



**Dissertation**

**By**

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**UNIVERSITY OF SCIENCE AND  
TECHNOLOGY**

**The Effect of Ranking on Secondary School Enrolment,  
Promotion Rates and Performance Trends in  
Kakamega South District, Kenya**

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**OCTOBER, 2010**

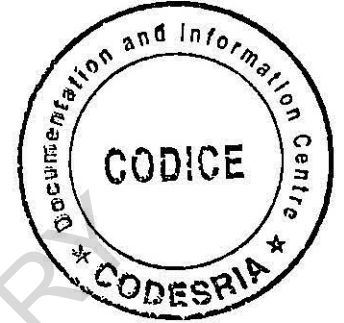
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**THE EFFECT OF RANKING ON SECONDARY SCHOOL  
ENROLMENT, PROMOTION RATES AND PERFORMANCE  
TRENDS IN KAKAMEGA SOUTH DISTRICT, KENYA**

**BY**

**Jane Kwambitsa Amunga**

**EPM/G/18/06**



**A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE  
STUDIES IN PARTIAL FULFILMENT OF THE  
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF  
MASTER OF EDUCATION OF MASINDE MULIRO  
UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**OCTOBER, 2010**

## DECLARATION

This thesis is my original work and it has not been presented for a degree in any other university or any other award.

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17/10/2010  
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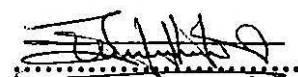
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Date

## **DEDICATION**

To my parents

**Justus Martin Amunga**

and

**Christabel Indeche Amunga.**

Your love, support and encouragement throughout my life has given me confidence and inspired me to realize many personal goals key of which is the completion of this study.

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## ACKNOWLEDGEMENTS

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Special tributes go to my loving husband Chrispus. This scholarly voyage would not have been accomplished without your love, encouragement and a lot of selflessness. Thank you for supporting my goals and making me realise my dreams. Know that your invaluable input will always be cherished and appreciated, for this accomplishment is as much yours as it is mine. You remain the unsung hero of this scholarly enterprise. I thank my children Reggis, Derrick and Chris for their patience. This study took away many hours that we could have spent together catching up on your school work and other issues.

Special thanks go to the Council for the Development of Social Science Research in Africa (CODESRIA) for recognising and funding this study. I also sincerely thank the entire Department of Educational Planning and Management at Masinde Muliro University of Science and Technology for the assistance I was accorded during this exercise.

There would have been no study without data. I therefore sincerely thank all the Principals of the 36 schools I visited for allowing me to collect data from their schools. I also thank the teachers and students in these schools for taking time off their busy schedules to complete my questionnaires and thus facilitating the completion of thesis.

## ABSTRACT

The objectives of this study were to establish the effect of ranking schools and students in national examinations on enrolment, promotion rates and performance trends. It was also meant to investigate the teachers' and students' perception of ranking. It was guided by the null hypotheses that there is no significant relationship between the school performance index and enrolment, promotion rates and performance trends.

Ranking schools and students in National Examinations creates the impression that there are good and bad schools in Kenya. The top performing schools are regarded as effective schools while low performing are regarded as ineffective schools. This belief influenced enrolment, promotion rates and performance trends in different schools. It also affected perception of teachers' and students. It is expected that the study will assist the Ministry of Education consider other factors that should be used in ranking schools and students, particularly those suggested by teachers and students like use of CATs and Value Added. It will also help policy makers in addressing under-enrolment or over-enrolment problems caused by ranking.

Schreen's conceptual framework on School Effectiveness was adapted to suit the study. The key variables that were studied are enrolment, promotion rates, achievement measured by the performance index (mean score) upon which ranking is based and perceptions. The study covered Kakamega South District. A descriptive survey research design was used and head teachers, teachers and students from secondary schools in Kakamega South District formed the study population. The sample frame consisted of 75 secondary schools stratified according to performance into low ranked schools, average ranked schools and top ranked ranked categories. The sample size consisted of 36 schools (12 from each performance category) selected by random sampling and 252 respondents selected purposively from the 36 schools. Data collection instruments were the questionnaire and document analysis guide. Reliability of the instrument was established by use of test retest technique while validity was established by assessing the items on the instrument and ensuring that they appeared relevant, meaningful and appropriate to the respondents. The data collected were analysed

descriptively and inferentially using Statistical package for Social Science (SPSS). The Crude Grade Survival Rate was used to determine promotion rates.

The study revealed that ranking has a direct effect on enrolment. The enrolment means for the four years were 23.51, 35.55 and 43.02 for the low average and top ranked schools respectively. It also has a differential effect on the promotion rates of the three categories of schools. On performance trends, there was no difference in the performance of individual schools during each of the four years but there was significant difference in performance among the different categories of schools. The mean scores for the four years were 3.94, 4.94 and 6.62 for the low, average and top ranked schools respectively. Most of the respondents perceived their schools' performance as average with the majority of respondents attributing this performance to the students. On their stand on ranking, most of the students and most head teachers approved of ranking while most of the teachers disapproved of ranking. Despite this stand on ranking, both the teachers and students felt that ranking should be improved and thus called for a system of assessment that encompassed all the aspects instead of focusing on academic performance only. These are use of Continuous Assessment Tests, considering Extra- curricular activities, Value added, available resources among other considerations. This would ensure that ranking of schools and students did not glorify academic achievement at the expense of talent and other virtues.

# TABLE OF CONTENTS

<b>Title</b>	<b>Page</b>
DECLARATION .....	i
DEDICATION .....	ii
ACKNOWLEDGEMENTS .....	iii
ABSTRACT .....	iv
TABLE OF CONTENTS .....	vi
LIST OF TABLES .....	ix
LIST OF FIGURES .....	xi
ABBREVIATIONS AND ACRONYMS .....	xii
CHAPTER ONE: THE PROBLEM AND ITS MAIN COMPONENTS .....	1
1.1 Introduction .....	1
1.2 Background of the Study .....	1
1.3 The Problem .....	5
1.4 Purpose of the Study .....	6
1.5 Objectives of the Study .....	6
1.6 Hypotheses .....	6
1.7 Significance of the Study .....	7
1.8 The Scope .....	8
1.9 Limitations of the Study .....	8
1.10 Assumptions of the Study .....	9
1.11 Conceptual Framework .....	9
1.12 Operational Definition of Terms .....	11
CHAPTER TWO: LITERATURE REVIEW .....	13
2.1 Introduction .....	13
2.2 Effects of Schools' Ranking in Developed Countries .....	13
2.3 Effects of Schools' Ranking in Developing Countries. ....	20
2.4 Effects of Schools' Ranking in Kenya .....	25
2.5 The Knowledge Gap .....	27
CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY .....	29
3.1 Introduction .....	29
3.2 The Study Area .....	29



3.3 Research Design.....	30
3.4 Study Population .....	30
3.5 The Sampling Design and Sample Size .....	31
3.6 The Research Instrument.....	33
3.6.1 Head Teachers' Questionnaire .....	33
3.6.2 Teachers' Questionnaire.....	33
3.6.3 Students' Questionnaire .....	34
3.6.4 The Document Analysis Guide .....	34
3.7 Procedure for Data Collection.....	34
3.8 The Pilot Study.....	35
3.9 Data Analysis Plan .....	36
CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND DISCUSSION .....	38
4.1 Introduction .....	38
4.2 Overview of Findings.....	38
4.3 The Effect of Ranking on Student Enrolment (2003-2006).....	39
4.3.1 Enrolment in Different School Categories .....	39
4.3.2 Enrolment Trends in Low Ranked Schools .....	42
4.3.3 Enrolment Trends in Average Ranked Schools .....	44
4.3.4 Enrolment Trends in Top Ranked Schools .....	45
4.3.5: Relationship between the School Performance Index and Enrolment.....	47
4.3.6 Performance index and enrolment: .....	48
4.3.7 Discussion of the Effect of Ranking on Enrolment.....	49
4.4 The effect of ranking on students' promotion rate.....	51
4.4.1 Overall promotion rates.....	52
4.4.2 Promotion Rates in the Low Ranked Category of Schools.....	53
4.4.3 Promotion Rates in the Average Ranked Category of Schools.....	54
4.4.4 Promotion Rates in the Top Ranked Category of Schools.....	55
4.4.5 Discussion of the Effect of Ranking on Promotion Rates.....	56
4.5 The Effect of Ranking on Performance Trends During 2003-2006.....	57
4.5.1 Performance Trends in the Low Ranked Category of Schools .....	59
4.5.2 Performance Trends in the Average Ranked Category of Schools.....	61
4.5.3 Performance Trends in the Top Ranked Category of Schools.....	62
4.5.4 Statistical Test on Performance Trends.....	65
4.5.5 Discussion of the Effect of Ranking on Performance Trends.....	66
4.6 Teachers' and Students' Perception of Ranking .....	67
4.6.1 Respondents' views on ranking .....	68
4.6.2 Factors that Contributed to the School Position in 2006 KCSE Results.....	70
4.6.3 Effect of the School Rank on the Respondents' Self-esteem.....	72
4.6.4 The Effect of the School Rank on Respondents' Progression .....	73
4.6.5 The effect of the school rank on the inter-school relationship.....	74
4.6.7 Factors that Should be Considered in the Ranking. ....	75
4.6.8 Discussion of the Teachers' and Students' Perception of Ranking.....	82

CHAPTER FIVE:SUMMARY, CONCLUSIONS AND RECOMMENDATIONS.....	86
5.1 Introduction.....	86
5.2 Summary of Research Findings .....	86
5.2.1 The Influence of the School Performance Index on Enrolment.....	87
5.2.2 The Effect of the School Performance Index on the Students' Promotion Rates. ....	88
5.2.3 The Effect of Ranking on the Schools' Performance Trends .....	89
5.2.4 The Teachers' and Students' Perception of Ranking .....	92
5.3 Conclusions .....	93
5.4 Recommendations.....	93
5.5 Suggestions for further research.....	95
REFERENCES.....	96
APPENDIXES.....	106
APPENDIX 1: Questionnaire for head teachers .....	106
APPENDIX 2: Questionnaire for teachers.....	110
APPENDIX 3: Questionnaire for students.....	113
APPENDIX 4: Data for the flow rates.....	116
APPENDIX 5: Low Ranked Schools' Enrolment Data.....	117
APPENDIX 6: Average Ranked Schools' Enrolment Data.....	118
APPENDIX 7: Top Ranked Schools' Enrolment Data.....	119
APPENDIX 8: Formula for the calculation of the Pearson Product Moment Correlation Coefficient (for the pilot study).....	120
APPENDIX 9: Formula for promotion/survival rate .....	121
APPENDIX 10: Letter of introduction .....	122
APPENDIX 11: Map showing the Study Area.....	123
APPENDIX 12: Letter from the University.....	124
APPENDIX 13: Research Authorisation .....	125
APPENDIX 14: Research Permit.....	126

## LIST OF TABLES

Table	Page
Table 1 Stratum sample allocation at performance category .....	32
Table 2 Distribution of Respondents by category.....	33
Table 3 Summary of Statistical Data Analysis.....	37
Table 4 Student Enrolment (2003-2006).....	39
Table 5 Average Enrolment(2003-2006).....	40
Table 6 Average Enrolment per Class per Year in Low Ranked Schools.....	42
Table 7 Average Enrolment per Class per Year in Average Ranked Schools.....	44
Table 8 Average Enrolment per Class per Year in Top Ranked Schools.....	46
Table 9 ANOVA Table on Enrolment and School Rank Categories.....	48
Table 10 Linear Regression Model.....	49
Table 11 Overall Promotion Rates.....	52
Table 12 Promotion Rates in Low Ranked Schools.....	53
Table 13 Promotion Rates in Average Ranked Schools.....	54
Table 14 Promotion Rates in Top Ranked Schools.....	55
Table 15 KCSE Means Scores for the different School categories .....	57
Table 16 Low Ranked Schools' Mean Scores.....	59
Table 17 Average Ranked Schools' Mean Scores.....	61
Table 18 Top Ranked Schools' Mean Scores.....	63
Table 19 ANOVA Table on School Performance and Year.....	65
Table 20 ANOVA Table on Performance and School Rank Categories.....	66
Table 21 Respondents' Views on Ranking.....	68
Table 22 The Factor that Contributed to the School Position.....	70
Table 23 Effect of School Rank on Self-esteem.....	72
Table 24 Effect of School Rank on Progression.....	73
Table 25 Effect of School Rank on Inter-school Relationships.....	74
Table 26 Other Suggested Factors for Consideration in Ranking.....	76
Table 27 The Effect of Ranking on Morale and Jealousy.....	78
Table 28 The Effect of Ranking on Competition and Hard work.....	79

Table 29 Improvements of results and Teachers' Promotions.....	80
Table 30 Influence of Ranking on Promotion.....	80
Table 31 Ranking and Headship.....	81
Table 32 Ranking and Improvement of Results.....	82

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## LIST OF FIGURES

Figure	Page
Figure 1 Conceptual Framework .....	11
Figure 2 Overall enrolment trends between 2003-2006.....	41
Figure 3 Enrolment trends in low ranked schools.....	43
Figure 4 Enrolment trends in average ranked schools.....	45
Figure 5 Enrolment trends in top ranked schools.....	47
Figure 6 Scatter plot for enrolment and performance index.....	48
Figure 7 Graph showing general performance trends.....	58
Figure 8 Performance trends in the low ranked category of schools.....	60
Figure 9 Performance trends in the average ranked category of schools.....	62
Figure10 Performance trends in the top ranked category of schools.....	64

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## ABBREVIATIONS AND ACRONYMS

ADEA	Association for Development of Education in Africa
CSCE	Cambridge School Certificate Examination
CPE	Certificate of Primary Education
CEE	Common Entrance Examination
EACE	East African Certificate of Secondary Education
EAACE	East African Advanced Certificate of Secondary Education
FPE	Free Primary Education
GCSE	General Certificate of Secondary Education
GAS	Government African School
HSC	Higher School Certificate
IPAR	Institute of Policy Analysis and Research
KASSE	Kenya African Secondary School Examination
KAPE	Kenya African Preliminary Examination
KNEC	Kenya National Examinations Council
KCSE	Kenya Certificate of Secondary Education
KCE	Kenya Certificate of Education
KACE	Kenya Advanced Certificate of Education
KJSE	Kenya Junior Secondary Education
LNC	Local Native Council
MOEC	Ministry of Education and Culture
MOESR	Ministry of Education and Scientific Research
MOEST	Ministry of Education, Science and Technology
NCLB	No Child Left Behind
OFSTED	Office for Standards in Education-England
OECD	Organization for Economic Co-operation and Development
PSLE	Primary School Leaving Certificate
PLE	Primary Leaving Examination
PSE	Primary School Examination
PTA	Parents Teachers Association
SPSS	Statistical Package for Social Sciences
URT	United Republic of Tanzania
UNESCO	United Nations Educational, Scientific and Cultural Organization

# CHAPTER ONE

## THE PROBLEM AND ITS MAIN COMPONENTS

### 1.1 Introduction

This chapter presents the background to the problem, statement of the problem, purpose of the study, objectives and the research questions, significance of the study, scope and study limitations, assumptions, conceptual frame work and definition of terms.

