IMPACT OF FREE SECONDARY EDUCATION POLICY ON INTERNAL EFFICIENCY OF DAY SCHOOLS IN GATANGA DISTRICT, MURANG’A COUNTY, KENYA.

BY

RACHAEL WARUGURU MACHARIA

A RESEARCH PROJECT SUBMITTED TO THE SCHOOL OF EDUCATION IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF EDUCATION OF KENYATTA UNIVERSITY.

JUNE 2013
DECLARATION

This research project is my original work and has not been presented for award of degree or any other award in any other university.

__________________                  Date __________________

RACHAEL WARUGURU MACHARIA

E55/CE/23422/2010

This research project has been submitted for examination with our approval as university supervisors.

__________________                  Date __________________

DR. JACKLINE NYERERE

Lecturer, Department of educational management policy and curriculum studies,

Kenyatta University

__________________                  Date __________________

MR. DANIEL WESONGA

Lecturer, Department of educational management policy and curriculum studies,

Kenyatta University
DEDICATION

I dedicate this project to my mum, Beatrice Wamaitha and my late dad, Joseph Mwangi; and to my husband Judah and our three daughters, Mercy, Betty and Martha.
ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to my supervisors, Dr. Nyerere and Mr. Wesonga who devoted a lot of their time to this study. I am particularly grateful for their valuable advice and guidance without which the completion of this project would not have been possible.

I am grateful to the principals and teachers who provided the information that was required in this study.

I would also like to thank my principal who gave me days off so that I could work on this project.

Above all, I am grateful to God for providing all I needed to undertake this project.

I take sole responsibility for any errors of omission and/or commission.
ABSTRACT

In 2008, the Kenyan government introduced the free secondary education (FSE) programme with the aim of expanding access to secondary education to children from poor households who may fail to enroll because the parents are unable to pay. The government is seeking to expand secondary education while constrained by resources and strategies should therefore be put in place to ensure that the FSE programme is sustainable and that it yields meaningful gains. One such strategy would be to improve the internal efficiency of the education system and of individual institutions. This study sought to analyze the internal efficiency of day schools in Gatanga district under FSE. In particular the study sought to establish the status of repetition, performance in exams and enrolment/school sizes under FSE. The study adopted the survey design. The target population included 23 day secondary schools, 23 principals and 245 teachers. Simple random sampling was used to select a sample consisting of 8 schools and 8 principals and purposive sampling was used to select the 48 teachers who were included in the sample. Questionnaires and interview schedules were used to collect data from teachers and principals respectively. Data on performance, repeaters and enrolment was collected through document analysis. Content validity of the instruments was determined through consultations with supervisors and their reliability was tested by piloting the instruments. Data was edited, coded and punched into a computer. Quantitative data was tabulated and analyzed using measures of central tendency and percentages, by means of Excel computer program. The data is presented in tables and bar graphs. Qualitative data was subjected to thematic analysis. The study found that in the period between 2008 and 2011 performance of day schools in KCSE improved, repeater rates greatly increased and enrolment had a marginal increase. It was concluded that the FSE policy had contributed both positively and negatively to internal efficiency of day schools; positively through improved performance in national exams and enrolment (although schools were still under enrolled) and negatively through increased repeater rates. It was recommended that there was need to put in place clear guidelines on class size so as to address the problem of screening as a cause of under enrolment. Another recommendation was that strict guidelines on repetition should be put in place so as to avoid wastage of resources allocated to schools and to the education sector. Textbooks and an equipped science laboratory are instrumental in improving performance of learners. It was therefore recommended that the ministry of education officials should occasionally inspect schools to ensure that the textbook fund and other such funds which directly improve learners’ achievement are not diverted to other school projects. Recommendations for further research were also made.
ABBREVIATIONS AND ACRONYMS

**EFA**: Education for all

**FSE**: Free secondary education

**GER**: Gross enrolment ratio

**KCPE**: Kenya Certificate of Primary Education

**KCSE**: Kenya Certificate of Secondary Education

**MDGs**: Millennium Development Goals

**MOE**: Ministry of Education

**NER**: Net enrolment ratio

**OECD**: Organization for Economic Co-operation and Development

**PTR**: Pupil-teacher ratio

**SSA**: Sub-Saharan Africa

**UPE**: Universal primary education

**USE**: Universal secondary education

**SSE**: Senior secondary education
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CHAPTER ONE

1.0 INTRODUCTION

This chapter covers the background to the study, statement of the problem, purpose of the study, objectives of the study, research questions, assumptions of the study, limitations and delimitations of the study, significance of the study, theoretical framework, conceptual framework and operational definitions of central terms.

1.1 Background to the study

Secondary education is important because of the role it plays in the economic and social development of nations and to individual students. It provides countries with critical higher level skills and knowledge for advanced learning and training of technicians, scientists, and entrepreneurs (Mastri, 2002). To the individual student, it yields considerable private returns and provides opportunities to acquire attitudes, skills, and competencies unlikely to be developed during the primary grades; and which enable young people to participate fully in society, take control of their lives, and continue learning (Mastri, 2002).

World wide, secondary education was for a long time the privilege of a few and its role in economic development was mainly to train a limited number of primary school graduates to meet the manpower needs of the economy (Briseid, Caillods, Lugaz & Murtin, 2004). Today, many middle and high income countries have transformed secondary education from an elite system
to a mass system that offers opportunities for further learning to all primary school graduates (Verspoor, 2008). In many such countries basic education, which includes lower secondary education is free and compulsory; and free (but not compulsory) in upper secondary. Following the world education forum (Dakar 2000) and the adoption of the education for all (EFA) and Millennium Development Goals (MDGs), many African countries have improved primary school education significantly (Verspoor, 2008). Part of this improvement has been the introduction of free primary education; which has led to massive increase in enrolments. Governments in Sub-Saharan Africa (SSA) are now concerned that many children from poor households who successfully complete free primary education will be unable to continue to secondary education because their parents are unable to afford the costs of this level of education. As a consequence, some governments in SSA have recently introduced free secondary education as a strategy to expand access to education for the poor. Uganda, for instance, abolished lower secondary education fees in 2007 with the aim of shifting access patterns from limited elites to the majority of children in the country (Ohba, 2009).

Cost of schooling has been identified as a major obstacle to enrolment in secondary schools in the developing world. For example, in 1992, the proportion of children in Uganda who were not enrolled in school due to costs related to schooling was estimated at 71 percent but this figure dropped to 37 percent after direct fees were eliminated (Figueroedo & Anzalone, 2003). This
was the case in many developing countries. In a study carried out in Tanzania in 2001, parents and teachers said that inability to pay fees was the principal reason why children did not attend school; and in Zambia, it was estimated that at least 45 percent of children who dropped out of school did so because they could not pay fees (Ohba, 2009). As Figueredo & Anzalone (2003) point out, removal of user fees has been found to be effective in improving equitable access to education—specifically the ability to reach the poor, girls, orphans and other disadvantaged groups.

Secondary education in Kenya is characterized by low participation rates as indicated by low transition rates, low gross enrolment rate (GER) and low net enrolment rate (NER) (Oyugi, 2010). For instance, in 2009, NER was approximately 50 percent while the primary to secondary school transition rate was equally low at 55 percent (World Bank, 2009; MOE, 2010). The two major factors constraining secondary school enrolments in Kenya are insufficient school supply since the number of secondary schools has not matched that of primary schools; and affordability (Ohba, 2009; Oyugi, 2010). The cost of secondary education, more so, reduces the chances of children from poor households enrolling and/or remaining in school.

The Government of Kenya officially launched the Free Secondary Education (FSE) programme at the beginning of 2008 to address the plight of children from poor households who upon completion of free primary education could not get access to secondary school, mostly because of school fees. During the launch, the President of Kenya in his speech emphasized that the main
objective of providing free secondary education was to ensure that children from poor households acquired a quality education that would enable them to access opportunities for self-advancement and become productive members of society (President Kibaki, 2008). Through the FSE policy, the government subsidizes Ksh. 10,625 per child per year in government secondary schools. A study by Ohba (2009) on the impact of FSE on access to secondary education found that the FSE policy had led to considerable fee reduction in public day schools. Under FSE parents are only responsible for payment of caution money (for new entrants), and development fees which are suggested to be a maximum of Ksh.2500 and lunch fees; as opposed to the previous amount of a maximum of Ksh. 11,000 per year as per the national guidelines for school fees.

Public subsidization and expansion of secondary education in Kenya, like in other developing countries are taking place against a background of inadequate financial resources. One of the strategies that needs to be employed in order to expand secondary education while constrained by resources, is improving internal efficiency of education systems (Yin & Wang, 2005). Some measures of improving efficiency would include: decreasing repetition and dropout; increasing class size; and improved utilization of teaching-contact hours. If, for instance, a system has high repetition rates then it means that a lot of scarce resources are going to waste since the same amount of resources could have been spent on a larger number of children if there was no repetition. In Cameroon, for instance, it was estimated that in 2003, almost 30
percent of education sector resources were wasted due to repetition (Kattan 2006).

