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Home based Factors and Educational Wastage in Public Secondary Schools in Machakos County, Kenya

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Abstract:
This study sought to determine the influence of home based factors on educational wastage in public secondary school in Kathiani sub county, Machakos. A descriptive survey research design was used. 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 home based factors and educational wastage in public secondary schools in Kathiani sub county. The chi square results for parental income were χ^2 (4) =41.860, p=0.000. The results for family structure were χ^2 (4) =22.912, p=0.000. The results for parental level of education were χ^2 (4) =19.754, p=0.000. Results for family size were χ^2 (4) =41.860, 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. The results for home lighting were χ^2 (3) =3.561, p=0.313. Since p- value is greater than 0.05 significance level, it can be concluded that there is no statistically significant relationship between home lighting and educational wastage.

Keywords: *Educational Wastage, Public secondary school, Education, home based factor*

1. Introduction

UNESCO (1970) defined 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 (UNESCO, 1971).

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 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 wastage has motivated researchers to conduct this study in Machakos County. This study therefore aims at investigating the influence of home based factors on educational wastage in Kathiani, Machakos County.
Research by Rumberger (2008) on dropouts has identified a number of factors within students' families, schools, and communities that predict dropping out and graduating. Three aspects of families predict whether students drop out or graduate: family structure, family resources, and family practices (Rumberger, 2008). Students living with both parents have lower dropout rates and higher graduation rates, compared to students living in other family arrangements. More important, changes in family structure, along with other potentially stressful events (such as a family move, illness, death, adults entering and leaving the households, and marital disruptions) increase the odds of dropping out. Students in homes with more family resources—as measured by parental education, parents' occupational status, and family income—are less likely to drop out of school (Bryk &Thum, 1989). A number of parenting practices—sometimes referred to as social resources or social capital—have been shown to reduce the odds of dropping out, including: having high educational aspirations for their children; monitoring their children's school progress; communicating with the school; and, knowing the parents of their children's friends. Finally, students are more likely to drop out if they have a sibling who dropped out Schools (Mcmillen, 1997; Rosenthal, 1998; Rumberger 2008).
The members of a household can have an influence over educational access and retention of their children in school, particularly in poorer communities. Children living with mothers generally are less likely to drop out. The number of children in a family dictates the poor families‟ ability to retain their children in school. Older girls in poor households may be withdrawn from school to take care of their younger siblings. This therefore means that birth order and gender often influence who has access to school (Hunt, 2007).

2. 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 while in school, 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).

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

Table 1: Sample size and sampling procedure

The respondents were obtained as follows; 29 public school principals and 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.

3. Results and Discussion

This deals with the presentation and analysis of data obtained from respondents through questionnaires and interviews.

Home based factors were defined as home aspects that impact on students learning positively or negatively. The home based factors included parents' involvement in education, family structure, family size, parental education, parental income and food provision. This is in line with Mutinda (2013) who pointed out that school based factors influenced drop out.
The respondents were asked to identify the home based factors which influenced wastage in the schools, the findings were summarised in table 1. In the table, the responses to the given statements were summarised in a frequency distribution table using a 5-point likert scale. The responses were then awarded cumulative scores such that responses that indicated strongly agree were awarded 5 points, agree awarded 4 points, neutral awarded 3 points, disagree awarded 2 points and strongly disagree 1 point. Their ratings are presented in table 1.

Factor	N	SA	A	N	D	SD	Mean	Standard deviation
Parental Income	57	28	17	6	3	3	4.12	0.998
Family Structure	57	16	21	14	3	3	3.78	1.176
Family Size	57	18	19	14	2	4	3.79	1.020
Sufficient Home Lighting	57	14	15	19	9	0	3.60	1.126
Parental Level of Education	57	21	15	13	6	2	3.82	1.363

Table 2: Mean scores and frequency counts of Home based factors influence on wastage

Where;
SA-Strongly Agree
A-Agree
N-Neutral
D-Disagree
SD-Strongly Disagree
Table 2 shows means and frequency counts of home based factors that influence wastage.
The table indicates that parental income rates high (4.12) among home based factors influencing wastage. This is because family with low income may hinder them from affording school needs of their children. This could force students to drop out of school to look for employment to fend for themselves. Children from households with high income are advantaged because their parents can afford school needs. One drop out reported that;

→ My parents' incapability to pay for my school fees was main reason for me to quit schooling.

