

# Nature of Educational Wastage in Public Secondary Schools in Kericho County, Kenya

ORWASA BERNARD<sup>1</sup> JOHN ALUKO ORODHO<sup>2</sup>

1. lecturer at Kericho Teachers Training College and a Doctoral student in the Department of Educational Management, Policy and Curriculum Studies, School of Education, Kenyatta University, Kenya
2. Associate Professor of Research and Statistics in the Department of Educational Management, Policy and Curriculum Studies, School of Education, Kenyatta University, Kenya

## Abstract

Despite the fact that 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, the depth and prevalence of wastage is quite alarming in some counties in the county. The gist of this study was to examine the nature of educational wastage in public secondary schools in Kericho County, Kenya. A table of random numbers was used to select 10 secondary schools from which 10 principals, 25 teachers and 275 students were selected yielding a sample size of 310 subjects for the study. The data gathered through questionnaire, was analyzed using mean, median, and percentage. To determine the magnitude of educational wastage and to identify the gender and grade level that was severely affected by wastage, five consecutive years' students' document (enrolment, repetition and dropout) was used. Wastage rate was calculated and indicated for each grade level according to the past five years data. The findings have indicated that high repetition rate was registered in all forms from one to four, high drop-out rate was registered at form three and high over-all wastage rate was registered at form four. It was also identified that rate of wastage among boys was higher than girls. Finally, the weighted mean scores, over-all wastage average results revealed that students related, school related and socio-economic background variables were found significant factors behind low internal efficiency of secondary schools. The findings therefore suggest that improving these variables may take a considerable change in alleviating wastage of secondary education. Based on these findings and conclusion drawn, it was recommended that the measures regarding creating awareness for parents, nearby school building, motivating teachers, creating conducive school environment and improving school facilities and services should be taken to minimize the educational wastage of secondary schools in the study area.

**Keywords:** Education, public secondary schools, nature of wastage, Kericho County, Kenya

## 1. INTRODUCTION

### 1.1. Background of the study

Embarking on the path of sustainable development will require an efficient and high quality educational system of high impact which has a profound transformation of how we think and act (UNESCO,2017). To create a more sustainable world and to engage with sustainability-related issues as described in the SDGs, individuals must become sustainability change-makers. They require the knowledge, skills, values and attitudes that empower them to contribute to sustainable development (Orodho,2017). An efficient and less wasteful education, therefore, is crucial for the achievement of sustainable development. However, not all kinds of education support sustainable development. Education that promotes economic growth alone may well also lead to an increase in unsustainable consumption patterns. The now well-established approach of Education for Sustainable Development (ESD) empowers learners to take informed decisions and responsible actions for environmental integrity, economic viability and a just society for present and future generations. Nonetheless, these noble expectations cannot be achieved in situations where the efficiency of the education system is questionable (Orodho ,2017).

The term —wastage is used within the field of education to describe various aspects of failure of an educational system to achieve its objectives (Yusuf, 2014). Akindele (2015) viewed wastage as failure of students to attain the qualifications they had registered for in a given course. According to Ajayi & Mbah (2008), wastage arising from repetition and drop out is a sign of internal inefficiency in the education system. UNESCO (2014) perceives wastage to include drop outs, repeaters, premature withdrawal from schools and non-employability of school leavers and listed three ways of measuring wastage. These include; apparent cohort method, reconstructed cohort method and true cohort method. Economists liken education to industry, with capital invested in plant, and raw materials being processed into finished products. What is being wasted is human learning, school buildings and equipment and the labour of teachers. Wastage occurs through the failure of countries to achieve their educational objectives, when children fail to reach target achievement levels, in repetition of grades, in premature school leaving, in unemployable school leavers(Grunseit, 2007).

This paper contends that wastage means the act of losing or destroying something, especially when it has been used or dealt with carelessly. In this context, wastage in education connotes inefficiency in the use of

educational resources by school administrators. In other words, poor relationship of educational inputs with outputs is wastage. Educational output invariably determines shape of the national development. Education wastage engenders negative performance or outcomes. Obviously, education wastage is clearly seen in the following negative attitudes: students' drop-out; carryover of courses because of students' inability to perform as expected, hence failure to achieve; unemployment for graduates; employment without success in the area of work; brain-drain and poor utilization of educational resources such as personnel, time, physical, material and financial resources among others.

