Influence of School-based Factors on Educational Wastage in Public Secondary Schools in Machakos County, Kenya

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Abstract

This study sought to determine the influence of school-based factors on educational wastage in public secondary school in Kathiani Sub-county, Machakos. A descriptive survey research design was use. The study was carried out in all 31 public secondary schools in Kathiani Sub-county, Machakos County. The target population of the study was 31 principals, 59 form four class teachers, the Sub-county director of education, 10 drop outs and 10 repeaters of secondary level of education in Kathiani Sub-county. All 31 principals were purposefully selected and one class teacher in each school was randomly selected. Data was collected using interview schedules for drop outs and questionnaires for form four class teachers, repeaters, Sub-county director of education and principals. Data was analysed using both descriptive and inferential methods. Quantitative data collected using questionnaires was analysed by the use of descriptive statistics and Chi-square statistical procedure using the Statistical Package for Social Sciences (SPSS version 20). Descriptive statistics that were used in this study include frequencies and mean. The hypothesis was tested using the chi-square test, at a significance level of 0.05. The findings of the study show that there is a statistically significant association between school-based factors and educational wastage in public secondary schools in Kathiani Sub-county. The chi square results for curriculum overload is χ^2 (4) =25.44, P=0.000. The results for staffing were χ^2 (3) = 26.579, p-value= 0.000. School fees results were χ^2 (4) = 27.649 and p-value= 0.000. The results for management support were χ^2 (3) =27.140, p=0.000, distance to school results were χ^2 (4) =26.070, p=0.000. Results for availability of teaching and learning facilities χ^2 (4) =27.123, p=0.000 while results for school fees were χ^2 (4) =27.649, p=0.000. In all these cases the P- values were less than 0.05 significance level, meaning they are all significant influencers of educational wastage.

Keywords: Educational Wastage, Public secondary school, Education, School-based factor.

Introduction

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). According to Ajayi & Mbah (2008), wastage arising from repetition and drop out is a sign of internal inefficiency in the education system. UNESCO (1970) defined wastage to include drop outs, repeaters, premature withdrawal from schools and non-employability of school leavers. What is being wasted is human learning, school buildings and equipment and the labour of teachers.

Graduating at secondary education level is important in development. It empowers individuals to realize more productive lives and is also a primary driver of national economic development. Receiving a good education is the lifeline by which many youth can lift themselves out of poverty.

It is also seen as a primary means of social mobility, national cohesion and social economic development (Woodhall & Psacharopoulos, 1985), and a pre-requisite for human capital development (Kiumi & Chiuri, 2005). In a study carried out by Freudenberg and Ruglis in 2007, it was observed that education is one of the strongest predictors of health: the more schooling people have, the better their health is likely to be. Education is also a basic human right.

Vision 2030 of Kenya is also looking upon education to deliver the necessary skills, and build adequate human capital to achieve and sustain the country as a middle-income country. The fundamental aim of this vision is to have a globally competitive and prosperous country, with high quality life by 2030 and transform the country into a newly industrialized middle level income country providing quality life to all its citizens in a clean and secure environment. Educational wastage has serious implications to the attainment of Vision 2030. Indeed, to achieve the Vision 2030, a lot needs to be done to reduce all forms of education wastage. Measures should be put in place to reduce and eventually eradicate wastage. In addition, effort should be put into improving the grades of graduating students to ensure higher transition rates to tertiary education. Solving the problem of wastage is important in every part of the world.

The Kenyan education system has been characterized by high dropout, repetition and poor academic performance (Muyanga, 2010), which leads to educational wastage. The government has tried to address the issue of quality education, retention and completion through Free Day Secondary Education (FDSE), but the wastage problem still persists. Despite many policies and strategies developed to ensure that student's complete school smoothly, there are still some students who withdraw from school prematurely. This problem of wastagehas motivated researchers to conduct this study in Machakos County. This study therefore aims at investigating influence of school-based factors on educational wastage in Kathiani, Machakos County.