### 1.2 Background of the Study

Formal education was first introduced in Kenya by the missionaries in 1846. The first education plan drawn by the Fraser Commission in 1909 laid the basis for racial segregation. It stressed vocational/industrial instruction in schools for African children (Otiende, Wamahiu and Karugu, 1992). In 1925, the Advisory Committee on education laid down the aims of education for the indigenous people of Kenya. The first aim was to educate and train the natives in the reserves. The setting up of the Jeans School was a pointer to this intention. The second aim of training artisans and craftsmen of the community led to the establishment of the Native Industrial Training and Depot, which is now Kabete Technical Training College. The third aim of educating skilled professionals required by the state and commerce led to the setting up of Alliance High School, and later, Maseno and Kabaa (Mutua and Namaswa, 1992).

Ranking in Kenyan education history started after the establishment of Local Native Council (LNC) and independent schools (Bogonko, 1992). These schools were ranked alongside the existing missionary schools and by the early 1940s, their performance was way above that of missionary schools. Ranking was also done among the Government African Schools (GAS) whose first batch of pupils sat the Primary School Examinations (PSE) in 1938. However,

examinations had the effect of undermining the progression of Africans to higher levels of education. Pruning started at standard IV with Common Entrance Examination (CEE) being the basis for entry to STD V. Kenya African Preliminary Examination (KAPE) provided the selection criteria for secondary education. This pruning continued at intervals of two years up to Cambridge School Certificate Examinations (CSCE). For example in 1948, 6,983 African pupils sat for Primary School Examinations (PSE), 2,204 for KAPE, 192 for Kenya African Secondary School Examination (KASSE) and 39 for CSCE (Bogonko, 1992).

In 1952, a proposal was put forward to modify the 1948 structure so that Forms I and II in the intermediate school would become standard 7 and 8 respectively. Secondary school was to have two segments of four years (Forms I-IV) and two years (Forms V-VI). This structure was implemented in two stages. In 1957, the CEE was abolished and KAPE was pegged at the standard 8 level. KASE was also abolished leaving the CSCE to be taken at the end of form IV (Eshiwani, 1993). In 1961, the 'A' level classes known in Kenya as Higher School Certificate (HSC) were introduced in five schools: Alliance High school, Kakamega High School, Alliance Girls High School, Kangaru High School and Shimo-La Tewa High School.

At independence in 1963, the new Government of Kenya inherited problems that included 2 primary school systems that consisted of an 8-year system for Africans and a 7-year system for Europeans and Asians. The racial school system was abolished as recommended by the Kenya Education Commission (Republic of Kenya, 1964). A common 7-year continuous primary education was adopted which led to a rapid increase in school enrolment from 62,000 in 1963 to 133,000 in 1966 (Eshiwani, 1993). From 1964, tremendous increase in primary school leavers had called for expansion of secondary education with the locals being called upon to assist. This



created three categories of schools: government aided, harambee and private secondary schools. While performance in CSCE up to 1968 among Africans in aided schools was fair, harambee schools recorded poor performance as they were poorly equipped and had very few trained teachers, if any. The examination results were presented as Division I, II, III and IV EACE and then a fail F.

During colonial period, examinations were organized by the colonial government. After independence, the organization of examinations was localised in East Africa. The Cambridge syndicate that was conducting examinations was replaced by East African Examinations Council in 1973 which offered East African Certificate of Education (EACE) and East African Advanced Certificate of Education (EAACE). In 1980, an act of parliament empowered the Kenya National Examination Council (KNEC) to manage examinations in Kenyan schools (Eshiwani, 1993).

With the introduction of the 8-4-4 system of education, Certificate of Primary Education (CPE) was replaced by KCPE from 1984. The Kenya Junior Secondary Examination (KJSE), Kenya Certificate of Education (KCE) Examination and Kenya Advanced Certificate of Education (KACE) Examination were also phased out in 1985, 1987 and 1989 in that order (Eshiwani, 1993). Under the 8-4-4 system, the four year secondary school education cycle ends with the Kenya Certificate of Secondary Education (KCSE) examination which replaced KCE in the old 7-4-2-3 system of education.

This was followed by a radical change in the ranking of schools according to a performance index in 1989. The ranking of schools and students is done by the Kenya National Examinations Council (KNEC) every year. Up to 2007, there have been seven categories of ranking examination results at the secondary school level used. These are: the overall, National schools,

Provincial schools, District schools, Private schools, most improved schools and Student categories. This kind of ranking has been stopped and from 2008, only students were ranked. The official ban on ranking notwithstanding, the media still ranked schools. In addition, Provinces and Districts have continued to rank schools in order to hold education days. The school rank is based on the mean scores of all the candidates in a particular school. This form of ranking is strictly based on students' academic performance in national examinations unlike the criteria used in other countries (like continuous assessment tests in New South Wales and use Value Added in league tables in America) which contribute to an all round student.

The Report of the National Committee on Educational Objectives and Policies (Republic of Kenya 1976) observed that examinations tended to exercise undue influence on the education system and were used to serve highly selective objectives. This was reinforced by the economic survey of 1981 (Eshiwani, 1993). To enhance equity and quality of education, the Koech Report on Totally Integrated Quality Education and Training (TIQET, 1999) not only focussed on teacher training and motivation but also recommended that school ranking system be abolished. The pressure of examinations and ranking of schools according to performance were blamed for lack of depth in learning and the teaching process. Considerable reliance on national examinations to ensure that the common curriculum is covered affects the content and skills covered in schools. Teachers gear their teaching to the examinations encouraging rote learning.

There has been an increasing interest in the use of examination results to monitor the effectiveness of schools. The posting of examination outcomes is meant to hold schools and teachers accountable for the performance (Kellaghan and Greaney, 2001). Yet this exam publication impacts on education in schools in various ways. Demand for education is affected as

parents and students compete to obtain enrolment in best performing schools. Although the recommended enrolment is 40 students per class, some schools have higher enrolments because of the high demand for places (MOEST, 1996). The Report of the Provincial Working Committee on the Improvement of Education Standards in Western Province (1998) disclosed that every year there is a high demand for form one places in Kenya in general and in Western Province in particular. At the beginning of every year, education officers are besieged by parents desperate for form one places in 'good performing' schools. The stakeholders therefore recommended the creation of 3-6 streams in established and well performing schools.

### **1.3 The Problem**

Ranking of schools and students in national examinations is meant to encourage positive competition. However, the extent to which this affects society and schools in particular is evidenced by the anxiety of the stake-holders during release of Kenya Certificate of Secondary Education (KCSE) results in February every year, when the names of champion students and schools grace the print and electronic media. The results reinforce a widely held belief that there are good and bad schools in Kenya. The top performing schools are regarded as effective schools while poor performing ones are regarded as ineffective. Although ranking was meant to improve performance, there is no indication that individual schools realise any significant improvement in performance annually as a result of the publication of these results. This system of ranking has also been perceived as promoting unfair competition among schools because the comparison between schools fails to take into account differences in the KCPE intake mark, social and physical conditions under which the different schools operate.

Ranking individual students and schools creates fierce competition which sometimes leads to departure from teaching to preparation for passing examinations and cheating. It also influences enrolment patterns that have not been documented and affects promotion rates. Although national ranking was abolished with effect from 2008, the media still ranked schools. Furthermore, Provinces and Districts still rank schools in order to hold education days. Therefore, it is against this background that this study intended to investigate how ranking schools and students in national examinations affects students' enrolment, promotion rates, and performance in schools; and to establish the teacher' and students' perception of the practice.

#### **1.4 Purpose of the Study**

The purpose of this study was to establish how ranking of schools and students in national examinations in Kenya affected enrolment, promotion rates and performance trends in secondary schools in Kakamega South District.

#### **1.5 Objectives of the Study**

The objectives of this study were:

1. To determine the effect of ranking on enrolment between 2003-2006.
2. To establish the effect of the ranking on students' promotion rates.
3. To establish the effect of ranking on schools' performance trends between 2003-2006.
4. To investigate the teachers' and students' perception of ranking.

#### **1.6 Hypotheses**

The study was guided by the following Null hypotheses:

H<sub>01</sub> There is no significant relationship between the school performance index and

enrolment.

Ho2 There is no significant relationship between the school performance index and promotion rates.

Ho3 There is no significant difference in the performance trends of the various secondary schools.

Ho4 There are no significant differences among the teachers and students in their perception of ranking.

### **1.7 Significance of the Study**

It is expected that the study will be significant practically as follows:

- a) The findings of this study on performance trends would assist the Ministry of Education consider other factors that should be used in ranking schools and students, particularly those suggested by teachers and students like use of CATs and Value Added.
- b) The study has highlighted enrolment problems in schools arising from ranking. This would help policy makers in addressing under-enrolment or over-enrolment problems caused by ranking.
- c) It is hoped that the findings of the study on how ranking affects promotion rates will put the district education office on the alert to monitor internal transitions within schools and thus enhance smooth movement of students from one class to another.

It is expected that the study will be significant theoretically as follows:

- a) The study will contribute to the existing stock of knowledge on factors which affect enrolments in schools, by showing that there is a relationship between the school performance index and enrolment. Ranking which is based on the performance index therefore affects enrolment. The better the school rank, the higher the enrolment.

## **1.8 The Scope**

The study was carried out in Kakamega South District which had 75 secondary schools at the time of study in 2007. The 75 schools in the district were stratified into three categories of 25 schools (Low ranked schools, Average Ranked schools and Top Ranked schools) according to their performance between 2003-2006. Afterwards, 12 schools were randomly chosen from each category. Teachers and students participating in the study were purposively selected to include head teachers of participating schools and three teachers from each school (1 head of an academic department, 1 head of a non-academic department, and 1 teacher in a non-administrative position in the school). Three students were also purposively selected from each school. The study selected the head-student, the games captain and one student in the school who was not a prefect. Head teachers provided information on enrolment and performance as well as their perception of ranking. Teachers and students provided information on perception only. This study did not look at other factors that affect enrolment, promotion rate and performance trends.

## **1.9 Limitations of the Study**

This study was limited by the following:

1. Other factors that affect enrolment, promotion rate and performance trends were not established.
2. The effect of ranking was restricted to enrolment, promotion rates, performance trends and perceptions of stakeholders. Other effects like repetition, teacher and student turn over were not investigated by the study.
3. The study only assessed the teachers' and students' perception of ranking. It did not seek the perception of the other stakeholders like parents and education officers who are equally important.

### **1.10 Assumptions of the Study**

This study was based on a number of assumptions:

- a) Because of the close supervision of data collection, the data gathered on enrolment in the study schools were accurate and reliable.
- b) The respondents were sincere in their perceptions of ranking which was established by piloting the instruments and computing a reliability index. The high coefficients meant the instruments were reliable and respondents were sincere.
- c) Most of the teachers who were involved in the preparation of the candidates for 2006 were most likely to be found in the sampled schools. They could therefore adequately provide the information required on their perceptions of their school rank during that particular year.

### **1.11 Conceptual Framework**

This study adapted the Schreen's conceptual framework on school effectiveness (Schreen's, 1990). The original framework, developed according to the integrative approach of school environment, school organization and management at the classroom level and level of individual students, is more detailed and covers diverse elements. The elementary design of school effectiveness is the association of school effectiveness enhancing conditions of schooling and output measures mostly student achievement. It reveals the impact of relevant in-put characteristics (No. of teachers and experience, school/class size, and infrastructure) on the out put (academic achievement and higher education placement), after being subjected to processes or through-put factors ( promotion policy, internal evaluation, promotion rates, dropout rates and motivation) which work next to the impact of contextual factors (school location, category, cultural and socio-economic factors).

This modified framework incorporates a few of the variables relevant for the study. It isolates the contextual factors (school category-provincial /district), In-puts (student factors-school/classroom size or enrolment), processes (Promotion rates based on internal evaluation and perception), output factors (academic achievement). The conceptual framework has been born out of the sharp focus and intense pressure on the capacity of individual schools to deliver high educational outcomes which are measured by academic performance index that culminates into school ranking.