1.2 Statement of the problem

The FSE policy was intended to make secondary education more affordable and to improve academic achievement of learners. These were to be achieved through reduced user fees and provision of textbooks and other learning materials. This reduction in user fees was quite significant in day schools. Under the cost sharing policy day schools were found to be internally inefficient. Some of the notable inefficiencies included high rates of absenteeism, under enrolment and poor performance in national examinations. It is hoped that the FSE policy has addressed these inefficiencies thereby making day schools more internally efficient. Repetition is a form of inefficiency that has been linked with reduced cost of schooling in day schools, and its extent under the FSE policy requires investigation.

1.3 Purpose of the study

The purpose of the study was to investigate the extent to which internal efficiency of day schools had been affected by the FSE programme.

1.4 Objectives of the study

The following were the objectives of the study;

i. To analyze the trend in performance in Gatanga district between 2004 and 2011.

ii. To analyze the trend in repetition in day schools in Gatanga district between 2004 and 2011.
iii. To analyze the trend in enrolment/school size in day schools in Gatanga district between 2004 and 2011.

iv. To assess the views of teachers and principals on the impact of FSE on internal efficiency of day schools in Gatanga District.

v. To recommend appropriate strategies that should be put in place so as to improve the internal efficiency of day schools.

1.5 Research questions

The study was guided by the following research questions;

i. What is the trend in performance of day schools, in KCSE, in Gatanga district between 2004 and 2011?

ii. What is the trend in repetition in day schools in Gatanga district between 2004 and 2011?

iii. What is the trend in enrolment in day schools in Gatanga district between 2004 and 2011?

iv. In which ways has FSE policy affected performance in KCSE in day schools in Gatanga district?

v. In which ways has FSE affected enrolment/school size in day schools in Gatanga district?

vi. What are some of the strategies that can be put in place to improve the internal efficiency of day schools so that the FSE funds yield maximum benefits to the individual and to the nation?

1.6 Assumptions of the study

In the study, the following assumptions were made:
i) All respondents would be co-operative and provide reliable responses.

ii) Fees charged in day schools under FSE policy are affordable to poor households and as such, enrolment in day school is no longer affected by ability to pay fees.

iii) Neighbouring day schools draw their students from the same pool (i.e., from the same primary schools) and therefore, entry behaviour of learners is not a factor that would have to be considered when comparing performance of day schools.

1.7 Limitations of the study

The following were limitations of the proposed study:

i) The study limited itself to day schools in Gatanga district due to constraints of time, accessibility of the schools and the cost of producing research instruments.

ii) The sample used in the study was drawn from rural day schools in the district. The results can only be generalized to rural day schools in Gatanga district. The results may not be typical of day schools in other districts or in urban settings.

1.8 Delimitations of the study

i) The study confined itself to public day schools in Gatanga district since the district is familiar to the researcher.

ii) Boarding schools were left out since the FSE policy did not have a significant effect in reduction of user fees in these schools.
iii) The teachers that were included in the sample were those (present) in school at the time of the study.

1.9 Significance of the study

The focus of the research was directed towards determining the impact of FSE on internal efficiency (as measured by pass rates, repetition, utilization of teachers and utilization of teaching-contact hours) in day schools in Gatanga district. The study sought to establish the gains on internal efficiency made through the FSE policy. The study was expected to provide important information about the levels of internal efficiency of day schools. This was in the hope that the stakeholders in these schools would, where necessary, take appropriate measures to ensure that the resources allocated to their schools do not only achieve the intended objective of improving access to secondary education, but that they also yield the maximum benefits possible, to the students and the nation. The information could also be important to policy makers who may come up with policies to address areas/issues in schools and/or in the entire education system that may be a cause of inefficiencies.

1.10 Theoretical framework

The proposed study adopted the Classical Liberal Theory of Equal Opportunity by Sherwin and Wood (1982) who asserted that each person is born with a given amount of capacity, which to a large extent cannot be substantially changed. Thus, educational systems should be designed so as to remove barriers of any nature (economic, gender, geographic) that prevent
bright students from lower economic backgrounds from taking advantage of inborn talents, which accelerate them to social promotion.

The Classical liberal theory states that social mobility will be promoted by equal opportunity of education. There is a widespread belief that by removing economic barriers and making more places available in upper secondary and higher education and by increasing the length of attendance in the common school, ideal situation could be created to implement the vision of equal opportunity, where everybody has access to the kind and amount of education that is suited to his inherited capacity. In developing countries where inequalities of education provision are severe, it may be desirable on equity and efficiency grounds, to pursue the goal of equal distribution of educational opportunities. Inequality of participation means that the benefits of education are disproportionately enjoyed by the upper income families whose children are far more likely to complete secondary schooling or enroll in higher education (Psacharopoulos and Woodhall, 1985).

The theory was relevant to the study as FSE is aimed at giving children from poor households an opportunity to participate in secondary education. Thus, by eliminating fees the government has removed some economic barriers. This may reduce drop out, absenteeism and low pass rates which are common among children from poor households due to inability to pay; thereby improving internal efficiency of education systems. FSE has created a situation whereby the poor can access secondary education and be able to transit to higher levels of education or to the world of work.
1.11 Conceptual framework

Figure 1.1 shows the relationship between the independent variable and the dependent variables of the study. Cost of schooling is closely related to absenteeism and consequently to performance. Students may be away from school for long periods due to non-payment of fees. Sometimes the students sent home may be so many that the teacher opts to wait for them to come back before he/she can continue teaching, or to repeat what had been taught when these students were away. This affects syllabus coverage and consequently performance in exams. Fees abolition may reduce absenteeism due to non-payment of fees.

Figure 1.1: Effects of FSE on internal efficiency of schools

**Source:** Researcher

Repetition in the final year of a level of education gives pupils a second chance in seeking selection in the next level of education. Repetition requires extra finances for the additional year and high cost of schooling may hinder
children from poor households from repeating. Reduced private cost of schooling through public subsidization, may lead to high repetition rates.

Increased enrolment at the secondary level without corresponding increase of places in institutions of higher learning raises the requirements for admission. Students who have the potential may repeat so as to re-sit exams and raise their chances of admission.

1.12 Operational definition of central terms

**Internal efficiency:** Appropriate utilization of resources allocated to schools so as to yield maximum outputs as measured by pass rates in national exams, enrolment and the number of years taken to complete the secondary cycle.

**Pass rates:** Proportion of form four candidates who score C+ and above in KCSE.

**Performance:** Grades attained by learners in national exams.

**Quality of pupils:** Pupils rated according to the grades they have scored in national exams.

**Repetition:** Sitting KCSE and then coming back to the same grade or to a lower grade while the normal expectation is leaving the secondary level.

**Repeater rate:** Proportion of KCSE candidates in a particular year who are repeaters.
CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction
This section dealt with review of literature that was related to this study. This included: expansion of secondary education, meaning of internal efficiency, and effects of abolition of user fees on performance, repetition and enrolment. A summary of the reviewed literature was also given.

2.2 Expansion of secondary education

2.2.1 Expansion of secondary education in industrialized countries
By the start of the 20th century secondary enrollment was largely a preserve for the elite in most of today’s industrialized countries (Verspoor, 2008). Today, the higher income countries have achieved (or are close to achieving) universal secondary education; thereby transforming secondary education from an elite system that offers opportunities for further learning for a few selected students to a mass system that aims to enroll most primary school graduates for several years beyond the typical six or so years of primary education (Global Monitoring Report, 2004). Achievement of universal secondary education has been possible through subsidies. As Dur and Teulings (2002) point out education is heavily subsidized throughout the Western world not only at primary level but also at secondary and higher education levels.

In an analysis of secondary education in industrialized countries, Briseid, Caillods, Lugaz & Murtin (2004) point out that in most OECD countries, no
tuition fees are charged in state schools until the end of secondary education; and that in most of these countries, free education also applies to textbooks and transportation until the end of compulsory education. A few of the OECD countries provide school free meals (for example, in Finland) or subsidized depending on the resources of the families (for example, in France and some US states). Most of the countries require families to pay for meals, school supplies, extra-curricula activities and uniforms (where necessary) at lower secondary level, as well as transportation and textbooks at upper secondary level; with families that cannot meet these costs receiving a scholarship and/or benefitting from a reduction in costs.

Looking into financing of secondary education, Briseid et al (2004) point out that allocation of funds in most OECD countries is based on per pupil or per class and the allocation made is then adjusted to take into account certain features such as the type of school, its size, the options offered and the number of non-national language speakers. In addition, several OECD countries have introduced programmes that provide additional funds to individual schools that enroll large numbers of students from disadvantaged backgrounds or to all schools in areas where there is high concentration of migrant populations or minority groups. The funds allow schools to improve the quality of teaching and learning by: use of new combinations of teaching and non-teaching staff, adopting new methods of grouping students, favoring team teaching, rewarding teachers and leaders for success in raising the achievements of students from disadvantaged groups, and supporting families and students.
Examples of such programmes are: Education Action Zones in the United Kingdom, Zones d’Éducation Prioritaire’ in France and the Disadvantaged School Programmes in Australia.

2.2.2 Expansion of secondary education in Sub-Saharan African countries

Access to secondary education in SSA countries is limited to a few. On average only about 30 percent of each age cohort completes junior secondary education and 12 percent senior secondary (Verspoor, 2008). Following the World Education Forum (Dakar, 2000) and the adoption of the education for all (EFA) initiative and the world millennium goals (MDGs) there is increasing demand for secondary education in most SSA countries due to the rapidly increasing primary school enrolment (Mastri, 2002).