School experiences serves as powerful precursors to the decision to formally leave school. For example, the most common school-based factors contributing to dropping out include; poor school performance, disruptive behaviours, poor attendance, negative attitudes toward school, and early school failure-particularly, repeating grades and corporal punishment (Muhammad & Muhammad, 2011).Although student and family characteristics account for most of the variability in dropout rates, about 20 percent can be attributed to four characteristics of schools: the composition of the student body, resources, structural features, and policies and practices (Rumberger, 2008). Research conducted by Rumberger (2008) shows that the odds of dropping out are lower in schools with more advantaged students, but the effects appear to be indirect, through the association with other school characteristics. Research does not show that school size has a consistent effect on dropout and graduation rates. Attending a Catholic high school improves the odds of graduating; yet studies have also found that Catholic and other private schools lose as many students as public schools because students attending private schools typically transfer to public schools instead of dropping out. Relatively few studies found significant effects of school resources on dropout and graduation rates, at least in high school. But there is strong evidence that small classes improve high school graduation rates (Rumberger, 2008).

Students are less likely to drop out if they attend schools with a stronger academic climate, as measured by more students taking academic courses and doing homework. On the other hand, students are more likely to drop out in schools with a poor disciplinary climate, as measured by student disruptions in class or in school (Mcmillen, 1997). There does not appear to be a consistent effect of exit exams on dropout rates, although more recent high school exams appear to lower high school completion rates. Additionally, requiring students to attend school beyond age 16 leads to lower dropout and higher completion rates (Rumberger, 2008). Communities play a crucial role in adolescent development along with families, schools, and peers. Rumberger further argued that Population characteristics of communities are associated with dropping out, but not in a straightforward manner: living in a high poverty neighbourhood is not necessarily detrimental to completing high school, but rather living in an affluent neighbourhood is beneficial to school success. This suggests that affluent neighbourhoods provide more access to community resources and positive role models from affluent neighbours.

The girls and their parents are also discouraged by absence of female teachers who act as their role models (Kane, 2004). The distances to the nearest school in Kenya have been reduced as compared to other countries of similar income level, even though not in all the regions It is therefore important to reduce the distance, which deters access to schools in low population areas in order to help boost educational access to pupils in these regions. The school environment, indiscipline, sexual harassment of girls by male counterparts and some teachers and unfavourable home environment were some causes of wastage.

Methodology

The study adopted a descriptive survey research design as a method of collecting data by interviewing or administration of questionnaire to a sample of individuals, (Kombo & Tromp, 2007). Mugenda and Mugenda (2003) argue that survey research is a self-report study which requires the collection of quantifiable information from the sample. Survey was preferred because it involves gathering data that describes events and then organizes, tabulates, depicts and describes the data collection (Glass & Hopkins, 1984). This research design was found suitable by the researcher because of its simplicity. Through this design the researcher would pose a series of questions to willing respondents; summarise their responses with percentages, frequency counts, and means, and draw conclusions. The design also saved time and money which were limited.The target population for this study comprised of 31 principals, 59 form four class teachers, the D.E.O in charge of the Sub-county, 10 drop outs and 10 repeaters. This gave a total of 111 respondents. Form four class teachers were selected because they were likely to be the longest-serving class teachers, principals were selected because they keep records of the students in the schools, the D.E.O was selected because he/she also keeps records of the entire Sub-county, the drop outs and repeaters were selected because they have first-hand information on the influence of each factor on their wastage.

A sample population comprised of 29 principals, 31 form four class teachers, the DEO, 10 drop outs, and 10 repeaters, making a total of 81 respondents (Table 1).