### 1.2 State of the Art Review

A global overview of educational wastage indicates that wastage is a real challenge that many countries of the world have been trying to curb. In the United States of America, for instance, the high school dropout rate is alarming. A study by David and Jefferson (2010) during the 2007-2008 period in the California Department of Education estimated that 98,420 public high school students dropped out of school. These data suggest that about 19 percent of California high school students in any ninth-grade class would more likely drop out over a four-year period. Further, the dropout rate was particularly acute among the state's largest minority student populations. An estimated 33 percent of African Americans and 24 percent of Hispanics will drop out over a four-year period (David & Jeffrey, 2010). This source further explains that the economic and social consequences of the dropout crisis are profound, particularly in those minority communities whose children drop out of high school at disproportionately higher rates. Research demonstrates that dropouts suffer more joblessness, earn less income, and tend more to criminality, public dependency, and poor health than successful high school graduates.

In developing countries, wastage is also widespread. This creates a serious situation because the funds available for educational development are limited and their effective use is considerably reduced by wastage. Gatawa (1998) had earlier argued that while developing countries have done remarkably well in terms of expanding educational access to a large percentage of their school going population, school performance as measured by dropout rates, progression rates and examinations results has been quite discouraging. Most African countries are faced by the educational wastage problem and have come up with various initiatives to curb the problem. For example, Nigeria, has adopted the education sector as one of the pillars of poverty reduction. It is argued that wastage is an unprofitable and uneconomical utilization of time and resources (Adamu, 2000; Oyetakin, 2011).

Adamu (2000) argues that repetition of classes may have negative effect on students and parents; therefore, the development of each child must be directed towards the ability of the child, bearing in mind the needs of society. Akindele (2015) stated that the analysis of efficiency in education is necessary in ensuring optimal uses of meagre resources allocated to education in order to eliminate wastage. Similarly, in Zambia, Lawrence (1995) noted that educational wastage was very old. It argued in his study that there were many reasons attributed to educational wastage. It was noted that wastage has been rampant at the secondary level, while the non-formal sector is incapable of catering effectively for those adversely affected due to a variety of factors (Lawrence, 1995; Fraeberg & Ruglis, 2007; Deribe, Endale & Eshiebir, 2015). Lawrence continues to argue that wastage in Zambia is caused by failing examinations, lack of space in grades 8 and 10, cultural factors, poverty, poor health, truancy and lack of interest in school.

A study by Ncube (2004) in Zimbabwe found that the number of students repeating a grade increases with level of schooling. Ncube noted that, of the 2527 repeaters over a period of four years, 5.7% were in form one, 7.6% in form two, 30.2% in form three and 56.5% in form four. There is also a problem of high repetition and low progression rate. This could be affected by school size, school regime, school type, and inability to pay school fees, HIV/AIDS pandemic, violence and drug abuse (Achoka, 2007). It is clear there is an educational wastage problem in the African continent; hence, policies should be created and implemented to ensure that this wastage is reduced.

In Kenya, despite the free primary education and subsidized secondary education which increased the enrolment of pupils in both primary and secondary schools, wastage remains a big challenge of secondary school level education (Economic Survey, 2013). The ministry of Education Science and Technology (MOEST) is always concerned with efficiency and feels that internal efficiency of education requires policy attention (MOEST, 2010). According to these sources, the drop-outs in primary schools has been as high as 37% and repetition rate at 14% between class one and seven, the survival rate has been low at 40%, although at the secondary level the survival rate has been better at 84% the overall performance remains low considering the Gross Enrolment Rate (GER) for secondary school is 31.7% for boys and 27.3% for girls. In Kenya, secondary school dropout rate was 17.9% females and 6.1% males in 2012 (MOEST, 2012).

In a study by Achoka (2007), it was observed that day schools record a higher repetition rate than boarding schools. This is attributable to the fact that day school students are affected by both home and school-based factors while Boarding school students are affected by school-based factors only. Education wastage is

undesirable in any country and should be solved so as to improve a country 's health, improve employability of populace, boost economic growth and aid in realization of the country 's development goals. Machakos County has a primary school enrolment rate of 81% for both boys and girls and secondary school enrolment rate of 32% (Republic of Kenya, 2012). This source further indicates that the secondary school dropout rate is 4.7% and that many children drop out of school due to inability to meet cost of education. Other problems mentioned are limited number of schools, low transition rate from primary to secondary school, teenage pregnancies, poverty and inadequate infrastructure. It is against this backdrop that this study was spurred to analyze the nature of educational wastage in the study locale.