One of the greatest challenges of gaining access to secondary education in most African countries is affordability, since in a majority of the countries this level of education is not offered free by the government (Kattan, 2006). This means that parents are required to meet some operational costs such as tuition and maintenance and may be required to pay for many other things including food, uniforms, learning materials, and special equipment. High level of costs borne by households becomes a barrier to the enrolment of students from poor families. Akyeampong (2005), for instance, found that in Ghana, SSE was out of reach for the poorest 60 percent; and in both Uganda and Tanzania, those outside the top 25 percent of income would not be able to afford unsubsidized secondary education.
Many SSA countries are experiencing a rising demand for secondary education while facing the challenge of severely constrained public budgets and the countries are therefore looking for financially sustainable strategies for expanding access to those out of school as well as to lower the unit cost for those enrolled. Such strategies include: public–private partnerships; altering the structure of the system, for example integrating lower secondary into primary education or into upper secondary education; using alternative modes of delivery such as radio and internet; and improving internal efficiency by lowering the high drop out and repetition rates (Mastri, 2002).

Verspoor (2008) looks into expansion of secondary education in SSA countries and notes that some countries have attempted to meet the rising demand for secondary education, while facing financial constraints, by spreading the available resources to a large number of students. This has led to shortages of essential inputs resulting in increased class sizes; shortages of textbooks, instructional materials and supplies; poorly stocked libraries; and double-or triple-shift use of facilities. For example, in Guinea GER rose from 9 percent in 1990 to 28 percent in 2004 resulting in an increase in PTR from 13 in 1990 to 43 in 2004.

2.2.3 Expansion of secondary education in Kenya

An analysis of trends in secondary education by household wealth using 2003 Kenya demographic and health survey (KDHS) data, revealed that access to secondary education was highly skewed in favour of the rich (Ohba 2009). Improving access to education for poor households in developing countries
may involve (i) extensive expansion of the school system (for example, by building more schools or new classrooms in existing schools), that is, supply-side expansion; and (ii) subsidizing investment in education by the poor (that is, demand-side subsidies) (Coady & Parker, 2002). The Kenyan government has improved access to secondary education mainly through demand-side financing mechanisms; leaving building of schools (i.e., supply-side expansion) to communities and private partners, such as religious organizations.

In the 1993/1994 financial year the government introduced the secondary schools bursary scheme with the intention of providing financial assistance to economically and socially needy students in all public secondary schools. However, a study by Njeru and Orodho (2003) found that the scheme did not have a significant effect on enrolment by the poor because it targeted students who were already in secondary school. The scheme missed students who could not raise the initial school fees, despite their academic eligibility and it was therefore viewed as one that assisted the children who would successfully enter secondary school.

Introduction of free primary education in 2003 resulted in massive increase in enrolment. The gross enrollment rate increased from 88.2 percent to 102.8 percent in 2003, rising to 104.8 percent in 2004 (World Bank, 2009). The Kenyan government got concerned that the majority of those who enrolled and completed free primary education would be unable to continue to secondary education; particularly, the children from poor households whose parents
could not afford to pay. In 2008, the government introduced FSE program to enable children from poor households to participate in secondary education.

A study by Ohba (2009) on the impact of FSE on access to secondary education revealed that FSE had substantially reduced the cost of education borne by households in day secondary schools. Before the introduction of FSE, the schools that were studied were charging Ksh. 11628 per annum (which was slightly above the maximum figure of Ksh. 11000 as per national guidelines). After the introduction of FSE this figure dropped to Ksh. 4938. This figure is above the national guideline of Ksh. 2500, but this has been attributed to lunch fees which had not been included in the national guideline. The study also revealed that FSE education had led to an increase in secondary school enrolment. Secondary school enrollments increased from 779,000 in 2002 to 1.2 million in 2007 and to 1.4 million in 2008. Thus, the annual average increase in enrollment between 2002 and 2007 was 84,200, while between 2007 and 2008 increase was 200,000 (Ohba, 2009). The study does not indicate whether the program has led to significant increase in enrolment in day schools. This study sought to establish whether FSE had had significant effect on enrolment in day schools in Gatanga district.

2.3 Meaning and measures of internal efficiency

Internal efficiency is concerned with the relationship between inputs and outputs within the education system or within individual institutions (Yin & Wang, 2005). Internal efficiency is a question of whether more outputs could be achieved given the available inputs or alternatively, whether few inputs
could be used in providing the same level and mix of outputs (Chapman & Windham, 1986: 7). Inputs of the education system include: the students, the teachers, the buildings and other equipment being used, and other recurrent costs of education (Miller, 1969). Output refers to achievement of pupils—which refers to knowledge, skills, behavior, and attitudes—as measured by tests, examination results, and the like (World Bank, 1980).

There are different views on how to measure educational output. As UNESCO points out,

“How educational output is measured depends, of course, on the nature of the objectives of the educational system. Depending on the philosophical, political or analytical viewpoint adopted the objectives may differ considerably.” (Ndaruhutse, 2005: 12)

Ndaruhutse (2005) categorizes measures of internal efficiency into: student efficiency measures; staff efficiency measures; and cost-efficiency measures. Student efficiency measures show how efficiently a given cohort is making transition through the education system. The three primary student efficiency measures are promotion rates, repetition rates and drop out rates. Completion rate as a measure of student efficiency incorporates these three measures giving one overview point of student flow through an education system from start to finish. Staff efficiency measures are: student-staff ratio; and teaching-contact hours. Student-staff ratio gives an indication of how well one type of input (staff) is used in the education process. Teaching-contact hours refers to
the average number of hours a teacher teaches students in a week; and as a measure of internal efficiency it indicates how staff are using their time.

Some measures of improving efficiency would include: decreasing repetition and dropout; increasing class size; and improved utilization of teaching-contact hours. If for instance, a system has high repetition rates then it means that a lot of scarce resources are going to waste; since the same amount of resources could have been spent on a larger number of children if there was no repetition.

2.4 Effects of reduction of user fees on performance

Studies indicate that user fees negatively affect attendance rates. A study which was carried out in Kenya found that 31% of an average student’s absenteeism was attributable to school fee-related issues (Mukundi, 2004). This agrees with a research by Boyle, Brock, Mace and Sibbons (2002) in some areas of Uganda and Zambia, which found that the inability to pay school fees meant children withdrawing from school for periods of time, however temporarily.

Utilization of stipulated teacher-pupil contact hours will have an effect on syllabus coverage. Waime (2003) found that most day schools did not manage to cover the syllabus and one of the major reasons given for this was absenteeism due to non-payment of fees. Schools that were studied had an average mean grade of ‘D’ for three years in a row. The schools were also found to have high textbook to pupil ratios.
Kiveu and Mayio (2009) also found absenteeism to be a cause of delayed coverage of the syllabus because teachers were made to repeat what they had already taught when those students who had been sent home for fees resumed. Failure to cover the syllabus contributed to poor performance.

This study sought to establish whether absenteeism (in terms of the number of days a student misses school per term) due to fee-related issues had reduced under FSE and thereby improving internal efficiency in relation to examination results. The study also sought to establish whether or not students had adequate textbooks under the FSE policy given that the policy has a vote head for text books.

2.5 Link between reduction of user fees and repetition

Repetition is a major challenge in developing countries as it occurs against a background of constrained resources. Repetition affects internal efficiency of an education system by (i) increasing the total costs (that is, the number of pupil-years) needed to graduate a cohort of students; (ii) taking up student-places in the first grade that can be used to accommodate new students, or increasing class size; (iii) reducing the number of graduates; and (iv) increasing the required input per graduate. Repetition increases the time that a student spends in school. The longer a student is enrolled beyond the minimum time required, the more the resources (in terms of teacher time, classroom space, textbooks and other teaching materials and educational services) needed and the more it will cost the family and the government to keep the student at school. However, there are proponents of repetition who
argue that repeating a class helps slow learners to attain instructional objectives and prevents students from dropping out prematurely. According to proponents of repetition, students who proceed to upper grades before they acquire the necessary knowledge and skills may not catch up and this may lead to continued poor performance and even to drop out (Cuadra & Fredriksen, 1992; Briseid et al, 2004).

Nishimura, Yamano and Sasaoka (2007) carried out a study that sought to establish the status of dropout and repetition under the UPE policy in rural Uganda. They found that the probability of repetition was higher in public schools than in private schools. To them, there was a possibility that the capitation grant might make schools want to have as many pupils as possible to the extent of increasing repeaters. To improve internal efficiency of public schools Nishimura et al suggested a change in the mode of public subsidization. They suggested an incentive scheme that would reward teachers whose classes/school improved repetition; that is an incentive scheme directly linked to improved internal efficiency of schools.

Repetition is found to be linked to school leaving exams. Eisemon (1988) found that in Kenya repetition was high in the final year of a schooling level due to emphasis on examinations as a device to select pupils from one level of schooling to another. Moreover, the students who were allowed to repeat were the academically talented. Thus, the role played by exams as a selective device and inadequacy of places at the next level were two major causes of repetition in Kenya.
Eisemon (1997) observes that increased enrolment at a certain educational level without corresponding increase of places in the next level of education raises the requirement for admission. He illustrates this with the findings by Eisemon and Salmi (1993) that in Uganda the ‘A’ level scores for entrance to a government university were raised when the cohort of eligible students increased. This may lead to repetition by students who have attained the standard pass mark for that level so as to increase chances of admission in the next level. In a case where schools are rated in terms of performance, such ‘quality’ repeaters would boost the image of the school by improving its mean grade. This study sought to establish the criteria used to select repeaters if any, and whether repeaters caused a significant improvement in the mean score of the school.