Table 1: Sample size and sampling procedure

Category	Population	Sample	Percentage	Sampling technique
Principals	31	29	94	Purposive
Class teachers	59	31	54	Simple random
D.E.O	1	1	100	Purposive
Drop out		10		Snow ball
Repeaters		10		Snow ball

The respondents were obtained as follows; 29 public school principals and the D.E.O were purposively selected because their population is small, form four class teachers were selected randomly so that only one is picked from each school. The random sampling was done by writing numbers on pieces of papers for teachers in schools with more than one class teacher. The teachers were then asked to pick one paper each. Those who picked the paper corresponding to the number sought for by the researcher were selected. Class teachers in single stream schools were purposively selected. A sample of drop outs and repeaters were selected using snow ball sampling method. The initial drop outs and repeaters were purposively identified. The few identified were requested to name others they knew. This was done until the right number was obtained. The study used questionnaires and the interview schedule as tools for data collection. The questionnaires were administered to principals, teachers, Sub-county director of education and repeaters while interview schedules were administered drop outs.

Results and Discussion

This section presents an analysis of the data obtained from respondents through questionnaires and interviews.

Table 2: School-based factors influence ratings table

Factors	N	SA	A	N	D	SD	Mean	Std. Deviation
Teaching and learning resources	57	15	23	13	3	3	4.22	.998
Schools' physical facilities	57	25	22	9	1	0	4.13	1.058
Staffing in schools	57	23	22	9	1	0	4.24	1.287
Distance to school	57	24	15	11	4	3	3.92	1.265
School rules	57	26	14	14	2	1	4.08	1.364
Curriculum overload	57	15	23	13	3	3	3.77	1.234
School management support	57	15	24	8	6	4	3.87	1.180
School fees	57	22	19	10	4	2	4.09	1.240

Where;

SA-Strongly Agree, A-Agree, N-Neutral, D-Disagree, SD-Strongly Disagree

Table 2 shows means and frequency counts of school-based factors that influence wastage. From the table, it is clear that staffing in schools rates high among the school-based factors. It has a mean of 4.24. Poor staffing is associated with wastage, especially in schools where one gender is missing. For instance, girls may be discouraged to attend schools where there are no female teachers. This is in concurrence with Kane (2004) who noted that girls and their parents are discouraged by absence of female teachers who act as their role models. This may contribute to wastage in schools. Schools where male teachers sexually harass girls also tend to have high cases of wastage. Proper staffing is associated with reduction of wastage. This finding agrees with findings of Deribe (2015) who pointed out that one of the components required to make an educational system viable, functional and productive is the availability of qualified and adequate teaching staff.

Teaching and learning resources rates second (4.22) among the school-based factors. Availability of these resources would encourage students to attend school while unavailability would discourage students. Abagi (1997) noted that availability of scholastic materials retain pupils in school. Unavailability of school facilities or poor school facilities may reduce school retention. School facilities make teaching and learning smooth and enjoyable. In the absence of these facilities, parents are supposed to chip in and provide. According to the cost sharing policy, the government and parents are supposed to share the costs of education. However, due to high poverty levels, parents are unable to step in and supplement the effort of the government. They cannot purchase all the equipment needed. This increases the cost of education and chances of wastage.

School fees are rated fourth among the school-based factors with a mean of 4.09. Students are expected to pay school fees and other school levies to have schools running. Respondents attributed wastage to school fees problems, which indicates that respondents agreed that fee problems lead to wastage. Parents have to meet part of the school fees regardless of their income level. This makes children from low income families to withdraw from school or even repeat a grade. The reason for this is that students whose parents do not pay all school levies on time are send home, which increases chances of absenteeism. According to the study findings, students are send home to collect school fees. This is in agreement with Mutwota (2013) who noted that students are ever sent home to collect development fees, tuition fee, and other school levies. This therefore indicates that levies charged on parents are too high for them to pay. This finding coincides with the finding of study done by Henry (2015) who concluded that cost of education influence wastage.

Long distance travelled to school had a mean of 3.92. This implies that students who walked for long distances to get school got discouraged and quit, especially girls. Those student whose homes were near schools had nothing to fear. Sifuna (2006) pointed out that long distance travelled to school leads to students' lateness to school. This makes students miss lessons as they get punished. The denied learning opportunities lead to poor performance which is a likely precursor of withdrawal and repetition.

