education no matter his or her socio-economic status (Government of Kenya, 1997) The provision of education opportunities has been and still is a standing objective of the Government of Kenya since independence in 1963. It is considered by different stakeholders in the country as an important vehicle for self-advancement to socio-economic and political development. Education has therefore been seen as a fundamental strategy for human capital development and a crucial vehicle for enhancing the quality of life; it has also now become clearer that when educational opportunities are opened to girls and women, such benefits are even greater.

Over the last 40 years, the government, households, communities and the private investors have strived to enhance the development of education in the country. Such investment has been in line with the philosophy spelt out in the Sessional Paper No. 10 on African Socialism and its Application to Planning in Kenya, (Republic of Kenya, 1965). The efforts of various players in the education sector have been guided by the various policy documents such as National Development plans and Sessional

Papers (in particular Seasonal Paper No 10, 6,1 and 2 of 1965, 1988, 1992 and 1996 respectively. This implies that any wastage among school students leading to non-completion of programs may jeopardize the main objective of education as a socio-economic factor for development.

1.2.1 Government of Kenya's Commitment to Education For All (EFA)

The participation of the Government of Kenya in the Jomtien Conference in 1990 and its subsequent endorsement of EFA declaration reinforced the commitment that Kenya has on the provision of education to its citizens. It is noted that two crucial events laid the foundation for domesticating Education for All (EFA) commitments in the country. These are National Conference on Education For All held in Kisumu in 1992 and National Symposium on the Education of the Girl-child held in Machakos in 1994 (Republic of Kenya, 2000).

Due to the ever rising population and development advancement, the government has been allocating large shares of its total budget to expand and improve the quality of education in Kenya. This is evidenced by the budget allocation to the Ministry of Education, for example the expenditure in education increased from Ksh 72.29 billion in 2003 to Ksh.114.36 billion in 2007. The ratio of recurrent expenditure in 2003/04 was 94.36% and has marginally declined to 93.08 %. The ratio of salaries in the total expenditure has declined marginally from 86.2 % in 2003/04 to 84.8 % in 2006/7 (Republic of Kenya, 2006). Kiumi and Chiuri (2005), assert that the reason why the government gives a large share of allocation to the Ministry of Education as compared to other Ministries is the expected benefits accruing from education. In addition, Becky (1990) also observes that education is the crucial factor in

development that leads to human resource development and that no investment is considered more lucrative than the education and training of a country's citizenry.

Investment in human capital is the expenditure of resources on education and training of people so as to increase their productivity in terms of work input. The government's expenditure on education is therefore an investment in human capital which is expected to increase productivity and enhance economic growth, (Kiumi and Chiuri, 2005; Ayot and Brigs, 1990). Therefore, a clear track of education and training of the citizens to the completion of their programs will seal the gaps of manpower wastage and eventual shortages in the labour market. The government's commitment to this course will ensure achievements of objectives geared towards socio-economic development of this nation.

1.2.2 Educational Wastage

The term wastage comes from the language of economists where education is compared to a factory with capital investment in the plan and raw materials being processed into finished products (UNESCO 2008). The same source argues that an output of a given cycle of education is the number of students who complete the cycle at the right time. Kiumi and Chiuri (2005) refer to educational wastage as the dual problem of class repetition and dropout. It may be deduced here that those who repeat deplete resources and create wastage, and those who stop their program without completion hence the knowledge they gather is half-achieved and not useful for man power purposes, constitutes wastage as well.

According to statistics given by UNESCO (1995) in their statistical year book on public expenditure on education, the majority of world governments allocate big

shares of their total budget to education. Therefore, educational input is a government and other educational stakeholder's expenditure in education and the output expected is human capital. The term wastage as used in education is likened to "failure in schools" (UNESCO 2005). The same source continues to argue that if educational institutions fail to meet their objectives of ensuring that students reach target achievement goals, retain students within the educational system, realize high flow rates students who complete and have skills that are needed in the job market, provide universal education, bring on board children into the education system, putting in place appropriate educational objectives, then wastage in education takes its toll, hence "failure in schools". What is being wasted here is human capital (Kiumi and Chiuri, 2005).

Dropping out of school depending on the level of opting out implies that less skill is acquired as compared to those attained by a student who successfully completes the program. Repetition adds an extra burden in terms of expenditure to an educational system. If a few graduates of a particular terminal level of education are considered qualified for the labour market after an examination, or if the drop out and repetition rates are high, then the expenditure on education is not commensurate with the benefits, whether these are social or economic, this is wastage in education (Mutua and Namaswa. 1992). It is necessary to reduce this unnecessary extra cost on education because secondary education is often expensive in Africa in both absolute and relative terms (World Bank, 1988). Kizerbo (1990) argues that ineffectiveness and inefficiency in education can be seen in terms of the number of school drop outs and repetition.

1.2.3 Objective of Secondary School Education

Secondary school level of education in Kenya has several objectives to fulfill as put forward by the Government of Kenya in 1998. These objectives include:

- i) To promote beyond the primary school experience, growth of the whole person through integrated development of mental, physical and emotive (moral, spiritual and aesthetic) attributes and abilities.
- ii) To increase knowledge on economic production factors and their relationship with the social context and the natural environment
- iii) To promote social equity through provision of education to an interesting number of adolescents including those from disadvantaged communities and households, girls and the handicapped.

From the above information the researcher asserts that a secondary school dropout whose qualifications have not been measured by a gradable examination like the Kenya Certificate of Secondary Education is believed to have no skills and experiences that may in the first place create his own employment or be easily employed in a country where unemployment rate is as high as it is in Kenya today. This results in wastage of educational resources already invested in his/her education. It was important to carry out a study to ascertain factors that contribute to students' dropout so that lasting solutions can be found based on the facts found from the study.

According to the Republic of Kenya (2004), primary education is offered to children between age 6 and 13. Out of the total enrolments into this level of education, only 47% of those who complete primary education proceed to the 4 years' secondary education. Public universities enroll 12% of this group for further education while

others join middle level colleges to train for various professions at certificate and diploma levels. For many, the level is terminal.

Therefore the need for life skills which the Kenyan child need to acquire must be seen against this background. Indeed, one of the goals of both primary and secondary education in Kenya is to prepare the learners to fit into and contribute to the well being of society, and to fit in the world of work. These two goals address the competences for life which the learner should acquire. The life competencies can be categorized into two broad areas. The first is that the learner should get adequate knowledge and skills. The second focuses on the learners being able to fit into a social world. This is the real world, knowing to live with others and dealing with daily challenges in the society. Quality education is that form of education that stresses the acquisition of living values by learners. It inculcates universal and ethical values such as compassion, courage, honesty, tolerance and truthfulness (K1E, 2002). This helps in nurturing balanced individuals, thus creating a humane society. Values are what promote human beings to personhood. These values are inherent in all people and acting contrary to them negates one's personhood. Animals live by instinct, they are driven by instinctive forces and are not answerable for their acts. These instincts drive them to find food, shelter, and to procreate. Human beings are gifted with an intellect that helps them to reason about the right course of action, especially in moral aspects. There are three basic institutions that influence value education - the home, the church/religious institution and the school.

A close look at the national goals of education in Kenya would help explain how closely related they are to the perceived need to inculcate quality education. The goals as explained by the Kenya Institute of Education (KIE, 2002) are outlined as follows:

1. To foster nationalism, patriotism and promote national unity.
2. To promote the social, economic, technological and industrial needs for national development.
3. To promote individual development and self fulfillment
4. To promote sound moral and religious values
5. To promote social equality and responsibility
6. To Promote respect for and development of Kenya's rich and varied cultures
7. To promote international consciousness and foster positive attitudes toward other nations.
8. To promote positive attitudes towards good health and environmental protection.

From the national goals of education, one can isolate terminologies that indicate Kenya's commitment to providing quality education. It should be noted that the importance of imparting life skills to learners is well articulated in the EFA goals. The EFA (2000) assessment country report goes on to say that EFA takes cognizance of the fact that about one million children of primary school going age in Kenya are not in school due to cultural historical factors, poverty and effects of HIV/AIDS. With the inception of Free Primary Education (FPE) and the current government's efforts for free tuition in secondary schools, opportunities were to be created for many poor children who in the past could not access education due to the user charges. Non-formal alternatives which offer quality education need to be considered to cater for the out-of-school youth.

According to Kenya National Commission of Human Rights (KCHR, 2007) Report, the recognition of persons with disabilities as human beings with full and equal right evolved slowly during the decades proceeding from the 1948 Universal Declaration of Human Rights (UDHR). The shift from a “caring” to a “right-based” approach to matters of disability began in 1970s. The 1971 General Assembly Resolution on Declaration on the Rights of mentally Retarded persons noted that such persons enjoy the same rights as all other persons.

According to MOEST (2004), Kenya is committed to achieving EFA goals which include, reaching out to disadvantaged and vulnerable children and those in difficult circumstances which include girls, orphans, school dropouts, children with special needs, child workers, children of nomadic pastoralists, street children, refugees, especially challenged and disabled children. Bursaries targeting the poor, bright and the needy are allocated to both secondary and university students. This aims at improving access and retention for the vulnerable groups, hence avoiding wastage.

The connection between education and personhood is in the process of education helping learners become full persons i.e. to help learners acquire in a more complete way those powers of rationality, feeling and acting responsibly. To be responsible for what one does and for one's destiny is an essential part of being a person.

1.3 Statement of the Problem

The Ministry of Education is faced with a number of educational challenges. These include meeting greater public demand for quality education and training both as a human right and as an essential investment in the quest to attain the status of a newly

industrialized country. These challenges point to the need for the education sector to properly play its role of developing a highly skilled human resource base.

Since 1985, Kenya has followed the 8-4-4 system of education (8 years of primary education, 4 years secondary and at least 4 years university education for undergraduate studies). Under this system, the objectives of primary schooling include learning opportunities which enable pupils to acquire basic knowledge and skills for the world of work in the context of economic and human resource needs of the nation. Although there has been considerable investment and participation in the 8-4-4 system of education, it has featured prominently in the national political and academic discourse. The debate has centered on its relevance and efficiency in the last decade. The increased public demand for education and training has stretched the Government budget to the sector. The Government has therefore intensified partnerships and collaboration with other partners including parents and communities, individual investors, civil society and donors in the financing of education and training (Republic of Kenya, 1998).

The National Secondary School repetition rates have generally reduced from 1.8 % in 1999 to 1.3 % in 2003. However, the highest repetition rate was recorded in 2003 in Rift Valley and North Eastern Provinces at 2.6 and 3.4 %, respectively while the lowest was registered in Central Province at 0.5 %. On average, boys recorded higher rate than girls over the period. During the years 1999 and 2003 the secondary dropout rates was 5.5 and 6.6 %, respectively: Again, Rift Valley Province recorded the highest rate, (9.5 %) while North Eastern registered the lowest (3.8 %). Rift Valley Province further recorded a sharp increase in repetition from 4.6 % in 1999 to 9.5 % in 2003 with the girls' rate being 10.3 %.

The problem of dropout and repetition rate in secondary schools in Kericho County is a matter of great concern in the two administrative districts of Belgut and Kericho. Students who sat for Kenya Certificate for Secondary Education (KCSE) in the year 2006 were less by 482 their enrolment number in 2003; this is a high wastage rate for just one cohort (District Education Office (DEO), Kericho 2007). The same source explains that this form of wastage poses a significant challenge to all educational stakeholders. This is because repeaters disproportionately used resources allocated to the secondary school education while the dropouts wasted educational resources invested in their education, (Kiumi and Chiuri, 2005). In addition, dropouts miss a chance to further their training. Dropout behavior is a serious problem that adversely affects the future plans of the Kenyan youth. Bishop (1994) observes that there is an increased need for skilled labour which contributes to and is a necessity for economic growth. This implies that wastage in education is also a setback to economic growth. Unfortunately, factors influencing this phenomenon are not clearly understood. Consequently, it was necessary to conduct a research in this matter of education wastage in Kericho County and suggest a way forward.

1.4 Purpose of the study

This study sought to investigate and document the nature of educational wastage as well as school and home-based causes of educational wastage in secondary schools within Kericho County.

1.5 Objectives of the study

This study was guided by the following objectives:

- i) To determine the nature of educational wastage in secondary schools in Kericho County in respect to three key variables: poor performance, repetition and school drop-out.
- ii) To identify school and home-based factors which lead to educational wastage in secondary schools within Kericho County.
- iii) To identify socio-economic factors contributing to wastage among secondary school students in Kericho County.
- iv) To identify policies and strategies at national, county and school levels aimed at managing educational wastage in Kericho County.

1.6 Research Questions

This study was guided by the following research questions:

- i) What is the nature of educational wastage in Kericho County in respect to three key variables in the study: poor performance, repetition and school drop-out?
- ii) Which school and home-based factors contribute to educational wastage in secondary schools in Kericho County?
- iii) Which socio-economic factors contribute to wastage among secondary school students in Kericho County?
- iv) Are there any policies and strategies in place at national, county and school level aimed at managing educational wastage?

1.7 Assumptions of the study

This study was based on the following assumptions:

- i) That all the three forms of educational wastage – poor performance, repetition and drop-out exist in Kericho County.
- ii) That respondents would give honest responses to the research questions.
- iii) That research period would be sufficient to adequately address the phenomenon under study.

1.8 Limitation of the study

This study was conducted in selected secondary schools in Kericho County. Three forms of educational wastage in relation to home and school-based factors were explored. Key stakeholders in education within the county were sampled to participate in the study. The use of English language limited this study given that parents with different levels of education participated in the study. This problem was addressed by translating interview guides into Kiswahili and the local vernacular language(s). It was also difficult to identify and engage school drop-outs in the study.

1.9 Significance of the study

Findings from this study have not only added to the existing scant literature on educational wastage, but also offered lessons to all the key stakeholders in education. Findings from this study shed light on school-based factors that contribute to poor performance, repetition and the likelihood of students to drop-out of school as well as strategies that need to be taken to minimize and eventually eradicate educational wastage. Findings also offer insights to school managers on how to re-organize school

structures and nurture school cultures that foster students' academic achievements and retention in secondary schools.

Similarly, findings from this study shed light on home-based factors which demotivate and contribute towards students' low academic achievement and eventual drop-out from school; and inform parents on how best to support their children by making the home environment conducive for higher academic outcomes. It is also hoped that findings will inform MOEST on how best to communicate and implement policies aimed at minimizing educational wastage from the national to school level; to shed light on how best the TSC, KNUT and KUPPET can solve their issues so that they do not translate to educational wastage. Last but not least, findings from this study add to the existing but scant literature on the relationship between forms of educational wastage (poor performance, repetition and drop-out) and home and school-based causes, especially in the newly created Kericho County.

1.10 Theoretical framework

The theoretical framework applied to this study was based on the production function model. An education production function is an application of the economic concept of a production function to the field of education. It relates various inputs affecting a student's learning (schools, families, peers, neighborhoods, etc.) to measured outputs including subsequent labor market success, college attendance, graduation rates, and, most frequently, standardized test scores. The original study that prompted interest in the idea of education production function was by a sociologist, Coleman (1966). The Coleman Report, published in 1966, concluded that the marginal effect of various

school inputs on student achievement was small compared to the impact of families and friends.

The report launched a large number of successive studies, increasingly involving economists that provided inconsistent results about the impact of school resources on student performance. The interpretation of the various studies has been very controversial, in part because the findings have been directly entered into policy debates. Two separate lines of study have been particularly widely debated. The overall question of whether added funds to schools are likely to produce higher achievement (the "money doesn't matter" debate) has entered into legislative debates and court consideration of school finance systems (Gary 1996). Additionally, the policy discussing about class size reduction highlighted the relationship between academic achievement and size of the class. (Lawrence et al 2002).

The theoretical framework applied to this study was the production function model:

$$Q = F(L,K).....(1)$$

Equation 1: Production Function Model

Where,

Q = Represents output

F = Represents function of

L = Represents labour

K = Represents capital

(Vaizei, 1972)

There is a very close relationship between output and input in a firm according to Eq.

1. The output of a firm depends on the quality of labour and amount of capital.

Simmons (1980) came up with a modified version of the production function model;

the Education Production Function model (EPF), which states that educational input includes physical and non physical resources provided by students and parents, influences of peer; resources provided by the school and variables of other environmental factors. These are responsible for differences in educational outcome according to EPF. The EPF is expressed using the equation

$$A_{it} = [F_{it}(t), S_i(t), P_i(t), I(t)] \dots \dots \dots (2)$$

Equation 2: Education Production Function Model

Where,

I = The i^{th} of the student and student characteristics

(t) = An input cumulative to t ,

A = Educational output, usually academic or a performance at national examination and the

input categories:

F = Family background

S = School inputs

P = Peer group characteristics and student ability (Simmons, 1980).

World Bank development report (1980) cited in Ayot and Briggs (1992) suggests that the input into an educational process and the outcome being the ability of the students to be socially and economically productive are useful means of evaluating educational systems efficiency. The input mentioned comprise of government subsidy like free secondary tuition, teachers salary, text books, laboratory equipment, levies, buildings, students effort to endure the process of learning among others (Kiumi and Chiuri,

2005). The output of an educational system is low when wastage takes its toll. An equation for wastage function can be derived from equation (i) or (ii) as:

Equation 3: Wastage Function

$$W = f(s-i, s-ii \text{ etc}) \dots \dots \dots (3)$$

Where,

W = wastage,

$s-i$ = The limiting socio-economic factors.

$s-ii$ = School factors that are derogative to learning.

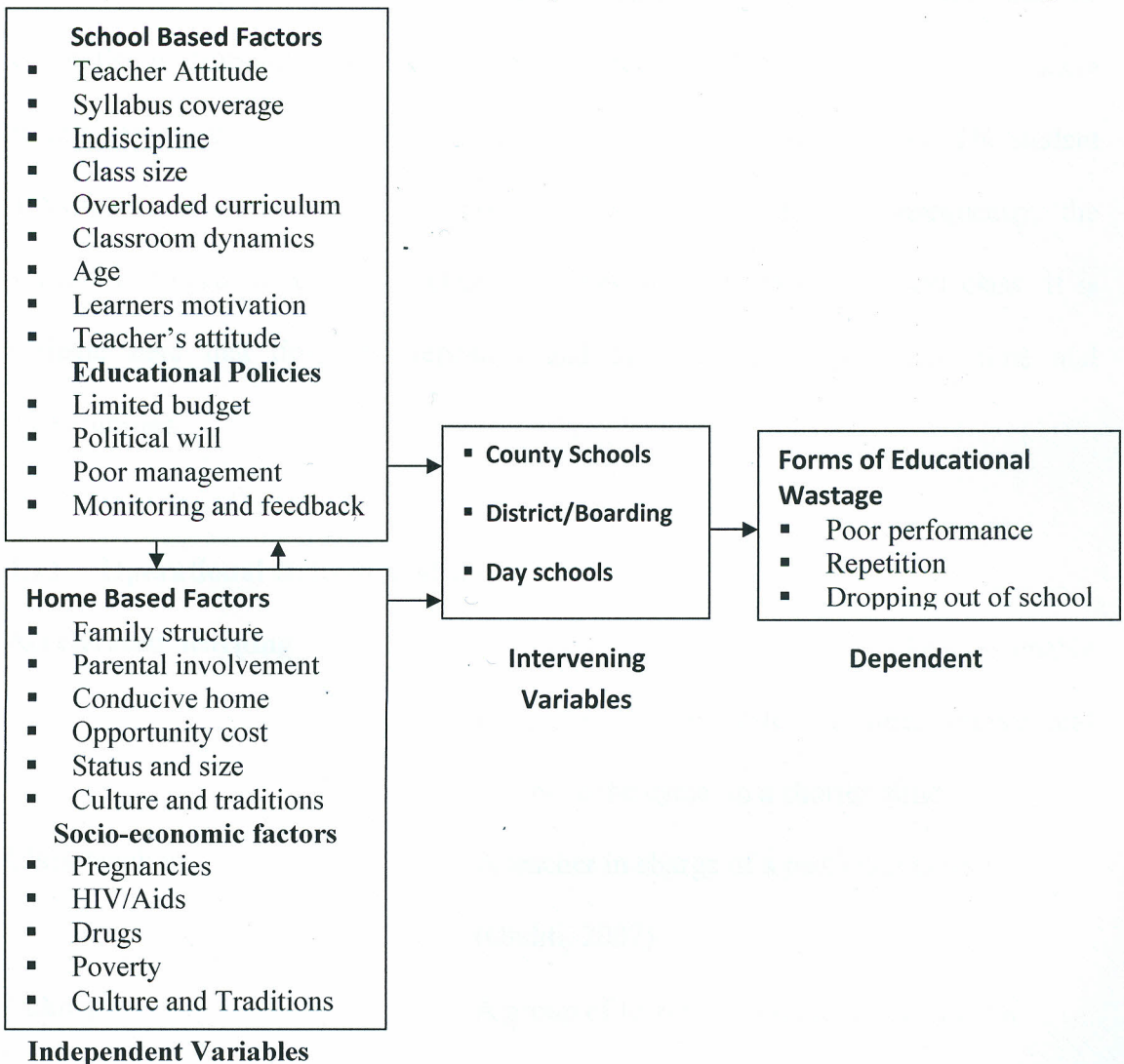
The researcher considered socio-economic and school factors that cause wastage among other variables in the study. This is measured by the ability of the guardians or parents to meet the educational requirements of their children.