In their study on the effects of cost sharing on internal efficiency, Kiveu and Mayio (2009) found that the majority of those who repeated came from well off families that could afford the costs. Fees abolition may lead to increased repetition, especially in day schools where the fees charged is quite low because in that case even poor parents may be able to raise the fees for the additional year. However a study carried out by Mwangi (2012) found that repetition in day schools had reduced under the FSE policy.

2.6 Link between reduction of user fees and enrolment

Class sizes/school sizes have an effect on utilization of teachers. Teacher salary expenditures constitute a huge proportion of government expenditure on education: teachers’ wage bill currently absorbs 73 percent of the ministry of
education’s recurrent budget (ROK, 2012). Utilization of teachers therefore becomes a major consideration when determining internal efficiency of an education system or of an individual institution. Low PTR is a reason for low internal efficiency. Low enrolment in a class would lead to underutilization of resources, both physical and human-particularly the teacher. A teacher attending to a small class is being underutilized since she/he could have served many more pupils while earning the same pay in a month. However, it is a fact that classes may become too large to a point where classroom management and effective teaching become difficult which may in turn affect academic achievement of learners (Abagi & Odipo, 1997). All in all, where resources are limited, like in Kenya, it makes sense to have a class size of about 45 as suggested by the World Bank.

Secondary school teachers in Kenya are expected to teach 18 hours (27 periods of 40 minutes each) per week, but this is not normally the case. Rajkumar and Onsomu (2004) for instance, found that teaching loads averaged 13 hours per week for secondary school teachers. This however, does not mean that every secondary school teacher is underutilized-some teachers are underutilized while others are overextended. Some of the reasons for underutilization and which tend to be pronounced in small schools are: (a) schools have small student enrolment and do not have enough teaching periods for a full teaching load; (b) teachers are only teaching one subject, rather than two or three; or (c) few classes are offered in subject(s) teachers are qualified to teach.
A 2004 World Bank study outlined aspects of teacher deployment policy that would allow secondary enrollment to increase by 50 percent without increasing the number of teachers; two of which are of interest in this study. These are: increasing class sizes from an average of 36 to about 45; and expanding existing schools to at least three parallel streams. Fee abolition may improve efficiency in utilization of teachers through increased enrolment which may translate into larger class sizes and/or larger school sizes, in terms of number of streams.

Waime (2003) carried out a study that investigated the challenges that were faced by head teachers in the management of district day schools Thika district. She found that most day schools had single streams and had low enrolment (a number of them had less than 120 pupils). This study was carried out under the cost sharing policy.

A study conducted by Chabari (2010) on the challenges facing effective implementation of the FSE policy indicated that the policy had led to increased enrolment to the extent that there was overcrowding in classrooms. He also found that the number of streams had increased in a majority of the schools (62.5%) that he had included in the sample. This study sought to establish whether or not enrolment and number of streams in day schools had increased under the FSE policy.

2.7 Summary of the reviewed literature

Performance of students in examinations is affected by a number of factors. Among the factors that affect performance and which are of interest in this are
availability of textbooks and other teaching and learning materials and utilization of teacher-pupil contact hours. According to the reviewed literature, utilization of teacher-pupil contact hours may be inefficient due to pupils’ absenteeism; and especially when a large number of students are locked out of school due to non-payment of fees. The study by Waime (2003) found that day schools in Thika district (Gatanga district was then part of Thika district) had an average mean grade of D for three years running. This study sought to establish whether or not performance of day schools in national examinations had improved under the FSE policy. Moreover, Chabari (2010) recommended that studies should be carried out to assess the effects of the FSE policy on performance of public secondary schools.

The reviewed literature indicates that repetition in exam grades may go up as a result of reduced cost of schooling. However a study by Mwangi (2012) indicated that repeater rates in exam and pre-exam grades had decreased. This study sought to establish whether or not the number of students repeating in form four had decreased under FSE. As Mwangi (2012) had recommended under the areas for further research the study further sought to establish how the trend in repetition in day schools in Gatanga district compared with those of other districts.

The reviewed literature indicated that enrolment can be affected by abolition of user fees. Increased enrolment as a result of elimination of user fees may lead to efficient utilization of teachers through increased class sizes. Studies carried out under the cost sharing policy indicated that day school had low
enrolment and most day schools had single streams (Waime, 2003). This study sought to establish whether or not enrolment in day schools in Gatanga district had increased after the introduction of FSE policy.

The reviewed literature indicates that FSE policy had led to increase in enrolment to the extent that classrooms were overcrowded (Chabari, 2010). Chabari also found that school sizes had increased under the FSE policy. The study conducted by Chabari included both day and boarding schools. This study sought to establish if a similar situation in terms of class and school sizes existed in day schools.
CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Introduction
This section gives the details of the methodology used in the study. These include; the research design, location of the study, target population, sample size and sampling technique, data collection instruments, validity and reliability of data collection instruments, data collection procedures and data analysis techniques.

3.2 Design
This study adopted survey design. Orodho (2009) defines a research design as schemes, outlines or plans that are used to generate answers to research problems. According to Kothari (1985), survey design is concerned with describing, recording, analyzing and reporting conditions that exist or existed. This design was appropriate for this study since the researcher sought to obtain information from a large group of people that could be used to explain the observed levels of internal efficiency in day schools in Gatanga district under FSE.

3.3 Locale
The study was conducted in Gatanga District of Murang’a County, in Central province. The researcher works in Gatanga District. The area is therefore familiar to the researcher. Moreover, there was the constraint of time and
finances and Gatanga was therefore convenient since the researcher did not have to travel long distances to reach any of the schools in the district.

Gatanga district neighbours Thika town, which is a fast growing industrial town. Gatanga district is rural and a large proportion of the population in the district derives income from agriculture-mainly coffee and tea farming. Poultry farming is also practiced due to availability of ready market in Thika town. The road network is good; and water and electricity are available in most parts of the district. The good road network has opened up the district such that some of its areas are considered to be suburbs of Thika town.

The district has 32 secondary schools: 1 private school and 31 public schools. Of the 31 public schools, 23 are mixed day schools, five are girls’ boarding schools and three are boys’ boarding schools.

3.4 Target population

Target population refers to the total number of subjects or the environment of interest to the researcher (Oso and Onen, 2005). The target population for this study was 23 day schools, 23 principals and 245 teachers.

3.5 Sample and sampling techniques

A sample refers to a part of the target population that has been procedurally selected to represent it (Oso and Onen, 2005). The sample will consist of eight day schools, eight principals and 48 teachers.

Simple random sampling was used to select 8 schools (34.7%) from the 23 schools in the district. This was in agreement with Mugenda and Mugenda’s (2003) recommendation of 20-50% sample size. The names of schools were
written on identical pieces of paper which were then folded and shuffled. Eight papers were picked, one at a time. This method gave all the schools in the target population equal chances of being selected. The principals that were included in the sample were those from the eight selected schools.

Six teachers from each of the selected schools were included in the sample. The selection of the six teachers was through purposive sampling as the researcher targeted class teachers and/or teachers who had been in the school for at least six years (that is, teachers who were in the school before introduction of FSE).

The following table shows the target population and the sample size for the various samples.

Table 3.1: Sampling matrix

<table>
<thead>
<tr>
<th>Description</th>
<th>Population</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day schools</td>
<td>23</td>
<td>8</td>
</tr>
<tr>
<td>Principals</td>
<td>23</td>
<td>8</td>
</tr>
<tr>
<td>Teachers</td>
<td>245</td>
<td>48</td>
</tr>
<tr>
<td>Total</td>
<td>291</td>
<td>64</td>
</tr>
</tbody>
</table>

3.6 Research instruments

Questionnaire and interview schedule were the main research instruments that were used to collect data. A questionnaire is an instrument used to gather data which allows measurement for or against a particular viewpoint (Orodho, 2009). The researcher developed a questionnaire for teachers.
The questionnaire consisted of three sections. Section I gathered background information on the teacher. Section II consisted of close-ended questions which gathered information on repetition and students’ performance in KCSE. Section III consisted of open ended questions which sought teachers’ opinions on ways of improving performance in KCSE and of reducing repetition in day schools in Gatanga district.

An interview schedule was used to collect data from principals, concerning enrolment, repetition and performance in KCSE. The interview schedule consisted of open-ended questions.

Quantitative data on performance, enrolment and repetition was collected through analysis of documents, particularly the schools’ KCSE analysis records, enrolment records and form 4 class lists respectively.

3.7 Pre-test/piloting

A pilot study was undertaken in one of the day schools in Gatanga district, which was not included in the sample. The pilot study allowed for pre-testing of research instruments, particularly the questionnaire so as to determine its validity and reliability.