Overloaded curriculum had a mean of 3.77. This can be an indication that a curriculum which has many subjects and is concerned with academic excellence could lead to wastage. World Bank (2009) noted that overloaded 8.4.4 curriculum affect completion rate of students. Many examinable subjects put students under pressure which reduces the motivation to learn and as a result lead to poor performance. Some students end up giving up on education and consequently withdraw from school. This is in agreement to Mutahi (2014) who pointed out that heavy curriculum leads to wastage.

A drop out who was a student in one secondary school in Kathiani Sub-county noted that he joined school with the aim of completing high school education and probably join tertiary institutions. Unfortunately, he did not complete studies as anticipated. He expected to get full support from his teachers. According to him, the school was supposed to be a second home for students where teachers motivated students to work towards achieving their goals. However, this was not the case. The student said that some teachers discouraged students with negative remarks and told students that they will never make it in life.

The researcher tested the hypothesis: There is no statistically significant association between school-based factors and educational wastage using chi-square at 0.05 significance level. The purpose of the hypothesis test was to determine whether there was a significant association between school-based factors and educational wastage. The school-based factors included curriculum overload, staffing, distance to school, management support, availability of physical facilities, availability of teaching materials, school fees and school rules. The hypothesis was stated as follows:

H_{01}: There is no statistically significant association between school-based factors and educational wastage
The chi-square test results are presented in table 2

Table 2: Chi Square Test Statistics

	Curriculum overload	Staffing	Availability of physical facilities	Management support	distance to school	availability of teaching and learning facilities	School fees	school rules
Chi-Square	25.544	26.579	27.140	23.263	26.070	27.123	27.649	37.123
Df	4	3	3	4	4	4	4	4
Asymp. Sig.	.000	.000	.000	.000	.000	.000	.000	.000

Table 2 Shows that calculated χ^2 statistic of curriculum overload is χ^2 (4) =25.44,P=0.000. The results for staffing were $\chi^2(3)$ = 26.579, p-value= 0.000. School fees results were $\chi^2(4)$ = 27.649 and p-value= 0.000. The results for management support were $\chi^2(3)$ =27.140, p=0.000, distance to school results were χ^2 (4) =26.070, p=0.000. Results for availability of teaching and learning facilities χ^2 (4) =27.123, p=0.000 while results for school fees were $\chi^2(4)$ =27.649, p=0.000. In all these cases the P- values are less than 0.05 significance level. This implies that the null hypothesis H_{01} (there is no statistically significant association between school-based factors and educational wastage in public secondary schools in Kathiani Sub-county) can be rejected to support the alternative hypothesisH_{11} (There is a statistically significant association between school-based factors and educational wastage in Kathiani Sub-county).

From the results above, it can be argued that school-based factors influence wastage. This in line with Psacharopolous and Woodhall (1985) who argued that factors influencing school wastage are high opportunity cost of schooling for poor families, inappropriate curriculum factors 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 depletion at the primary level.

Rumberger (2008) argued that school resources, structural features of school and policies and practices of the school influence wastage. According to Kane (2004), other school-based factors leading to wastage in schools include teacher pupil conflicts, poor methods of teaching, excessive punishments; excessive homework, over-crowded schools, inaccessibility and costly school requirements. The girls and their parents are also discouraged by absence of female teachers who act as their role models. Muhammad and Muhammad, (2011) also claimed that poor attendance and negative attitudes towards school lead to wastage. Distance travelled to school is another school-based factor which influences wastage. This is due to the fact that it deters access to schools. In order to help boost educational access, it is therefore important to reduce the distance that students travel by establishing more secondary schools.

Conclusion

From the findingsit can be concluded that the school-based factors are significant influencers of educational wastage and should be put into account while dealing with wastage. Schools should have adequate teaching and learning facilities, proper staffing, and a conducive learning environment. The quality of the school management, its ability to motivate both students and staff as well as ability to create team spirit are all vital ingredients of an efficient school.

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