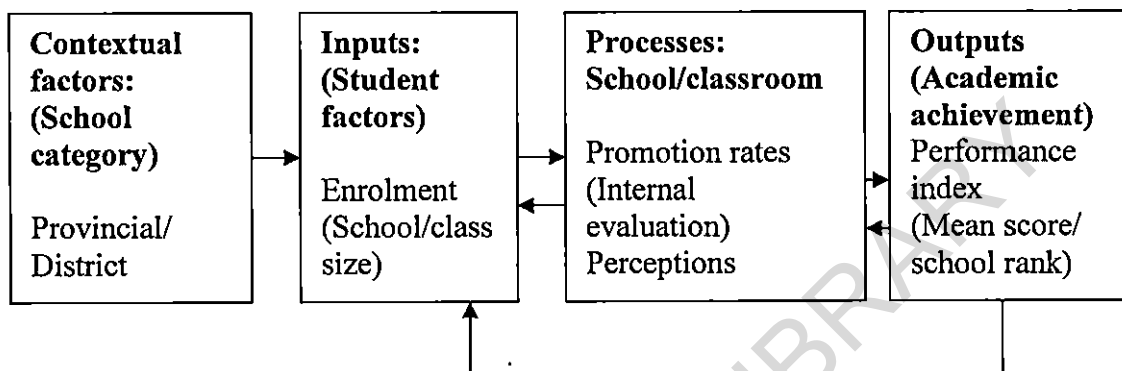
This modified conceptual framework therefore shows the interrelationship among the variables of study. To begin with, the admission policy sets a framework for selection of students into different categories of schools depending on whether they are provincial or district. Such a differentiation of students across the system as a whole through the admission procedures pegged on school category has a bearing on the achievement of equitable outcomes. In addition, enrolment or class size is an indicator of student access to teaching and learning resources. Once students are enrolled, school and classroom processes that they are subjected to affect student achievement that in turn leads to the school rank. This rank element will affect the future enrolment as well as future school and class processes. Effective schools, that is, those that obtain good examination results attract students with high marks, have generally high enrolments and are well staffed. Conversely, poor performing schools attract weaker students, suffer under-enrolment and are likely to experience high staff turn over leading to cyclic poor performance.

The element of measuring school effectiveness by use of examinations has a negative implication for the school as far as classroom processes are concerned. In order to be efficient, schools tend to be examination oriented and other indicators of efficiency like promotion rates and other factors



are ignored. The effect on promotion rates then in turn affects the school/class size. At the same time, the performance index that culminates into the school rank either increases or reduces demand for a school consequently affecting the school/class size.

As mentioned earlier, this conceptual framework shows the interrelationship among the variables of study. These variables are enrolment, promotion rates, perceptions and performance trends as indicated by performance index.



**Figure 1: Conceptual Framework**

**Source: Adapted from Schreen’s Conceptual Framework on School Effectiveness, 1990.**

**1.12 Operational Definition of Terms**

For the purpose of this study, the following terms are operationalised to as follows:

- **Efficiency**.....This is the ability of the school to meet the internally and externally set objectives. Efficient schools are those which obtain good outcomes.
- **Enrolment** .....The total number of students in each grade during each year in the study schools during 2003-2006.

- **National examinations**....An assessment and evaluation of students carried out in the whole country during a particular period.
- **Promotion rate** .....It is used in this context to mean the ability of students to successfully move from a previous grade in a previous year to a subsequent grade in a subsequent year. This will also be referred to as survival rate.
- **Perception** .....In the context of this study, it refers to the teachers' and students' view of ranking.
- **Ranking** ..... This is assigning positions to schools on the basis of mean score obtained in KCSE. Its calculation is based on the performance (mean scores) of all the candidates in a school during that particular year.
- **Secondary School**.... In this study, it is the level of education after primary school and before tertiary education. It is the stage of education that marks the end of basic education.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1 Introduction

This chapter presents a review of related literature on how ranking affects enrolment, promotion rates and performance trends in developed and developing countries, as well as some stakeholders' perception of ranking. It also reviews related literature on the effects of ranking schools and students in national examinations in Kenya and establishes the knowledge gap.

#### 2.2 Effects of Schools' Ranking in Developed Countries.

The issue of assessment is critical to the functioning of schools. It serves as a motivator of student performance. In addition, it provides a feedback to the teacher on the effectiveness of teaching and student achievement. It also communicates to the students, parents and others what has been learnt (James, 1998). In the United States of America, in 2002, the President signed into law the No Child Left Behind (NCLB) Act. This Act ensures that schools maintain high academic standards. Schools are classified into four categories. These are exemplary, recognized, acceptable and low performing. The category of each school depends on the following: the fraction of all students who pass spring achievement examinations, minimum drop-out rates, maximum attendance rates and amount of school improvement in school pass rate from the previous year. The central idea is to ensure that the ranking of these schools acts as a motivator for maintaining learners in school and promoting them to the next level (Quenemoen *et al.* 2004; Berlak, 2005). Despite this effort, teachers' unions, school leaders, principals and teachers tend to oppose policies linking assessment to accountability on the grounds of perverse effects including

narrowing the curriculum to the practice of teaching to the test and incentives for teachers to cheat (Evers & Walberg, 2003).

Evidence suggests that agencies alter the timing of their actions and engage in cream skimming in response to specific performance measures (Hickman, Henrick & Smith, 2002). They exclude weak students from sitting for examinations. Cheating was mentioned as another unproductive type of response to accountability incentives and misreporting of school dropout rates (Peabody & Markley, 2003). Some schools improve the nutritional content of their meals before the tests and alter their disciplinary practices while others classified students as special education or limited English proficient in order to exempt them from testing (Figlio & Getzler, 2002). There are also fears that the push for accountability in the nation's public schools which had produced policies to end social promotion and to institute high school exit examinations could increase the number of students who failed to complete high school (Rumberger, 2001). It was found that 5% of high school students dropped out of school in the US (Kaufman et al. 1999). The US Bureau of Census put this figure at 479,000 students in 1997-1998. School related factors accounted for 77% of the reasons for dropping out. A study by Reback (2005) showed that some schools responded to short incentives by improving the performance of weak students. The low achieving students eventually performed better than expected when their score was important for the school rating while high achieving students performed worse than expected.

Specific measures have been put in place in the state of California to ensure academic performance prowess. Ranking is done for all public schools in order to identify and sanction low performing schools and their teachers. Schools where students score highly are regarded as effective schools while the lowly ranked schools are thought to be ineffective. Because parents

worry about their children's well being, they are lured into settling in districts that have top ranked schools which their children can access (Berlak, 2005; Popham, 2000).

Two main systems of measuring performance in education exist in England. These are the Office for Standards in Education (OFSTED) reports and the publication of summary performance indicators commonly referred to as league tables. The different performance measures provide information about different indicators of school quality. The Office for Standards in Education deals with the educational standards achieved; the quality of education provided; the quality of leadership and management; and the spiritual, moral, social and cultural development of students (OFSTED, 2003). Performance tables for England have been published annually since 1992 (Wilson, 2003). Currently they are used to describe the difference between 'materials brought in and the finished product' and thus measures the value added by the production process (Wilson, 2003). This is determined between the age of 14 years and pass rates at the age 16 years. It rates pupils who obtain grades A-C. The aim of using a value added measure is to isolate the impact that the school environment has on student progress between two points in time.

The information published about school performance has an impact on the incentives faced by both the supply and the demand side of education. Both parents and teachers are sensitive to the form of performance measure used (Wilson, 2003). According to Burgess *et al* (2002) provision of information on school performance is a pre-requisite for informed parental choice.

Other studies carried out in England reveal that, some schools use volunteer teachers to help weaker students; there is strategic mentoring by teachers which includes after school coaching and holiday revision classes (West & Pennell, 2000). For courses which are not compulsory, weak

students are excluded (Fitz-Gibbon, 1996). It has been reported that, the publication of league tables led to the exclusion of certain students from school. There was a tripling of exclusions in the three year period after the first league tables were published. Schools also exclude weak students by engaging in cream skimming at the point of admission. This is because the higher the ability of students admitted, the better the out-put and the higher the schools relative position in the league tables (Wilson, 2001). Schools therefore tailor their populations in many ways in order to improve their performance indicators. To boost their position in the value added performance table, schools react by depressing their entry examination scores because this input score is internal to the schools and within their control. The final performance rank is likely to be higher giving the impression of a greater value added measure. The use of value added measures then does not necessarily mean an improvement in actual outcomes since schools can increase their raw output performance measures by altering intake and without increasing the actual value added or effectiveness (Burgess *et al*, 2002).

The publication of league tables showing performance in public examinations is both a symptom and a cause of greater competition (Bray, 2003). The publication of results may lead to schools that are perceived to be doing well to attract students of high levels of ability while those perceived to be doing badly will be left with lower achieving students (Kellaghan 1996). It may also lead to the transfer of more able teachers, lower morale in individual schools and create ghetto schools. This view is echoed by Raey & Lucey (2003) who state that the reporting of individual schools and public ranking of schools can result in humiliation of schools, teachers, students and their families. Kellaghan & Greaney (2003) also note that, while publication of results is meant to increase competition between schools and provide information on student performance, it also has a number of effects. It leads to change of content to which students are

exposed and emphasis of short-term or superficial strategies like memorization, rote-learning and rehearsing. There is a devotion of a significant amount of time to test preparation activities and a focus on students who are more likely to succeed at the expense of the weak ones. In addition, Briseid & Caillods (2004) state that, the most topical issue of examinations in the different countries is the tilting effect of tests and exams where some parts of learning objectives receive more attention to the detriment of others.

There are indications that government policy has arguably pre-empted parental preference through adoption of national targets and the publication of school performance (league) tables. In England these have a strong focus on absolute levels of academic achievement of students and exert a strong influence on parental choice (Woods & Levacic, 2002). On their effect on enrolment, Bradley *et al* (2000) found that an improvement of 10% in a school's examination performance led to an increase of seven pupil enrolments. As they point out, this modest increase may reflect capacity constraints faced by popular schools or the reluctance of the head teachers to increase their roll in case this reduces the effectiveness of the school. At the same time, increase in attainment may be accompanied with decrease in equality of opportunity as parental preferences reallocate positive peer group effects away from lower-ranked schools (Adnet & Davies, 2000).

Bradley & Taylor (2000) found that results of other schools had a significant but negligible influence on the performance of each school because a 1% increase in the examination results of other schools resulted in a 0.3% increase in a schools' own performance. In England, performance trends indicated a widening gap between the performance of pupils in the highest and lowest ranked schools (OFSTED, 1999). Whilst the average GCSE point score increased from 33.1 to

35.9 between 1993-1997, the top 10% of the cohort of pupils experienced an increase of 4.4 and the bottom 10% of the cohort declined from 0.8 to 0.7( West & Pennel, 2000).

In New South Wales, a student's final mark in each subject is determined by a combination of school-based assessments conducted throughout the Higher School Certificate (HSC) component of the course which forms 50% and externally administered final examinations held in October or November of every year (Board of Studies-NSW, 2008). In addition to comprising half of a student's final assessment result, external examinations are also used to statistically moderate in-school assessment results between different schools. The results which are published in December are analyzed to determine which students and schools have done best.

Among OECD countries students don't repeat grades even if they achieve poor results. The aim of this automatic promotion is to keep age-groups together for social reasons. It is also felt that repeating might be a waste of time and money for the individual and the society he lives in. In addition, obliging young people to suffer the defeat of repetition might lower their morale and there-by be counter productive to further learning (UNESCO, 2000).

In South Korea, the achievement of targeted high enrolment ratios in primary education led to competition for entrance into secondary schools in general. Entrance into elite schools in particular became so intense that grade repetition and private tutoring soared quickly and became a serious social concern (Bregman & Stallmerster, 2002). Korea responded by removing barriers of student flow such as middle school entry qualifications. In Bangladesh, there is no nationwide examination at the end primary school during the fifth year. At the secondary school level which is between years 6-12, there are two nationwide examinations. The first is the Secondary School



Certificate Examination conducted at the end of year 10 and the Higher Secondary Certificate Examination conducted at the end of year 12. These examinations are conducted by seven education boards but are not ranked.

The World Bank (2001) on Alternative Schools and Roma Children, reports that student achievement is measured by their achievement in schools. This includes the number and percentage of students who failed courses, the number and percentage of students who were forced to repeat a year and drop out rates. Another indicator of assessing the success of a school is by examining the proportion of students who pass the final secondary school examination and who were admitted to universities and colleges. In Finland, evaluation is done at both the national and local level. A national external evaluation is performed by the National Board of Education according to the guidelines, principles and targets set by the Ministry of Education. It measures educational outcomes, identifies strengths and weaknesses of the system that serves national education policy decision making.

It is important to note that, so far, there are hardly any empirical studies of how publication of results affects enrolment, promotion rate and performance trends. The above information, which is basically on reports by Berlak (2005), Reback (2005), Peabody & Markley (2003) among others clearly shows some of the malpractices associated with school ranking and the effect on performance trends and enrolments. Examination results are used to judge the effectiveness of individual teachers. They are also linked to rewards and penalties. It is therefore necessary to carry out an empirical study in order to establish the effect of ranking on promotion rate as well as the teachers' and students' perception of ranking.

### **2.3 Effects of Schools' Ranking in Developing Countries.**

Most examination bodies in Africa use ranking of students, schools or regions to report examination results. According to Kivilu (2004) reporting of examination results can have both facilitative and inhibitive effects on stakeholders such as the students, teachers, parents, schools and communities.

Examination results for primary schools in Tanzania are ranked according to regions. For example the Primary School Leaving Examination (PSLE) for 1999 showed a wide range of passing rates from 35.43% in Dar-es-Salaam to 17.73% in Shinyanga. The best four regions were Dar-es-salaam, Mara, Iringa and Mbeya while the bottom four regions from the last were Shinyanga, Tabora, Ruvuma and Mtwara (URT, 2000). The examination system at secondary level consists of continuous assessment and final examinations at forms two and four. By Circular Number 2 of 2002 the pass mark was raised from 21 per cent to 30 per cent (URT 2002b). A student scoring less than 30 per cent does not proceed to form three but can repeat form two. Form four examination results for students are ranked from the best as Division I, II, III, IV and Division 0 is a failure. In 1996, 20% of girls caught Div. 0 as compared to 7.3% of boys (MOEC, 1997). In the year 2000, of the 30 best ranked schools 23 were private schools and only 7 were public schools.