3.7.1 Validity of the instruments

Validity is the degree to which results obtained from the analysis of the data actually represent the phenomenon under investigation (Orodho, 2009). To ensure content validity of the teacher’s questionnaire and the principal’s interview schedule the contents were discussed with university supervisors, as recommended by Gay (1987).
3.7.2 Reliability of the instruments

Mugenda and Mugenda (2003) define reliability as a measure of the degree to which a research instrument yields consistent results or data after repeated trials. The test-retest method was used. One school not included in the sample was used. The instrument was administered in a time lapse of two weeks. The results were evaluated using Spearman rank order correlation obtained from the following formula:

\[ r = 1 - \left( \frac{6 \sum d^2}{n(n^2-1)} \right) \]

where \( r \) = Spearman’s correlation coefficient,
\( d \) = difference between ranks of the two variables,
\( n \) = number of pairs of observations

The correlation coefficient helps in establishing the extent to which the contents of the questionnaire were consistent in eliciting the same response every time the instrument was administered.

A correlation coefficient of 0.86 was obtained. A questionnaire is considered to be reliable if a correlation coefficient of 0.75 or more is obtained (Orodho, 2009). The questionnaire was therefore reliable.

3.8 Data collection procedures

The researcher obtained a research permit from the National Council of Science and Technology. Permission to collect data from the various schools in the district was sought from the DEO, Gatanga. The researcher wrote to the
various principals seeking permission to collect data from their schools. The researcher booked appointments with principals for interviews at the time of delivering the questionnaires to the schools included in the sample. The questionnaires were collected after one week. This gave teachers enough time to think over the questions so as to give well thought out responses. The researcher conducted interviews with principals during the visit for collecting questionnaires.

3.9 Data analysis plan

Data analysis refers to the organization, interpretation and presentation of collected data (Oso and Onen, 2005). Quantitative data collected through document analysis was keyed into a computer and analysed using mean, percentages and range by means of Excel computer programme. The data was presented in tables and bar graphs.

Close ended items included in the questionnaire were edited and coded. The coded data was entered into a computer and analysed using frequencies and percentages. The data was presented in tables.

Open ended questions posed during interviews with principals and those included in the teacher’s questionnaire were categorized under topics based on the research questions. All the responses to a particular question which conveyed a similar theme were summarised and presented as a single response.

Research findings were given as per the research questions. Conclusions were drawn and recommendations made.
CHAPTER FOUR

4.0 DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.1 Introduction

This chapter covers analysis of data, presentation and discussion. The researcher collected data for this study from eight day schools in Gatanga district, Murang’a County, through questionnaires, interviews and document analysis.

The researcher administered 48 questionnaires to teachers. Forty-five (45) questionnaires that were duly completed were received; which was a return rate of 93.75%. The researcher conducted interviews with each of the principals of the eight day schools included in the sample. Data on performance and repetition was collected from KCSE analysis records and form four class lists respectively.

Quantitative data collected through document analysis addressed the first three research questions which were as follows:

i. What is the trend in performance of day schools, in KCSE, in Gatanga district between 2004 and 2011?

ii. What is the trend in repetition in day schools in Gatanga district between 2004 and 2011?

iii. What is the trend in enrolment/school size in day schools in Gatanga district between 2004 and 2011?
Data collected through document analysis was summarized using descriptive statistics-mean, range, standard deviation and percentages. The data is presented in tables and bar graphs.

Data collected from teachers’ questionnaires and principals’ interviews addressed the last three research questions which were:

iv. How has FSE policy affected performance in KCSE in day schools in Gatanga district?

v. How has FSE policy affected enrolment/school size in day schools in Gatanga district?

vi. What are some of the strategies that can be put in place to improve the internal efficiency of day schools so that the FSE funds yield maximum benefits to the individual and to the nation?

Teachers’ responses to closed-ended questions were described using frequencies and percentages. Teachers’ and principals’ responses to open ended questions were summarized whereby responses with a similar theme were presented as a single response.

Description and discussion of the results of the study are presented as per the research questions.

4.2 Analysis of trend in performance

The research question being addressed was: What is the trend in performance in KCSE in day schools in Gatanga district between 2004 and 2011?

Data on performance was obtained from school records on KCSE analysis. The eight schools included in the sample were coded as P, Q, R, S, T U, V and
W. Table 4.1 gives the mean grades for the 8 schools included in the sample, for the years between 2004 and 2011.

Performance in KCSE is graded on a scale of 12 points. The best grade is ‘A’ and this corresponds to 12 points. The worst grade in KCSE is ‘E’ and this corresponds to 1 point. The scale is as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>A</th>
<th>A-</th>
<th>B+</th>
<th>B</th>
<th>B-</th>
<th>C+</th>
<th>C</th>
<th>C-</th>
<th>D+</th>
<th>D</th>
<th>D-</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Points</td>
<td>12</td>
<td>11</td>
<td>10</td>
<td>9</td>
<td>8</td>
<td>7</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

The overall mean grade for the schools was obtained by dividing the total number of points by the number of schools. For example the overall mean grade for the year 2004 is given by:

\[
\text{Overall mean grade} = \frac{(3 \times 4) + (4 \times 4)}{8} = \frac{28}{8} = 3.5 \text{ (This corresponds to D+)}
\]
Table 4.1: School mean grades for the years 2004-2011

<table>
<thead>
<tr>
<th>School</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>D+</td>
<td>D+</td>
<td>D</td>
<td>D+</td>
<td>D</td>
<td>D+</td>
<td>D+</td>
<td></td>
</tr>
<tr>
<td>Q</td>
<td>D+</td>
<td>D+</td>
<td>D+</td>
<td>C-</td>
<td>D+</td>
<td>D+</td>
<td>D+</td>
<td>C-</td>
</tr>
<tr>
<td>R</td>
<td>D+</td>
<td>D+</td>
<td>C-</td>
<td>D+</td>
<td>D+</td>
<td>D+</td>
<td>D+</td>
<td>C</td>
</tr>
<tr>
<td>S</td>
<td>D</td>
<td>D</td>
<td>D</td>
<td>D+</td>
<td>D</td>
<td>D+</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>T</td>
<td>D</td>
<td>D+</td>
<td>D+</td>
<td>D+</td>
<td>D+</td>
<td>D</td>
<td>D+</td>
<td>D+</td>
</tr>
<tr>
<td>U</td>
<td>D+</td>
<td>D+</td>
<td>C-</td>
<td>C</td>
<td>C-</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>V</td>
<td>D</td>
<td>D</td>
<td>D</td>
<td>D+</td>
<td>D+</td>
<td>D+</td>
<td>D+</td>
<td>D+</td>
</tr>
<tr>
<td>W</td>
<td>D+</td>
<td>D+</td>
<td>D+</td>
<td>C-</td>
<td>C</td>
<td>C-</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td><strong>Total points</strong></td>
<td><strong>28</strong></td>
<td><strong>32</strong></td>
<td><strong>31</strong></td>
<td><strong>36</strong></td>
<td><strong>33</strong></td>
<td><strong>32</strong></td>
<td><strong>35</strong></td>
<td><strong>39</strong></td>
</tr>
<tr>
<td><strong>Mean grade</strong></td>
<td><strong>D+</strong></td>
<td><strong>D+</strong></td>
<td><strong>D+</strong></td>
<td><strong>C-</strong></td>
<td><strong>D+</strong></td>
<td><strong>D+</strong></td>
<td><strong>D+</strong></td>
<td><strong>C-</strong></td>
</tr>
</tbody>
</table>

Source: School records

The overall mean grades do not show any difference in performance between the two periods; 2004-2007 and 2008-2011. This is because mean grades cover a range of values such that there may be an increase in the mean standard score without a change in mean grade.

In order to compare the performance in KCSE before and after introduction of FSE for each school included in the sample, average mean grades of the schools for the periods 2004-2007 and 2008-2011 have been calculated. The average mean grade for each period is hereafter referred to as the mean grade of the period in question. The mean grades of the two periods are presented in table 4.2.
Table 4.2: Mean grades of schools for 2004-2007 and 2008-2011.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>D</td>
<td>D+</td>
</tr>
<tr>
<td>Q</td>
<td>D+</td>
<td>D+</td>
</tr>
<tr>
<td>R</td>
<td>D+</td>
<td>C-</td>
</tr>
<tr>
<td>S</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>T</td>
<td>D+</td>
<td>D+</td>
</tr>
<tr>
<td>U</td>
<td>C-</td>
<td>C</td>
</tr>
<tr>
<td>V</td>
<td>D</td>
<td>D+</td>
</tr>
<tr>
<td>W</td>
<td>D+</td>
<td>C</td>
</tr>
</tbody>
</table>

Source: school records

The data in table 4.2 shows that 3 schools (37.5%) retained the same mean grade in the two periods. However, as explained earlier, the fact that a school has the same grade does not mean there was no change in performance since the mean grade covers a range of values. The rest of the schools (62.5%) show clear improvement in performance under the FSE education policy.

Pass rates were also used to establish the trend in performance between 2004 and 2011. The pass rate (%) of a school in a given year was obtained as follows:

\[
\text{Pass rate} = \left( \frac{\text{Number of candidates who score C+ and above in year } t}{\text{Total number of candidates in year } t} \right) \times 100
\]
From the pass rates of each year the average pass rate for each period were calculated. The average pass rate for each of the periods was obtained as follows:

\[ \text{sum of the pass rates (\% of the four years in the period)} \]

Average pass rate for each period of the two periods, 2004-2007 and 2008-2011, is hereafter referred to as the pass rate for the period.