The Education Production Function model compares raw materials delivered into a factory for processing to students enrolled into an educational system. The processing of the raw materials determines the quality of the finished product. Likewise, the successful completion of an educational cycle by a student seems to be determined by school factors alone according to the EPF theory. School is where students learn and it is being likened to the processing of the raw materials in a factory. Other factors influencing wastage, namely family background, peer group characteristics and student ability, featured in equation 2 and 3 are not elaborate enough to show how they affect the learning of the student (processing in the factory) causing wastage. This therefore necessitates the use of a conceptual framework whereby all the factors causing wastage can be made clear by showing how they interact.

1.11 Conceptual framework

A conceptual framework according to Orodho (2009) is a type of a model that illustrates the nature of relationships between independent and dependent variables in the study. Figure 1 depicts the relationships between independent variables (school-based factors, home - based factors and socio-economic factors) and the dependent variables (different forms of educational wastage) in secondary schools in Kericho County.

Figure 1.1: Conceptual framework showing relationship between school based factors, home based factors and how they interact to cause educational wastage



Source: Adapted from Orodho

Figure 1.1: How the variables interact to cause wastage

The causes of school dropouts and repetition may be traced from the socio-economic background of the student. For example inability to pay school levies compels the school management to send students home from school to their parents to demand the payment of the school levies. This is because levies are used to meet school expenses like paying wages of the support staff whose services are very essential for the smooth running of any school. A student from a humble background may stay away from school for a long time as the parents struggle to fulfill the school demands. But a student, whose parents have perhaps died of natural causes or HIV/AIDS may be compelled to drop out of school all together. This may also be the case with a student from a very poor and vulnerable background who will drop out of school. The student absenteeism eventually leads to poor academic performance. Consequently, the student is forced to repeat the class as others progress on to the next class. It is realistic here that dropouts, repeaters and absentees all waste their time and opportunities.

1.12 Operational Definition of terms

- Accelerated learning** : This is learning that is fast-tracked to enable the student move faster to other classes and complete the cycle in a shorter time
- Class teacher** : A teacher in charge of a particular class
(Onditi, 2007)
- Cohort** : A group of learners, who are enrolled in an

educational cycle the same time and due for completion after a given period of time (Kiumi and Chiuri, 2005).

- Drop-out** : This is a pupil who leaves school before completing the prescribed cycle of education.
- Educational Wastage** : Indicator of internal inefficiency of an education system manifested in students' poor performance, repetition and drop-out.
- Parent** : The person who stays with the student, not necessarily the biological parent (Onditi, 2007)
- Repetition** : Is remaining in same class/grade for more than one year due to poor performance or failure in national examination.
- School Category** : The disaggregation of school by composition whether it is girls only, boys or both boys and girls i.e. mixed school
- School –based factors** : School aspects that can impact on student learning positively or negatively. They include teacher behaviour, resources, teacher qualifications, teaching practice and guidance and counseling services (Sang, 2007), Teacher attitude, Syllabus coverage, Indiscipline, Class size, Overloaded curriculum, Classroom dynamics, Age of the learners and learners motivation.

- School Mean Score** : Rating of the academic performance of all the students sitting KCSE on a scale of 1 to 12 (12 being the best)
- School Type** : The disaggregation of school by whether it is day school, boarding or both day and boarding.
- Socio-economic factors** : Social and economic aspects that can impact on student's ability to learn negatively or positively such as family size, proportion of children, parent level of education, ability of the parents to pay school levies, family income and child labour (Sang, 2007).

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter is devoted to review of research done by other scholars on factors causing wastage in education. Wastage as a term is elaborately known especially in developed and developing countries, including Kenya. The chapter gives a summary drawn from the literature review on wastage and is organized as wastage rates in Kenya, factors influencing wastage in developed countries, factors influencing wastage in developing countries, factors influencing wastage in Kenya, academic performance and lastly the summary.

2.2 Wastage Rates in Kenya

Increased social demand for education following independence led to a tremendous increase in the number of secondary schools in Kenya. Secondary schools numbered 151 in 1963 and by 2004 this number had increased to 3,277 with total enrolment of 926,149 students, Republic of Kenya, (1998) and Republic of Kenya (2006). The same sources reveal that 48% of this enrolment was female and 52% were male students, the general enrolment percent was 29.8%. Unfortunately, even with this increase of the number of schools, wastage remains a big challenge at secondary school level of education and in fact it cuts across all other educational levels alike.

According to the Ministry of Education Science and Technology (MOEST) (2004), internal efficiency of education system requires policy attention. The cumulative dropout rates in primary education have been as high as 37% and the repetition rates of 14% between standard one and seven. The survival rate at the primary level has

been low at 40%. Although at the secondary level the survival rate has been better at 84%, the overall performance remains low considering that the Gross Enrolment Rate (GER) for secondary is 22%. At the secondary school level in the year 2009, a total of 2.8 million boys and girls aged between 14-17 years who should have been in secondary school were not enrolled. Policy measures are therefore required to address the constrained access and to enable the country to attain its EFA goals and prepare her manpower. The reflection of the data afore-mentioned shows the magnitude of wastage and non-enrolled students in the specific levels of education. This consequently reveals how much human capital is lost on the way to achievements.

In 1999, the average national repetition rate stood at 13.5% for male and 13.2% for female, while the dropout rate stood at 4.1% for male and 4.2% for female respectively (Republic of Kenya, 1998). In 2004, the average national dropout rate had reduced to 7.1% against the general enrolment of 29.8%. A dropout rate of 7.1% is significant because it lowers enrolment (Republic of Kenya, 2006). This is evident by national retention rates of the cohort of the base year 2009 in the Tables 2.1, 2.3, and 2.4.

Table 2. 1: Male Gross Retention Rates in Secondary Schools of the base year 2009 (enrolment in 000s)

Year	Form			
	1	2	3	4
2009	82 (100%)			
2010		88(107%)		
2011			84(95%)	
2012				78(93%)

Source: (Republic of Kenya, 2012)

From Table 2.1, 82,000 male students were enrolled in form one in the year 2009. This is interpreted as 100% enrolment. In the following year 2010, the cohort moved to form two and their number rose to 88,000. This enrolment number is interpreted as 107%. The 7% increase is attributed to repeaters of 2010 cohort who were not promoted to form three; in the year 2012, 78,000 students sat for KCSE examination. This figure is inclusive of repeaters of the preceding cohort. Students who did not sit for KCSE examination repeated form three while others may have dropped out of school along the way. The same cohort analysis was subjected to the results shown out below.

Table 2.2: Female Gross Retention Rates in Secondary Schools of the base year 2009 (Enrolment in 000s)

Year	Form			
	1	2	3	4
2009	70(100%)			
2010		77(110%)		
2011			70(91%)	
2012				66(96%)

Source: (Republic of Kenya, 2012)

From Table 2.2, 70,000 of the female students were enrolled in form one in the year 2009. This is interpreted as 100% enrolment. In the following year 2010, the cohort moved to form two and their number rose to 77,000. This enrolment number is interpreted as 110%. The 10% increase is attributed to repeaters of 2010 cohort who were not promoted to form three; in the year 2012, 66,000 students sat for KCSE examination. This figure is inclusive of repeaters of the preceding cohort. Students

who did not sit for KCSE examination repeated form three while others may have dropped out of school along the way. The same cohort analysis was subjected to the results shown in Table 2.2.

Table 2.3 illustrates the male and female gross repetition rates in secondary schools of the base year 2009 to 2012 enrolment in Kericho County.

Table 2.3: Male and Female Gross Retention Rate in Secondary schools of the base year 2009 (Enrolment in 000s)

Year	Form			
	1	2	3	4
2009	152			
2010		165(109%)		
2011			154(93%)	
2012				144(94%)

Source: (Republic of Kenya, 2012)

From Table 2.1, 10% male students dropped out between form 2 and 4, while in Table 2.2 11% female students dropped out between the same forms. The conclusions drawn from Table 2.1 and from the Republic of Kenya (2012) gives a national statistics of wastage rates. These statistics cannot be used to estimate the wastage rates at county level because wastage rates differ from one county to another. The researcher established wastage rates by gender at county level in Kericho County. The information gathered from the study can be used to evaluate educational efficiency in the county.

Dropping out of school or premature school leaving is perceived differently from one region to another in the United States of America. Gustard (1991) reports that students who drop out over summer or leave school to get married are not counted as dropouts while others count them as dropouts. Students may leave regular high schools before graduation to enter correctional institutions, where they get enrolled into educational programs similar to those offered in the regular high schools. Some students after leaving high school get enrolled to college. These two groups of students are counted as dropouts until they have completed equivalency program (Macmillan et al, 1994). Vincent (1996) cited in UNESCO (2008), made a follow-up of male dropout students at grade II over a period of 3 to 6 years from public high schools in Calgary and Canada. The majority were very successful in the job level stability and earning power and many had sought further education to improve their qualification. A study done by UNESCO (2008) in North America reveals that little repetition occurs in developed countries and this is attributed to the presence of effective guidance and counseling services offered to students in school. Wastage in terms of drop out continues to pose a great challenge in the developed countries.

Elliot (1966) cited in UNESCO (2008) sought to identify factors which explain intellectually capable students dropping out of school. The causes were directly connected to the social class or minority group to which the students belong. Adolescents from certain classes tend to behave in conformity with the standard of the environment. The pupils' personalities and the attitude of families to education interact in such a way as to encourage dropout behaviour. Schreiber (1968) also cited in UNESCO (2008) identified factors influencing dropouts as school factors and the current state of the society, in which there is a high rate of youth unemployment,

continuous rise in delinquency, large scale migration to urban centres and a population explosion. A good school organization is important for learning. This is because, a well organized school structure enables proper delegation of duties and clearly spelt job description, for example guidance and counseling, career guidance as services which students need most (Lunenburg, 1991).

Guidance and counseling can help students who might be opting to drop out of school considerably. Therefore factors contributing to school wastage can be readily addressed by education officials (Tinega, 2004). Efficient school administrators and skilled teaching has strong positive impact on students' achievement. Teachers are the learning facilitators and they have key multiple roles to play in the life of students which include motivating them. Dalin (1993) cited in UNESCO (2008) strongly observes that the teacher's competence is critical to success and failure of student, and that no wise parent can permit his or her child to be taught by an untrained teacher. One of the reasons for joining school is the love of learning which is a critical service offered by teachers and other adults in the school. This enhances student retention in school. Here, the vices that can make a student drop out of school are addressed properly. Needless to say, teachers are the key link between policy and implementation. There exists a close relationship between absenteeism and variations in families in the United States. Children who come from families with low income, single parent families and 'families from racial and ethnic minority status, do not attend school regularly compared to the others from advantaged families (Erickson et. al., 1986; Rumberger 1983, 1987 and Rumberger et. al. (1990) cited in Hussein and Postlethwaite 1994).

One of the specific objectives of this study was to identify school factors and socio-economic factors contributing to wastage among secondary school students. The literature above addresses certain causes of school dropouts which include early marriages, adolescent behaviour or peer influence, school factors and the prevailing state of the society. Literature on wastage can be enriched if one of the developing countries is included in the study. The current study was done to fill this gap. In addition, this study sought to specifically address the causes of wastage in order to come up with strategies that would address the pertinent issues with lasting solutions that would fill the present existing gaps. However, the studies were used in the study as guide in terms of school and socio-economic factors to be investigated.

2.3 Factors influencing wastage in developing countries

Developing countries are faced with development challenges such as poverty, unemployment corruption and violence, among others. A report by UNESCO (2005) acknowledges these challenges and further reveals that they are related to educational wastage. This is because many people in developing nations are still burdened with high food prices, rising costs of electricity, gasoline or paraffin and essential items and have no savings to invest in education. The disparities are starkest between socio-economic classes, gender, geographical regions and generations.

In a study conducted by Forum for African Women Educationists, FAWE (1997) in six African countries namely Botswana, Ghana, Kenya, Malawi, Mozambique, Zanzibar and Sao Tome and Principe on school wastage, poverty was identified to be the major cause of educational wastage and the girl child was the most affected. FAWE recommended that governments, communities and families need to advocate more on the right to education for all, and especially for the girl child. King and Hill

(1993) explain that the opportunity cost of sending girls to school is a major issue in female participation in educational process. For example, girls are expected to perform domestic chores as they attend school. This leads to absenteeism and differed school entry for girls. The study conducted by FAWA (1997), highlights the plight of the girl child and yet the boy child is also at a big risk of being wasted. The researcher intends to examine variation of educational wastage rates among boys and girls in secondary schools in Kericho County.

In Latin America, Africa and South Asia, wastage is prevalent among students from low socio- economic background, in the rural than the urban areas and again among girls than the boys (UNESCO, 2004). Factors influencing this school wastage according to Psacharopoulos and Woodhall (1985) are; "Poverty, which may give rise to illness, malnutrition, absenteeism, the high opportunity cost of schooling for poor families, cultural factors, which affect girls in particular; inappropriate curriculum and examinations which is excessively academic and designed to prepare majority of pupils for upper secondary and higher education; and a shortage of secondary school places, which lead to repetition at the primary level."(Pg 200).

The above causes of wastage seem to be assumptions. It was the intention of the researcher that an empirical study be done on areas where wastage has been noted like in Kericho County. Some factors causing wastage are peculiar to particular regions; this makes them impossible to be generalized to other places. However, the researcher examined school factors such as class text books, ratio of students to teachers, size of the classrooms and teacher qualification. Socio- economic factors, such as cost of schooling for poor families, educational level of parents and the number of siblings was examined. These were gaps the researcher intended to fill in this study.

Just like many other developing countries, education in Sierra Leone is neither compulsory nor free. In this African nation, marginalization within the school system causes underachievement which leads to repetition and eventually dropouts (Beckly, 1990) The same source argues that home environment factors are casually related to marginalization. These include domestic factors which are students' background which has been noted to influence wastage in education as it was also observed in another study done by United Nations International Children Education Fund (UNICEF) in Peru in the 1970. In this study, about 40% of all drop outs in the Peruvian rural districts belong to the secluded and background regions. It was revealed that guardians of 60 to 70 per cent of the schooldrop outs were either illiterate or had not gone beyond the primary level of education.

Dropping out of school due to inability to meet financial needs is a problem faced by students from humble backgrounds (Graham, 1989). According to the same source, there are also moral factors that contribute to wastage in education. These include negative influence of the media on students, causing the most vulnerable to adopt socially deviant behaviour like indulgence in crime and sexual promiscuity. In addition, educational factors such as absence of state policy on compulsory school education also influence wastage (Beckly, 1990). Wastage in developing countries is related to poverty according to the literature review. This gives rise to other social ills. Poverty is one of the socio-economic problems that many governments fight against. Poverty is definitely a factor that has a bearing on purchasing power (the ability to pay fees) without which students will drop out because schools require fees. The literature talks about many factors but does not give the role played by the school management in addressing the resultant wastage.

2.4 Factors influencing wastage in Kenya

Lack of space in secondary schools is a serious cause of wastage to students on transit from primary school to secondary school level of education. As an illustration, 18,706 pupils were enrolled for KCPE examination in Nairobi in 2004 and vied to join secondary school level of education, whose admission capacity was limited to 4,463 students. The number of students who got enrolled into secondary schools represents a transition rate of 29% based on availability of admission space. This implies that students who were not able to find chances for admission repeated class eight, causing a serious congestion and some may have even opted out of school (Republic of Kenya, 2006). In addition to this, the same scenario is witnessed country-wide in 2012 whereby according to The Daily Nation News Editorial 29th December 2011, "So many candidates with score of 250 to 500 marks are technically locked out of secondary education and the only hope, for them to further their education is to join youth polytechnics which are unfortunately moribund; these children cannot join informal sector because it is not feasible" page 9).

Studies done revealed that factors causing wastage include inability to pay school fees, poor academic performance, sickness, absenteeism, negative attitudes towards education by both parents and the pupils, child labour, transfer from one school to another and early marriage. Repetition rate was higher than the dropout rate. Parents or guardians and school authorities made decisions for some pupils to repeat. The need to do well in KCPE made schools to promote high academic achievers and low achievers to repeat with the belief that this would improve their chances of passing exams for entry into the next class level. In the same year, another scholar, Kombe (2005) identified causes of wastage in Nairobi as low self esteem, lack of positive

relationship with peers and adults in school, delinquency, a history of substance abuse and pregnancy. Personal or individual characteristics linked to non attendance are poor school performance. The study done by Kombe (2005) further revealed that some student dropouts acquired low paying jobs and they were contented with the little they earned so they ended up discouraging their peers from learning. Forgone productive contribution is a factor influencing wastage among students according to Kiumi and Chiuri (2005). The same source argues that poverty can make parents to withdraw their children from school so as to work and earn in order to subsidize for the family income, even though it is against the law.

The general school climate and tempo of the activities therein reflects what takes place in the classroom and the attitude of students towards learning (Yambo, 2003). A study done by Juma (2003) in Vihiga reveals that school management made policies which created a negative impact on students, for example, the school management forced academically underperforming students to repeat classes to raise the level of performance. Persistent poor academic performance and many repetitions made students to develop a negative attitude towards education which led to dropout. Therefore poor academic performance and absenteeism caused wastage (Juma, 2003). In addition to this, poor teaching discourages students and creates negative attitude towards teachers and finally may cause students to withdraw from school (Government of Kenya, 2002). School factors therefore play an important role in student retention rate. Apart from academic performance, the number of teachers and other resources in the school was investigated in this study. The findings of these scholars provided indicators that influence wastage among secondary school students who were investigated in this study.

Socio-economic activities during particular seasons like cultivation, planting and harvesting interfered with school programs in parts of Kisii according to Michieka (1983). The same source observes that children from poor families are affected most. These farm activities cause long periods of absence and children resumed learning after the planting and harvesting seasons. Children who were absent for a long time missed many lessons and performed poorly in examinations making them to repeat. Class promotion is based on meeting target examination achievement. This implies that, irregular school attendance would bring about discontinuity in subject coverage which would lead to poor performance. Continued poor performance eventually made students drop out of school (Omolo, 1999; Rono, 1990).

According to Okullu (2002), payment of school levies is another cause of student absenteeism. As much as presently there is free tuition in Secondary education and FPE, the cost of education is not completely free. This is because payment of school levies for students from poor economic background is a challenge that has continued to persist whereby a student can be compelled to stay at home if they cannot meet this requirement and end up forgetting or forming a negative attitude towards school, hence drops out of school at the end. The pastoralist communities in North Eastern Kenya believe that what is offered in schools do not reflect their socio-economic and cultural lifestyle. This makes the curriculum irrelevant to them (Onditi, 2007). The rate of return of investment in education in the nomadic groups in Kenya is lower compared to other communities (Ayot and Briggs, 1990) This contributes to high wastage in North Eastern and other regions dominated by the pastoralist groups.