Various studies have used different methods to analyse issues of enrolment and performance in education. An earlier study carried out in Tanzania by Lassibille *et al.* (1998) found that students in the public schools tended to perform better than their private school counterpart, with average scores higher by 25% and 20% respectively for the form 2 and form 4 examinations. The trend in

public schools was toward greater homogeneity on the form 2 examination but this trend was not mirrored in the form 4 examination performance. An analysis of the value added by the schools between form 2 and form 4 showed that the gap between the best and the worst schools had widened. The study also found that given that performance in the form 4 examinations was a key determinant of prospects for further education and access to good jobs, parents and students were likely to focus on this indicator in defining value. As a result, between 1990-1992, the average size of a public school grew by 31% in the public sector and schools whose position in the value added ranking improved between 1992-1995 gained more students than those with a lower ranking. In the public sector schools that ranked higher in 1995 than in 1992 in terms of the form 4 examination results gained 41% in average enrolments. A later study by Mbelle & Katabaro (2003) which looked at determinants enrolment and performance among other factors found that although private schools consistently performed better than public schools, they had a practice of weeding out students who performed poorly. The best performing public schools were those designated as special schools. This study stratified regions into best performers, average performers and poor performers. Schools were drawn from these regions and 637 students randomly selected. In their analysis, correlation and descriptive statistics were used.

In Chile there is a system of merit awards to schools called the National System to Evaluate School Performance. This system provides an important part of the basis on which school performance is evaluated. Other factors include, improvement in student assessment scores, physical improvements by school administrators, working conditions of teachers, equality of opportunity through retention rates, promotion and avoidance of discrimination practices on basis of gender or disability and teacher- parents integration in school. The factors are weighted and adjusted to arrive at a final score entitlement for school. Enrolment in the winning school

accounts for 25 % of the score. The schools are stratified into homogeneous groups so that competition is roughly between schools that are comparable in terms of student population, socio-economic status of the community where the school is based. Schools are ranked within each group according to score index and awards given to teachers of schools in that order to be divided among themselves according to hours worked (McMakin, 2000). In spite of this method of assessment, private subsidized schools perform better and therefore attract better students. This has contributed to the right to education problem for the children from lower socio-economic status who may not meet the desired school' test standards. As a result, there has been a call for random selection in all oversubscribed schools.

Studies indicate that assessment data published in league tables impact on the behaviour of schools. In Senegal, in the 1990s, a results oriented management system in which information on the performance of schools was published in the press was introduced. Between 1995-1998, the success rates in the examination at the end of primary school rose from 30% to 48% and the enrolment of girls rose from 40% to 77%. In Burundi, the extent to which examinations dominate teaching was seen in the description of the behaviour of the teachers. There was an increase in instructional time beyond the stipulated time, a regular review of material considered essential, frequent testing and the use of class periods allocated to pre-vocational skills which were not examined to teach academic subjects (ADEA, 2002).

In Mauritius, ranking was abolished and a new mode of admission to secondary school adopted. This was after it was agreed that the major set back of the education system was the bottle-neck created by the element of ranking at the Certificate of Primary Examination (CPE). It was a major stumbling block to equity and it also created a mismatch between the demand and supply for form

one places in the few highly regarded secondary schools (MOESR, 2004). In addition it perverted the very aims and objectives of primary education by giving rise to a lopsided education focused on examinable subjects rather than emphasising the holistic development of the child.

In Uganda, the Ministry of Education and Sports stopped ranking schools' performance in national examinations in 1997. Independent rankings by the media shows a predominance of private schools among those judged high in academic excellence. In the 1999 Primary Leaving Examinations (PLE) for example, the best five schools were all private and because of concern over standards, many well-to-do parents moved their children to private schools (Kirungi, 2001).

Other studies indicate that, despite the use of league tables in Kenya, Senegal and elsewhere, several factors indicate that their use is complicated and misleading. If students differ from school to school in their level of achievement when joining the schools, a measure of achievement at a later date that does not take this into account will be inequitable and misleading in that it will not adequately reflect a schools success in moving students from their initial entry level to their present level of achievement as reflected in a public examination (Kellaghan & Greaney, 2001). At a general level, high stakes may be associated with malpractice. In their effort to obtain high grades, students and sometimes teachers resort to various forms of cheating designed to give a candidate unfair advantage over others. This takes many forms including copying from other students during examinations, collusion between students and supervisors, use of material smuggled into the examination rooms and purchasing of examination papers (Kellaghan & Greaney, 1996).

According to Kwarteng (2001) ranking is an unnecessary publication designed to undermine public confidence in some schools in Ghana. Kivilu (2004) maintains that if examinations are the sole ground for judging a schools' performance, then some schools are likely to present only their best candidates in such examinations in countries where ranking takes centre stage. In addition, he says that schools are supposed to be social, moral and academic organizations charged with the function of developing social responsibilities in young people, training them in sound and moral precepts and equipping them with appropriate skills, knowledge and abilities for the purposes of future employment, professional education or post secondary studies. As such one cannot use only a quantitative tool such as examination results to compare the performance of schools (Kivilu, 2004).

An empirical study carried out by Mbelle & Katabaro (2003) looked at determinants enrolment and performance but did not assess how performance affected promotion rate and shaped trends of the different schools or regions. It also did not statistically establish the relationship between performance and enrolment. The other studies, carried out in African countries by Kivilu (2004), Lassibille *et al* (1998), MOESR (2004) and Kirungi (2001) among others are limited. They hardly offer any findings on how ranking affects enrolments and performance trends in schools. They also don't clearly point out the teachers' and students' perception of ranking and yet they are primary stakeholders in education. This study hopes to fill this gap.

## 2.4 Effects of Schools' Ranking in Kenya

The publication of mean performance statistics for each school and for each district in league tables made it possible for schools to see where they stood with respect to other schools in the district and for districts to compare themselves with other districts. This was a key feature of the Kenya examination reform in which this kind of information was called incentive information (Somerset, 1987). The underlying idea was that dissemination of information would create competition between schools which would motivate teachers to change their instructional practices (Chapman & Synder, 2000). However, according to Ndago (2004), there is no moral justification in ranking schools where no genuine competition really existed because some schools admit the best KCPE candidates and have the best resources which creates uneven playground. Ndago argued that instead of ranking schools using the percentage of candidates who attained a certain level of performance, we should use deviations (positive or negative) of the KCSE grades from the KCPE mark. Marenya (2007) also argued that the annual ritual ranking was not in keeping with the best practice internationally. In addition, it was immoral to rank schools as if they were competing on equal terms when others were facilitated to do well by taking the cream of standard 8 candidates, giving them reasonable facilities and ensuring that they were taught by competent and conscientious teachers while students in other schools were condemned to inescapable failure by the absence of the same conditions. He advocated for a grading system that captures and rewards everything that the school teaches and nurtures including talent.

The structure of education in Kenya is a funnel with very high push out rates at the end of primary and secondary education. Although at the primary school level promotion from standard 1 to 8 is automatic, a great deal of wastage occurs because of dropout and repetition (Eshiwani,

1993). A focus on achieving high grades in examinations may lead to high rates of repetition and dropout. In Kenya, the low levels of transition rates between standard 6 and 7 was partially explained by the fact that schools discouraged weaker pupils from taking KCPE for fear that it would lower the mean scores in published league tables (Akers, Migoli & Nzomo, 2001).

According to Aduda (2007), district ranking for Kenya Certificate of primary Education (KCPE) examinations had been stopped due to the negative competition it created. At the time weak candidates were made to repeat standard seven and only the best were allowed to sit the exams so that they could post high scores to earn their districts top ranking. According to Institute of Policy Analysis and Research (IPAR, 2004), ranking in national examinations at the individual student and also at the school level has resulted in fierce competition. The fierce competition sometimes leads to departure from teaching to preparation for passing examinations. According to the Koech Report (1999) on Totally Integrated Quality Education and Training (TIQET), considerable reliance on national examinations to ensure that the common curriculum is covered affects the content and skills covered in schools. Teachers gear their teaching to the examinations encouraging rote learning. Wicks (2007) also observed that secondary school teachers in certain schools had been made to work for long hours in a bid to deliver excellent results in national examinations. In the process some teachers had become slaves to the culture of helping students pass examinations usually at the expense of developing the students' social and extra-academic lives.

Mulambula (2006) investigated how students and teachers perceive the evaluation process as an indicator of educational accountability and whether there were differences between the teachers and the students in their perceptions. It was carried out in Kakamega Municipality and Malava



Division of Western Kenya. Stratified sampling was used and participants randomly chosen. The null hypothesis “There is no significant difference between students and teachers in their perception of evaluation instruments” was tested using a Two-Way ANOVA at 0.05. It was rejected. The overall findings were that students and teachers cannot be held accountable for the consequences of educational outcomes since the role of the government is exaggerated. It also revealed that students and teachers perceive public examinations as not being the most appropriate instruments for measuring academic performance.

## **2.5 The Knowledge Gap**

This study is necessitated by lack of empirical studies on how publication of results affects enrolment, promotion rate and performance trends. A number of reports from developed countries (Berlak 2005; Reback 2005; Peabody & Markley, 2003) among others show the extent to which ranking of schools affects enrolment, promotion rates, performance trends and influences parental choice of schools. They are however silent on how the practice of ranking affects teachers and students who are key players in the education sector. Reports from developing countries by Kivilu (2004), Lassibille *et al* (1998), MOESR (2004) and Kirungi (2001) among others do not show how the posting of school outcomes affects enrolment and performance trends. In addition they did not show how the teachers and students perceive this practice. In Kenya, the limited reports do not indicate the effect of ranking on enrolment and performance trends and the stakeholders’ perceptions of ranking. The only empirical study by Mulambula (2006) carried out in Kakamega municipality and Malava, examined students’ and parents’ perceptions of evaluation process but he fails to show how the government role in the evaluation process affects the enrolment, promotion rates and performance trends in secondary schools.

It is hoped that this study will fill the gap by establishing and documenting how the ranking of schools and students in national examinations affects enrolment, promotion rates and performance trends in secondary schools in Kakamega South, Kenya. It will use the descriptive research design that has not been used in previous studies and statistically establish relationship between ranking, enrolment, promotion rates and performance trends.

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## CHAPTER THREE

### RESEARCH DESIGN AND METHODOLOGY

#### 3.1 Introduction

This section presents the methodology that was used to carry out the study. It consists of the area of study, the research design, the study population, sampling design and sample size, data collection instruments, procedure for data collection, pilot study, data presentation, analysis and interpretation.

#### 3.2 The Study Area

Kakamega-South District is located in Western Province and lies on an area of 970.6 Km<sup>2</sup> (District Development Plans-2002-2008: Kakamega). It is divided into six divisions namely Lurambi, Shinyalu, Ikolomani, Navakholo, Ileho and Kakamega Municipality (Appendix 11). The district has three parliamentary constituencies (Lurambi, Shinyalu and Ikolomani) and two local authorities (Kakamega County Council and Kakamega Municipal Council). The district had a population of 453,912 people which is projected to reach 549,433 people by the end of 2008 (Central Bureau of Statistics, 2002). The average population density is 461 persons per km<sup>2</sup> but the municipality division has a much higher density of 1,583 persons per km<sup>2</sup>. It has 256 primary schools, with a population of 195,768 pupils and 4,027 teachers. There are 75 secondary schools with an enrolment of 25,810 students and 1,413 teachers (Provincial Director of Education's Enrolment Report, 2007).

\*Kakamega South District has since been sub-divided into several Districts.

Since the region receives ample rainfall annually, it supports a number of economic activities. Sugar-cane is grown as a cash crop and supplied to Mumias Sugar Company and West Kenya Sugar Company while tea is also grown on small scale in Shinyalu and Ikolomani. Maize, beans, potatoes, cassava, bananas, sorghum and millet are grown as food crops and there is also livestock keeping. Small business enterprises thrive in the district. The Kakamega forest attracts a lot of tourists. The main market centres are mainly serviced by the boda-boda transport system.

### **3.3 Research Design**

The study was a descriptive survey design. Descriptive research is concerned with conditions or relationships that exist, practices that prevail, processes that are on going, attitudes that are held or trends that are developing (Best, 1970). This design was deemed most ideal for this study because although the study covered the 2003-2006 period, the practice was ongoing and its effects were still being felt. The design therefore facilitated the collection of information on how the current practice of ranking schools and students affected enrolment, promotion rates and performance trends. It yielded descriptive and inferential information that was useful in making generalizations. It was also appropriate in assessing the teachers' and students' perceptions of ranking. In addition, it was also quick and enabled completion within the available limited time.

### **3.4 Study Population**

The sampling frame was secondary schools in Kakamega South District. The study population comprised head teachers, teachers and students. The District had 25,810 teachers and 1,413 students. There were 36 head teachers chosen as respondents in this study as they represented the administrative authority in schools and their permission was needed to access school data. A total of 108 teachers and 108 students were included because they are primary stakeholders

in education. The study covered schools which were established by 2003 since it intended to cover a four-year period in order to determine promotions, enrolments at all levels and performance trends.

### **3.5 The Sampling Design and Sample Size**

The stratification of schools was tailored along that of a study by Ngala *et. al* (2005). Out of a study population of 25 schools, the outlier effect was used to bifurcate schools into High Performing Schools and Low Performing Schools and then 5 schools were selected from each category. In this study, to obtain a representative sample, the 75 schools in the district were stratified into three categories of 25 schools each. The schools were ranked from the best to the last and divided into three even categories of 25 schools each. This stratification was based on mean performance in KCSE examination results between 2003-2006. This was deemed the best way of coming up with the three performance categories. It ensured that homogenous sub-sets that shared the same performance characteristics were represented in the sample. Random sampling where every item in each stratum had an equal chance of inclusion in the sample was then used to select 12 schools from each of the categories. This was done by writing the names of the 25 schools in each category on pieces of paper, mixing them up in a box and randomly picking one at a time without replacement until all the 12 schools from each category had been selected. This sample of 36 schools comprising 48% of the target population was considered neither too small nor too big for the study (Mulusa, 1990; Cohen *et al*, 2000 and Polland, 2005). Table 1 presents the summary of this stratification, population per stratum and sample size from each stratum.