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.

### **Statement of The Problem**

The growing importance of the knowledge economy has profound implications for the role of education as a determinant of economic growth. Increasingly, countries' ability to compete in the global economy and to respond to existing and emerging challenges depends on their education systems' ability to impart foundation skills, which enable further learning, and to impart transversal skills, which foster mobility. Therefore, it is more important than ever for economic growth strategies to be underpinned by an education and training system which develops a literate and trainable workforce (UNESCO,2014).

The links between education and economic growth, income distribution and poverty reduction are well established.<sup>1</sup> While many factors affect the strength of this relationship, accelerated progress towards the EFA goals is necessary for the reduction of poverty and hunger. Broadening access to good quality education for all will help achieve this MDG in a number of ways, including by increasing productivity, promoting more pro-poor economic growth, enhancing health and nutrition, and empowering women. UNESCO (2014) indicated that children around the world, especially Sub-Saharan Africa countries, fail to gain access to primary schooling. Even large numbers among those who do enroll leave prematurely, dropping-out before the skills of numeracy and literacy have been properly gained. This initiates for a close investigation of the degree of educational wastage of primary schools. Like other developing countries, primary schools in Ethiopia have shown a rapid expansion since 1974. With this rate of development, however, the percentage of Children who reach the final grade of the primary education cycle is low

## **II. RESEARCH METHODOLOGY**

### **2.1. Research Design**

The study adopted a descriptive survey design. Descriptive survey is a method of collecting information by interviewing or administering questionnaires to a sample of individuals (Orodho, Wenceslas, Odundo, Waweru & Ndayambaje, 2016). A survey is normally employed in research to describe attitudes, beliefs, opinions among other personal attributes (Orodho, 2012 ; ). According to Orodho (2012), 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.

### **3.2 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). 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.

## 2.2 Target Population and Sampling Procedures

The target population comprised of County secondary schools, District/Boarding secondary schools, Day secondary schools and District Mixed secondary schools. The County has a population of 154 secondary schools, 2750 Form Three students and 250 teachers. The researcher used the table of random numbers to select 10 secondary schools to serve as a unit of study. Purposive sampling was utilized to select one principal per school yielding 10 principals on the criterion that there is only one principal per school. From each school, 10% of the teachers per school yielding 25 teachers. The study also selected 10 % of the 2750 Form III students yielding a student sample of 275. The entire sampling process yielded a sample size of 310 subjects for the study as illustrated in Table 1.

**Table 1 : Determination of the sample**

Respondents	Target	Sample
Students	2750	275
Teachers	250	25
Principals	154	10
<b>Total</b>	<b>3308</b>	<b>310</b>

## 2.2. Research Instruments and data Collection

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. The research instruments were piloted to determine their validity and reliability. Orodho (2012) 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 achieving what they were intended to do. The validity of the instruments was determined by expert peer review. Reliability is the consistency of the instruments in measuring what is intended to measure (Orodho, et.al.2016). It is a measure of degree to which such instruments yield consistent results after repeated trial (Frankel & Wallen,2007; Mugenda and Mugenda (1999). The researcher used split-half technique in investigating the reliability of the instruments.

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. According to Orodho (2012), 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.

## 2.3 Data collection and Analysis

A research permit was sought from the National Council for Science, Technology and Innovation (NACOSTI) prior to data collection schools. The questionnaires were then distributed to teachers and students according to the itinerary made in the specific schools sampled for the study. The principals were interviewed in their respective offices on the agreed date as well as observation of key areas of interest according to the observation schedule to collect data from the principals, teachers and students.

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 adopted to analyze the data. SPSS programme was used to produce the mean, frequencies and percentage of data obtained from the document. The quantitative results were then tabulated in frequency tables for ease of interpretation so as to easily visualize the various results as given by the respondents. The narrative and discourse analysis were used to analyze data obtained from interviews.

## III. FINDINGS AND DISCUSSIONS

### Nature of educational wastage in secondary schools in Kericho County

The main thrust of this study was 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.