Factors influencing wastage in schools vary from one geographical region to another and are only peculiar to these regions, for example school programs being interrupted by farming activities in Kisii, and community's negative attitude towards education in North Eastern as revealed by a study done by Onditi (2007). This makes the findings of other researchers on this matter impossible to be generalized to other places in Kenya. There is, therefore, a need to conduct a research to ascertain factors causing wastage in areas where research about the same has not been done. Studies done on wastage in Kenya are a reflection of research trends in Africa according to UNESCO (2008). There is scanty literature about wastage in education at secondary school level in Kenya. For example, only two scholars cited in the literature review on wastage in Kenya, (Omollo, 1999; Juma 2003) focused their studies at secondary school level while the rest based their studies at primary school level. Factors causing wastage are not the same across educational levels. The researcher carried out the research to make a contribution to knowledge on wastage in secondary school level of education.

The literature on wastage in Kenya addresses socio-cultural factors that segregate government from education. Policies of education are mentioned to be impacting negatively on students. Other factors like home environment and socio-economic activities involving parents are mentioned as contributing to wastage, yet no suggestions have been recommended for solutions to these issues. The ways to address these factors is the achievement of this study.

2.5 Academic performance

Academic performance is the outcome of education reflected in examination results. Examination results are a measure of knowledge, skills and aptitude acquired at the end of a time period of learning, for example at the end of primary and secondary

education cycles in Kenya students sit for National examinations, these are, K.C.P.E and K.C.S.E. Sitting for exams is important because it provides career choices, job opportunities. In addition to this, it influences a school's reputation because it is a measure of education delivery.

The first K.C.S.E was done in 1989. In this same year the last Kenya Advanced Certificate of Education (K.A.C.E) was done. The K.C.S.E. examinable subjects are grouped into four. The compulsory subjects which are English, Kiswahili and Mathematics. The sciences are Biology, Physics and Chemistry. Humanities which are History and Government, Geography, Christian Religious Education, Islamic Religious Education and Hindu Religious Education. Lastly, the technical and applied subjects which are Home Science, Art and Design, Agriculture, Computer Studies, Aviation, Business Studies, French, German, Arabic and Music. Candidates do all the compulsory subjects, at least two sciences, one humanity, one technical and one applied subject. These add up to seven exams done per candidate. K.C.S.E exam is administered and marked under supervision of the Kenya National Examinations Council (K.N.E.C) at the end of each year. The exam results are announced to the public in the month of February each year by the Minister for Education (Wikipedia 2010).

The number of candidates increased from 207,730 in 2003 to 265,310 in 2007, an increase of 27.7 %. However, there was decline in number of candidates in 2006 of 6.9 % attributed to strict rules introduced during registration of candidates to avoid double registration. There were more male than female candidates who sat for the KCSE in the five-year period. In 2007, the number of male candidates increased by

14.2 % as compared to the female candidates increase of 8.8% (Republic of Kenya, 2012).

KCSE candidature and performance by gender in the KCSE subjects and grades trends in some selected subjects reveals that the candidature of Physics (232) is the lowest among the major science subjects and is even worse for girls than boys in the five-year period between 2003 and 2007. It further shows that the mean scores of male and female candidates in English (101), Kiswahili (102), Mathematics (121), Biology (231), Physics (232), Chemistry (233), Biological Sciences (235), Geography (312), French (501) and Commerce (562) has been below 50.00% in the five years (Republic of Kenya, 2012).

Boys performed better than girls in most of the subjects for the five years. A higher percentage of male candidates got grades A to D+ in English (101), Mathematics (121), Biology (231), Physics (232) and Chemistry (233) than their female counterparts for the years 2006 to 2012. A casual look at the list of the top 100 candidates in KCSE in 2010 reveals that 95% of them were boys while only 5% were girls (Republic of Kenya, 2012).

2.6 Summary

Dropping out of school or premature school leaving is perceived differently from one region to another. Vincent (1996) cited in UNESCO (2008), made a follow-up of male dropout students at grade II over a period of 3 to 6 years from public high schools in Calgary and Canada. The majority of these dropouts were very successful in the job level stability and learning power and many had sought further education to improve

their qualification. A study done by UNESCO (2008) in North America revealed that slight repetition occurs in developed countries and this is attributed to the presence of effective guidance and counseling services offered to students in school.

Developing countries are faced with development challenges such as poverty, unemployment, corruption and violence among others. A report by UNESCO (2005) acknowledges these challenges and further reveals that they are related to educational wastage. This is because many people in developing nations are still burdened with high food prices, rising cost of electricity, gasoline or paraffin and essential items and have no savings to invest in education. Dropping out of school due to inability to meet financial needs is a problem faced by students from humble backgrounds, (Graham, 1989).

Boys performed better than girls in most of the subjects in the national examinations. A casual look at the list of the top 100 candidates in KCSE in 2010 reveals that 95% of them were boys while only 5% were girls. Lack of space in secondary schools is a serious cause of wastage to students on transit from primary school to secondary school level of education. Repetition rate was higher than the dropout rate. Parents or guardians and school authorities made decisions for some pupils to repeat. The need to do well in KCPE made schools to promote high academic achievers and low achievers to repeat with the belief that this would improve their chances of passing exams for entry into the next class level. Factors influencing wastage in schools vary from one geographical region to another and are only peculiar to these regions.

One of the specific objectives of this study is to identify socio-economic factors contributing to wastage among secondary school students. The literature above

addresses certain causes of school dropouts which include early marriage, adolescent behaviour or peer influence, school factors and the prevailing state of the society. From the reviewed literature, it emerges that several studies conducted in wastage were in developed countries and those done in developing nations seem to have only focused on trend and state of wastage but few have looked at the factors influencing wastage. The current study was envisaged to fill this gap. In addition, this study sought to specifically address the pertinent issues with lasting solutions that would fill the present existing gaps.

The above causes of wastage seem to be assumptions. Some factors causing wastage are peculiar to particular regions, this makes them impossible to be generalized to other places. However, the researcher examined school factors such as class textbooks, ratio of students to teachers, size of the classrooms, teacher qualification and home-based factors such as family structures, cultural and traditional practices, parental involvement and family status. Socio-economic factors, such as cost of schooling for poor families, educational level of parents, poverty, culture and traditions and drug abuse were examined. These were gaps the researcher intended to fill in this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the research design that was used in the study. The study context, target population and sampling procedures are described. Methods of data collection as well as tools of data collection and recording are also described. Last but not least, data analysis, presentation of findings and ethical issues observed in the study are discussed.

3.2 Research Design

This study adopted a descriptive survey design. According to Orodho, descriptive survey is a method of collecting information by interviewing or administering questionnaires to a sample of individuals (Orodho in Kombo & Tromp, 2006). A survey is normally employed in research to describe attitudes, beliefs, opinions among other personal attributes (Wambalaba, 2009). According to Mugenda and Mugenda (2003), survey research is a self-report study which requires the collection of quantifiable information from the sample. Survey was preferred because it was deemed suitable for obtaining information on existing phenomenon in regard to home and school-based factors that lead to educational wastage in secondary schools within Kericho County.

3.3 The Study Location

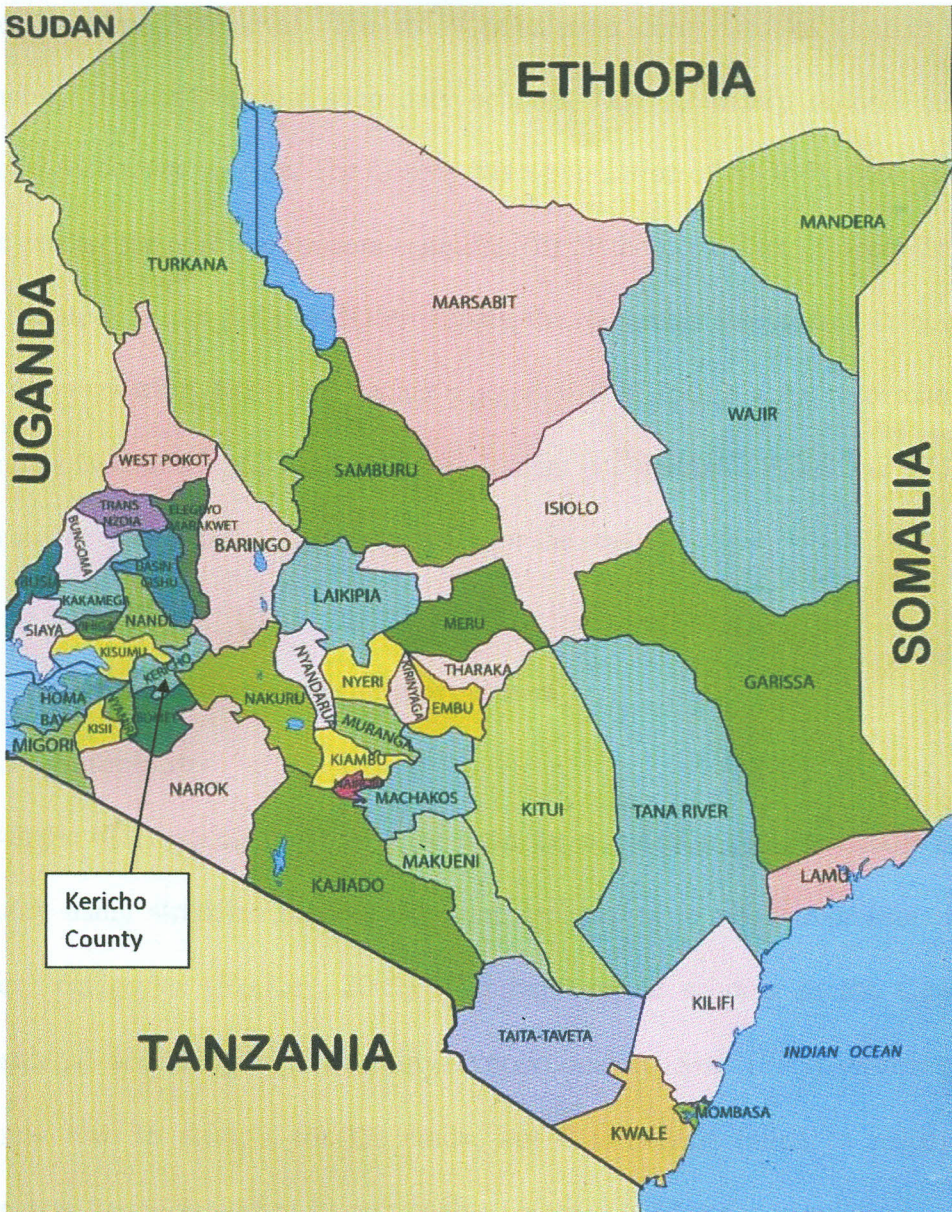
This study was conducted within Kericho County. Kericho County is one of the 47 counties created under the Constitution of Kenya (2010). It is located within the Rift Valley region of Kenya and comprises five administrative districts, namely: Kericho,

Kipkelion, Bureti, Londiani and Belgut. The county is home to the Kipsigis people who are part of the Kalenjin community and Kericho town is its headquarters. As per the national census of 2009 the county has a population of 758,339 persons.

Kericho County was selected for the study because it is one among the 47 Counties in Kenya with the highest forms of educational wastage in secondary schools in terms of poor performance in National Examinations (KCSE), dropout of students and repetition rates. This has raised great concern among the parents, stakeholders, the religious organizations and political class who hail from the area. The concerns that were raised in this County were used for discussions of finding the long-lasting solutions for alleviating the high level of educational wastage in secondary schools in the County.

Kericho County is home to Kenya's biggest water catchment area, the Mau Forest and therefore, most economic activities revolve around agriculture. Agricultural activities include tea production, maize and dairy farming, horticulture, pyrethrum, pineapples, sugar cane and stevia crop. Kericho County is indeed Kenya's leading producer of tea and home to the largest tea plantations. A number of multi-national companies who produce and export tea operate in the county. They include: Unilever Tea Kenya, James Finlay Tea Limited and George Williamson Tea Ltd. There is also Kenya Tea Packers Limited (KETEPA). The county has several educational institutions. There are many public and private primary schools, 154 public secondary schools, three universities and several middle-level colleges. The study sample was drawn from the 154 public secondary schools within the county.

Figure 3.1: Map of Kenya showing all the counties including Kericho County



3.4 Target Population

A population refers to an entire group of individuals, events or objects having common observable characteristics. According to Mugenda and Mugenda (2003), a target population is the population to which a researcher wants to generalize his or her results. Secondary schools in Kericho County were of interest to the researcher

because of their continued high level of educational wastage in terms of poor performance in National Examinations (KCSE), dropout of students and repetition rates at form four level. The study population comprised of County secondary schools, District/Boarding secondary schools, Day secondary schools and District Mixed secondary schools. The County has a population of N (154) secondary schools. The researcher used the random sampling (n) method to select 25 secondary schools for the study. From the 154 (N) Principals, the researcher selected 19 Principals using the same criterion. From the teacher's population of 250 (N), the researcher used the same method to select 25 (n). From the student population of Form four 2750 (N), the researcher sampled out 275 (n) students for the study.

3.5 Sample size and sampling procedure

3.5.1 Sample size

A sample of 25 schools was selected from the population of 154 schools in Kericho County using stratified random sampling techniques to allow representation of all school categories (Kothari. 2003). The numbers of schools in the County were considered according to Probability Proportional to Size (PPS) ensuring that the County had 25 schools for the study, but 6 principals failed to respond to the interview, hence arrived at 19 principals. This was 12% of the population.

From the County, the strata consisted of three school types: County, District/Boarding and Day schools. Within the selected schools a simple random sampling procedure was used to select 275 Form four students who participated in filling the questionnaires. 25 form four class teachers were purposively sampled from the target population for the study. The 25 schools comprised of 16% of the target population of

154 secondary schools in the County. According to Gay (1992), for a survey design, sample of at least 10% is a justifiable representation of the total population. The 16% of 154 secondary schools and 12% of the Principals were selected. The researcher also sampled 10% of the population of 250 teachers. Ary, Jacob and Razaviah (1972) observed that a survey design sample of 10% is also justified for data collection. 10% of the 250 teachers and 2750 students were included in the sample. The determination of sample size is shown in Table 3.1

Table 3.1: Determination of the sample

Respondents	Target	Sample
Students	2750	275
Teachers	250	25
Principals	154	19
Total	3154	319

For the purpose of the study, the identified 5 strata include; County schools for (boys) and (girls), mixed day secondary schools, District/Boarding schools for (boys) and (girls) comprising of 4 County schools for boys and 4 County schools for girls, 3 District/Boarding schools for boys and 3 District/Boarding for the girls and 5 Mixed day secondary schools. The researcher selected 19 schools from 154 secondary schools from the target population. These translated to 12.3% of the total schools in the county. According to Mugenda and Mugenda, (1999), for descriptive studies, 10% of the accessible population is an enough sample to be used.

Each stratum was represented as follows:

- County schools for boys – 4
- County schools for girls – 4
- District/Boarding schools for boys – 3
- District/Boarding schools for girls – 3
- Mixed day secondary schools – 5

i) Schools

The study targeted (154) secondary schools in Kericho County. Due to the fact that the population from the sample drawn is not homogenous, stratified sampling was used to obtain a representation of (19) sampled schools. According to Krathwol, (1993) the researcher will classify the units in the sampling frame into strata on basis of characteristics that if not properly represented in the sample, it may affect the influences researcher makes.

ii) Principals

Stratified sampling was used to select principals from sampled schools to be included in the study. In stratified random sampling, the population was first divided into two or more exclusive segments called strata based on categories of one complete stratified sample (Orodho, 2009). All principals from the 19 sample schools under the study were included.

iii) Students

The sample included 110 students from 19 sample schools. 10% of the total population in each school was sampled. The 19 schools have a population of 2750 form four students.

iii) Teachers

Stratified sampling was used to select teachers from sample schools to be included in the study. The sample included 5 teachers from each stratum. 10% of the total population of teachers in each school was sampled. The 19 schools have a population of 250 teachers; out of these, 25 teachers were sampled for the study.

3.6 Research Instruments

The researcher adopted questionnaires and interview guide to collect data from the principals, teachers and students on factors contributing to educational wastage in Kericho County.

3.6.1 Questionnaires

Best and Kahn (1999) and Orodho (2009) contend that questionnaires enable the person administering them to explain purpose of the study and to explain the meaning of the items that may not be clear. Questionnaires are used to obtain important information about the population, (Mugenda and Mugenda 1999). The study used questionnaire because they can ensure anonymity, permit use of standardized questions, and they have uniform procedures, provide time for the subject to think about responses and are easy to score. Questionnaires were used in the study because they are easier to complete and the researcher would easily detect a trend just by glancing at the responses (Orodho, 2012).

i.) Principals' Interview Schedules

The Principals interview schedule was used to collect data on student enrolment, academic performance of the school, management of wastage, causes of wastage, physical and human resources and personal opinion on ways of managing wastage (Appendix B)

ii.) Teachers' Questionnaires

The class teachers questionnaires collected information on enrolment, the nature of wastage, reasons for wastage, suggestions on management of wastage, personal opinion on causes of wastage, academic performance, reasons for absenteeism, student attitude towards learning, motivation of teachers from school management and parent involvement on matters that pertain to student welfare in school, (Appendix C)

iii.) Students' Questionnaires

The main instrument that was used in this study was structured questionnaires filled by various participants who took part in the study. Questionnaires were designed for form four students and form four class teachers. The student questionnaire collected data on student family background, reasons for repetition, reasons for absenteeism, reasons for dropouts, attitude towards learning and school, the role and effectiveness of guidance and counseling in their school, (Appendix D)

3.6.2 Research Observation Schedule

The research observation schedule was one of the research instruments. It was used to supplement information, which was obtained through the questionnaires. This included examining and recording the data.

Kothari and Pals (1993) note that observations are much better in overcoming the weaknesses of self reported evidence. The authors add that the techniques enable the researcher to collect direct information about human behaviour. The areas to observe included school-based factors, educational policies, home-based factors and socio-economical factors.

3.7 Validity and Reliability of the Research Instruments

This section presents validity and reliability of research instruments.

3.7.1 Validity of the instruments

Orodho (2005) defines validity as the degree to which results obtained from the analysis of the data actually represents the phenomenon under study. Validity therefore checks if the research instruments are doing what they were intended to do. Two instruments i.e. questionnaire and interview guide were submitted to the supervisors in the Department of Educational Management, policy and Curriculum Studies. The experts scrutinized the details of these instruments and gave their opinion in view of reviewing or adopting them for pilot study. Two schools had similar characteristics with the rest of the schools that were studied; pilot study helped to make clarification and improve the content for the use in the instruments that were administered for the study. At the same time, the study helped the researcher attain a good environment of conducting interviews.

3.7.2 Reliability of the instruments

Reliability is the consistency of the instruments in measuring what is intended to measure (Wiersma, 1985). It is a measure of degree to which such instruments yield consistent results after repeated trial (Mugenda and Mugenda 1999). The researcher used split-half technique in investigating the reliability of the instruments. According to Mugenda and Mugenda (1999), this technique administers an instrument once to two groups of subjects. The research instruments were therefore administered to twenty identical respondents made up of ten male and 10 female teachers. The scored items were then randomly divided into two groups. The completed questionnaires

were then scored and analyzed. Spearman rank order of correlation coefficient was calculated using the formula:

$$r = 1 - \frac{6 \sum (D)^2}{N(N^2 - 1)}$$

Where,

r is the Spearman rank order correlation

\sum is the summation of subjects

N is the number of subjects

D is the deviations of the subjects between odds and even

The coefficient obtained was used to determine the reliability index of co-efficiency by subjecting it to Spearman Brown prophecy formulae. A split-half co-efficient of 0.78 was obtained and considered substantially high enough to determine the reliability of research instruments.

$$\text{Split-half coefficient, } r = \frac{2r}{1 + r} = 0.78$$

Where r is correlation co-efficient

According to Orodho (2005), a co-efficient correlation (r) of about 0.75 and above should be considered high enough to judge an instrument as reliable. The researchers' value was 0.78 and the instruments were adopted for data collection.