**Table 1: Sample Allocation at School Performance Category**

Stratum of performance ranking in KCSE (2003-2006)	Population (Number of schools)	Sample size (Number of selected schools)
Top	25	12
Average	25	12
Low	25	12
Total	75	36

A purposive sampling technique was used to select the participants for the study. Kerlinger (1973) states that, purposive sampling is characterized by use of judgement and a deliberate effort to obtain a representative sample by including typical presumable areas or groups in the sample. Teachers and students participating in the study were therefore purposively selected to include head teachers of participating schools and three teachers from each school (1 head of an academic department, 1 head of a non-academic department, and 1 teacher in a non-administrative position in the school). Three students were also purposively selected from each school to include the head-student, the games captain and one student in the school who was not a prefect. It was assumed that this selection achieved even representation of the teacher and student population found within the school community by using those in leadership and non-leadership positions within the school. In addition, it was also assumed that the selected participants could provide the required information. Therefore, a total of 252 respondents participated in the study. The summary is provided in Table 2.

**Table 2: Distribution of Respondents by Category**

School performance category	No. of schools	No. of H/teachers	No. of teachers	No. of students	Total
Top	12	12	36	36	84
Average	12	12	36	36	84
Low	12	12	36	36	84
Total	36	36	108	108	252

### 3.6 The Research Instruments

The main data collection instrument in this study was the questionnaire. In addition, the document analysis guide was used. The questionnaire was developed by the researcher based on the objectives of the study. The questionnaire was structured to ensure consistency.

#### 3.6.1 Head Teachers' Questionnaire

The Head teachers' questionnaire was the primary tool administered to all the school heads. It was divided into two parts; part I and part II. Part I required the head teachers to provide general information of the school. In part II of the questionnaire, the head teachers assessed their school positions in the 2006 KCSE results and related effects (see Appendix 1). It had both closed and open ended items and a five point, six item, likert response scale.

#### 3.6.2 Teachers' Questionnaire

This was meant to establish their perceptions on ranking through the assessment of the 2006 KCSE schools' position in the district. Factors contributing to this position and related effects of

the schools' ranks were also sought (see Appendix 2). The teachers then completed a five point, six item likert response scale similar to that of the head teachers. This questionnaire had both open and closed ended items and was administered to three teachers in each school.

### **3.6.3 Students' Questionnaire**

This was meant to establish their perceptions on ranking through the assessment of the 2006 KCSE school' position in the district, the factors contributing to this position and related effects arising from these schools' rank (see Appendix 3). The students then completed a two item likert scale which was used for assessing their perceptions of ranking. This questionnaire had both open and closed ended items and was administered to three students.

### **3.6.4 The Document Analysis Guide**

This instrument was used to verify the data which was sourced from school records. It was ideal in capturing of information provided on enrolment, promotion rates and performance trends. The school registers were used to obtain information on enrolment in the period 2003-2006 and promotion rates during the same period. KCSE results analysis sheets kept by the schools' examination offices provided information on performance trends. Where school registers were missing mark sheets and quarterly returns were used.

### **3.7 Procedure for Data Collection**

A letter authorizing implementation of the study was obtained from the Masinde Muliro's School of Graduate Studies. Thereafter, a permit was obtained from the Ministry of Education. The provincial administration was notified of the intended study. Research Assistants were then identified and trained. Prior to the study, the areas of study were visited and appointments booked



with the respective interviewees. During the data collection, questionnaires were issued out and collected as soon as they are completed in the course of the day.

### **3.8 The Pilot Study**

Three secondary schools from Kakamega South District were selected for pilot purposes. These schools did not participate in the final study. The research instrument was administered to the principals, teachers and students purposively chosen as stated earlier. After a two week interval, the same instrument was again administered. Reliability of the instrument was thus established by computing a test-retest reliability coefficient. It yielded a Correlation Coefficient of 0.96 for the head teachers, 0.91 for the teachers and 0.89 for the students (formula in Appendix 8). The calculated coefficients meant that the instrument were reliable and could be used for data collection for the final study.

The pilot study indicated that the 20 minutes time allocated for the completion of the questionnaire was sufficient. One open ended question which was problematic to the respondents was changed to closed format for ease of understanding. Some questions that appeared repetitive were omitted. The general order of the items on the questionnaire was adjusted for harmony and to enhance the understanding by the respondents. These adjustments were effected as a result of the observations made by some of the respondents. The language used was easily comprehensible and posed no problems to the respondents.

Validity is the extent to which values provided by an instrument actually measure the attributes they are intended to measure. Three aspects of validity were determined for the instruments. Face validity was established by assessing the items on the instrument and ensuring that they appeared

relevant, meaningful and appropriate to the respondents. Content validity was determined by supervisors who looked at the measuring technique and decided whether it measured what it intended to measure. They critically and carefully examined the items on the instrument and ascertained that the instrument contained adequate traits expected to measure the domain under study. Their corrections were incorporated and the instrument fine-tuned through the modification of the questionnaire. Construct validity was obtained by correlating the scores on one instrument with scores from another instrument. After the piloting, the high correlations of 0.96, 0.91 and 0.89 for the head teachers, teachers and students respectively indicated that the measuring instrument was measuring the same construct.

### **3.9 Data Analysis Plan**

Data collected from the field were checked to ensure that they were accurate, consistent with other facts gathered and well arranged to facilitate coding and computer keying. Both descriptive and inferential statistics were used in the analysis with the aid of the SPSS package. Since this study was comparing performance in three groups (low ranked schools, average ranked schools and top ranked schools) during four years (2003, 2004, 2005 and 2006), Analysis of Variance (ANOVA) was used to test the difference between groups. A scatter diagram was used to show the relationship between performance and enrolment. The Pearson Product Moment Correlation Coefficient and linear regression were used to establish the strength of the relationship between performance and enrolment. Data collected to establish performance trends between 2003 and 2006 was also presented using tables and polygons. Student promotion rate were calculated using the Crude Grade Survival Rate formula (Appendix 9) which shows student movement from a previous grade in a previous year to a subsequent grade in a subsequent year. This information was presented in tabular form. Perceptions of the teachers and students were presented using

cross-tabulations and percentages. The chi square was then used to determine whether there were any differences in the perceptions of the different respondents. Table 3 presents a summary of this information.

**Table 3: Summary of Statistical Data Analysis**

No	Objective	Independent variable	Dependent variable	Statistical tools
1	To determine the effect of ranking on enrolment between 2003-2006	Performance index	Enrolment	PPMCC ANOVA Linear regression
2	To establish the effect of ranking on students' promotion rates	Performance index	Promotion	The Crude Grade Survival Rate
3	To establish the effect of ranking on schools' performance trends between 2003-2006	Performance index	Performance trends	ANOVA
4	To investigate the teachers' and students' perception of ranking	Performance index	Perceptions	The chi square

## CHAPTER FOUR

### DATA PRESENTATION, ANALYSIS AND DISCUSSION

#### 4.1 Introduction

This chapter presents the findings of the study on the effects of ranking secondary schools and students in national examinations in Kenya with a focus on Kakamega south district. The study was designed to determine the effects of ranking on enrolment, students' promotion rate and performance trends in schools. It was also meant to establish teachers' and students' perception of ranking. The findings are presented in the order of the objectives of the study.

#### 4.2 Overview of Findings

Appendix 5, 6 and 7 give the detailed enrolment for the years 2003-2006 of the sampled schools in each category. Most of the schools in the low ranked schools' category were under-enrolled. Out of the 12 sample schools in this category, 10 had a mean enrolment of less than 30 students per class during the four year period while the highest enrolled school had a mean of about 37 students. This category of schools had the fewest number of streams compared to the others. Out of the 12 schools in this category, 4 were one-stream, 6 were two-stream, 1 was three-streams and 1 was four-streams totalling to 23 streams and 92 classes in any given year.

In the second category of schools (average ranked schools), 4 were one-stream, 5 were two-stream, 1 was three-stream and 2 were four stream totalling to 25 streams and 100 classes in any given year. Only three schools had an enrolment mean of less than 30 while three other schools had an enrolment mean of more than 40 during the four year study period.

In the top ranked schools' category, only 2 schools were one-stream, 1 was two-stream, 1 was three-stream, 2 were four-stream, 4 were five-stream and 2 were six-stream. There were a total of

47 streams and 188 classes during the period of study. This category of schools therefore had the highest number of streams and classes. No school had an enrolment mean of less than 30 while 7 of the schools had an enrolment mean of more than 40.

### 4.3 The Effect of Ranking on Student Enrolment (2003-2006)

#### 4.3.1 Enrolment in Different School Categories

In the four year cycle of the study, 54,070 students were enrolled in the 36 schools. The overall mean enrolment per stream during the entire four year period was 34; with a minimum enrolment of 14 and maximum enrolment of 54. Table 4 presents the enrolment in each of the categories of schools during the four years.

**Table 4: Student Enrolment (2003-2006)**

Year	School category			Total
	Low ranked	Average ranked	Top ranked	
2003	2087	3305	7685	13077
2004	2145	3296	7977	13418
2005	2187	3448	8222	13857
2006	2102	3522	8094	13718
Total	8,521	13,571	31,978	54,070

**Source:** Field data

The low ranked schools' category had a total enrolment of 8,521 for the period 2003-2006. This comprised 15.76% of the total enrolment of all the schools considered. This was the lowest enrolment for the three categories of schools. The average ranked schools had a total enrolment of 13,571. This comprised 25.1% of the total enrolment of all the schools considered. The top ranked schools had the enrolment of 31,978. This comprised 59.14% of the total enrolment of all the schools considered. This was the highest enrolment for the three categories of schools. The low ranked schools had a steady increase in enrolment during 2003-2005 but registered a decrease in 2006. The average ranked schools had a steady increase throughout the four years while the top ranked schools, like the low ranked schools, had a steady increase in enrolment during 2003-2005 but experienced a slight decline in 2006 (Table 4). While Table 4 shows the general enrolment, Table 5 shows the average enrolment per category of school during each of the four years.

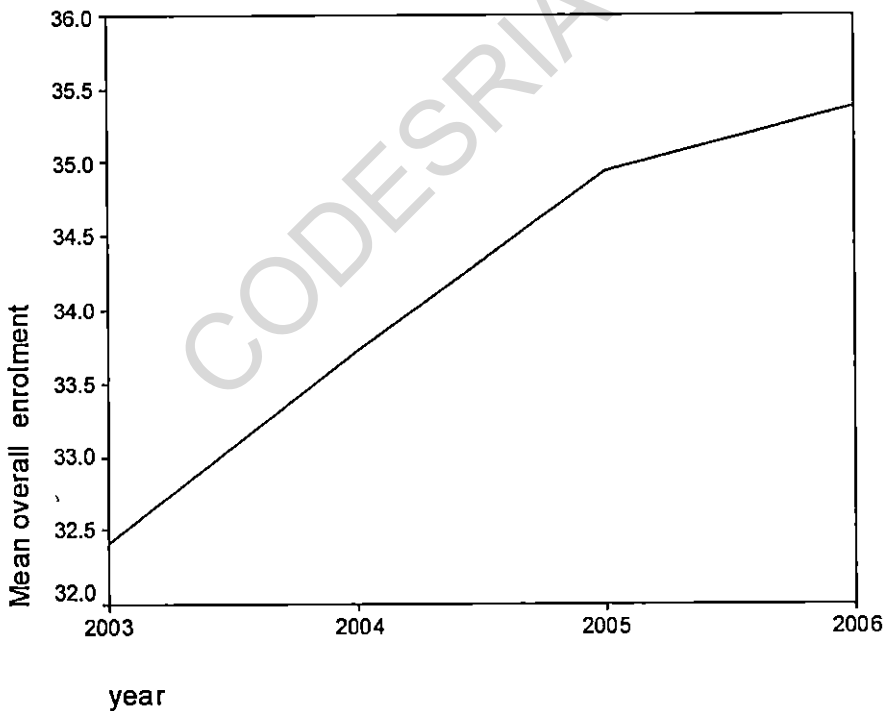
**Table 5: Average Enrolment (2003-2006)**

Year	School category			Average per year
	Low ranked	Average ranked	Top ranked	
2003	22.54	34.23	40.48	32.42
2004	23.59	34.74	42.82	33.71
2005	24.20	36.05	44.56	34.94
2006	23.74	37.20	44.21	35.05
Average	23.51	35.55	43.02	34.03

**Source:** Field data

Despite the steady increase in enrolment in the low ranked schools from 2003-2005 as shown in Table 5 above, these schools remained under enrolled with a low average enrolment of 23.51 (ranging from 22.54 to 24.20). The average ranked schools had a steady increase in enrolment during the four years but the average enrolment was still low at 35.55 (ranging from 34.23 to 37.20). The average enrolment for the top ranked category of schools was 43.02 (ranging from 40.48 to 44.56, Table 5).

The following line graphs based on the average enrolment figures in Table 5 clearly depict the general enrolment trends and the specific enrolment trends in different categories of schools during the four year period. Generally there was a steady increase in enrolment in the sample schools in the district between 2003-2006 as shown by the overall average enrolment figures and the graph (Table 5 and Figure 2).



**Fig 2: Overall enrolment trends between 2003-2006**

### 4.3.2 Enrolment Trends in Low Ranked Schools

Table 6 presents the mean enrolment per class per year during the four years.