**Table 4.3: Pass rates for the periods 2004-2007 and 2008-2011.**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>4.4%</td>
<td>6.8%</td>
</tr>
<tr>
<td>Q</td>
<td>10.8%</td>
<td>16.9%</td>
</tr>
<tr>
<td>R</td>
<td>11.3%</td>
<td>19.7%</td>
</tr>
<tr>
<td>S</td>
<td>7.9%</td>
<td>8.2%</td>
</tr>
<tr>
<td>T</td>
<td>9.1%</td>
<td>17.3%</td>
</tr>
<tr>
<td>U</td>
<td>15.6%</td>
<td>18.2%</td>
</tr>
<tr>
<td>V</td>
<td>4.1%</td>
<td>7.4%</td>
</tr>
<tr>
<td>W</td>
<td>12.4%</td>
<td>21.8%</td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td><strong>9.45%</strong></td>
<td><strong>14.54%</strong></td>
</tr>
</tbody>
</table>

Source: KCSE analysis (school) records

The data in table 4.3 shows that the mean pass rate increased from 9.45\% in 2004-2007 to 14.54\%. This was a percentage increase of 53.86.
The results of the study indicate that school mean grades and pass rates of day schools have improved under FSE policy. Under FSE, there is a vote head for textbooks and availability of textbooks correlates with high achievement (Levin and Lockheed, 1991).

Entry behaviour of learners also explains the trend in performance. Ncube (2004) found that the rural day schools had low pass rates due to enrolment of students who were academic inferior, among other reasons, and recommended screening of students as one way of improving pass rates in day schools. The principals explained that day schools were screening students, leaving out students with low marks; and that the schools were admitting more students with high marks under the FSE policy than they did before.

The data in table 4.3 also shows great variations in pass rates among the schools. Two measures of dispersion—the range and the standard deviation—were used to illustrate these differences.

**Table 4.4: Range and standard deviation of pass rates**

<table>
<thead>
<tr>
<th>Period</th>
<th>Range</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-2007</td>
<td>11.2%</td>
<td>3.68</td>
</tr>
<tr>
<td>2008-2011</td>
<td>15.0%</td>
<td>5.66</td>
</tr>
</tbody>
</table>

Source: School records

The range shows that the difference between the highest and the lowest pass rates attained by schools in the period 2004-2007 was 11.2%; and in the period 2008-2011 it was 15. The variations were therefore higher in the period 2008-2011 than they were in the period 2004-2007. This is confirmed by the
standard deviations. The standard deviation for the period 2004-2007 was 3.68 while that for the period 2008-2011 was 5.66. These figures of standard deviation indicate that in the period between 2004 and 2007 day schools in Gatanga district had pass rates that were close. However in the period between 2008 and 2011 the differences in pass rates among schools increased.

A report by Glennester, Kremer, Mbiti and Takarasha (2011) attributes such variations in performance among schools to: differences in facilities, teachers and other resources; and the different levels of academic preparation of the students admitted to the schools. Teachers’ responses (section 4.5) indicated that some day schools lacked adequate textbooks and other learning materials as well as an equipped science laboratory.

4.3 Analysis of trend in repetition

The research question being addressed is: What is the trend in repetition in day schools in Gatanga district between 2004 and 2011?

Data on repetition was restricted to the number of students in a form 4 class who had repeated regardless of whether they had sat KCSE the previous year or they had repeated in pre-exam grade (form 3). This made it possible to collect the data on repeaters form 4 class lists for the various years since there were no official documents on repeaters. For the purpose of this study the percentage repetition rate in a given year was obtained as follows:

\[
\frac{\text{Number of candidates who are repeaters in year } t}{\text{Total number of candidates in year } t} \times 100
\]
The average repeater rates for each period for each of the 8 schools were obtained as follows:

\[ \text{Sum of repeater rates} \% \text{ for the 4 years in the period} \]

\[ \frac{1}{4} \]

The average repeater rate hereafter referred to simply as the repeater rate for the period. Repeater rates for each of the 8 schools are presented in table 4.5.

Table 4.5: Repeater rate (%) for 2004-2007 and 2008-2011

<table>
<thead>
<tr>
<th>School</th>
<th>Repeater rate (%) for the period</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>1.45</td>
</tr>
<tr>
<td>Q</td>
<td>2.56</td>
</tr>
<tr>
<td>R</td>
<td>1.47</td>
</tr>
<tr>
<td>S</td>
<td>2.25</td>
</tr>
<tr>
<td>T</td>
<td>1.60</td>
</tr>
<tr>
<td>U</td>
<td>1.87</td>
</tr>
<tr>
<td>V</td>
<td>1.55</td>
</tr>
<tr>
<td>W</td>
<td>1.17</td>
</tr>
<tr>
<td>Mean</td>
<td>1.74</td>
</tr>
</tbody>
</table>

Source: School records

Table 4.5 indicates that the number of repeaters increased in all the 8 schools after FSE was introduced. This may be attributed partly to reduced cost of schooling in day schools under the FSE policy. Findings by Kiveu and Mayio
(2010) indicated that repetition was common among children from well-to-do families as cost of schooling, under the cost sharing policy, deterred pupils from poor households from repeating. The FSE policy has led to considerable fee reduction in public day secondary schools and this would make it possible for pupils from poor households to repeat so as to increase their chances of selection in the next level of education.

The findings of this study differ from those of Mwangi (2012). In his study he found that repetition in public day schools had declined under the FSE policy. Before the introduction of FSE policy repetition rates were high in the schools he studied with the leading causes of repetition being irregular school attendance and the desire to improve performance. After the introduction of FSE policy the repeater rates declined. A possible explanation for this would be the target population. Mwangi (2012) studied the trends in repetition in all classes (form I to IV) while this study focused on repetition in exam grades.

The data also shows variations in repeater rates among the schools. These variations were analysed using range and standard deviation and are presented in table 4.6.

**Table 4.6: Range and standard deviations of repeater rates among schools**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td>1.39</td>
<td>5.49</td>
</tr>
<tr>
<td>Standard deviation</td>
<td>0.186</td>
<td>2.585</td>
</tr>
</tbody>
</table>

The data shows that the range of repeater rates among schools was 1.39 in the period 2004-2007; and 5.49 in the period 2008-2011. The standard deviation
(variability of repeater rates among schools) for the period 2004-2007 was 0.186; and for the period 2008-2011 was 2.585. This shows that before the FSE policy was introduced repeater rates in the schools that were studied were close. However, after introduction of the policy the repeater rates among schools varied greatly.

4.4 Analysis of trend in enrolment/school size

The research question being addressed was: What is the trend in enrolment/school size in day schools in Gatanga district between 2004 and 2011?

The average enrolments for the period between 2004 and 2007; and between 2008 and 2011 were calculated. The average enrolment for each period has hereafter been referred to as the enrolment for the period in question. Table 4.7 presents the data on enrolment, number of streams and class size.
Table 4.7: Enrolment for the periods 2004-2007 and 2008-2011

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Streams</td>
<td>Enrolment</td>
</tr>
<tr>
<td>P</td>
<td>1</td>
<td>194</td>
</tr>
<tr>
<td>Q</td>
<td>2</td>
<td>378</td>
</tr>
<tr>
<td>R</td>
<td>2</td>
<td>324</td>
</tr>
<tr>
<td>S</td>
<td>2</td>
<td>320</td>
</tr>
<tr>
<td>T</td>
<td>1</td>
<td>150</td>
</tr>
<tr>
<td>U</td>
<td>2</td>
<td>312</td>
</tr>
<tr>
<td>V</td>
<td>1</td>
<td>198</td>
</tr>
<tr>
<td>W</td>
<td>2</td>
<td>368</td>
</tr>
<tr>
<td>Mean</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: School records

The data in table 4.7 shows that there was an improvement in enrolment after the introduction of FSE. The class sizes increased from 44 to 47, which is a percentage rise of 6.82%.

The number of streams in all the 8 schools had not increased. As pointed out in the review of literature teachers tend to be under-utilized in small schools because such schools do not have enough teaching periods for a full teaching load (Verspoor, 2008). This underutilization of teachers makes small schools to be internally inefficient.
The results differ with findings by Chabari (2010). In his study, he found that the number of streams had increased in a majority (62.5%) of the schools that were included in his study. The differences may be due to differences in the target population. This study targeted day schools while Chabari’s study included boarding schools.

Figure 4.1 further illustrates the differences in enrolment between the two periods.

![Figure 4.1: Comparison of enrolment for the periods 2004-2007 and 2008-2011](image)

Source: School records

The figure clearly shows that enrolment in all the eight school included in the sample all the schools in day schools had increased.

The results indicate that enrolment increased marginally and some schools were actually under-enrolled. This was mainly attributed to screening of students entering day schools as indicated by principals (section 4.6.2). Screening left out students, with low marks, who would have otherwise
enrolled. Abagi and Odipo (1997) explained that low enrolment in a class would lead to underutilization of resources, both physical and human—particularly the teacher. This makes the institution internally inefficient.

4.5 Views of teachers’ on effects of FSE policy on performance

The research question being addressed was: in which ways has FSE policy affected performance of day schools, in KCSE, in Gatanga district?