3.8 Procedure for Data collection

The researcher sought an introduction letter from the Department of Educational Management, Policy and Curriculum Studies in Kenyatta University to carry out the study. Once obtained, the researcher acquired a research permit from the National Council for Science and Technology. The permit legally allowed the researcher to

conduct the study. The researcher then visited the selected schools and distributed the questionnaires to teachers and students. The researcher interviewed the principals in their respective offices on the agreed date. The researcher used observation schedule to collect data from the principals, teachers and students.

3.9 Research clearance and ethical considerations

The procedure for data collection involved getting a research permit from the National Council for Science and Technology to undertake research on “Factors Contributing to Educational Wastage in Secondary Schools in Kericho County”. This procedure of getting clearance was followed all through the field work period by getting permission from the County Director of Education and School Management before distributing questionnaires. During the research process, the participants were assured of confidentiality and the researcher safeguarded the information obtained.

3.10 Data analysis procedure

The data obtained from the respondents was recorded in readiness for analysis. Kerlinger (1973) defines analysis as categorization, ordering, manipulating and summarizing data to obtain answers to research questions. Descriptive statistics using frequencies and percentages was used to analyze the data. Descriptive statistics was used to analyze qualitative data such as teachers’ attitude, syllabus coverage, family structure, parental involvement and limited budget. Statistical Package for Social Sciences (SPSS), which could manage huge amount of data, was used to analyze the data. SPSS programme was used to produce the mean, frequencies and percentage of data obtained from the document. The results were then tabulated in frequency tables

for ease of interpretation so as to easily visualize the various results as given by the respondents. Finally, responses on similar themes or objectives, emanating from different respondents was compared to find if the various respondents concur on various issues and if not, the possible reasons for the observed discrepancies. All these was then followed by a discussion on each particular research question in view of the responses given by the respondents. This discussion went along with the specific objectives of the study.

Qualitative data according to Mugenda and Mugenda (1999) does not produce discreet numerical data. Qualitative data obtained from open-ended questions and interview schedule were analyzed thematically i.e. an analysis of the main theme was found in the study.

3.10.1 Wastage

To determine wastage in the schools sampled, three educational measures developed by UNESCO (2009) were adopted namely:

- i) Grade repetition rate (G.R.R)
- ii) Grade Dropout Rate (G.D.R), and
- iii) Cohort Wastage Rates (CWR)

CHAPTER FOUR

RESEARCH FINDINGS, INTERPRETATIONS AND DISCUSSIONS

4.1 Introduction

This chapter presents the research findings, interpretations and discussions of the study. The study sought to explore and document the nature of educational wastage in Kericho County and to identify school and home-based factors leading to educational wastage. The study sought to address the following objectives:

- 1) To determine the nature of educational wastage in secondary schools in Kericho County in respect to three key variables: poor performance, repetition and drop-out
- 2) To identify school and home-based factors which lead to educational wastage in secondary schools within Kericho County
- 3) To identify socio-economic factors contributing to wastage among secondary school students in Kericho County.
- 4) To identify policies and strategies aimed at managing educational wastage in Kericho County

The study is organized according to the following themes; Demographic characteristics, nature of educational wastage, school and home-based factors, socio-economical factors and policies and strategies aimed at managing educational wastage.

4.2 Demographic characteristics of the respondents

This section presents some of the demographic aspects of the respondents, especially those that have a great bearing on the interpretation of data collected on the various

objectives of the study. Accordingly, the main demographic features of the respondents featured in this section include: gender of both the students and the teachers, categories of schools, names of departments and nature of the schools. The section presents background information of study participants. They included students, teachers and principals.

4.2.1 Distribution of respondents by Gender

During the data collection, the researcher aimed at establishing gender parity in the distribution of students, teachers and principal. This was because the respondents were purposively sampled to have equal gender representation. The data from 19 schools were analysed. Information obtained were administered through questionnaires in which the respondents were asked to indicate their gender. The results are presented in Table 4.1.

Table 4.1: Distribution of respondents by Gender

Respondents	Male		Female		Total
	F	%	F	%	
Students	183	66.55	92	33.45	275
Teachers	13	52	12	48	25
Principals	11	57.89	8	42.11	19

Table 4.1 shows the distribution of respondents by gender. The gender distribution shows significant differences such that the male teachers comprised 13 (52%) while the female teachers comprised of 12 (48%). The situation of the principals was perhaps more interesting. Out of the nineteen principals that participated in the study,

11(57.89%) of them were males while 8(42.11%) were females. Regarding students, out of 275 students of 183(66.55%) were male while 92(33.45%) were female.

4.2.2 Distribution of the sampled schools by type

The study sought information from the principals, teachers and students on the distribution of the sampled schools by type. This was necessary to provide a clear picture for understanding the effect of qualitative expansion of secondary schools on education in the county. The data obtained were administered through interviews given to the principals, and questionnaires given to teachers and students. The respondents were asked to indicate the type of their schools. The results are indicated in Table 4.2.

Table 4.2: Distribution of sampled schools by type

Types of schools	Students		Teachers		Principals	
	N	%	N	%	N	%
County	63	22.91	3	12	3	15.79
Mixed Day	173	62.91	19	76	13	68.42
District/ Boarding	39	14.18	3	12	3	15.79
Total	275	100	25	100	19	100

From Table 4.2 the study interviewed 275 students, 25 teachers and 19 Principals. The study found out that 22.91% of the students were from County schools, 62.91% were from Mixed day secondary schools and 14.18% from District/Boarding schools. Majority 76% of the teachers interviewed were from Mixed day schools while 12% were from County schools and further 12%, from District/boarding schools. Additionally, 68.42% of the principals were from Mixed day schools while 15.79% were from County schools and a further 15.79% from District Boarding schools.

4.2.3 The respondents by category

The schools were further categorized as either boys' schools, girls' schools or mixed schools for boys and girls. Table 4.3 shows the distribution of the respondents by category.

Table 4.3: Distribution of respondents by category of schools

	Students		Teachers		Principals	
	N	%	N	%	N	%
Boys	15	5.46	1	4	1	5.26
Girls	89	32.36	5	20	5	26.32
Mixed B/G	171	62.18	19	76	13	68.42
Total	275	100.0	25	100.0	19	100.0

From Table 4.3, it can be noted that the majority of the respondents were from mixed (boys and girls) schools. Out of the 275 student respondents, 62.18% were from mixed (boys' and girls') schools. Teachers from mixed (boys and girls') schools were 76% of respondents. Additionally, 68.42% of the principals interviewed were from mixed (boys and girls) schools.

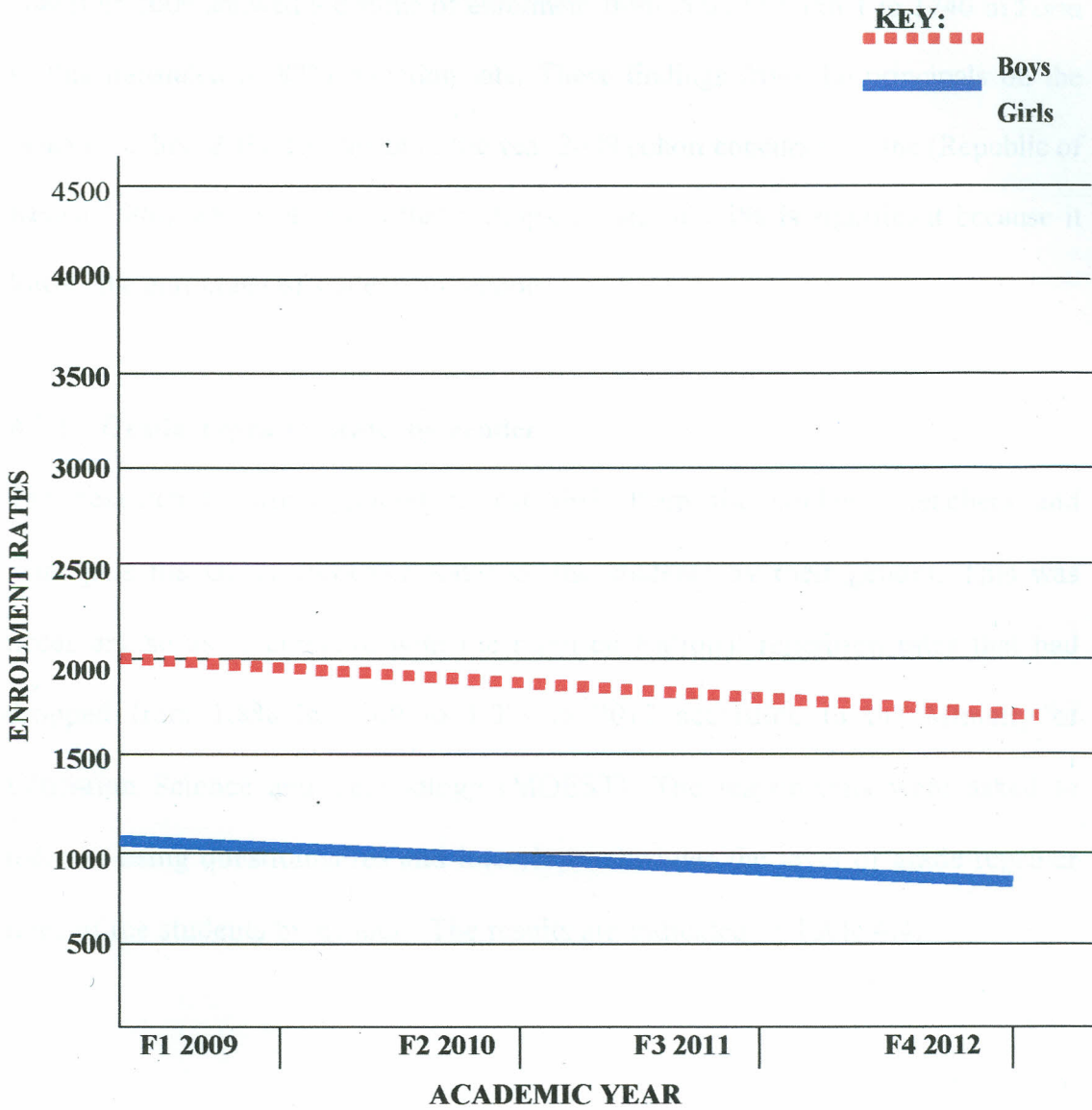
4.3 Nature of educational wastage in secondary schools in Kericho County

4.3.1 Enrolment Trends of the 2009 Cohort

This section focused on the nature of educational wastage and enrolment trends of the 2009 cohort. This was necessary to establish the declining trends and retention rates in each subsequent class. Principals were asked to indicate using interview schedule the level of enrolments and declining trends in their respective schools.

The results are presented in Figure 4.1

Figure 4.1: Enrolment Trends of the 2009 cohort



Findings from the principals on the enrolment trends of the 2009 cohort from their respective schools indicated that majority of the principals 15 (78.95%) observed that there was a general decline in the enrolment in each subsequent class from 2009 to 2012, from Form 1 to Form 4 every year. A similar declining trend was also observed by the principals for each gender. For example, they recorded that the Girls' cohort of

2009 showed a decline of enrolment from 1151 in Form 1 to 902 in Form 4, translating to 78.3% retention rate. Further, their responses showed that the boys' cohort of 2009 showed a decline of enrolment from 2000 in Form 1 to 1740 in Form 4, this translated to 87% retention rate. These findings from the principals on the general decline in the enrolment of the year 2009 cohort concurs with the (Republic of Kenya 2006) which observed that a drop-out rate of 7.1% is significant because it lowers the enrolment of students in schools.

4.3.2 Grade repeater Rate by gender

The researcher further sought to establish from the students, teachers and principals the Grade Repeater Rates of the students by their gender. This was necessary so as to compare with the reported National repetition rates that had dropped from 1.8% in 2009 to 1.3% in 2012 according to the Ministry of Education Science and Technology (MOEST). The respondents were asked to indicate using questionnaires and interview schedules the level of grade repeater rates of the students by gender. The results are indicated in Table 4.4.

Table 4.4: Grade repeater rates by gender

Grade Repeater Rate									
	Boys			Girls			Total		
	Enrolment	Repeater	Repeater Rate	Enrolment	Repeater	Repeater Rate	Enrolment	Repeater	Rate
2010									
Form 1	1151	36	0.031	816	42	0.051	1967	78	0.040
Form 2	1100	27	0.025	779	28	0.036	1879	55	0.029
Form 3	1065	18	0.017	739	22	0.030	1804	40	0.022
Form 4	1020	18	0.018	704	22	0.031	1724	40	0.023
2011									
Form 1	1060	43	0.041	798	24	0.030	1858	67	0.036
Form 2	1012	39	0.039	746	22	0.029	1758	61	0.035
Form 3	920	34	0.037	718	21	0.029	1638	55	0.034
Form 4	890	28	0.031	684	18	0.026	1574	46	0.029
2012									
Form 1	906	29	0.032	854	32	0.037	1760	61	0.035
Form 2	835	25	0.030	811	29	0.036	1646	54	0.033
Form 3	792	21	0.027	784	26	0.033	1576	47	0.030
Form 4	757	18	0.024	763	17	0.022	1520	35	0.023

From Table 4.4, findings from 12 (63.16%) of the principals and 16 (64%) of the teachers noted that, the highest repetition rate for boys in the year 2011 was 0.041% or 4.1% in form 1 and the lowest repetition rate in form three in 2010 at 0.017 or 1.7%. While 7(36.84%) of the principals and 9(36%) of the teachers observed that for the girls the highest repetition rate was noted in form 1 in 2010 at 0.051 or 5.1% and the lowest 0.022 or 2.2% in 2012 among the form four girls.

Comparatively, these figures are higher than the reported National repetition rates that had dropped from 1.8% in 2009 to 1.3% in 2012 according to Ministry of Education, Science & Technology. It is worth noting that while the repetition rates had continued to drop, the highest rates were reported in Kericho County at 2.6% for the same period. It is therefore not surprising that the figures established by the study from Kericho County were thus high.

4.3.3 Grade Dropout rate

This section sought to establish from the teachers and principals the overall grade drop-out rate of the year (2010) over the subsequent years. This was necessary so as to compare with the National available figures of (2010) that states the drop-out rate for the boys and girls which was 4.1% and 4.2% respectively. The respondents were asked to indicate using questionnaires and interview schedules, the overall cohort drop-out rates of the year (2010) over the subsequent years. The results are indicated in Table 4.5.

Table 4.5, shows the overall cohort Grade Dropout Rates of the year 2010 over the subsequent years. In calculating the Grade Dropout Rate for the 2010 cohort, a formula-(Reconstructed Cohort Method (RCM) was used by taking the number of repeaters and promoters of the grade in the year and deducting from the number of students enrolled in the corresponding school year and the difference was then divided by the number of students enrolled in corresponding grade in the school-year. The findings are summarized in Table 4.5.

Table 4.5: Grade dropout rates by Gender

	Boys			Girls			Total		
	Enrol	Repeaters	Dropout rate	Enrol	Repeaters	Dropout rate	Enrol	Repeaters	Dropout rate
2010									
Form 1	1151	36	11.3	816	42	6.9	1967	78	9.5
Form 2	1100	27	15.5	779	28	7.1	1879	55	12.0
Form 3	1065	18	16.4	739	22	7.4	1804	40	12.7
Form 4	1020	18		704	22		1724	40	
2011									
Form 1	1060	43	20.8	798	24		1858	67	11.1
Form 2	1012	39	21.2	746	22		1758	61	10.0
Form 3	920	34	17.1	718	21		1638	55	6.7
Form 4	890	28		684	18		1574	46	

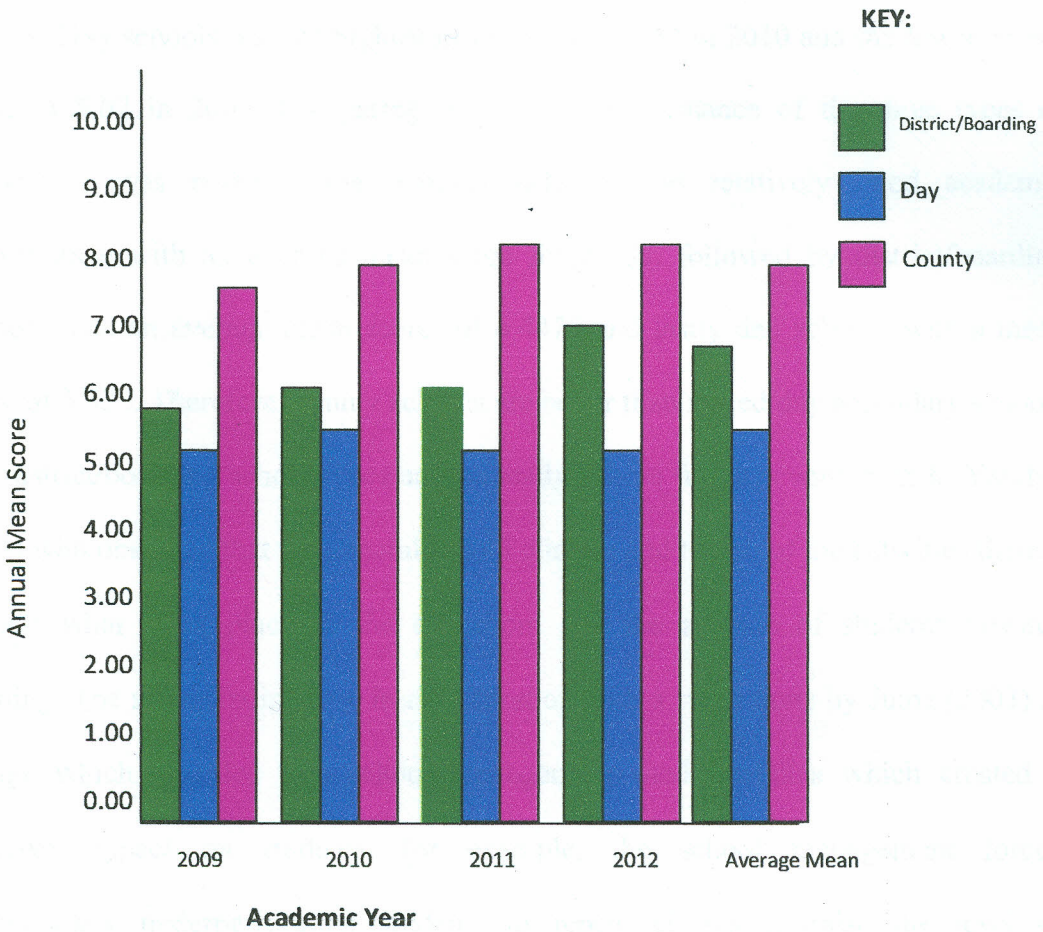
The findings in Table 4.5, 11(57.89) of the principals, 13(52%) of the teachers and 145(52.73%) of the students indicated that the highest (21.2%) dropout rate among the boys in form two was experienced in the year 2011. Views from the same respondents held that, the general trend of dropout rate for the 2010 cohort ranged from 6.7% to 12.7%. When interviewed, 5(26.32%) of the principals, 7(28%) of the teachers and 75(27.27%) of the students indicated that, the dropout rates for boys was generally high (11.3%) to (21.2%) compared to females (6.9% to 7.4%). The dropout for boys and girls was relatively high compared to national figure available that state that in 2009 the dropout rate for the boys and girls was 4.1% and 4.2%, respectively (Republic of Kenya, 2012). Further, the researcher interviewed 3(15.79%) of the principals, 5(20%) of the teachers and 55(20%) of the students to analyze the Proportion of Total Wastage due to Student Dropout (PTWSD) and Proportion of Total Wastage due to Student Repetition (PTWSR). Their responses were recorded based on the number of repeaters and calculated the number of dropouts for all the cohorts in all the classes considered in the study. It ascertained that the Proportion of

Total Wastage due to Student Dropout (PTWSD) was 6.7% to 12.7% for boys as compared to Proportion of Total Wastage due to Student Repetition (PTWSR) that was 2.2% to 4.0% for boys. For girls, PTWSD was 6.9% to 7.6% for girls as compared to PTWSR that was 2.2% to 5.1% for girls. This proportion was calculated by dividing the total number of student-years wasted by students who drop out from the 2010 cohort in Form 2 and Form 3 by the sum of the total number of students-years wasted by both the former and the students who repeat grades in the corresponding school year and level or cycle of education (i.e. the excess of students-years wasted on the repetition and drop-outs) and multiply the result by 100.