**Table 6: Average enrolment per class per year in low ranked schools**

Class	Year				Average
	2003	2004	2005	2006	2003-2006
FORM I	24.09	22.52	22.91	23.83	23.34
FORM II	22.83	23.98	21.74	20.57	22.28
FORM III	22.53	25.36	27.40	25.84	25.28
FORM IV	20.71	22.48	24.74	24.70	23.16
Average	22.54	23.59	24.20	23.74	23.51

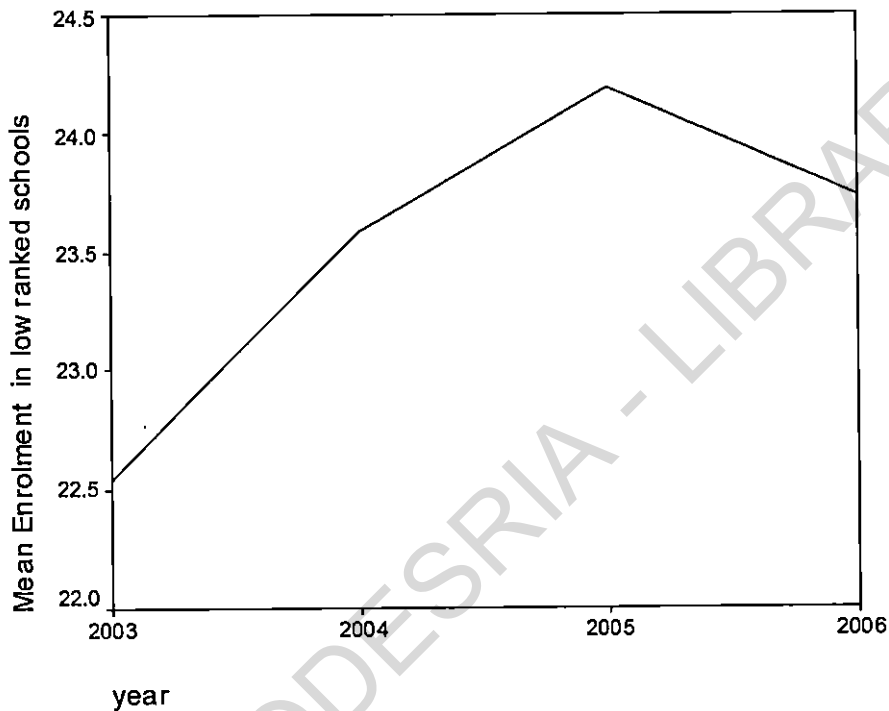
**Source:** Field data

A summary of the enrolment in the specific classes in low ranked schools in Table 6 also shows that these schools were grossly under enrolled at all levels since the class with the highest enrolment was form III which had an average of 25.28. There were also constant fluctuations in enrolment within and between grades. The Form II class experienced a high enrolment loss during the four years. It had the lowest average enrolment of 22.28 indicating that probably, some students only enrolled in low ranked schools as they waited for an opportunity to arise in better schools. The fact that the population of form II in top ranked schools increased could indicate that some of the students from low ranked schools are likely to have transferred to top ranked schools. Enrolment in this category of low ranked schools increased highly again in form III suggesting they in turn gained from the enrolment loss of the average and top ranked schools at the form III levels. The enrolment boom at this level can thus be attributed to inflow from the average and top



ranked schools which tend to discontinue their weak students in form three in order to maintain good positions in the performance league tables. The form IV class had a lower average enrolment which could be attributed to drop out or repetition in the form III class.

The line graph shows that there was an increase in enrolment in low ranked schools during 2003-2005 but the schools experienced a slight drop in 2006.



**Fig 3: Enrolment trends in low ranked schools.**

In spite of the enrolment trend indicated by the line graph, the average enrolment per school per year remained very low with 10 out of the 12 schools having an overall average enrolment of less than 30 students (Appendix 5).

### 4.3.3 Enrolment Trends in Average Ranked Schools

Table 7 presents the average enrolment per class per year during the four years. Generally, most schools in this category had an overall average enrolment of less than 40 students showing that just like the low ranked schools; they too experienced enrolment problems.

**Table 7: Average enrolment per class per year in average ranked schools**

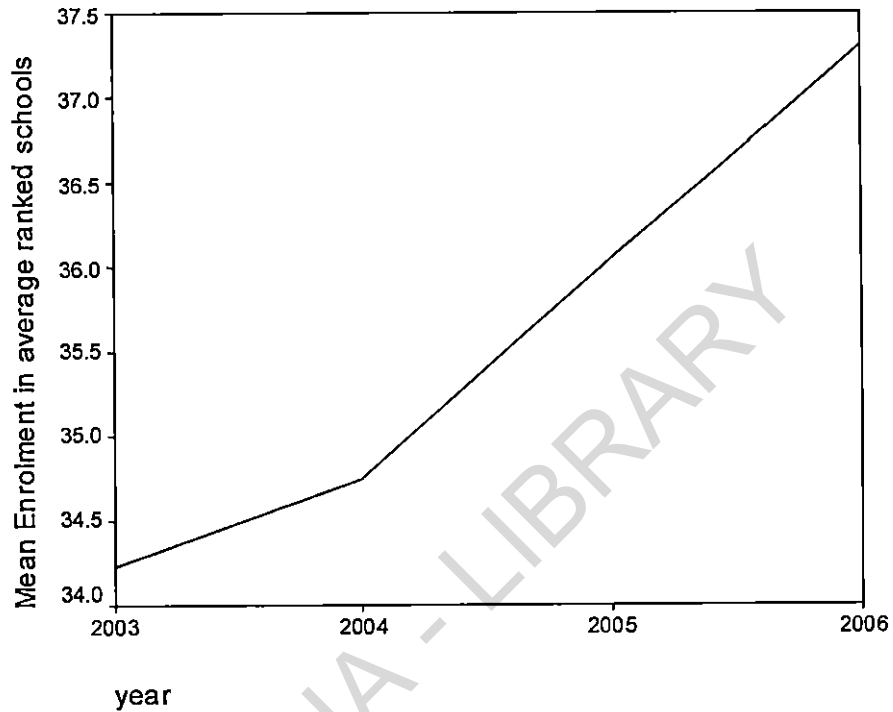
Class	Year				Average 2003-2006
	2003	2004	2005	2006	
FORM I	35.80	36.04	39.84	41.56	38.31
FORM II	34.80	35.44	35.74	38.66	36.16
FORM III	35.63	33.53	35.65	34.98	34.95
FORM IV	30.68	33.94	32.96	33.60	32.80
Average	34.23	34.74	36.05	37.20	35.55

**Source:** Field data

Table 7 shows that average ranked schools had a steady increase in enrolment in the form I class during the four years while the other classes experienced fluctuations. The highest enrolment for this category of schools was form I in 2006 which had an enrolment average of 41.56. The rest of the classes maintained an enrolment average of less than 40. Like the low ranked schools, these schools experienced a great enrolment loss between form I and form II. They too are likely to have contributed to the enrolment boom in form II in the top ranked schools. However, the total enrolment figures reveal that there was a clear enrolment pattern with form I having the highest average enrolment per year and form IV the lowest. Although the difference between the form III

and form IV yearly and average enrolment was the lowest, it nevertheless shows that there were several cases of drop-out or transfer.

For the average ranked schools, there was a general sharp increase in average enrolment between 2004 -2006 as shown in figure 4.



**Fig. 4: Enrolment trends in average ranked schools**

#### **4.3.4 Enrolment Trends in Top Ranked Schools**

Top ranked schools registered a steady increase in enrolment during 2003-2005 but experienced a decline in 2006.

**Table 8: Average enrolment per class per year in top ranked schools**

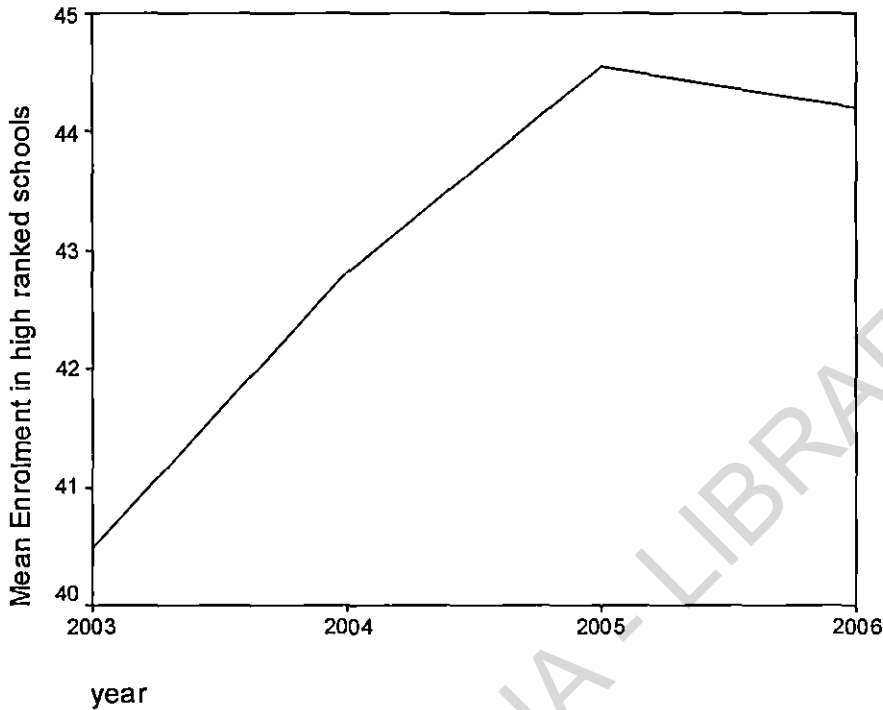
Class	Year				Average 2003-2006
	2003	2004	2005	2006	
FORM I	43.54	45.98	46.01	48.04	45.90
FORM II	45.99	44.98	46.89	47.58	46.36
FORM III	40.19	44.65	43.89	44.78	43.38
FORM IV	32.19	35.66	41.43	36.43	36.43
Average	40.48	42.82	44.56	<del>44.21</del>	43.02

**Source:** Field data

From Table 8 above, top ranked schools had a high enrolment average of above 40 in form I, II and III. The top ranked schools had a high and steady increase in enrolment in the form I class during the four years while the other classes experienced fluctuations. The average enrolment shows that form II had the highest enrolment during the four years. This could indicate that since these are schools in high demand, they received students who frequently transferred from the low and average ranked schools which experienced an enrolment loss at this level. Form III and IV in this category of schools experienced a great enrolment loss. This might indicate that there were drop out cases which could be voluntary or attributed to elimination of weak students as most schools want to have fewer students in the upper classes in order to improve on the effectiveness of teaching and safeguard their mean scores. From table 8, form IV had the lowest mean enrolment of below 40 during each of the four years except in 2005 when enrolment was at 41.43. The table also shows that the difference in the average enrolment between form III and IV during

the four years was very significant. This means there was a great enrolment loss between form III and form IV as some of the schools in this category off loaded their students to the low ranked schools which experienced an enrolment increase in form III.

The mean enrolment trends in this category of schools are presented graphically below (figure 5).



**Fig 5: Enrolment trends in top ranked schools**

#### **4.3.5: Relationship between the School Performance Index and Enrolment**

In dealing with objective 1, The Pearson Product Moment Correlation Coefficient, One way Analysis of Variance (tested at 0.05 level of significance) and Single Linear regression were the statistical tools used to test the null hypothesis HO1- There is no relationship between school performance index and enrolment. Analysis by ANOVA shows that there was a significant difference in average enrolment among the different performance categories (p-value 0.0001) as shown in Table 9. The calculated F value of 19.92 is greater than the critical

value of 3.23. The top ranked schools had the highest average enrolment per class while the low ranked schools had the lowest average enrolment per class.

**Table 9: ANOVA Table on Enrolment and School Rank Categories**

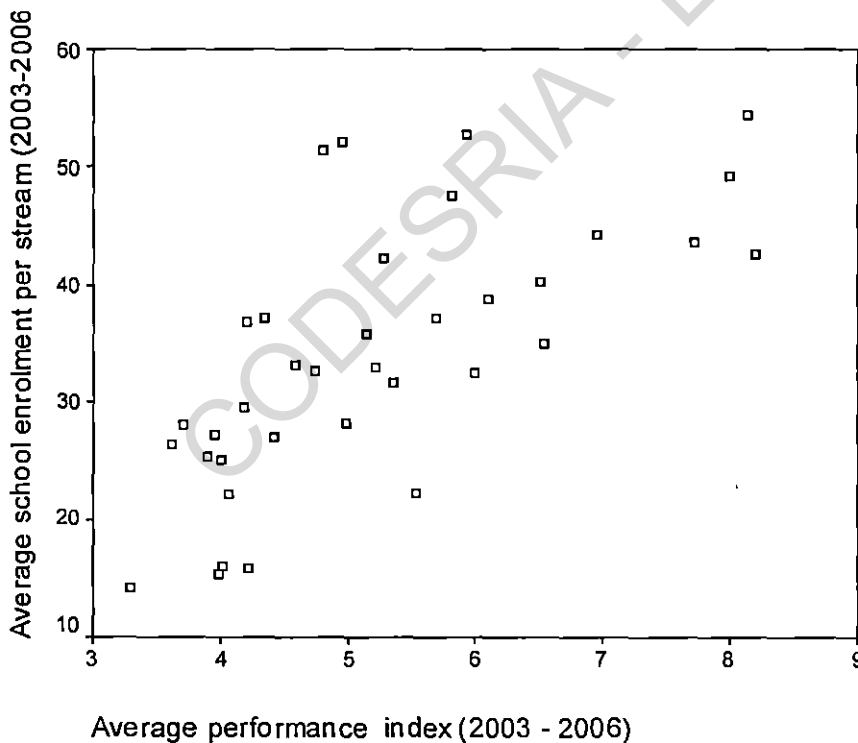
	Sum squares	df	Mean squares	F	sig
Between groups	2367.896	2	1183.948	19.92	0.0001
Within groups	1961.403	33	59.436		
Total	4329.299	35			

Source: SPSS output

#### 4.3.6 Performance index and enrolment:

The relationship between performance index and enrolment is presented by the scatter diagram

(Fig 6)



**Fig 6: Scatter plot for enrolment and performance index**

The scatter plot shows that there is a positive relationship between performance and enrolment such that enrolment increases with improved performance. The Pearson Product Moment Correlation Coefficient value of  $r_{xy}=0.71$  further reinforces the finding that there is quite a strong linear relationship between performance and enrolment.

Further analysis by a linear regression method was used to determine the strength of the relationship (Table 10)

**Table 10: Linear Regression Model**

Model	B coefficient	S.E.	t	Sig.
Intercept	3.48	5.350	0.786	0.520
Overall performance mean index	5.86	0.933	5.587	0.0001

**Source:** SPSS output

Note: Dependent variable- average school enrolment per stream in a 4-year cycle

There is a strong significant relationship between performance and enrolment

( p value 0.0001) in that for a unit improvement in performance index, there is 5.86 times unit increase in enrolment as shown by the B-coefficient for the linear model.

$$Y = 3.48 + 5.86X$$

Where ‘Y’ is the enrolment mean and ‘X’ is the performance index. An improvement in performance leads to a better school rank and consequently an increase in enrolment. These findings are supported by the average enrolment figures given in Table 5 which shows that there is a high enrolment ratio in the top ranked category of schools than the average and low ranked ones. The results of PPMCC, One way ANOVA and Linear regression show that there is a

relationship between the school performance index and enrolment. Consequently, the null hypothesis, HO1 There is no relationship between the school performance index and enrolment is rejected.