### 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 2 .

**Table 2 : Grade repeater rates by gender**

Grade Repeater Rate									
	Boys			Girls			Total		
	Enrolment	Repeater	Repeater Rate	Enrolment	Repeater	Repeater Rate	Enrolment	Repeater	Rate
<b>2010</b>									
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
<b>2011</b>									
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
<b>2012</b>									
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 2 , 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.

### 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 6 .

Table 6 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 3.

**Table 3: Grade dropout rates by Gender**

	Boys			Girls			Total		
	Enrol	Repeaters	Dropout rate	Enrol	Repeaters	Dropout rate	Enrol	Repeaters	Dropout rate
<b>2010</b>									
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	
<b>2011</b>									
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 previous tables indicate that, 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.

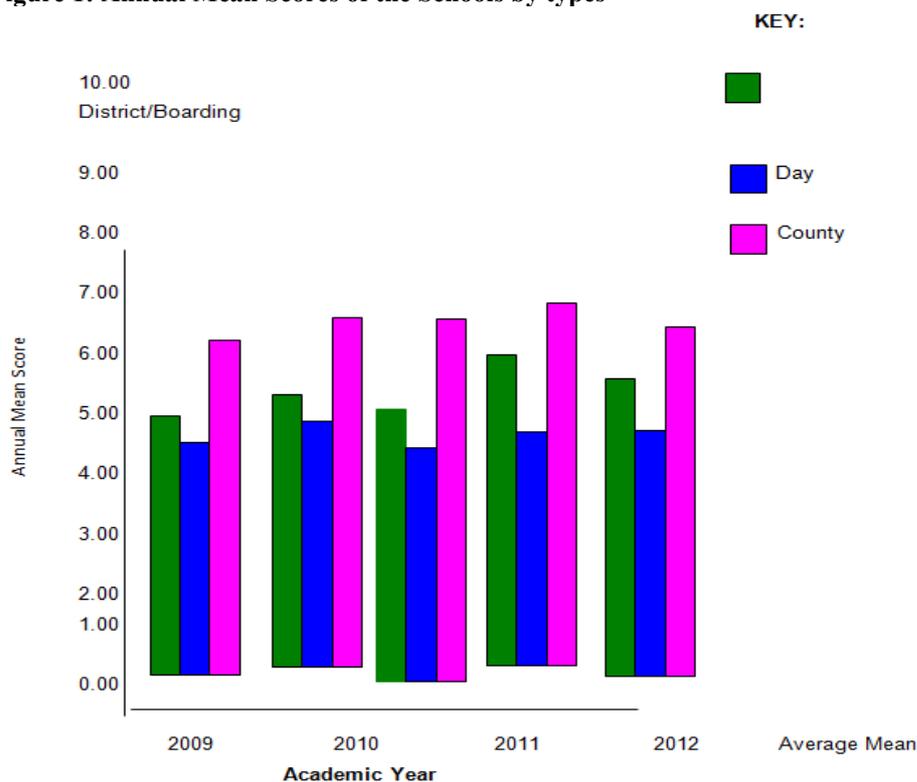
This proportion was calculated by dividing the total number of student-years wasted by students who drop out from the 2010 cohort in Form 2 and Form 3 by the sum of the total number of students-years wasted by both the former and the students who repeat grades in the corresponding school year and level or cycle of education (i.e. the excess of students-years wasted on the repetition and drop-outs) and multiply the result by 100.

### **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 (Orwasa, 2014). 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 1.

From Figure 1, 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.