4.3.4 Performances of the schools by type and category

The study established the performance of sampled schools by type. This was necessary because some of the sampled schools were classified as County (all the students reside in the school), District/Boarding (all the students reside in the school) and Mixed/Day secondary school (some of the students reside in the school while others commute from their homes every day). Only the national examination results KCSE were used because they were considered standard and comparable. The respondents were asked to indicate using questionnaires the level of the National examination (KCSE) performance of their respective schools. The findings of the study are presented in the Figure 4.2

Figure 4.2: Annual Mean Scores of the Schools by types



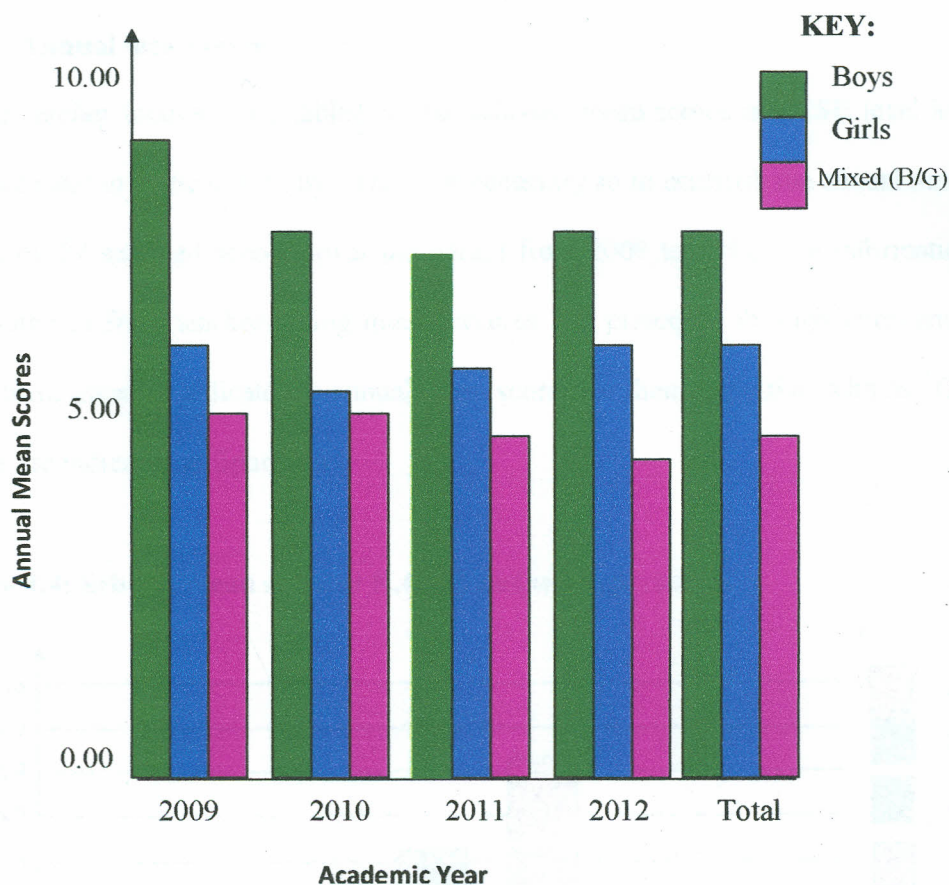
From Figure 4.2, the findings from 12 (63.16%) of the principals and 17 (68%) of the teachers indicated that the county schools emerged to be performing fairly well with the mean scores of 7.720 in 2009, 8.26 in 2010, 8.550 in 2011 and 8.600 in 2012 which gave an average mean score of 8.283 over the four year period. While 5 (26.32%) of the principals and 2(8%) of the teachers observed that district/boarding schools had a mean score of 5.79 in 2009, 6.340 in 2010, 6.55 in 2011 and 7.11 in 2012. This gave an average mean score of 6.4475 over the four year period. District boarding schools had the highest mean score of 6.110 in 2012 and the lowest of 5.79 in 2009. Data collected from 5(20%) of the principals and 3(12%) of the teachers indicated that day schools had a mean score of 5.02 in 2009, 5.62 in 2010, 5.100 in

2011 and 5.540 in 2012. This gave an average mean score of 5.32 over the four year period. Day schools had the highest mean score of 5.62 in 2010 and the lowest mean score at 5.02 in 2009. Comparing the overall performance of the three types of schools it was revealed that County schools had relatively good academic performance with an average mean score for 8.283, followed by district/boarding schools with an average mean scores of 6.4475 and lastly day schools with a mean score of 5.320. Therefore, county schools are better than mixed/day secondary schools and district/boarding school types academically. These findings concur with (Yambo, 2003) who observed that the general school climate and tempo of the activities therein reflects what takes place in the classroom and the attitude of students towards learning. The same findings are in collaboration with a study done by Juma (2003) in Vihiga which revealed that school management made policies which created a negative impact on students, for example, the school management forced academically underperforming students to repeat classes to raise the level of performance. Persistent poor academic performance and many repetitions made students to develop a negative attitude towards education which led to dropout. Therefore poor academic performance and absenteeism caused wastage (Juma, 2003).

4.3.5 Performance as illustrated by mean scores by category of schools

The study sought the information from the teachers and principals on the performance of schools according to categories as single sex boys or girls or mixed schools. This was necessary so as to understand the distribution of mean scores for the school performance of the three categories of schools of the years 2009, 2010, 2011 and 2012. The data obtained were administered through questionnaires given to teachers and interview to principals. The results are indicated in Figure 4.3.

Figure 4.3 Performance as illustrated by the mean scores by category



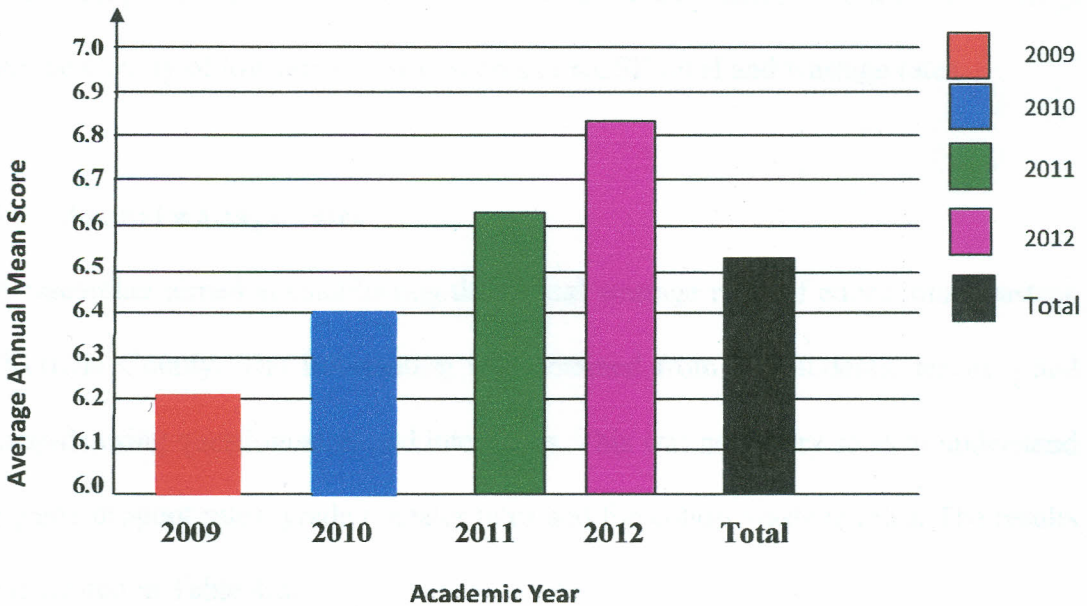
Findings from 11(57.89%) of the principals and 15 (60%) of the teachers indicated that the overall performance of the Boys schools was higher compared to either Girls or Mixed schools. Questionnaires administered to, 10 (40%) of the teachers and interviews given to 8 (42.11%) of the principals held the same view that over the period 2009 to 2012 the Boys schools had a mean score of 7.76 compared to 5.93 and 4.96 for Girls and Mixed schools, respectively. The trend of boys dominating over girls continue to be witnessed and this is evident in the 2011 national KCSE results of which boys dominated over the girls in mean score in almost all counties according to the Minister for Education “This does not augur well for girls since exams are used to select students for university entry, therefore there is a likelihood that the country will continue witnessing only a few women obtaining grades that allow them to join university and other colleges” (Sigei, 2012).

4.3.6 Schools mean scores at K.C.SE and wastage rates in Kericho County

4.3.7 Annual mean score

The researcher focused on establishing the schools' mean scores at KCSE level and wastage rates in Kericho County. This was necessary so to establish the annual mean scores of the sampled schools over the period from 2009 to 2012. The information was obtained from teachers using questionnaires and principals through interviews. They were asked to indicate the annual mean scores for their respective schools. The results are indicated in figure 4.4

Figure 4.4: Schools mean score at K.C.SE and wastage rates Key



Data was analyzed from 13 (68.42%) of the principals and 19 (76%) of the teachers on annual mean scores of schools within the County. Figure 4.4 indicate that the mean score for 2009 was 6.23, 2010 was 6.40, 2011 was 6.63 while 2012 was 6.84 giving and average of 6.525. The views of 6 (31.58%) of the principals and 6 (24%) of the teachers agreed that the mean scores reflect the general academic performance of all the schools, which is not quite satisfactory. These findings from the teachers and

principals concur with Michieka (1983), who observed that socio-economic activities during particular seasons like cultivation, planting and harvesting interfered with school programs in parts of Kisii. The same source notes that children from poor families are affected most. These farm activities cause long periods of absence and children resumed learning after the seasons. Children who were absent for a long time missed many lessons and performed poorly in examinations making them to repeat. Class promotion is based on meeting target examination achievement. This implies that, irregular school attendance would bring about discontinuity in subject coverage which would lead to poor performance. Continued poor performance eventually made students drop out of school (Omolo, 1999; Rono, 1990) which is line with the findings from the County of low annual mean scores at KCSE level and wastage rates

4.3.8 Annual wastage rates

The researcher aimed at establishing the annual wastage rates of educational wastage in Kericho County. The information was obtained from the students, teachers and principals using questionnaires and interviews. This was necessary so as to understand the grade dropout rates, grade repeater rates and the cohort wastage rates. The results are indicated in Table 4.6.

Table 4.6: Grade dropout rate, Grade repeater rate, Cohort wastage rate

	Year	Mean score	GDR	GRR	CWR
1	2009	5.751			0.0722
2	2010	5.643	0.114	0.2850	
3	2011	5.310	0.092	0.0335	
4	2012	5.253		0.0302	
Total		5.381	0.103	0.1162	0.0722

KEY

GDR Grade Dropout Rate

GRR Grade Repeater Rate

CWR Cohort Wastage Rate

Findings from 164 (59.64%) of the students, 14 (56%) of the teachers and 11 (57.89%) of the principals indicated in Table 4.6, deduced that the year 2010 had the highest Grade Repeater rate of 0.2850 (28.50%) while the year 2011 and 2012 demonstrated a grade repeater rate of 0.0335 (3.35%) and 0.0302 (3.02%) respectively. The views from 111 (40.36%) of the students, 11 (44%) of the teachers and 8 (42.11%) of the principals indicated that the highest grade dropout rate of 0.114 (11.4%) was recorded in 2010 while the year 2011 registered a grade dropout rate of 0.092 (9.20%). Table 4.6 illustrates the Cohort Wastage Rate (CWR) for the 2009 cohort that was studied. It shows a Wastage rate of 0.0722 (7.22%), a mean repetition rate of 11.6% and a mean dropout rates of 10.3% which are quite high, compared to the cohort mean score of 5.253 which is quite low. A critical analysis of the wastage rates and KCSE mean scores do not conform to the belief that when students repeat grades they perform better in exams. The repetition rates and dropouts rates are quite high yet the mean score is quite low. Students are compelled to repeat classes based on poor academic performance which implies that those who sit for KCSE are able to produce good results. High dropout rates imply that factors that discourage students from school are many, hence retention rate is low. These findings from the respondents concur with Kombe (2005) who identified and noted the causes of wastage in Nairobi as low self esteem, lack of positive relationship with peers and adults in school, delinquency, a history of substance abuse and pregnancy. Personal or

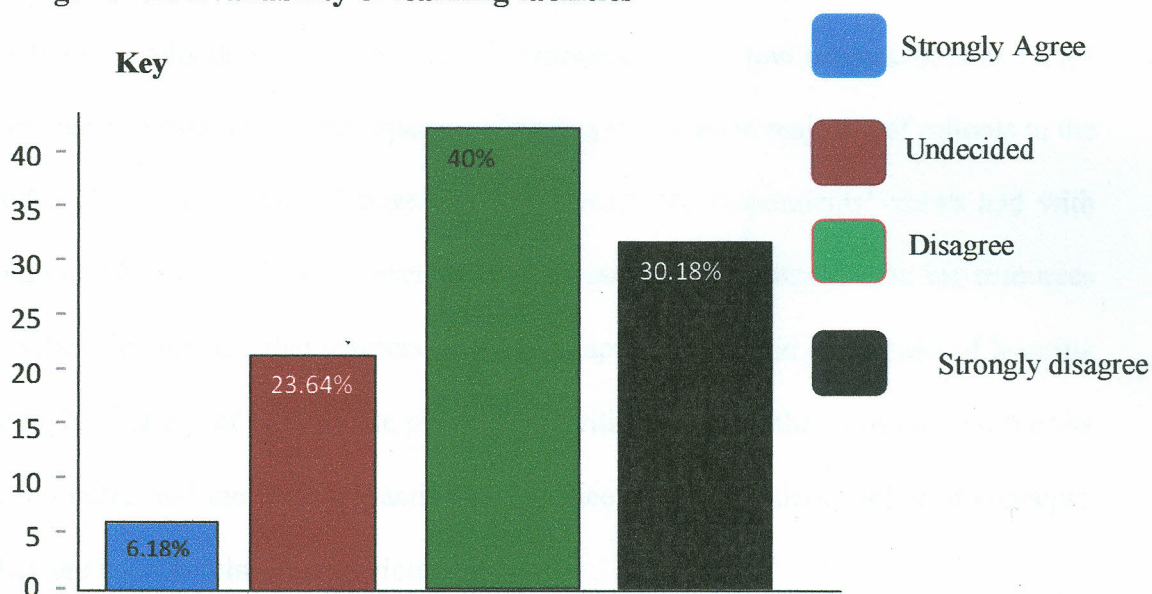
individual characteristics linked to non attendance are poor school performance. The same findings do agree with the study done by the same scholar who further revealed that some students who dropped out of school acquired low paying jobs and were contented with the little they earned so they ended up discouraging their peers from learning. Forgone productive contribution is a factor influencing wastage among students according to Kiumi and Chiuri (2005) which is in agreement with the findings from the study. The same source argues that poverty can make parents to withdraw their children from school so as to work and earn in order to subsidize for the family income, even though it is against the law.

4.4 School and home-based factors contributing to educational wastage in secondary schools in Kericho County

4.4.1 School - based factors

Here the main question was to establish the school-based factors contributing to educational wastage in secondary schools in Kericho County. This was necessary so as to establish whether schools in the County had adequate teaching and learning facilities which is a key component in enhancing students' performance. The students were asked to indicate using questionnaires whether the schools had adequate teaching and learning facilities. The responses are indicated in Figure 4.5

Figure 4.5: Availability of learning facilities



Findings from Figure 4.5 indicated that 17 (6.18%) of the students strongly agree that their schools had adequate teaching and learning facilities while 65 (23.64%) of the students were undecided. Further findings revealed that 110 (40%) of the students disagreed with the view that there are adequate learning facilities, while 83(30%) of the students strongly disagreed that their schools had adequate teaching and learning facilities. Hence, the biggest percentage of respondents showed that most schools had no learning facilities. Furthermore, apart from the returned questionnaires, the researcher visited the schools personally and observed that the learning facilities were inadequate in most of the schools. Availability of learning resources infer aid or assisting learning materials which include school farms, library services, study trips, audio- visual aids for example overhead projectors, models and maps, laboratory equipped with relevant apparatus and computer assimilated experiments among others. Learning facilities enhance learning thereby improving academic performance for all students. This is because students are able to retain information better when they practise what they learn by performing experiments, going for field trips to

observe the applications of what they learn in class among others. Unsatisfactory academic results depicted in Figure 4.5 characterized by low mean scores at KCSE level can be attributed to inadequacy of learning facilities in majority of schools in the study. The findings from Figure 4.5 concur with the respondents' views and with Grant and Searl (1997) who observes that the use and adequacy of learning resources is critical in ensuring that learners develop an appreciation and enjoyment of learning through a variety of appropriate practical activities. They further observe that the use of resources and the resulting activities enhance students understanding of concepts. They are used to reinforce previous learning.

The respondents were further asked to enumerate information on home-based factors which influence wastage, they stated both positive and negative factors the results are presented in the Table 4.7

Table 4.7 Home- based Factors Influencing Wastage Rates in Secondary Schools in Kericho County

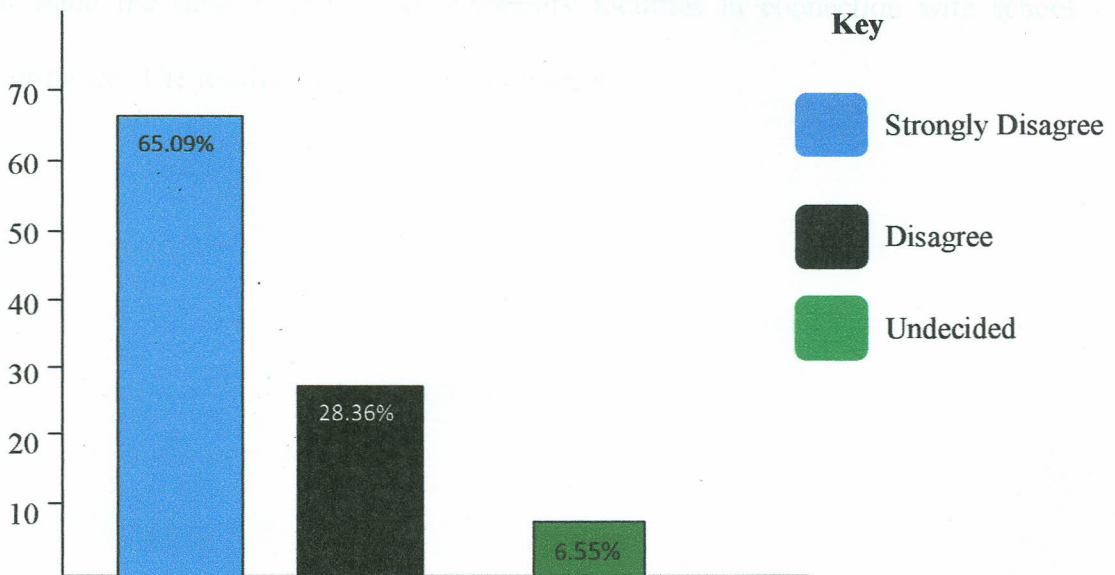
Factors	Number	Percentage	Factors	Number	Percentage
Repeating class	62	22.95	Improved guidance & counseling	72	26.65
Early Marriage	10	3.70	Remedial classes for the weak	19	7.05
HIV/AIDS	13	4.80	Academic open days	8	2.95
Indiscipline	21				
Poverty	7	7.75			
Family	11	2.60			
Conflict	109	4.10			
Child labour	13	40.40			
Lack of fees	56				
Peer influence	24	4.80			
Drug Abuse	9	20.75			
FGM		8.90			
	171	3.35			
Negative factors		63.35	Positive Factors	99	36.65

The study established that 171(63.35%) of respondents stated negative factors which contributed to wastage. These included repeating classes and dropout of the students which was indicated by 22.95% and 40.40% respectively by the respondents. However, some positive factors were mentioned by 36.65% of respondents. The respondents mentioned improved guidance and counseling (26.65%) and remedial classes for the weak (7.05%) as factors that contributed positively, while 2.95% thought academic open days had an advantage in positively contributing to low wastage.