#### **4.3.7 Discussion of the Effect of Ranking on Enrolment**

From the above findings, ranking schools according to the performance index has a direct bearing on enrolment. This study found that a unit improvement in the performance index brought about a 5.86 times unit increase in enrolment (Table 10) which concurs with the findings of Bradley *et al* (2000) that, an improvement of 10% in a schools' examination performance led to an increase of seven pupil enrolments. Lassabille *et al.* (1998) similarly found that schools whose position in value added improved in ranking gained 41% in average enrolments. While enrolment increased in the top ranked schools, it fell in the low ranked schools, because as pointed out by Adnet & Davies (2000), an increase in attainment may be accompanied with a decrease in equity as parental preferences re-allocated positive pressure away from lower ranked schools.

It has also been established that, while most of the top ranked schools had a mean enrolment of 40 and above students per stream, most low ranked schools had an enrolment mean of less than 30 students per stream. The top ranked schools had a higher demand than the low ranked schools. This also meant that they attracted better quality KCPE graduates and had numerous follow up applicants waiting to join the school. This is in itself a kind of cream skimming at the point of admission. According to Wilson (2001), cream skimming at the point of admission meant the higher the ability of students admitted. This leads to better out-put and a higher school's relative position in the league tables. This finding concurs with the observation of Kellaghan (1996) that the publication of good results may lead to schools that are perceived to be doing well to attract



students of high ability. Those perceived to be doing badly will be left with lower achieving students. These findings also agree with those of a study carried out in England (Woods and Levacic, 2002) which show that government policy has arguably pre-empted parental preference through adoption of national targets and the publication of school performance (league) tables. These have a strong focus on absolute levels of academic achievement of students and exert a strong influence on parental choice.

It was found that ranking made both the teachers and students to abandon low ranked schools for the top ranked ones leading to under staffing, under enrolment and under development in those schools. It caused over staffing, over enrolment and good development in the receiving schools. This agrees with Kellaghan (1996) that publication of results may lead to the transfer of more able teachers, lower morale in individual low ranked schools and create ghetto schools.

#### **4.4 The effect of ranking on students' promotion rate**

Analysis of the students' promotion rate had the limitation of the unavailability of data on repeaters as a result of which the actual promotion (survival) rates could not be worked out. This necessitated the use of Crude Grade Survival Rates in order to get a picture of the general promotion trends in the different categories of schools (formula provided in Appendix 9). To achieve this aim, head teachers were asked to complete a section of the questionnaire showing the enrolment in their schools in form I, II, III and IV during 2003-2006. This information was compiled and used to calculate the Crude Grade Survival Rates. The findings are presented at four levels: overall promotion rates, promotion rates in the low ranked schools' category, promotion rates in the average ranked schools' category and promotion rates in the top ranked schools' category.

#### 4.4.1 Overall promotion rates

In dealing with objective 2, the CGSR formula was used to determine the promotion rate in order to test the null hypotheses that There is no relationship between school performance index and enrolment. The promotion rate is presented as a fraction of 1.000.

**Table 11: Overall Promotion Rates**

Class	2003-2004	2004-2005	2005-2006	Average
Form I-II	0.995	0.986	0.985	0.989
Form II-III	0.978	0.992	0.975	0.982
Form III-IV	0.946	0.962	0.891	0.963

**Source:** Field data

There was a very high promotion rate between form I-II during the four year period of the study averaging at 0.989. The promotion rate at form II-III was lower with an average of 0.982 while form III-IV had the promotion rate of an average of 0.963. Of all the promotion rates, form III-IV had the lowest average promotion rate having lost 0.037 of the students (Table 11). This could be attributed to drop-out or discontinuation of schooling.

#### 4.4.2 Promotion Rates in the Low Ranked Category of Schools

The table below shows the promotion rate in the low ranked category of schools. The figures are presented as a fraction of 1.000

**Table 12: Promotion rates in the Low Ranked Schools**

Class	2003-2004	2004-2005	2005-2006	Average
Form I-II	0.996	0.965	0.985	0.990
Form II-III	1.000	1.000	0.990	0.997
Form III-IV	0.997	0.976	0.901	0.958

**Source:** Field data

For this category of schools, promotion rates between form I-II were slightly low averaging at 0.990 during the four years. This could be attributed to the fact that there might have been some drop-outs at this level. A plausible explanation is that some students may have enrolled in these schools in form I as they waited for vacancies in better schools, then transferred out in the second year. This trend changed during the transition between form II and III when promotion rates improved to an average of 0.997. This could be attributed to the fact that all those in form II moved on to form III. Promotion rates between form III and form IV dropped slightly to a mean of 0.958. This could indicate that some students repeated the previous class or dropped out of school. In total, this category of schools experienced an enrolment loss of 0.055 during the four years (between form I-IV, table 12). This translates into 469 students of the total 8,521 who went through these schools (Table 4).

#### 4.4.3 Promotion Rates in the Average Ranked Category of Schools

The table below shows the promotion rate in the average ranked category of schools. The figures are presented as a fraction of 1.000

**Table 13: Promotion Rates in the Average Ranked Schools**

Class	2003-2004	2004-2005	2005-2006	Average
Form I-II	0.989	0.992	0.970	0.984
Form II-III	0.964	1.000	0.979	0.981
Form III-IV	0.952	0.982	0.942	0.959

**Source:** Field data

Promotion rates between all the grades in this category of schools were higher between 2004 and 2005. Form I-II had a rate of 0.992, Form II-III had 1.000 and Form III-IV had 0.982. Generally, Form I-II had a higher average promotion rate of 0.984; followed by Form II-III with a rate of 0.981 while Form III-IV had the lowest promotion rate of 0.959. Thus promotion rates decreased as students progressed to senior classes. Compared to the low ranked schools, this category of schools had lower promotion rates between Form I-II and Form II-III, but higher promotion rates in Form III-IV. This category of schools experienced an enrolment loss of 0.076 during the four years (between Form I-IV, Table 13). This translates into 1,016 students of the total 13,571 who went through these schools (Table 4).

#### 4.4.4 Promotion Rates in the Top Ranked Category of Schools

The table below shows the promotion rate in the top ranked category of schools. The figures are presented as a fraction of 1.000

**Table 14: Promotion Rates in the Top Ranked Schools**

Class	2003-2004	2004-2005	2005-2006	Average
Form I-II	1.000	1.000	1.000	1.000
Form II-III	0.971	0.975	0.955	0.967
Form III-IV	0.887	0.928	0.830	0.882

**Source:** Field data

There was a high promotion rate between form I-II during the four year period. It is important to note that of all the categories of schools, the top ranked schools had the highest promotion rate between forms I and form II averaging at 1.000. This could be due to high demand for form I places in these schools; there was hardly repetition at form I since students had to move as a block to create room for new entrants. The high numbers in form II could be attributed to repeaters swelling up the number of those in this class making the form III class to shrink. It has been observed that since the Ministry of Education has been keen on returns for the form III enrolment in all schools, most repetitions are now enforced at the form II level which might give the false impression of 100% promotion rate. It is equally notable that average promotion rates between forms II – III and forms III - IV were the lowest compared to other categories of schools. This may not just be attributed to dropouts since form II-III promotion experienced a loss of 0.033 while form III-IV experienced a loss of 1.18 during the four years (Table 14). Like the average ranked schools, promotion rates were significantly high for all the grades during 2004-2005 when

there was a high alert about forced repetitions. This category of schools experienced a cumulative enrolment loss of 15.1% during the four years (Table 14). This translates into 4,829 students of the total 31,978 who went through these schools (Table 4). The different promotion rates in the different categories of schools coupled with varied enrolment loss in these categories lead to the rejection of the null hypothesis,  $H_0$  There is no relationship between the school performance index and students' promotion rate.

#### **4.4.5 Discussion of the Effect of Ranking on Promotion Rates**

These findings agree with Eshiwani (1993) that showed that for the 1978/82 cohort there was a drop out rate of 0.3% and 0.5% for the first and second year of secondary schooling in Kenya. There are still indications that, the low promotion rate between form I-II was as a result of some students using such schools as a stepping stone to better schools which was experienced in form II enrolment. The average promotion rate for the form II-III was quite high unlike in the average and top ranked schools. The improvement in the promotion rate at this level can be attributed to the inflow of students from the average and top ranked schools which experienced an enrolment loss at this level and to repetitions given that the form III-IV promotion rate was low. These findings on promotion rates concur with studies carried out by the Association for Development of Education in Africa (ADEA, 2002) which indicated that there was little doubt that assessment data published in league tables that showed how well or poorly schools were doing impacted on the behaviour of the schools.

In an effort to maintain a good performance index, to safeguard their mean scores or improve their ranking in league tables the average and top ranked schools engage in discontinuation of weak students. The very low promotion rate for the form III-IV conform to findings of Hickman, Henrick & Smith (2002) and Kivilu (2004) that in response to specific performance measures, schools engaged in "cream skimming" by excluding the weak students from sitting for

examinations. It's likely that the weak students were discontinued or asked to repeat and the majority could be ending up in the low ranked schools. This is best explained by the fact that in 2005 when the average form IV enrolment was the highest during the four years in the top ranked schools, performance index was the lowest (Table 8, Table 18 and figure 10). The following year, enrolment in form four went down and performance shot up.

#### 4.5 The Effect of Ranking on Performance Trends During 2003-2006

To assess the effect of ranking on performance trends, head teachers were asked to complete a section of the questionnaire by filling in their schools' mean scores in 2003, 2004, 2005 and 2006. The data was used to determine whether ranking of schools in national examinations affected the general performance trends of individual schools or particular categories of schools. Table 15 shows the means for the different categories of schools during the four years. From the information gathered from the sample schools, the mean performance index for the four years was 5.16.

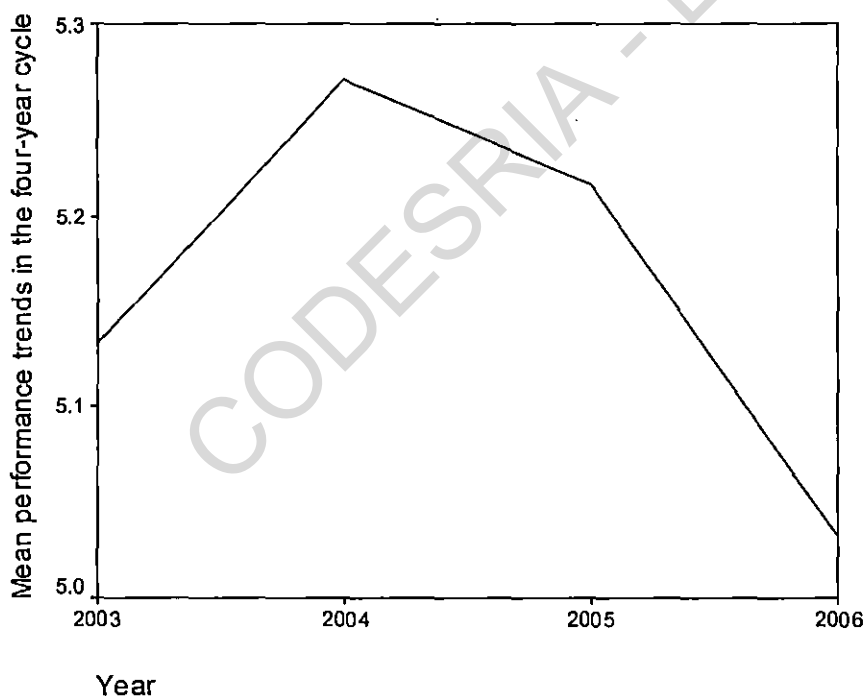
**Table 15: KCSE Mean Scores for the different school categories**

School performance category	School performance index-2003	School performance index-2004	School performance index-2005	School performance index-2006	Mean 2003-2006
Low ranked	3.85	4.05	4.03	3.81	3.94
Average	4.99	5.04	5.09	4.65	4.94
Top ranked	6.56	6.73	6.53	6.64	6.62
Mean	5.13	5.27	5.22	5.03	5.16

**Source:** Field data

General performance trends for the four –year period indicate that there was improved performance during 2003-2004. All the categories of schools contributed to this improvement because they all registered a positive index during this period. There was a slight drop in 2005 probably caused by low and top ranked schools whose mean scores dropped. Performance in the district took a nose dive in 2006 when the mean score was the lowest in the four years. This was as a result of negative performance index realised by the low and average ranked schools. These trends are further clarified by the table of mean summaries and individual performance category graphs (Tables 16, 17, 18 and Figures 8, 9 and 10).

The graph below shows the general performance trends based on the means shown in table 15 above.



**Figure 7: Graph showing general performance trends**



#### 4.5.1 Performance Trends in the Low Ranked Category of Schools

Table 16 shows the performance of the low ranked schools during 2003-2006.

During the four year period, trends in mean score were as follows: 3.85, 4.05, 4.03 and 3.81 for years 2003, 2004, 2005 and 2006 respectively.