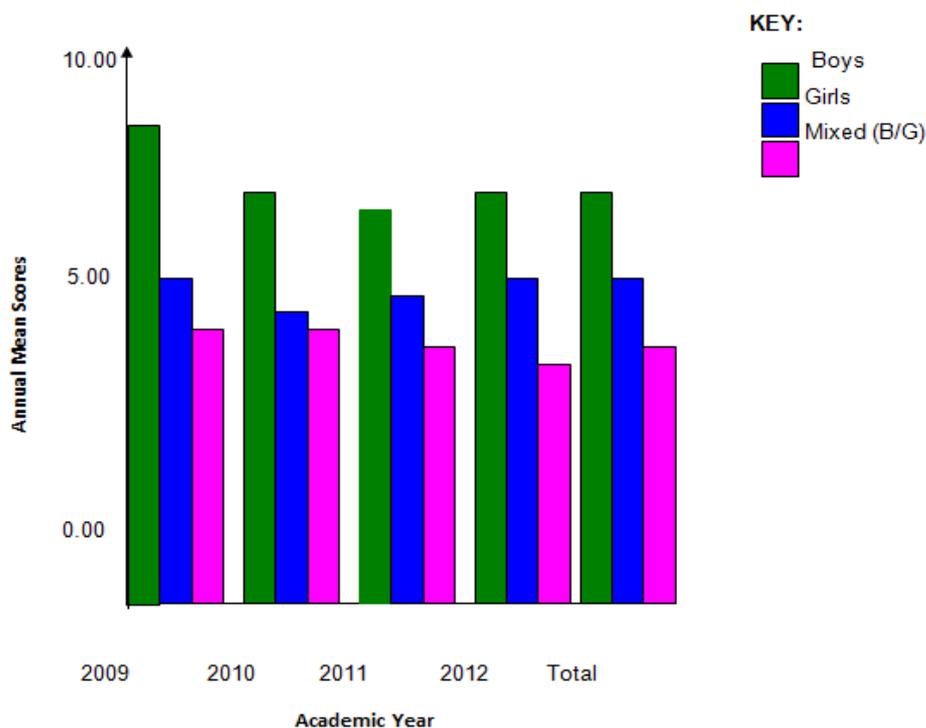
**Figure 1: Annual Mean Scores of the Schools by types**



These findings concur with Ajai and Mbah (2008) 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 consistent 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).

**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 Fig. 3.

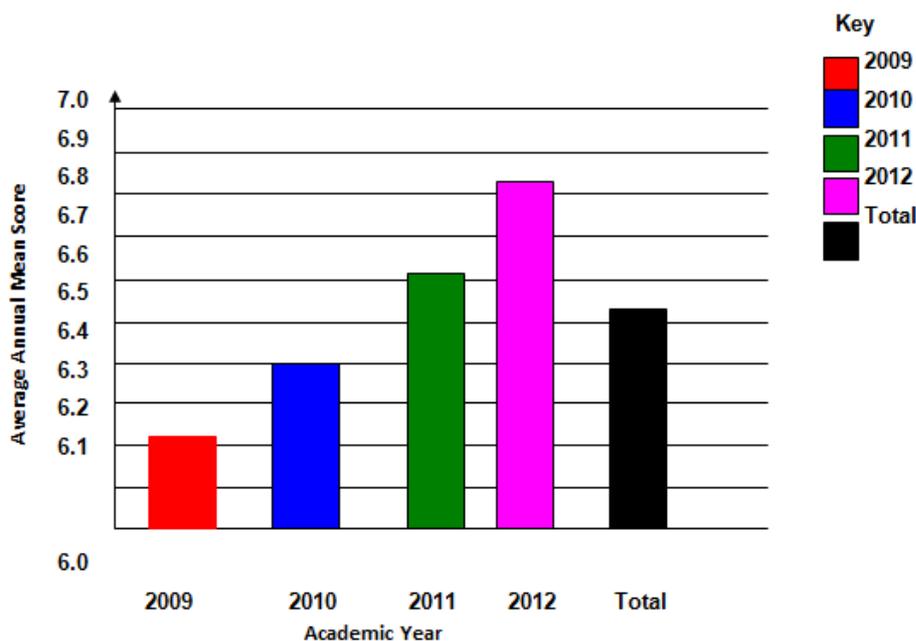


**Figure 3 Performance as illustrated by the mean scores by category**

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” (, 2012)

#### **Schools mean scores at KCSE and wastage rates in Kericho County**

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 3



**Figure 3 : Schools mean score at K.C.SE and wastage rates in Kericho County**

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 an 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 (Omollo, 1999; Rono, 1990) which is in line with the findings from the County of low annual mean scores at KCSE level and wastage rates

#### 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.

**Table 4 : 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	
<b>Total</b>		<b>5.381</b>	<b>0.103</b>	<b>0.1162</b>	<b>0.0722</b>

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 dropout 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.

### **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%.

### **Performances of the schools type and category**

County schools had the highest mean score at 8.28 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. The 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.

## **IV. CONCLUSION AND RECOMMENDATIONS**

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%.

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.

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