4.4.2 State of the library facilities in the schools

Another dimension of the school-based factors contributing to educational wastage in the County was to examine the state of the library facilities in the sampled schools within the County. This aspect is important since if school libraries do not have adequate learning resources, it will mean that the teachers have to source for more books elsewhere to meet the student text book ratio. The students were asked to indicate using questionnaires about the availability and adequacy of learning resources in their respective school libraries. The results are presented in Figure 4.6

Figure 4.6: Availability of learning resources in the school library

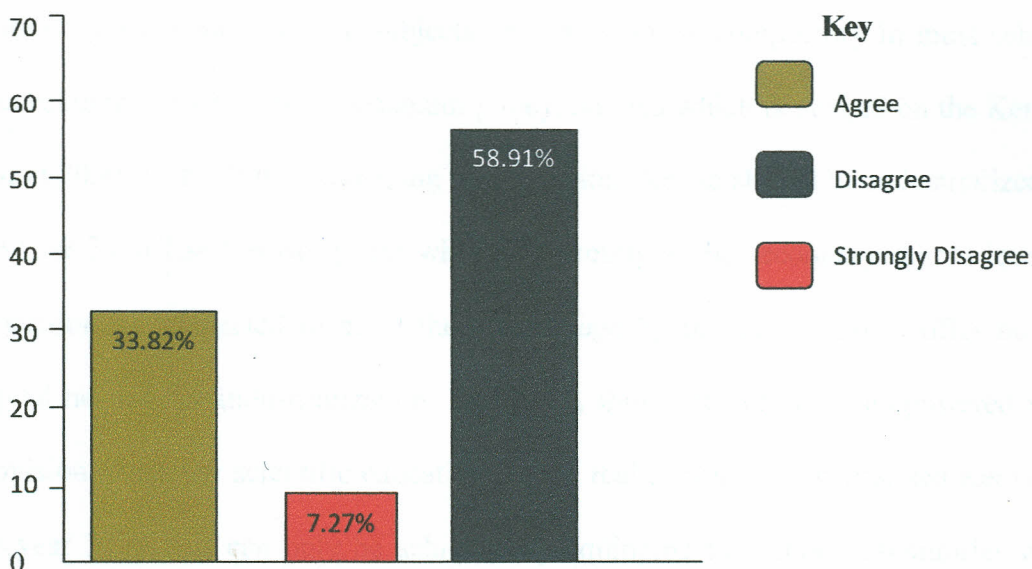


From Figure 4.6, out of 275 respondents, 179(65.09%) and 78(28.36%) strongly disagreed and disagreed, respectively, that learning resources were available in school libraries. 18(6.55%) of the students were undecided whether learning resources were available. This implies that schools need stocked libraries with books and other reference materials. In addition to this, the researcher found some schools with library buildings or rooms packed with several old books and materials which were not useful and relevant to the present curriculum. The few useful ones could not be shared among the students equally. The results from Figure 4.6 shows that 65.09% of the students indicated that their schools do not have functional libraries. These findings contradict Wilkins (1940) who ascertain that it is not by grandeur nor by the beauty of its buildings and their finishing that a library will attract its readers but by the rich collections within its walls.

4.4.3 The state of laboratory facilities in the sampled schools

This section sought to establish from the students their views using questionnaires on the state of their respective schools laboratory facilities. This was necessary so as to understand the state of the school laboratory facilities in connection with school performance. The results are presented in Figure 4.7

Figure 4.7: The state of school laboratories



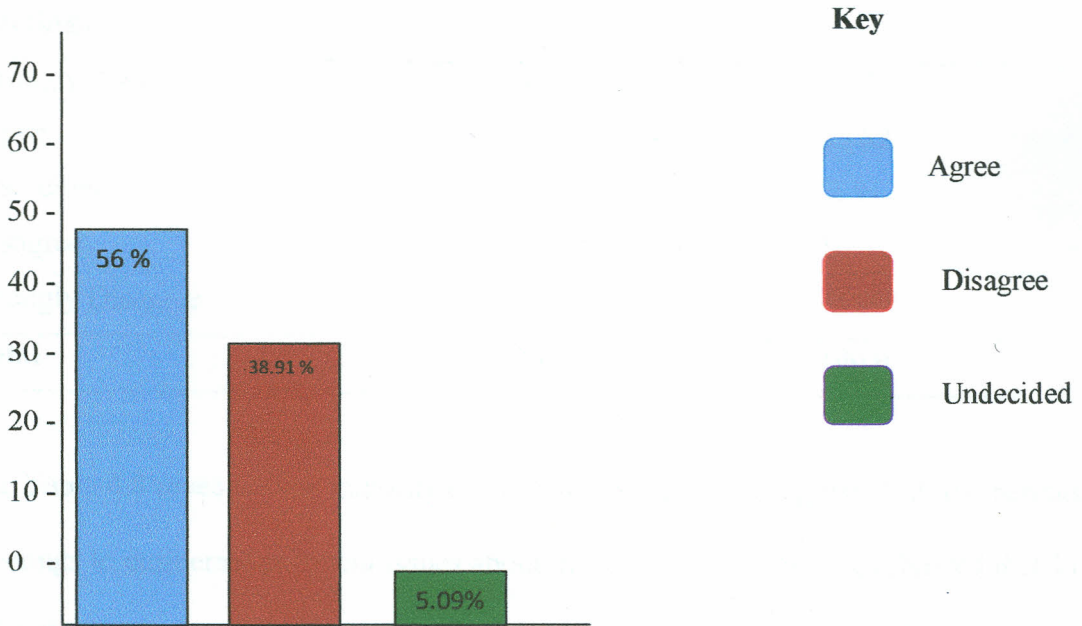
In Figure 4.7, majority 162 (58.91%) of the students indicated that the school laboratories are not equipped with needed apparatus, 93 (33.82%) agreed the schools had equipped laboratories while 20 (7.27%) of the students strongly disagreed with the opinion that schools had well equipped laboratories. However the researcher found out that even the few schools which appeared to be fully equipped still lacked some chemicals and proper storage facilities that accompany laboratory equipments. Science subjects taught in secondary schools are Chemistry, Biology and Physics. These subjects should be taught in a laboratory because they are practical subjects that require a lot of experiments. School laboratories are science rooms designed and fitted with apparatus used for performing experiments. Learners sit for science practical examinations at KCSE level in the three science subjects namely, Chemistry, Biology and Physics taught at the secondary school level of education. This practical examinations account for 40% of the overall scores per science subject. This implies that students who are not exposed to frequent science experiments are not in a

position to score good marks in science subjects. Unsatisfactory academic Performance at KCSE level illustrated in Figure 4.4 may be attributed to limited laboratory apparatus. Science subjects have been made compulsory in most schools according to the education curriculum policy, an idea which is pegged on the Kenyan vision 2030 (RoK, 2007). According to this vision, Kenya should be industrialized by the year 2030. The Kenyan youth who are currently at the secondary school level of Education are projected to be at their prime age by the year 2030 to offer human capital needed for industrialization. The youth should therefore be empowered with provision of quality scientific education for the realization of industrialized Kenya by the year 2030. This can only be achieved by equipping the school laboratories well. Therefore, the teaching of science subjects should be taken seriously by all educational stakeholders.

4.4.4 Teacher-Student ratio and school performance

The researcher aimed at establishing the teacher-student ratio in sampled schools. This was necessary so as to determine whether there was a correlation between teacher-student ratio and school academic performance. The students were asked to indicate using questionnaires whether teacher-student ratio had any correlation in school performance. The results are indicated in Figure 4.8.

Figure 4.8: Teacher-Student Ratio in Relation to School Performance



From Figure 4.8, teacher-student interaction is very instrumental not only in imparting knowledge but also in remedial work. The Figure 4.8 above indicates that 154 (56%) of the respondents strongly agreed that teacher-student ratio influenced school performance but 107(38.91%) appeared to disagree while 14 (5.09%) were undecided.

4.4.5 Regular staff and parents meeting

The research aimed at establishing whether there were regular parents and teachers meetings organized by school management. This was necessary so as to establish whether regular staff and parents meetings had any effect on students performance and smooth running of the schools. The information was obtained from the students using questionnaires. The results are indicated in Table 4.8

Table 4.8: Regular staff and parents meeting

Regular staff and parents meetings	Frequency	Percentage
Strongly Agree	8	33.45
Agree	11	45.82
Undecided	1	2.91
Disagree	3	10.55
Strongly Disagree	2	7.27
Total	25	100.0

The Table 4.8 revealed that majority of the schools organized regular staff and parents meetings to deliberate pertinent issues about the schools. The findings showed that 11 (45.82%) of teachers agreed with the view that there were regular staff and parents meetings in the respective schools, while 3 (10.55%) disagreed with the view. Only 1(2.91%) of the teachers were undecided. This shows that the school managements recognized the importance of involving teachers and parents in matters affecting the education of their children and the school as a whole. In parents/teachers meetings, many educational issues are deliberated on. This include payment of school levies, purchasing of learning facilities like buying a school bus and building new classrooms, motivation of teachers and students, management of remedial programs, among others. All these issues are important for the smooth running of a school. However, they cannot be achieved without the co-operation of parents and school management.

4.5 Socio – economic factors contributing to educational wastage

The study further investigated the socio-economical factors such as poverty, inflation, cultural issues e.g HIV/AIDS pandemic and how they contribute to educational wastage. The students were asked to indicate using questionnaires their responses on how socio-economical factors contribute to educational wastage in Kericho County.

The results are indicated in Table 4.8

Table 4.9: Socio – Economic factors contributing to Wastage

Socio-economic factors	Frequency	Percentage
Poverty	109	39.64
Inflation	66	24
Cultural issues e.g. Child labour and FGM.	54	19.64
HIV/AIDS Pandemic	46	16.72
Total	275	100.0

In Table 4.8, out of 275 respondents, 109 (39.64%) indicated that poverty was the greatest socio-economic factor contributing to wastage followed by 66(24%) who thought inflation like that experienced in Kenya from 2011 was a key factor to wastage. A small percentage of the respondents 54(19.64%) felt that cultural issues had a role in educational wastage, while 46(16.72%) said HIV/AIDS pandemic had a big hand in contributing to educational wastage as it took away the bread winners in form of death or terminal illness that derived them their roles in employment and business.

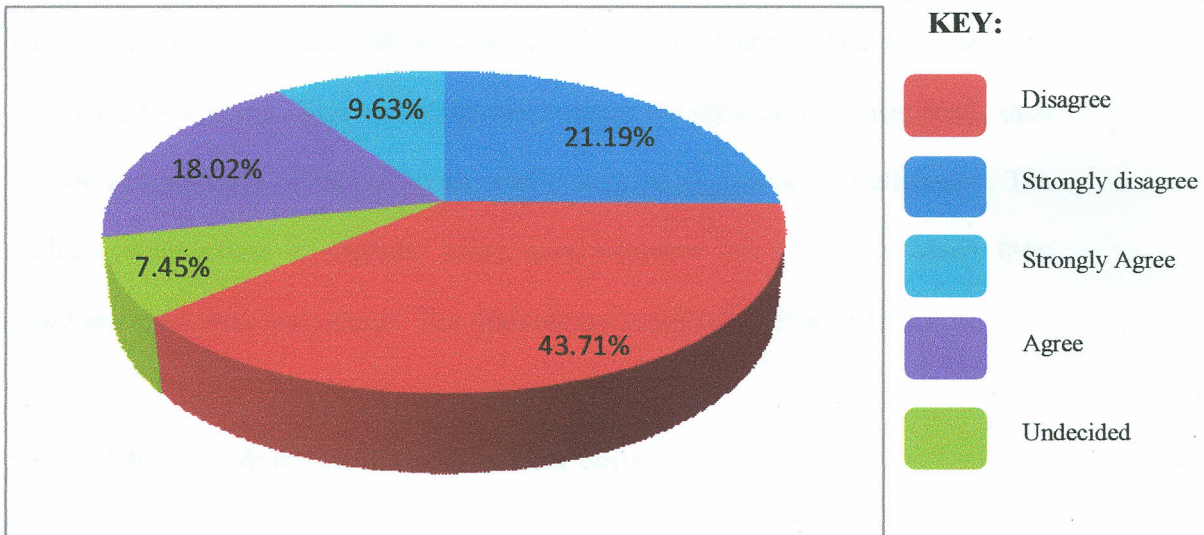
Further analysis about socio- economic background of the students revealed that the majority of parents terminated school at form four level, a few proceeded on to

middle level colleges and beyond. In addition to this, a few parents had formal employment, while the majority were farmers, casual laborers and businessmen. Formal employment provides a reliable source of income and therefore these parents are able to meet their children's educational needs. The findings from students concur with Okullu (2002), who notes that payment of school levies is another cause of student absenteeism. He further argues that as much as presently there is free tuition in Secondary education and FPE, the cost of education is not completely free. Okullu (2002) observes that payment of school levies for students from poor economic background is a challenge that has continued to persist whereby students can be compelled to stay at home if they cannot meet this requirement and end up forgetting or forming a negative attitude towards school, hence drop out of school at the end. The same finding concur with (Onditi.2007) who notes that the pastoralist communities in North Eastern Kenya believe that what is offered in schools do not reflect their socio-economic and cultural lifestyle. This makes the curriculum irrelevant to them (Onditi.2007).

4.5.1 Whether students have enough food in their schools and homes

The study further sought to establish from the students in the sampled schools whether they had enough food and learning materials needed for them to sustain their learning. This was necessary so as to establish whether farmers, casual laborers and businessmen who are the majority of the parents in the County had a reliable source of income for them to meet their children's educational needs. Students were asked to indicate whether they had enough food and learning materials in their respective schools. The results are indicated in Figure 4.9

Figure 4.9: Students have enough food and learning materials



In figure 4.9, the respondents 172 (43.71%) disagree that students have enough food and learning materials needed for them, while 77(21.19%) of the respondents strongly disagree. This therefore indicates that majority of parents cannot afford to provide food and some useful learning materials for their children. Essential learning materials are pens, mathematical/geometrical set supplementary text books, among others. Learning cannot take place successfully without adequate learning materials. Hence, lack of learning materials is a possible cause of wastage and poor academic achievement at KCSE level as reflected in previous section. The findings concur with a report by UNESCO (2005) which acknowledges that these challenges contribute to educational wastage. The report further observes that many people in developing nations are still burdened with high food prices, rising costs of electricity, gasoline or paraffin and essential items and have no savings to invest in education. The disparities are starkest between socio-economic classes, gender, geographical regions and generations.

4.5.2 Whether guardians meet the student' basic needs

This section sought to establish from the students, the extent to which the guardians meet their basic needs. This was necessary because the provision of basic needs such as food and payment of school levies enable students to pursue their education. The students were asked to indicate using questionnaires the extent to which their guardians meet their basic needs. The findings are presented in Figure 4.10

Figure 4.10: Guardians meeting the student basic needs

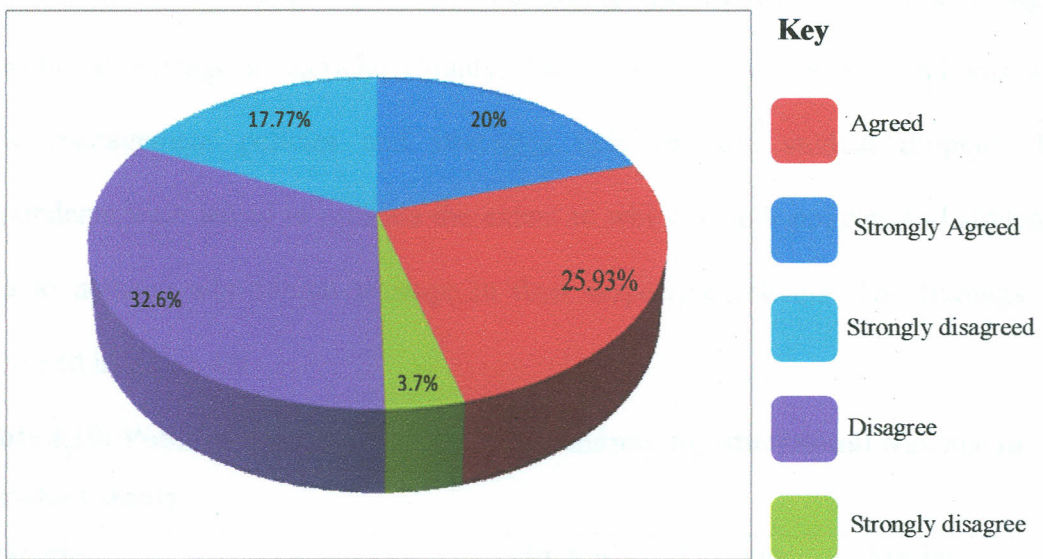


Figure 4.10 indicates that 89(32.6%) of the respondents disagreed that the student needs were provided as required. However 71(25.93%) agreed that parents and guardians tried their best to provide the school requirements and basic needs to enable the students pursue their education. These findings concur with those of (UNESCO, 2004) which observes that in Latin America, Africa and South Asia, wastage is prevalent among students from low socio- economic background, in the rural than the urban areas and again among girls than the boys. Psacharopoulos and Woodhall (1985) further observe that factors influencing wastage are; "Poverty, which may give rise to illness, malnutrition, absenteeism, the high opportunity cost of schooling for

poor families, cultural factors, which affect girls in particular; inappropriate curriculum and examinations which is excessively academic and designed to prepare majority of pupils for upper secondary and higher education; and a shortage of secondary school places, which lead to repetition at the primary level."(Pg 200).

4.6 Policies and strategies aimed at managing educational wastage

This study sought information from teachers and students using questionnaires and interview schedules from the principals on strategies and policies aimed at managing educational wastage in Kericho County. This was necessary because schools with good management policies and strategies help to curb student dropout. The respondents were asked to indicate the extent to which school policies and strategies help to manage educational wastage in their respective schools. The findings are presented in Table 4.9

Table 4.10: Policies and Strategies aimed at managing educational wastage in Kericho County

Strategies	Principals		Teacher		Students	
	f	%	f	%	f	%
Guidance and counseling and career guidance opportunities	4	21	5	20	36	13.0
Highlighting the plight of the needy students to well wishers	4	21	8	31.0	66	24.0
Facilitating the bursary fund to the deserving students	4	21	2	8.3	34	12.5
Engaging parents in monitoring their children's progress	3	16	2	8.3	34	12.5
Regular meetings by parents and teachers	4	21	8	31.0	105	38.0
Total	19	100	25	100.0	275	100.0

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Regular meetings by parents and teachers	4	21	8	31.0	105	38.0
Total	19	100	25	100.0	275	100.0

Findings from Table 4.9 indicate that majority of the principals 4 (21%), 8 (31%) of the teachers and 105 (38%) of the students observed that a school with good management policies facilitates better learning and minimizes wastage. A school with good management has delegated duties and spelt job description, for example, guidance and counseling and career guidance which students need most. Guidance and counseling can help students who might opt to drop out of school while career guidance enables students to forecast into their future and work hard to secure a successful future. In fact career guidance is a motivation to many students who access this service.

Other roles that school managers have played in management of wastage according to this research are: highlighting the plight of the needy students to well wishers, facilitating bursary fund to the deserving students, engaging parents in monitoring their children's progress in school as seen in Table 4.9 on regular meetings by parents and teachers, slotting many academic open days in a term, organizing remedial lessons during free times, weekends and during the holidays for academically weak students. The PTA as part of the management team have played a big role in management of wastage, for example, contributing some funds for student and teacher motivation, constructing boarding facilities, purchasing a school bus, buying laboratory equipments among others. These are important contributions which facilitate learning and minimize wastage.

4.7 Discussions

The general trends in enrolment from Form 1 to Form 4 for both male and female students show a general decline for all the cohorts whether the Apparent Cohort Method (ACM) or the Reconstructed Cohort Method (RCM) is used as shown in Figure 4.1. Without any further analysis, it is apparent that there is wastage in the schools studied. As far as educational wastage is concerned, it occurs in three forms— one in the form of dropout, the second one is in form of repetitions of classes and thirdly in poor performance. When a pupil leaves the school before completing the course, it is termed as dropout whereas failing once or more before gaining promotion to the next higher class falls under the category of repetition of classes. The definition of dropouts, however, raises an important issue. There are two viewpoints on the definition of dropouts which form the basis of two definitions to the concept. According to the first view, wastage is related to the objectives of education whereas the second definition is based on the concept of incremental gains in learning outcomes.