The data on views of teachers and principals was collected through questionnaires and interviews respectively. Teachers’ views were sought through close-ended questions in the teachers’ questionnaire. The questions addressed factors that were likely to affect performance under the FSE policy. The responses of teachers were presented as per the factor under consideration.

4.5.1 Availability of textbooks and other instructional materials

This study sought to establish if day schools had adequate textbooks and other instructional materials. The teachers were required to choose the response that best described the availability of textbooks and other learning materials in their schools and the status of the laboratory equipment and supplies.

Thirty one respondents (68.89% of the respondents) indicated that their schools had adequate textbooks and other learning material while fourteen respondents (31.11%) indicated that they were inadequate. These results indicated that the majority of schools had adequate textbooks.

Through the FSE policy the government intended to provide adequate textbooks to schools by including a textbook fund which was allocated on per
pupil basis. However, it is worth noting that despite the efforts by the government to provide more textbooks and the importance of textbooks in improving learner’s academic achievement, there were schools (represented by 31.11% of respondents) which did not have adequate textbooks and other learning materials.

Regarding laboratory supplies and equipment, 40% (18) of the respondents indicated that they were adequate while 46.7% (21) indicated that they were inadequate. Six respondents (13.3%) were undecided. These responses indicate that some day schools (represented by 46.7% respondents) lacked necessary laboratory equipment and supplies, yet, the FSE policy has a vote head for laboratory equipment of Ksh. 728 per pupil (MOE, 2010).

Verspoor (2008) points out that good science teaching requires specialized facilities, equipment and supplies and that if teaching of science is to improve there is need for adequate facilities and equipment. This implies that performance of learners would be negatively affected by lack of laboratory equipment and supplies. These differences in availability of facilities may partly account for the differences in performance among day schools in Gatanga district as established in section 4.2.

4.5.2 School attendance

The teachers were required to compare absenteeism due to non-payment of fees before and after introduction of fees in terms of (i) the number of students who would be sent home at any one given time and (ii) the number of days a student who was sent home would take before resuming.
All the respondents (100%) indicated that under the FSE policy, the number of students who were absent due to non-payment of fees had reduced. This can be attributed to the reduced cost of schooling. Kiveu and Mayio (2009) found that cost sharing had contributed to absenteeism. They found that a large number of students would be sent home at a given time and this affected syllabus coverage which in turn would affect performance.

All the respondents (100%) indicated that after introduction of FSE policy, the number of days that a student stayed out of school due to non-payment of fees had reduced. A student who is sent away loses on contact hours and may not catch up on what was taught when he/she was away and more so if he/she is a slow learner. This would in turn affect the pupil’s performance.

4.5.3 Repetition

Teachers were required to tick against the response that best represented the status of repetition in their schools. Table 4.12 presents data obtained from teachers’ responses regarding repetition.
Table 4.8: Teachers’ responses regarding repetition

<table>
<thead>
<tr>
<th>Statement</th>
<th>Response</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>The number of students who re-sit KCSE in this school has increased under FSE policy.</td>
<td>Frequency</td>
<td>45</td>
<td>0</td>
<td>0</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>At least half of the students who score C+ and above in this school are repeaters</td>
<td>Frequency</td>
<td>34</td>
<td>0</td>
<td>11</td>
<td>45</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>75.56</td>
<td>0</td>
<td>24.44</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Teacher’s questionnaire

All the respondents (100%) agreed with the statement that, ‘number of students who repeat to re-sit KCSE has increased under FSE.’ These results are consistent with the trend in repetition that was observed in section 4.3.

Thirty four respondents (75.56 %) agreed with the statement that, ‘at least half of the students who score C+ and above in this school are repeaters’, while eleven (24.44%) disagreed. This shows that in most of the schools included in the sample (represented by 75.56% of respondents) repetition contributed to increase in pass rates.

4.5.4 Views of principals on effects of FSE on performance

The question posed to principals regarding performance was; ‘How has FSE policy affected performance of day schools?’

The responses given by principals were summarized and presented as per the theme that they addressed.
Adequate learning materials: According to principals, FSE had made it possible to acquire adequate textbooks and other instructional materials. Moreover, the schools could afford to purchase revision materials that exposed learners to exam-type questions.

Attendance: The principals explained that the FSE policy had led to high attendance rates. This had improved syllabus coverage. As one principal put it; “We no longer have to suspend lessons because half of the class has been sent home to collect school fees.”

The principals also explained that although there were delays in disbursement of funds the situation was much better under FSE in terms of availability of funds. Some schools, as some principals explained, could afford to run for a term without sending students home. They explained that with the FSE funds the school could continue running and allow poor households to pay the fees required in small amounts throughout the term.

Entry behaviour of learners: The principals explained that the introduction of FSE had made it possible for day schools to enroll more students with high marks. They explained that the FSE policy had made secondary education in public day schools affordable to households that would not have otherwise afforded, raising demand for places in day schools. This, according to principals, had made it possible for day schools to screen the students who were being enrolled. As a result, most day schools were enrolling pupils with higher marks under FSE policy than they did before. Moreover, the number of
students who had been selected to join ‘quality schools’ but who ended up enrolling in day schools had gone up.

4.6 Effects of FSE policy on enrolment/school size

The research question being addressed was, ‘How has FSE policy affected enrolment/school size in day schools in Gatanga district?’

The researcher sought the views of principals; and responses given have been summarised under two main issues.

4.6.1 Misinterpretation of FSE policy

The researcher established that the number of streams had remained the same before and after introduction of the FSE policy. Principals explained that day schools relied on parents to be able to put up physical facilities such as laboratories and classrooms. The idea that education was free had made parents unwilling to raise money for infrastructure, yet this had remained an obligation of parents under the FSE policy. This had made it difficult to increase the number of streams.

4.6.2 Higher demand than supply

The researcher established that day schools included in the sample had only a slight increase in enrolment after the introduction of the FSE policy. The results on enrolment (section 4.4) also indicated that some schools remained under enrolled even after the introduction of the FSE policy.

Principals explained that reduced cost of schooling under FSE policy had raised demand for places in day schools. This had enabled most day schools to screen the students they enrolled, in terms of performance in KCPE, leaving
out pupils with low marks. This partly explains why the enrolment had increased only marginally.

4.7 Teachers’ and principals suggestions on ways of improving internal efficiency of day schools

The research question addressed was, ‘What are some of the strategies that can be put in place to improve the internal efficiency of day school so that the FSE funds yield maximum benefits to the individual and to the nation?’

Teachers gave their suggestions by answering an open-ended question in their questionnaire. The same question was posed to principals during interviews. The question was; ‘suggest ways of improving performance of day schools in KCSE?’

Responses given were summarised putting together similar responses as a single idea:

i) Increase time for learning to cater for slow learners

ii) Ensure schools have adequate staff.

iii) Increase funding to day schools to enable them put up necessary physical facilities, especially science laboratories.

Principals and teachers further gave their views on measures that would be necessary in reducing repetition. The question that was asked was: ‘Repetition is a form of wastage that should be kept to a minimum. Suggest ways of reducing repetition in day schools’.

The researcher summarized the responses given by principals and teachers presented them according to the issue that they raised.
i) Increased funding to day schools to enable them acquire the necessary facilities, equipment and supplies which would make it possible to expose the pupils to examination procedures. This would increase their chances of attaining high grades and reduce chances of repeating.

ii) Adequate staffing as teacher shortages often led to: available teachers being overworked and/or hiring of untrained teachers and this affected performance which in turn led to repetition.
CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1: Introduction

This chapter presents a summary of the study, which includes a summary of the research findings; conclusion based on research findings; policy recommendations; and areas that require further research.

5.2 Summary

The purpose of this study was to investigate the effects of the FSE policy on internal efficiency of day schools in Gatanga district, Murang’a County. The researcher did this by establishing the trends in performance, repetition and enrolment in day schools for the period between 2004 and 2011 and by seeking the views of teachers and principals on the effects of FSE policy on performance, repetition and enrolment. The study also aimed at arriving at some strategies that could help in improving the gains of FSE policy both to the individual and to the nation.

The researcher collected data for this study through teacher’s questionnaires, structured interviews and document analysis. The sample from which data was collected included 8 day schools, 8 principals and 48 teachers. Selection of schools was done by random sampling. Principals and teachers included in the sample were those from these eight schools. Six teachers from each school were selected through purposive sampling.
The researcher carried out data analysis by describing the data using mean, percentages, range and standard deviation and presented it in tables and bar graphs. Data that gave the opinions of teachers and principals was summarised, whereby responses with a similar opinion were put together as a single response.

The following is a summary of the research findings presented as per the research questions.

5.2.1: What is the trend in performance of day schools, in KCSE, in Gatanga district between 2004 and 2011?

The results of the study showed an increase in pass rates from 9.45% to 14.54% after the FSE policy was introduced. The pass rates varied among the schools. The standard deviation of pass rates of the 8 schools was 3.68 in the period 2004-2007 and 5.66 in the period 2008-2011.

5.2.2: What is the trend in repetition in day schools, in Gatanga district, between 2004 and 2011?

The results of the study showed that repeater rates increased from 1.74% in the period 2004-2007 to 5.07% in the period 2008-2011. The repeater rates varied among schools. The range of repeater rates among schools was 1.39 in the period 2004-2007 and 5.49 in the period 2008-2011. The standard deviation of repeater rates among schools in the period 2004-2007 was 0.186. This rose to 2.585 in period 2008-2011.
5.2.3: What is the trend in enrolment/school size in day schools, in Gatanga district, between 2004 and 2011?