Another factor which strongly influences educational wastage in this study is the family size (3.79). This is because when the number of children in a family is large, parents may not be in a position to fend for them and providing school requirements hence they are likely to withdraw from school. Family size is one of the home-based factors influencing student wastage. If the parent is not stable financially, the children could easily drop out of school. Members of a family have influence on educational wastage. This is in concurrence with Hunt (2007) who noted that older children in poor households may be withdrawn from school to take care of younger siblings and fend for them for them.
Parental level of education also influences wastage (3.82). It is expected that parents who are able to read and write be committed to the education of their children. This could help solve the problem of wastage. This study found out that parents in this Sub County were literate. However, despite this, wastage still persisted. This could possibly mean that the basic education attained by parents was not fully utilised to support the learning of their children. Parents were pre occupied with other duties at the expense of the education of their children. This may result to repeating or withdrawing from school. Parents who were committed to education of their children have been seen to reduce the odds of repeating and dropping out. This is because these parents had high aspirations for their children, monitored their children's progress and always communicated with the school.

4. Inferential statistics
The hypothesis of the study was to determine whether there was a statistically significant association between home-based factors and educational wastage. Home-based factors included parental income, family structure, family size, home lighting and parental level of education. The hypothesis was tested using chi-square at 0.05 significant levels.
H_0: There is no statistically significant association between home-based factors and educational wastage.
The chi-square test results are presented in table 2

	Parental income	Family structure	Family size	Home lighting	Parental level of education
Chi-Square	41.860	22.912	22.035	3.561	19.754
Df	4	4	4	3	4
Asymp. Sig.	.000	.000	.000	.313	.001

Table 3: Chi Square Test Statistics

Table 3 shows that the results for parental income were χ^2 (4) =41.860, p=0.000. The results for family structure were χ^2 (4) =22.912, p=0.000. The results for parental level of education were χ^2 (4) =19.754, p=0.001. In all these cases, p-value is 0.000 which is less than 0.05 significant level. This suggests that the null hypothesis H_0 (There is no significant association between home-based factors

and educational wastage) can be rejected and alternative H_1 (there is a statistically significant association between home-based factors and educational wastage) can be accepted. The results for home lighting were χ^2 (3) =3.561, p= 0.313. Since p-value is greater than the significant level, then this suggests that there is no significant association between home lighting and educational wastage.

The overall results above indicate that home based factors influence wastage. This is in line with the study of Hunt (2007) who noted that the members of a household can have an influence over educational access and retention of their children in school, particularly in poorer communities. Children living with mothers generally are less likely to drop out. The number of children in a family dictates the poor families‟ ability to retain their children in school. Older girls in poor households may be withdrawn from school to take care of their younger siblings. This therefore means that birth order and gender often influence who has access to school. This therefore means that home based factors influence wastage and there is need to look in to them while curbing wastage.

5. Conclusion

From the study findings it can be concluded that the home-based factors are significant influencers of educational wastage and should be put into account while dealing with wastage.

For example, most respondents indicated that parents' involvement in education and parental income contributes to wastage. These findings point out home-based factors are significant factors of educational wastage. Its place in educational wastage had also been established by Emily Durkheim who pointed out that parents play a critical role in early socialisation of the students by helping them to learn and adapt to norms and values of the society. The parents are obligated to ensure that students attend and continue with learning without disturbance by paying school fees, creating a conducive environment at home and becoming good role models for their children.

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