The continued research in this line (Nayak and Karmakar, 1994) helped the experts to devise the following three different methods to measure educational wastage:

- i) Apparent Cohort Method (ACM);
- ii) Reconstructed Cohort Method (RCM), and
- iii) True Cohort Method (TCM).

The Apparent Cohort Method can be used to measure educational wastage in schools either by, using cross-sectional or time series data. While using cross section data, enrolment in Form I in a given year is considered as cohort and the same is compared

with the enrollment figures in all other classes in the same year. Any diminution from one class to another is regarded as evidence of wastage. But this method provides only a rough estimate educational wastage because of the following few reasons: Firstly, enrollment in Form I in a given year is not the result of enrollment in Form I in the same year but in the previous year. Secondly, enrollment in Form II also includes repeaters of the same year and possibly some newly-admitted students who dropped out earlier or of those who might have migrated from other schools.

The ACM while using time series data considers enrollment in Form I in a base year as Cohort and determines the relationship through diagonal analysis between cohort enrollments in successive classes in successive years. This method is also not free from limitations when it uses time series data as it does not take into account the element of repetition in a Class. The Reconstructed Cohort Method which was used by UNESCO (1970) in a worldwide survey during 1969 uses successive year class wise data on enrollment and repeaters. From these data the number of students promoted (P) for each class is derived first by subtracting the given number of students repeated (R) from total number of enrollment (E) in the class as follows:

$P = E - R$ Then the number of dropouts (D) is estimated as the residual factor in the following way: $D = E - (P+R)$. The RCM also fails in taking into account the pupils who do not repeat but dropout from the school and get promoted to the higher class in some other school. In the case of True Cohort Method, a particular group of pupils entering the beginning of the class is followed up in subsequent years till they reach the final class of the course. This requires the longitudinal studies which help in identifying the number of pupils leaving school at different points of time, the number of pupils migrating to other schools, the number of pupils repeating classes and their

frequency, the number of pupils getting promotion and the number of pupils rejoining school after dropping out, etc. The TCM is considered to be the most scientific one among the available methods though it involves the use of cumulative record cards of time consuming nature.

Due to data inadequacy, the RCM was used which facilitated the estimation of dropout rate, type of data that is generally unavailable to the general public due to the Ministry of Education Policy on such matters. The general trends in repetition were in unit percentages and were never more than 4% for all the classes and for both gender in the present study. Considering an average class of 50 students, an average of 4% repetition rate would mean at least 2 students would repeat a class for all the cohorts. This is a relatively high value of repetition rate at secondary school level. Comparatively, these figures are higher than the reported National repetition rates that had dropped from 1.8 in 2009 to 1.3 in 2012 according to Ministry of Education; it is worth noting that while the repetition rates had continued to drop, Kericho County had a 2.6 dropout rate for the same period. It is therefore not surprising that the figures established by the study from Kericho County were thus high.

On the other hand, 7.4% to 21.2% dropout rates can be quite worrying for the surveyed schools. Again, when a class of average 50 students is considered, the dropout will range from about 4 students to 10 students per year. Such a high dropout rate for a cohort can only be compensated by a similar increase in enrolment after taking care of repetition (average of 2). This means that if a balance has to be maintained for a cohort throughout the education cycle, the wastage rate of about 12 students (2 repetition and 10 dropouts) must be maintained by increased enrolment of

the same number of students in the respective years of study. The dropout rates for boys were generally high (11.3% to 21.2%) as compared to girls (6.9% to 7.4%). The dropout for boys and girls was relatively high compared to national figure available that states that in 2009 the dropout rate for the boys and girls was 4.1 and 4.2 respectively (Government of Kenya 2012).

The performance, classified on the basis of mean score showed a wide range of 5.02 to 8.83. The score classifications into 6 ranks provide almost a unit change for the purposes of analyzing performance. For Day, County/Boarding, Day/Boarding and Mixed Day schools, no clear pattern of school type could be linked to performance but it was noted that most of the day schools do not have libraries and for those which have, they are not well stocked. Clearly, this is also a case of inadequate learning resources and hence, poor performance. From the analytical assessment, there was no evidence of differences in performance between Day, County/Boarding and Day/Boarding schools but Mixed Day schools showed poorer performance than the other categories meaning that co-educational approach for secondary schools in the surveyed districts is a major factor determining performance when the covariates are repetition, dropout or wastage.

Factors responsible for wastage in the surveyed schools seem to be focused on academic performance, behavior and family background. This is consistent with studies done earlier by Owiye (2005), Belgut district which revealed that, factors causing wastage include inability to pay school fees, poor academic performance, sickness, absenteeism, negative attitudes towards education by both parents and the

pupils, child labour, transfer from one school to another and early marriage. Parents or guardians and school authorities made decision for some pupils to repeat.

Whereas drugs featured as one of the factors, it was not priority issue in wastage but early and late starting of school seem to be the most highly ranked factors. When considering the demographic and social structures among the communities in the study area, this could be a serious social barrier to education. From knowledge of the area, social issues on perceptions, opinions and communication with late starters of school may be an issue while early starters are properly incapable of coping with the demanding 8-4-4 curriculum due to inadequate early childhood development in relation to learning process. These factors were ranked both higher and cumulatively in day schools as compared to boarding schools and also in mixed schools as compared to girls or boys schools. The main challenge in performance and wastage seem to be in the structures and academic environment in day schools as well as in co-educational establishment. Unless stricter rules and high responsibilities are placed on both the students and the teachers, there is more freedom of movement and decision-making in these day schools and may be the root cause of wastage.

A study done by UNESCO (2008) in North America, revealed that little repetition occurs in developed countries and this is attributed to the presence of effective guidance and counseling services offered to students in school. In Latin America, Africa and South Asia wastage is prevalent among students from low economic background UNESCO (2004C). The main factors responsible for repetition according to teachers from this research are child labour and poor academic performance. Peer influence, indiscipline and school fees play a minor role. These main factors seem to

be related to the social and demographic issues and academic performance. It is apparent those social and demographic characteristics affects academic performance and are synergetic in action, thereby resulting in repetition. Studies done earlier by Juma 2003 in Kericho County also stated that in some schools, students are compelled to repeat classes to raise the class mean score. However, there is general agreement with Juma's study that poor academic performance and absenteeism also result in repetition. Further, studies done by Omollo (1999) and Rono (1990), also concurs that, promotion of students to the next class based on academic merits a school policy in some schools that contribute to wastage.

On the other hand, dropout is influenced by inability to pay school fees and peer influence on the top list. These are socio-economic factors which school authorities cannot control. It is hence expected that in areas with very poor economic potential and have exotic social settings, the dropout rates are expected to be quite high. These are very consistent with studies done by psacharopoulos and woodhall (1995) who averred that poverty, which may give rise to illness, malnutrition, absenteeism, the high opportunity cost of schooling for poor families, cultural factors, which affect girls in particular; inappropriate curriculum and examinations which is excessively academic and designed to prepare majority of the pupils upper secondary and higher education; and a shortage of secondary schools places, which lead to repetition at the primary level are causes of wastage. Dropout behaviour in developed countries is not a vice as such this is because students opting out of school get enrolment into education programmes similar to those offered in the regular schools (Gustard 1991) and others dropout get into the job market to improve their skills and become successful in the job stability and earning power (Vincent 1996) cited in UNESCO

2008b. The role being played by school management to reduce wastage includes the provision of library facilities which were found in all boarding schools, boys schools and girls schools but some Day schools, Day/Boarding Schools and Mixed Schools did not have libraries and where they were available, not all of them were well stocked. The main handicap in provision of quality education and reduction of wastage in secondary schools in Kericho County seem to be centred on Day Schools and Mixed (Boys/Girls) Schools. Other roles school managers have played in management of wastage according to this research are: highlighting the plight of the needy students to well wishers, facilitating bursary fund to the deserving students, engaging parents to monitor the progress in school by slotting in many academic open days in a term, organizing remedial lessons during the school holiday.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents an overview of the study. It provides a summary of the study, research findings, conclusions of the objectives that were researched on and recommendations that arose from the study. It further highlights possible areas of future research.

5.2 Summary of findings

i) Characteristics of the respondents

The study found out that 23% of the students were from boarding schools, 63% were from day schools and 14% from schools which were both day and boarding. Majority of the class teachers interviewed were from day schools (78%), while 11% were from boarding schools and further 11% from day boarding schools. Additionally, 68% of the Principals were from day schools while 16% were from boarding and a further 16% from day/boarding schools. The respondents' category of schools 62.4% were from mixed boys' and girls' schools. Class teachers from mixed schools were 74.1%. Additionally, 68.4% of the Principals interviewed were from mixed boys and girls schools.

j) Wastage rates by gender

The boys' cohort of 2009 showed a decline of enrolment from 2000 in Form 1 to 1740 in Form 4, translating to 87.0% retention rate. The girls' cohort of 2009 showed a decline of enrolment from 1151 in Form 1 to 902 in Form 4, this is translating to 78.3% retention rate.

The highest repetition rate for the boys was noted in the year 2011 at 0.041 or 4.1% in form I and the lowest repetition rate in form three in 2010 at 0.017 or 1.7 %. For the girls, the highest repetition rate was noted in form 1 in 2010 at 0.051 or 5.1 % and the lowest 0.022 or 2.2% in 2012 among the form four girls.

The study established that the highest dropout rate among the boys in form two in the year 2011 was (21.2%) The general trend of dropout rate for the 2009 cohort ranged from 6.7 to 17.7. The dropout rate for boys was generally high (11.3% to 21.2%) as compared to girls (6.9% to 7.4%).Based on the number of repeaters and the calculated number of dropouts for all the cohorts in all the classes considered in the study, for boys, the Proportion of Total Wastage due to Student Dropout (PTWSD) was 6.7% to 12.7% as compared to Proportion of Total Wastage due to Student Repetition (PTWSR) that was 2.2% to 4.0%. For girls, PTWSD was 6.9% to 7.6% as compared to PTWSR that was 2.2% to 5.1%.

k) Performances of the schools type and category

The found out that, County schools had the highest mean score at 8.28 in KCSE exams for the period of four years from 2009 to 2012, while the day schools had the lowest mean score of 5.32 for the same period. Further findings revealed that, District/Boarding schools had a mean score 6.197. For day schools, the best mean score was 5.620 for the year 2010 and the lowest was 5.02 for the year 2009. County schools had the highest mean score of 8.60 for the year 2012 and lowest of 7.72 for the 2009. District/Boarding schools had the highest mean score of 7.11 for the year 2012 and the lowest 6.34 for the year 2010. The overall performance of the boys' schools was higher compared to either girls or Mixed schools. Over the period 2009

to 2012, the boys' schools had a mean score of 8.283 compared to 6.4475 and 5.32 for girls and mixed schools, respectively.

D) School Mean score at KCSE and Wastage Rates

The study revealed that the annual mean score for the schools studied in 2006 was 5.751, 2010 was 5.643, 2011 was 5.310 while 2012 was 5.253 giving an average total mean of 5.381. The mean score reflects the general academic performance of the schools, which is not quite satisfactory. The year 2010 had the highest Grade Repeter rate of 0.2850 (28.50%) while the year 2011 and 2009 demonstrate a grade repeater rate of 0.0335 (3.35%) and 0.0302 (3.02%) respectively. The findings from the study revealed that, the highest grade dropout rate of 0.114 (11.4%) was recorded in 2007 while the year 2011 registered a grade dropout rate of 0.092 (9.20%).

As regards the Cohort Wastage Rate (CWR) for the 2009 cohort that was studied, the findings revealed a wastage rate of 0.0722 (7.22%), a mean repetition rate of 11.6% and a mean dropout rates of 10.3% which are quite high, compared to the mean score of 5.253 which is quite low. Furthermore, a correlation between mean score and repetition rate gave a coefficient value of 4.50230 and a p-value of 0.960. The p-value indicates that this is insufficient evidence to conclude that the repetition rate affects mean score. Additionally, the estimated coefficient for the single covariate, dropout rate, is 1.24920, with a p-value of 0.935.

m) Factors contributing to wastage in secondary schools

The biggest percentage of respondents showed that most schools had no learning facilities. Learning resources are inadequate in school libraries according to 66.30%

of the respondents. A majority of 165 (61.0%) indicated that the school laboratories are not equipped with needed apparatus. Science subjects have been made compulsory in most schools according to the education curriculum policy, an idea which seem to be pegged on the Kenyan vision 2030.

Out of 275 respondents, 112 (40.73%) indicated that poverty was the greatest socio-economic factor contributing to wastage followed by 65 (23.64%) who thought inflation like that experienced in Kenya from 2008 was a key factor to wastage. A small percentage of the respondents 53 (19.27%) felt that cultural issues had a role in educational wastage, while 45 (16.36%) said HIV/AIDS pandemic had a big hand in contributing to educational wastage as it took away the bread winners in form of death or terminal illness that derived them their roles in employment and business.

f) Role of school management in addressing wastage

The study established that school managers play important roles in management of wastage. These include highlighting the plight of the needy students to well wishers, facilitating the bursary fund to the deserving students, engaging parents in monitoring their children's progress by organizing regular meetings by parents and teachers, slotting in many academic open days in a term, organizing remedial lessons during free times, weekends and during the holidays for academically weak students. The PTA as part of the management team have played a big role in management of wastage, for example, contributing fund for students and teacher motivation, constructing boarding facilities, purchasing a school bus, buying laboratory equipments among others. These are important contributions which facilitate learning and minimize wastage.

5.3 Conclusions

Based on the findings of the study, it is concluded that the general retention rate in all classes of secondary schools studied was 78% and above for all cohorts in Kericho County. It is further concluded that there is a consistent general decline in enrolment for all cohorts and classes and for both gender in the surveyed schools in Kericho County. The annual repetition rate for both genders is unitary in scale and varies between 2.1% to 3.3% annually for all cohorts and for all classes and the annual dropout rate varies between 7.2% to 12.8% annually for all cohorts and for all classes thereby being higher than repetition rate. Dropout rate for boys in all the categories of schools was higher than for girls, and that, more boys than girls dropped out of schools in the County. The Proportion of Total Wastage due to Student Dropout (PTWSD) was 49.3% to 83.7% as compared to Proportion of Total Wastage due to Student Repetition (PTWSR) that was 6.8% to 50.7%.

Poor performance was found to be associated with Mixed Day Schools; the mixed day schools performed worse compared to County/Boarding, District/Boarding schools or day/boarding schools. Early and late starting of school was found to be a major factor contributing to wastage according to the teachers. Additionally, drug abuse, lack of job opportunities and being orphaned before completing school are other factors mentioned. The reasons given for wastage were predominant in Day Schools and in Mixed Day Schools. While the main factors responsible for repetition were found to be child labour and poor academic performance, those responsible for dropout were inability to pay school fees and peer influence. The role being played by school management to reduce wastage include the provision of library facilities which were found in all boarding schools, boys schools and girls schools but some day schools,

Day/Boarding Schools and Mixed Schools did not have libraries, and where available, not all of them were well stocked.

5.4 Recommendations from the study

Arising from the findings of the study, the following recommendations were made:

- 1) The school management should reinforce and strengthen the guidance and counseling services offered to students so as to be effective in helping students with personal problems that might lead to educational wastage.
- 2) Data on repetition, dropouts and cases of accelerated learning should be kept well by the school management to facilitate proper monitoring and evaluation of internal school efficiency.
- 3) The schools' stakeholders should provide enough learning resources to schools which motivate students to learn and therefore wastage is minimized.
- 4) The Ministry of Education, Science and Technology should introduce sex education in secondary school level to lower the number of pregnancy - related dropouts.
- 5) The government should reinforce its policy that ensures automatic promotion of students to the next classes which will eliminate repetition.
- 6) For those who drop out of school because of school fees, there should be a procedure for early identification of vulnerable students by the school management and process of ensuring that they get a bursary from the government in good time so that they are able to complete their secondary education.

5.6 Recommendations for further research

Based on the methodologies used in this study and the results obtained, the following recommendations are made for further research.

- i) A study to be conducted to establish the factors that influence student transfers and its effects on the operations of secondary schools in Kericho County.
- ii) A study to be conducted to establish the factors that influence poor maintenance of records and data and its effects on evaluation of internal efficiency in secondary schools in Kericho County.

REFERENCES

- Ary, D. Jacob, K. & Razaviah, h (1992) *Introduction to Research in Education*. New York, Holt, Rhine-halt and Wilson
- Ayot, G. Briggs,T. (1990; 1992). *The Economics of Education* Nairobi : East African Publishing House
- Barineka, N.J. (2012). *Analysis of poor performance in senior secondary school students in Chemistry in Nigeria*. African Research Review Vol. 6 (4), 27.
- Beckly, M.S (1990). *Education for All (EFA). Selection from papers commissioned to the regional conference on EFA* .UNESCO, Daker. A. Journal of African Thoughts on the prospects of EFA 27 (2), 27 – 28
- Bell, J. (2002). *Learning from research: Getting more from your data*. Buckingham: Open University Press.
- Best, J.N. & Kahn J.V. (1999) and Orodho (2009), *Research in Education*. Prentice-Hall of India Private Ltd. New Delhi
- Bishop, G. (1994). *Alternative strategies for education* London Macmillan
- CFBT Report (2009). *Grade repetition in primary schools in Sub-Saharan Africa*
- Cotton, K. (1996). *School size, school climate and student performance*. School improvement Research series.
- Coleman, J. (1966) *Education Production Functions*. Hoover institution, Stanford University, Stanford.edu <http://www.hoover.org/publication>
- Elliott, D S., Voss, H L Wending,(1966). *Capable dropouts and the social milieu of the high school*. The Journal of Educational Research (Madison, Wisconsin), vol 60, No. 4 P.180 – 186
- Erickson, D. A. (1982). *Disturbing Evidence about the "One Best System" In The Public School Monopoly*, edited by Robert. B. Everhart. San Francisco: Pacific Institute for Public Policy Research and Cambridge: Ballinger, 1982, 393-422.

- Edwards, G & Fisher, R. J. (1995). *Effective and ineffective secondary schools in Zimbabwe: a preliminary study*. International Studies in Educational Administration, 23:27-37.
- Edmonds, R. R. (1979). *Effective schools for the urban poor*. Educational Leadership, 37:15-27.
- Education Act of 2012*. Nairobi: Government printer.
- Elimu News (2007). *A newsletter of the Ministry of Education, Issue No. 1*.
- FAWE/ADEA/WGFP,(1997). *A Report of second Ministerial consultation* 13-14 October 1997, Dakar, Senegal.
- Finn, J.D. & Achilles, C.M. (1999). *Tennessee's class size study: findings, implications, misconceptions*. Educational Evaluation and Policy Analysis. 21:97-109.
- Frankel, and Wallen (2000), *problem solving and mathematical beliefs*. Arithmetic Teacher, 35 (1), 32-34
- Gaustad, J. (1991). *identifying potential dropouts*. In Erick Digest, Clearing house on Education Management, Oregon: University of Oregon.
- Gary, B. (1991). *Does Money Matter? The Effect of School Resources on Student Achievement and Adult Success*. Washington, D.C. The Brookings Institution
Description and scroll to chapter preview links.
- Gay, L. (1992) *Educational research: Competences for Analysis and Application* 4th Edition, Macmillan, New York
- George, F.E. (n.d). *Strategies to reduce repetition in Cameroon primary schools*.
- Graham, S. Taylor, A. Z., & Hudle, A. (1998). *Exploring achievement values among ethnic minority early adolescents* Journal of Educational Psychology, 90(4), 606-620.