The class sizes increased from an average of 44 to an average of 47, which was a 6.82% increase. The number of streams in each school remained the same before and after introduction of the FSE policy indicating that, FSE did not have any effect on school size in terms of number streams.

5.2.4: How has FSE policy affected performance in KCSE in day schools in Gatanga district?

The results of the study showed that the FSE policy had contributed to improvement in performance of day schools in KCSE through the following ways:

i) availability of textbooks and other learning materials,

ii) improved attendance rates as absenteeism due to non-payment of fees had reduced

iii) an increase in number of pupils with high grades who chose to enroll in day schools

iv) increase in number of repeaters who upon repeating scored high grades

v) screening of students who enrolled in day schools (introduction of cut-off marks as a criterion for selection).

5.2.5: How has FSE policy affected enrolment/school size in day schools in Gatanga district?

Analysis of principals’ responses brought out two main ways in which FSE affected enrolment. The study revealed that that the idea that education was
free made parents unwilling to raise money for physical facilities, yet this had remained an obligation of parents under the FSE policy. This explained why the number of streams in the schools included in the sample had not increased. Reduced cost of schooling in day schools has created demand for places in day schools. This has enabled most day schools to screen the students they enroll in terms of performance in KCPE leaving out pupils with low marks. This partly explains why the enrolment has increased only marginally.

5.2.6: What are some of the strategies that can be put in place to improve the internal efficiency of day schools so that the FSE funds yield maximum benefits to the individual and to the nation?

Teachers and principals suggested some strategies for improving internal efficiency of day schools- in terms of improved performance and reduced repetition. These included:

i) Increased time for learning to cater for slow learners.

ii) Adequate staffing.

iii) Increased funding to day schools to enable them put up necessary physical facilities, especially science laboratories and to acquire the necessary facilities, equipment and supplies which would make it possible to expose pupils to examination procedures, thereby increasing their chances of attaining high grades and reduce chances of repeating.

5.3 Conclusions

Based on the findings of this study it can be concluded that FSE policy has affected internal efficiency of day schools both positively and negatively. FSE
has had a positive effect on performance of day schools. FSE policy has contributed to improvement in performance of day schools in KCSE through provision of textbooks and other learning materials and through improved attendance rates as absenteeism due to non-payment of fees had reduced.

FSE policy had affected internal efficiency of day schools negatively as it has led to an increase in repeater rates. This was attributed to affordability of fees for an additional year(s) under the FSE policy, coupled with the desire of students to perform well in KCSE so as to be selected to the other level of education.

Introduction of FSE policy had a marginal effect on enrolment in day schools. Enrolment was negatively affected by screening of students joining day schools. Reduced cost/affordability of day schooling created a high demand for places in day schools, which in turn enabled schools to screen the students they were enrolling based on the marks they had scored in KCPE.

5.4 Recommendations

Based on the findings of the study, the researcher made the following recommendations, which can be addressed by stakeholders such as Ministry of Education (MOE), principals, school’s board of governors and parents to ensure that the FSE policy yields maximum benefits to individuals and to the nation.

The study established that performance of some schools had only improved marginally. Although there was a textbook fund allocated to schools under the FSE policy some schools lacked adequate textbooks and other learning
materials. It was recommended that there was need to monitor funds which were intended by the FSE policy to improve performance of learners particularly the funds for textbooks and laboratory equipment. This would ensure that such funds were not diverted to other school projects. It was further recommended that there was need to upgrade day schools by increasing funding. This would enable them put up necessary physical facilities, especially science laboratories and to acquire the necessary equipment and supplies. This would make it possible to expose pupils to examination procedures, thereby increasing their chances of attaining high grades.

Repetition was found to have increased considerably under the FSE policy. Thus, day schools are more inefficient internally, in terms of appropriate utilization of resources allocated to the education sector. It is recommended that strict guidelines regarding repetition should be put in place to minimize or eradicate repetition all together. For instance, subsidies may be allocated in such a way that a student is entitled to them for four years and households would have to meet all the costs for any additional year.

The study established that there was marginal increase in enrolment after introduction of the FSE policy due to screening of students. It is recommended that clear guidelines, on recommended class size, should be put in place and enforced by MOE officials at the grass root level such as the DEO to ensure that schools are not under enrolled as a result of screening of the students entering day schools.
The study established that school sizes in terms of the number of streams had not been affected by introduction of FSE policy. Small schools are associated with inefficiency in utilization of teachers (Rajkumar and Onsomu, 2004). It is recommended that day schools should be expanded to improve their internal efficiency in terms of utilization of teachers and other resources and facilities. To achieve this expansion schools can be given some grants to cater for part of the funds required to put up infrastructure.

5.5 Recommendations for further research

On the basis of the findings and the limitations of the results of this study, the following recommendations have been arrived at for future research.

This study targeted day schools in a rural setting. A similar study may be carried out in day schools in an urban setting to establish if similar patterns of internal efficiency of day schools before and after introduction of FSE exist.

A similar study may be carried out in day schools in rural settings in other districts to establish if similar patterns of internal efficiency of day schools before and after introduction of FSE exist.

A more detailed study, possibly a case study, incorporating the views of other stakeholders may be carried out to establish the reasons for the great variations in pass rates and repetition rates among day schools.

A more detailed study may be carried out to establish the factors underlying the high repeater rates in day schools under FSE policy, and the extent to which repetition contributes to improved pass rates in day schools. This can be
done by determining school mean grades and/or pass rates while excluding repeaters.
REFERENCES


APPENDIX I

Teacher’s Questionnaire

This Questionnaire is to elicit information concerning the factors that may have influenced internal efficiency of day schools— in terms of learners’ performance in KCSE and repetition— under the FSE policy in the hope of improving the gains of the policy.

Please answer all the questions as accurately and as honestly as possible. Your responses will be highly confidential and are only for the purpose of the study. Do not write your name on the questionnaire to ensure anonymity.

Section I

Instructions: Tick the appropriate answer in the space provided

1. What is your gender? Male [    ] Female [    ]

2. Which is your highest academic qualification?
Diploma [    ] Bachelor’s degree [    ] Master’s Degree [    ]

3. What is your teaching experience?
6-8 years [    ] 9-11 years [    ] 12-14 years [    ] Over 15 years [    ]
Section II: Tick once against the response that best represents your opinion

4. How would you rate the adequacy of textbooks and other learning materials in this school?
   Adequate [    ]    Inadequate [    ]    I am undecided [    ]

5. How would you describe the status of science laboratory in this school?
   The laboratory is equipped [    ]
   The laboratory lacks basic equipment and/or supplies [    ]
   Undecided [    ]

6. The number of students who are absent due to non-payment of fees under FSE
   Has reduced [    ]    Has increased [    ]    Has not changed [    ]

7. After introduction of FSE policy, the number of days that a student stays at home due to non-payment of fees
   Has reduced [    ]    Has increased [    ]    Has not changed [    ]

8. The number of students who re-sit KCSE in this school has increased
   Agree [    ]    Disagree [    ]    Undecided [    ]
9. At least half of the students who score C+ and above in this school are repeaters.

Agree [  ]  Disagree [  ]  Undecided [  ]

Section III: Give your opinion in the following questions

10. Day schools have continued to lag behind in terms of performance. Suggest one way of improving performance of day schools in KCSE.

11. Repetition is a form of wastage that should be kept to a minimum. Suggest one way of reducing repetition in day schools.

Thank you for your co-operation
APPENDIX II

Interview schedule for principals

1. Sex _________

2. Academic qualifications__________

3. How has the FSE policy affected performance in this school?

4. Suggest ways of improving performance of day schools in KCSE.

5. How has introduction of FSE policy affected enrolment/school size?

6. Repetition is a form of wastage that should be kept to a minimum. Suggest ways of reducing repetition in day schools.
APPENDIX III

Document analysis schedule

<table>
<thead>
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<th>Year</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>School mean grade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of students who sat KCSE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of students who scored C+ and above</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of repeaters</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enrolment</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>
### APPENDIX IV

#### BUDGET

<table>
<thead>
<tr>
<th>Budget item</th>
<th>Ksh</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A) Production of Research instruments</strong></td>
<td></td>
</tr>
<tr>
<td>Typing and printing 3 pages of a questionnaire at 30/= per page (30x3)</td>
<td>90.00</td>
</tr>
<tr>
<td>Photocopying 150 pages of questionnaires @ 3/= per page</td>
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<td>Typing and printing about 100 pages of project report @ 30/= per page (100x30)</td>
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<td>Printing 800 pages of project report at 10/= per page (10x800)</td>
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<tr>
<td>Binding 9 copies of project report @ 400/= per copy (4x400)</td>
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<td><strong>Sub Total</strong></td>
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<td><strong>B) Transport and subsistence</strong></td>
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<td>Public transport to the field 20 days @ 250/= per day (20x250)</td>
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<td>Lunch during field work @ 150/= per day for 20 days (20x150)</td>
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<td><strong>Sub Total</strong></td>
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<td><strong>C) Incidental costs</strong></td>
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<td>Stationery</td>
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<td><strong>Grand Total</strong></td>
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## APPENDIX V

### WORK PLAN

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