- Hanushek, E.A.(1999). *Some findings from an independent investigation of the Tennessee STA R experiment and from other investigation of class size effects.* Educational Evaluation and Policy Analysis, 19:143-163. Issue Brief (2007). The high cost of high school drop-outs.
- Harber, C. (1992). *Effective and ineffective schools: an international perspective on the role of research.* Educational Management and Administration, 20:161-169.
- H.J (2000). Perceptions of stakeholders on causes of poor performance in Grade 2 in a province in South Africa. South African Journal of Education, Vol. 22 (2) p.113-118.
- Hussein, T. and Postlethwaite, (Eds) (1994). *The International Encyclopaedia of Education Oxford: Pergamons PRESS Limited.*
- Juma, G. (2003). *Trend and Factors causing wastage in secondary school Education in Vihiga District, Kenya.* Unpublished Masters of Thesis Maseno University.
- Kennedy, M.M. (1999). *Approximations to indicators of student outcomes.* Educational Evaluation and Policy Analysis, 21:345-363.
- Kerlinger, N (1978). *Foundation of Behavioral Research,* Holt Rinehart and Wilson, New York.
- Kiumi, J.K. & Chiuri L. W. (2005). *Planning and Economics of Education.* Pangolin Pub Limited-Nairobi.
- King E.M. & Hill, W. (Ed) (1993). *Women Education in developing countries, Barriers, Benefits and Policies.* Washington D.C: The John Hopkins University Press.
- Ki-zebo, J (1990). *Education of Perish: Africa's Impasses and prospect.* UNESCO regional office for education in Dakar, Senegal and Abijan.
- Ki-zerbo, J. (1990). *Educational or Perish: Africa's impasse and prospects.* UNESCO regional office for education in Dakar, Senegal and Abidjan.

- Kombe, M. (2005). *Child Labour, a challenge to schooling*. UNESCO-Nairobi
- Kothari, N and Pals D. (1993). *Introduction to Research*. Njoro: Egerton University
- Lawrence, M. & Richard, R. (2002). *The class size debate*:
http://www.epi.org/publication/books_classizedebate
- Legotlo, M.W, Maaga, M.P, Sebego, M.G, Mosoge, M.J, Nieuwoudt, H.D & Steyn,
- Lockhead, M.E & Verspoor, A.M. (1991). *Improving education in developing countries*. New York: Oxford University Press.
- Ludwig, J. & Bassi, L.J. (1999) . *The puzzling case of school resources and student achievement*. Educational Evaluation and Policy Analysis, 21:385-403.
- Lunenburg, P. J. (1991). *Organizational & Restructuring in Education*. New York, Mc Millan Press, U.S.A
- MacMillan, et al (1993-1994). *Dropouts Rates in the United States, Department of Education*, National Center for Education Statistics U.S.
- Millis, G. E. (2007). *Action research: A guide for the teacher researcher* (3rd ed.). New Jersey: Pearson.
- Mji, A. & Makgato, M. (2006). *Factors associated with high school learners' poor performance: a spotlight on mathematics and physical science*. South African Journal of Education Vol26 (2) 253-266
- Mugenda, O. M. & Mugenda, A. G. (2003). *Research methods: Quantitative and Qualitative approaches*. Nairobi: Acts Press.
- Mugenda, O. M. & Mugenda, A. G. (1999). *Research methods: Quantitative and Qualitative approaches*. Nairobi: Acts Press.
- Mutua, R.W. & Namaswa G. (1992). *Educational planning, school management and organization*; Kenya Educational research and publication, Nairobi.

- Nayak, P. & Karmakar, M. (1994). *Educational Development and Wastage in Tripura*. TUI, Vol.-2, No.3, 1994, pp. 25-40
- Okullu, B.K. (2002). *An Investigation of School Wastage in Bondo District*. A Research proposal for P.G.D.E. Egerton University – Unpublished.
- Omolo, T.M. (1999). *Determinants of Dropouts Behaviors among Secondary students in Rachwonyo District*. M. Phil Thesis of Moi University. Unpublished.
- Onditi, K. (2007) *Factors that influence primary school dropouts in Suneka-Division, Kisii central, Kenya*. Master of Thesis, Maseno University, Unpublished.
- Owiye, O.D. (2005). *Trend in Factors Affecting Wastage in Siaya District – Kenya*. Master of Thesis, Maseno University, Unpublished.
- Psacharopoulos, G & Woodhall M. (1985). *Education for development; An analysis of investment choices*. Washington D.C. Oxford University Press.
- Republic of Kenya, (1965). *Sessional Paper No. 10 African Socialism and its application to planning in Kenya*, Government of Kenya Printers, Nairobi.
- Republic of Kenya, (1997). Ministry of Planning and National Development, *Economic Survey by Central Bureau of Statistics in the office of the Vice Presidents*. Government Printers, Nairobi.
- Republic of Kenya, (1998). Ministry of Education Science and Technology, *Master plan of Education and Training 1997-2010*, Nairobi.
- Republic of Kenya, (2000). *National symposium on Education of the Girl-child*, Government Printers, Nairobi.
- Republic of Kenya, (2006). *Ministry of Education, Strategic Planning 2007 to 2011*, Government printers, Nairobi.
- Republic of Kenya, (2007). *Ministry of Finance and Planning. An Analytical Report on Kenya population and Housing*. Nairobi.

- Republic of Kenya, (2007). *Vision 2030, a Competitive and Prosperous Kenya*. Government Printers. Nairobi.
- Robson, C. (2002). *Real world research* (2nd ed.). Malden MA: Blackwell Publishing.
- Rono, S.K.A. (1990) *Factors influencing the rate of dropouts among secondary school students in Nandi District in Kenya* unpublished Masters Thesis of Kenyatta University.
- Rumberger, R.W. (1983). *Dropping out of high school: the influence of race, sex and family background*. *America Educational Research Journal*, 20, 199-220.
- Rumberger, R.W. (1987). *High school dropout: A review of issues and evidence*. *Review of Educational Research*, 57, 101-121.
- Rumberger, R.W. (1990). *Second chance for high school dropouts. The cost and benefits of dropout recovery programme in the United States*. In D.E. Inbar (Ed.), *the second chance in education* (pp227-250). New York Falmer.
- Sang, K.D. (2007). *Factors influencing drop out and Repetition in Secondary Schools in Nandi District*. Masters of Thesis of Maseno University Unpublished.
- Schreiber, D. (1964). *The school dropout*. Washington, national Education Association, project: school Dropouts.
- Schiefelbein, Gand Farell, J.(1973), *Factors influencing Academic Performance among Chilean Primary Students*. Mimeo. Santiago Social and Cultural rights Orodho, 2005.
- Sigei, J. (2012) "KCSE Results Analysis" Nation Newspaper Saturday 24th March 2012 Nairobi.
- Simmons, (1980) *Applying Economic Analysis to Decision-Making in Developing Nations - International Efficiency of Education, External Efficiency of Education*,

- Growth with Social Equity* <http://education.stateuniversity.com/pages/1904/Decision-Making-in-Developing-Nations-Appling-Economic-Analysis.html>.
- Tinega, B.P. (2004) *Essentials of Teacher Influence in School Management*. Benjal Press-India.
- UNESCO (1989). *The prospect for Education Planning*, Paris IIEP. www.unicef.peru.org (August 2008) Students Wastage in Peru: A holistical Perspective of 1920.
- UNESCO (2005) UNESCO's *Contribution to the Implementation of the United Nations Decade of Education for Sustainable Development*.
- UNESCO (August 2008a) *Education Wastage* [http://www.uis.uneso\(b\).org](http://www.uis.uneso(b).org).
- UNESCO (2008) *Education for sustainable Development*. Education for sustainable Development unit, UNESCO Paris <http://portal.unesco.org/education> (Accessed 15th March, 2009)
- UNESCO (December 2009). *Education Wastage in developed countries* [http://www.uis.uneso\(b\).org](http://www.uis.uneso(b).org).
- UNESCO (1995). *Wasted opportunities: When schools fail*. EFA status and trends.
- UNESCO (1998). *Wasted opportunities: When schools fail*. EFA status and trends.
- UNESCO (2004), *World data on education, 6th edition*- Nigeria
- UNESCO (2005). *Challenges of implementing free primary education in Kenya: Assessment report*. Nairobi: UNESCO office.
- UNESCO (2006). *Practical tips of teaching large classes: A teacher's guide*. UNESCO Asia and Pacific Regional Bureau for Education: Bangkok.
- UNESCO (2008). *Education for sustainable Development unit*, UNESCO Paris <http://portal.unesco.org/education/> (Accessed 15th March, 2009)

UNESCO (December 2009). *Education wastage in developed countries*
[http://www.uis.unesco.org\(b\)org](http://www.uis.unesco.org(b)org).

USAID (2007). *Large class sizes in developing world: What do we know and what can we do?*

Vaizei, J. (1972). *The Political Economy of Education*. London: Gerald Duckworth and Company Limited.

Vincent, G.B. & Black, D.B. (1966). *The drop-out is societies' burden: fact or fiction: Canadian education and research digest (Toronto), vol. 6, No.4, December 1966.*

World Bank, (1980). *Education in sub-sahara Africa*: Washington D.C, World bank

World Bank, (1988). *Education in sub-sahara Africa*: Washington D.C, World bank

Wikipedia, (2012). *Kenya Certificate of Secondary Education*
<Http://en.wikipedia.org/wiki/accesed> 4th of March 2012.

Yambo, J.M.O. (2003) *Factors Influencing Examination Performance at KCSE Level: A case of SDA sponsored school in C.N.F.* Masters thesis of University of Eastern Africa-Baraton. Unpublished work.

APPENDICES

APPENDIX A: LETTER OF INTRODUCTION

Orwasa K. Bernard
Kenyatta University
Department of Educational Management,
Policy and Curriculum Studies,
P.O. Box 43844,
Nairobi.

Dear Respondent,

I am a postgraduate student from Kenyatta University currently undertaking research on the following topic : Factors contributing to Educational wastage in Secondary Schools in Kericho County.

You were identified as one of the subjects who were to provide information for this study.

You are kindly requested to provide information needed for successful completion of this study. Any information you give will not only be strictly confidential but also anonymous and will be utilized only for the academic purpose for which it is intended.

Yours faithfully,

Orwasa K. Bernard
E55/CE/23024/2010

APPENDIX B: INTERVIEW GUIDE FOR PRINCIPALS

1. Please tell me about yourself – name, age, qualification, teaching experience, leadership experience, type of school you head (national, county, district, day) and length of stay in school.
2. How has the students' enrolment and transition rate been for the last three years? What about that of the form four class of 2013? Is it consistent? Explain the reasons behind the current trend.
3. Do you have a school policy on the following:
 - a) Admission of students other than in form one?
 - b) Repetition?
 - c) Transfers?
 - d) Exclusion – suspension or expulsion?
 - e) Inclusion?
 - f) What views do parents have over the poor academic performance of their children, class repetition and school drop-out?
4. How has the school performance been in KCSE for the last five years and for the form four class of 2013 in the last three years? How do you rate that performance?
5. In your opinion, how do the following affect the students' performance:
 - a) Teachers' qualification, expertise and experience.
 - b) School environment – friendly/not friendly.
 - c) Organizational structure – class size, fee payment, teacher staffing, revision policy etc.
 - d) Parental involvement.
6. Which reasons do you give to parents or education officials as to why students have to repeat or drop-out of school?
7. How often do you meet with parents and other stakeholders outside the school to discuss students' performance, transition and retention?

8. Are there any policies or strategies in the classroom and school environment aimed at enhancing students' performance and managing repetition and drop-out? Are they effective? Explain.

9. a) Do you have the following facilities in your school?

Laboratory Equipments Yes No

Library Yes No

b) Who provides the textbooks and other instructional materials?

Parents Sponsor Government

Community NGOs

c) Are there adequate textbooks and other Instructional materials in your school?

Adequate Inadequate

d) If adequate does it affect KCSE Performance?

Yes No

10. The following statements relate to the indicators of the availability of teaching/learning materials in your school. Please indicate to what extent they are available and applicable in your school, by ticking using the following scale.

Adequacy of teaching / Learning Materials	5	4	3	2	1
	SA	A	D	SD	UN
The school has enough textbooks, teacher's guide reference books, maps, charts and stationery					
The school has adequate laboratory chemicals and other equipment					
Teachers have been in-serviced on how to use teaching learning materials					
KIE approved text books have well detailed and organized content					
All KIE -approved text books have inadequate content coverage.					
There should be a specific course book for each subject for all schools					
There are teacher's resource centre in the division/division/County					

APPENDIX C: QUESTIONNAIRE FOR TEACHERS

The purpose of this questionnaire is to collect information pertaining the nature and causes of educational wastage in Kericho County. Information collected will be treated with utmost confidentiality and will be used only in this study. **NB:** Give responses in the spaces provided and do not write your name or TSC number.

SECTION A: BIO-DATA

Tick the appropriate box

Type of school	National	County	District	Day school
Gender	Male	Female		
Age	21- 25years	25-30 years	31 -35 years	Over 36 years
Academic qualification	Diploma in education	Bachelors degree in education	Masters in education	Others-explain
Professional experience	1-3 years	4-10 years	11-15 years	16 and above
Administrative position	HOD	Head of subject	Class teacher	Others - explain
Professional development courses attended	KNEC	SMASSE	Subject-based	Others-explain

SECTION B: NATURE OF EDUCATIONAL WASTAGE

Use the rating scale provided to determine the nature of educational wastage in your school

SA- strongly agree D- disagree N- neutral

A-agree SD- strongly disagree

Nature of wastage	SA	A	N	D	SD
Cohort transition is less than 100% every year					
Students perform below expectation					
Student absenteeism is common					
At least there are students remaining in the same grade yearly					
I am aware of students who drop-out of school yearly.					

SECTION C: CAUSES OF EDUCATIONAL WASTAGE

a). (i) School based factors contributing to educational wastage

Factors	SA	A	N	D	SD
Inadequate text books and other learning resources					
Inadequate physical facilities					
Teacher absenteeism					
Inadequate syllabus coverage					
Class size and organization affects students' performance					
My conduct in class affects students' performance and retention.					
There is school policy on students' promotion/repetition					
We have policies that support needy students					
My qualification and teaching experience affect student' performance.					
Fee problem					

a) (ii) How often do your school hold a joint teachers and parents meetings to deliberate on pertinent academic issues in your school?

- (a) Once in a term [] (b) Twice in a term []
 (c) Thrice in a term [] (d) Rarely []

b) Home – based factors leading to educational wastage

Factors	SA	A	N	D	SD
Less parental involvement					
Inadequate or lack of motivation					
Parents do not help with assignments					
Lack of study room or conducive learning environment at home					
Lack of role models in the family					
Instability in the family					

SECTION D: WHAT SHOULD BE DONE TO MANAGE EDUCATIONAL WASTAGE

In your opinion, what should be done to enhance students' performance and reduce repetition and wastage?

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APPENDIX D: STUDENTS QUESTIONNAIRE

The purpose of this questionnaire is to collect information pertaining the nature and causes of educational wastage in Kericho County. Information collected will be treated with utmost confidentiality and will be used only in this study. **NB:** Give response in the spaces provided and do not write your name or admission number.

SECTION A: BIO-DATA

Tick the appropriate box

Type of school	National	County	District	Day school
Gender	Boy	Girl	Other -explain	
Age	17-18 years	19-20 years	21 -25 years	Over 25 years
Entry behaviour	Below 250	250-300 marks	300-330 marks	Above 330 marks
Family structure	Father- Mother-	Father- Mother-	Single parent	Orphans
Family size inclusive of parents	1-2members	3-4 members	5-6 members	Above 7 members
Level of parents' education Father - Mother -	No education	Primary level	Secondary level	Diploma and degree

SECTION B: NATURE OF EDUCATIONAL WASTAGE

Use the rating scale provided to determine the nature of educational wastage in your school

SA- strongly agree

D- disagree

N- neutral

A-agree

SD- strongly disagree

Nature of wastage	SA	A	N	D	SD
My average performance has been below C- for the last two years					
I have attended academic clinics because of low grades					
I have not mastered basic literacy and numeracy skills					
I have repeated at least one class since I joined form one					
I miss school occasionally and consider dropping out					
I know students who dropped out of school					

SECTION C: CAUSES OF EDUCATIONAL WASTAGE

1. School based factors contributing to educational wastage

Factors	SA	A	N	D	SD
Inadequate text books and other learning resources					
Inadequate physical facilities					
Teacher absenteeism					
Inadequate syllabus coverage					
Overcrowded classrooms					
Indiscipline					
Negative peer influence					
lack of interest in learning					
Low expectation from teachers					
Fee problem					

2. Home – based factors leading to educational wastage

Factors	SA	A	N	D	SD
Less parental involvement					
Inadequate or lack of motivation					
Parents do not help with assignments					
Lack of study room or conducive learning environment					
Source of light					
Lack of role models					
Instability in the family					

3. Tick the most suitable

- Is drug abuse one of the causes of drop out in your class? Yes [] No []
 - Do some students in your class drop out due to peer influence? Yes [] No []
 - Do inability for the parents/guardians to buy for you all requirement and personal effects in school a factor that cause drop out in your class? Yes [] No []
 - Do students prefer to drop out from school to go and operate small scale business like tea plucking, bodaboda? Yes [] No []
 - Do students prefer drop out of school because education takes too long and don't guarantee job after completion? Yes [] No []
- Do your parents/guardians come for academic open days? Yes [] No []
 - What do your parents/guardians do for a living?
 - The following socio-economical factors are the likely causes of students dropping out of school. Tick in the provided boxes the likely causes of student drop out.
 - Pregnancy of girls []
 - Don't like school []
 - Lack of school fees []
 - Poor academic performance []
 - Child labour []
 - Some teachers are cruel []
 - Peer influence []
 - Lack of personal effects []

7. Give your personal view on educational wastage

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8. Are there any policies or strategies in the classroom and school environment aimed at enhancing students' performance and managing repetition and drop-out? Are they effective? Explain.



APPENDIX E: BUDGET


a) Items (Stationery)	Quality	Cost in Kshs
Pens	10 Dozens @ 50	500
Pencils	5 @ 20	100
Rubber	2 @ 50	100
Flashdisks	4 @ 1500	6,000
Paper	10 Reams @ 500	5,000
Subtotal		11,700
b) Traveling Expenses		
Transport to schools and back home for 20 days	20 @ 500	10,000
Administering Questionnaires		10,000
Lunch @ 500 per day for 20 days		10,000
Honoraria for respondents		10,000
Sub-Total		55,000
c) Secretarial Services		
Research proposal typing, printing and binding		15,000
Research project typing, printing and binding the final report		15,000
Photocopying questionnaires		5,000
Sub-Total		35,000
d) Communication Services		
		10,000
Sub-Total		10,000
e) Miscellaneous Expenses		
		10,000
Sub-Total		10,000
Grand Total		106,700

APPENDIX F: WORK PLAN FOR THE STUDY

2012-2013						
Activity/Month	July 2012	Aug. 2012	Sept. 2012	May 2013	July 2013	Nov. 2013
Developing a research topic and literature review						
Writing the research proposal, developing tools for data collection and preparing for research proposal seminar						
Field frame work/conducting interviews						
Data entry, interpretation and analysis						
Compiling of the final draft						
Presentation of findings/final submission						

APPENDIX H: RESEARCH PERMIT

PAGE 2	PAGE 3
THIS IS TO CERTIFY THAT: Prof./Dr./Mr./Mrs./Miss/Institution Bernard Kipkorir Orwasa of (Address) Kenyatta University P.O.Box 43844-00100, Nairobi, has been permitted to conduct research in	Research Permit No. NCST/RCD/14/013/1376 Date of issue 30th July, 2013 Fee received KSH. 1000
Location District County Kericho	
on the topic: Factors contributing to educational wastage in secondary schools in Kericho County.	
for a period ending: 31st December, 2013.	Applicant's Signature For Secretary National Council for Science & Technology

CONDITIONS	
<ol style="list-style-type: none">1. You must report to the District Commissioner and the District Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.2. Government Officers will not be interviewed with-out prior appointment.3. No questionnaire will be used unless it has been approved.4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.5. You are required to submit at least two(2) four(4) bound copies of your final report for Kenyans and non-Kenyans respectively.6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.	REPUBLIC OF KENYA RESEARCH CLEARANCE PERMIT
CPK605540m10/2011	(CONDITIONS—see back page)