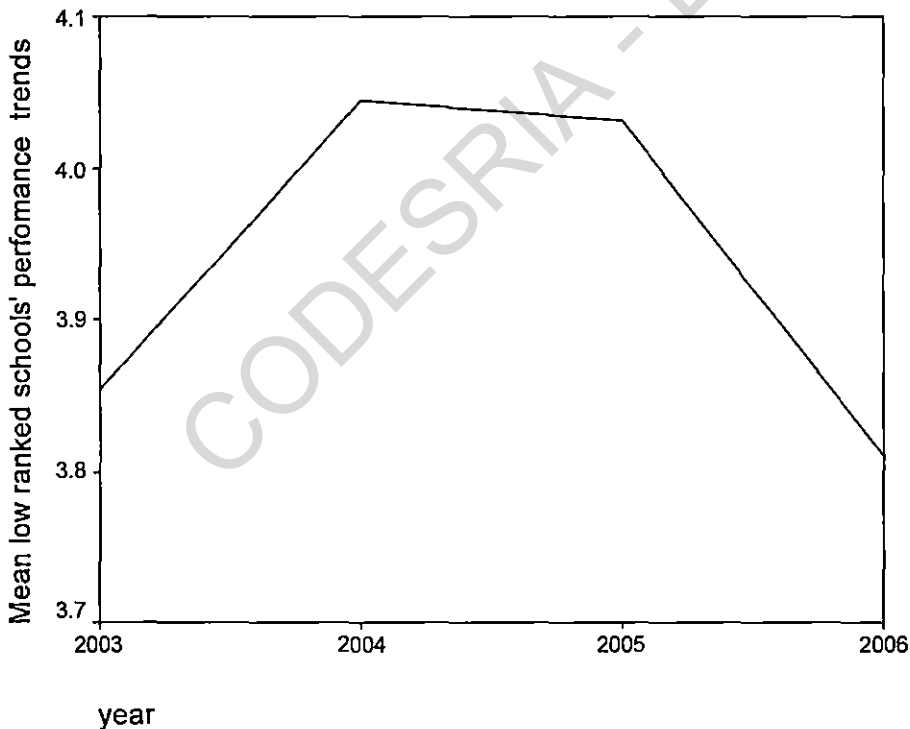
**Table 16: Low Ranked Schools' Mean Scores**

Sch. Code No	2003	2004	2005	2006	Mean
1	4.04	4.14	3.92	3.72	3.96
2	3.62	3.76	3.56	3.53	3.62
3	3.68	3.33	3.52	2.63	3.29
4	3.41	4.07	3.77	3.56	3.70
5	3.83	4.58	4.36	3.58	4.09
6	3.50	3.94	4.28	4.52	4.06
7	4.00	4.27	3.92	3.86	4.01
8	3.38	4.42	4.50	4.58	4.22
9	3.76	3.77	4.57	3.52	3.91
10	4.18	4.00	3.82	3.94	3.99
11	4.60	4.05	4.15	3.95	4.19
12	4.24	4.21	4.03	4.31	4.20
Mean	3.85	4.05	4.03	3.81	3.94

**Source:** Field data

All the schools in this category had fluctuations in performance. Except for two schools which maintained an upward trend, all the others had unpredictable performance patterns and were bound to either improve or drop. The highest mean score for this category of schools was 4.05 in 2004 while the lowest was 3.81 in 2006. With mean scores of 3.85, 4.05, 4.03 and 3.81 for years 2003, 2004, 2005 and 2006 respectively, there was hardly any difference in performance during the four years. This implies that ranking of schools in national examinations hardly improved the performance of schools in this category all of which remained poor performing.

Figure 8 shows the performance trends for this category of schools. There was an improvement in performance in 2003-2004 when this category of schools realized the highest mean score during the four years. From 2004-2005 there was a gentle decline and a drop between 2005-2006.



**Figure 8: Performance trends for the low ranked category of schools**

#### 4.5.2 Performance Trends in the Average Ranked Category of Schools

Table 17 shows the average ranked schools performance data for the four years. During the four year period, trends in mean score were as follows: 4.99, 5.04, 5.09 and 4.64 for the years 2003, 2004, 2005 and 2006 respectively.

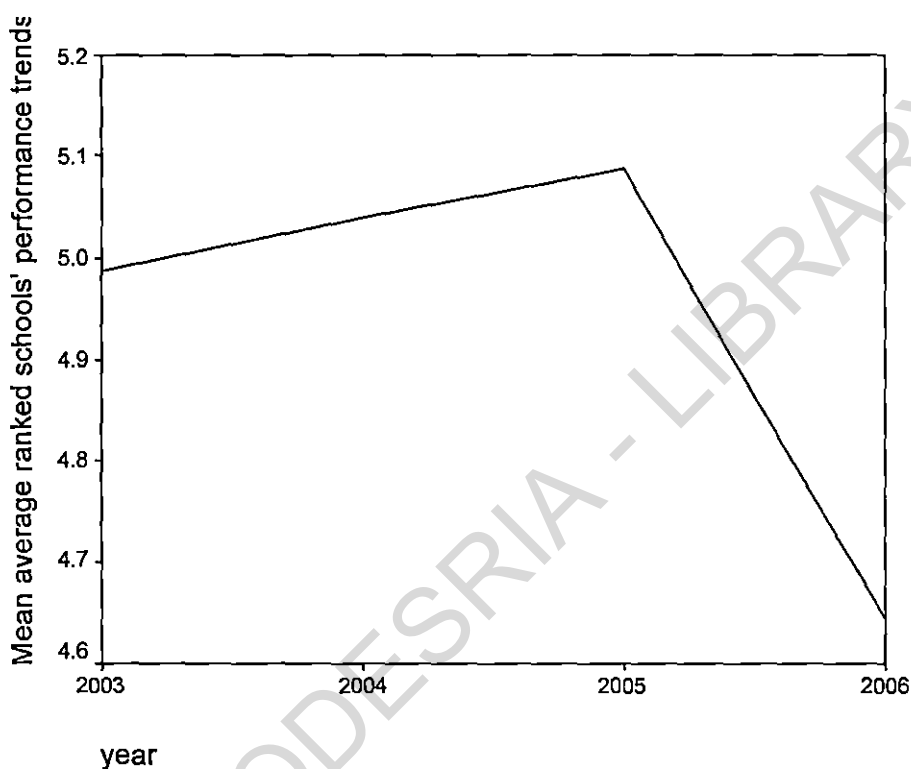
**Table 17: Average Ranked Schools' Mean Scores**

Sch. Code No	2003	2004	2005	2006	Mean
1	5.34	5.46	5.25	4.46	5.13
2	5.78	4.94	5.63	3.58	4.98
3	5.20	4.75	4.53	4.47	4.74
4	4.82	6.00	5.99	5.31	5.53
5	4.81	4.63	4.29	3.93	4.41
6	3.92	4.20	4.60	4.61	4.33
7	4.59	4.33	5.49	4.78	4.80
8	5.25	5.76	5.11	4.71	5.21
9	5.13	5.46	4.92	5.59	5.28
10	5.50	5.36	5.31	5.14	5.33
11	4.44	4.61	4.88	4.40	4.58
12	5.04	4.97	5.05	4.77	4.96
Mean	4.99	5.04	5.09	4.64	4.94

**Source:** Field data

These schools remained average as indicated by the mean scores 4.99, 5.04, 5.09 and 4.64 for the years 2003, 2004, 2005 and 2006 respectively. Only one school maintained a positive performance index while the others experienced constant fluctuations (Table 17).

Figure 9 shows the performance trends for this category of schools. Average ranked schools had a steady improvement in performance between 2003-2005 and then experienced a sharp drop in 2006.



**Figure 9: Performance trends for the average performing category of schools**

#### **4.5.3 Performance Trends in the Top Ranked Category of Schools.**

Table 18 shows the top ranked schools performance data for the four years. During the four year period, trends in mean score were as follows: 6.56, 6.73, 6.53 and 6.64 for the years 2003, 2004, 2005 and 2006 respectively.

**Table 18: Top ranked schools' mean scores**

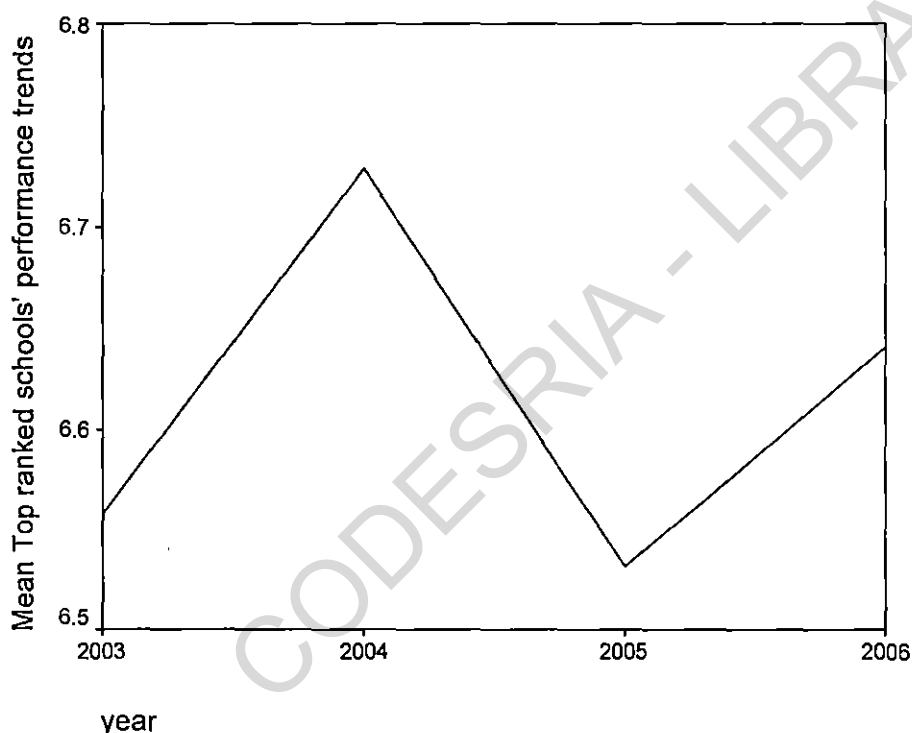
Sch. Code No.	2003	2004	2005	2006	Mean
1	6.83	7.17	6.92	6.89	6.95
2	6.36	6.05	5.84	4.71	5.74
3	5.17	5.74	5.10	6.74	5.69
4	6.17	6.53	6.58	6.91	6.55
5	8.17	8.30	7.83	7.72	8.01
6	7.85	7.41	7.51	8.16	7.73
7	5.63	6.25	5.67	5.69	5.81
8	6.02	6.50	6.26	6.05	6.21
9	5.92	6.78	6.65	6.54	6.47
10	6.58	6.16	5.95	5.69	6.10
11	7.90	8.11	8.04	8.71	8.19
12	6.10	5.74	6.02	5.89	5.94
Mean	6.56	6.73	6.53	6.64	6.62

**Source:** Field data

It can be noted that in 2005, the form four enrolment mean in top ranked schools went up from 35.66 to 41.43 (Table 8) and coincidentally, the performance index went down. Information on promotion rates also indicates that 2005 had the highest promotion rate between form III and form IV during the four years averaging at 92.8 % (Table14). The high grade promotion rate coupled with the increased form IV enrolment means that most schools

in this category increased on the number of their candidates by registering most of them leading to a lower mean performance index. Therefore unsurprisingly in 2006, enrolment in form IV was low. Similarly the promotion rate between form III and form IV was low and this led to a higher mean performance index. Ranking did not impact on the performance of top ranked schools in any way as they remained within their top rank bracket as shown by mean scores 6.56, 6.73, 6.53 and 6.64 for the years 2003, 2004, 2005 and 2006 respectively.

Figure 10 presents the performance trends for this category of schools. This category of schools had a zigzag kind of performance trend with an improvement in 2004, a drop in 2005 and then an improvement in 2006.



**Figure 10: Performance trends for the top ranked category of schools**

#### 4.5.4 Statistical Test on Performance Trends

In dealing with objective 3, One way Analysis of Variance (tested at 0.05 level of significance) was statistical tool used to test the null hypothesis, HO3 There is no significant difference in the performance trends of the various categories of secondary schools.

It can be deduced from Table 15 that, the highest mean score realized was 5.27 in 2004; the lowest was 5.03 in 2006. Table 19 presents the Analysis of Variance on mean individual schools' performance trends for each of the four years.

**Table 19: ANOVA Table on School Performance and Year**

	Sum squares	df	Mean squares	F	sig
Between groups	1.175	3	0.392	0.230	0.875
Within groups	238.042	140	1.700		
Total	239.217	143			

**Source:** SPSS output

Analysis by ANOVA confirms that there was no significant difference in the overall mean performance index of each of the schools during each of the four years (p value 0.875, at 0.05 level of confidence, Table 19). The calculated F value of 0.230 is less than the critical value of 2.60. Schools remained static in their performance during the four years.

Table 20 presents the Analysis of Variance on mean performance trends for the different categories of schools.

**Table 20: ANOVA Table on Performance and School Rank Categories**

	Sum squares	df	Mean squares	F	sig
Between groups	51.071	2	25.535	65.997	0.0001
Within groups	12.768	33	0.387		
Total	63.839	35			

**Source: SPSS output**

Performance during the four year period shows overall mean score of 3.94, 4.94 and 6.62 for the low, average and top ranked schools respectively (Table 15). Further analysis by ANOVA shows that there was a significant difference in mean performance index among the three categories during the four years (p value 0.0001, at 0.05 level of confidence, Table 20). The F statistic of 65.997 is greater than the critical value of 3.23. These findings lead to the rejection of the null hypothesis, HO3 There is no significant difference in the performance of the different categories of schools.

#### **4.5.5 Discussion of the Effect of Ranking on Performance Trends**

The mean scores were 3.94, 4.94 and 6.62 for the low, average and top ranked schools respectively. From the findings of this study ranking affected performance trends among the different categories of schools but did not significantly affect the trends of the individual schools. These findings concur with those of Bradley and Taylor (2000) that the top ranked schools



remained in the high performing category while the low ranked schools remained in the poor performing category thus widening the gap between the high and low achievers. Such findings are also similar to those of Lassabille *et al.* (1998) that showed the gap between the best and worst schools had widened. The same argument is expressed by the Office for Standards in Education (OFSTED, 1999) which found that performance trends indicated a widening gap between the performance of pupils in the highest and lowest ranked schools in England. Performance in the low ranked schools declined from 3.85 in 2003 to 3.81 in 2006, while in the top ranked schools the mean performance index improved from 6.56 in 2003 to 6.64 in 2006. West and Pennel (2000) had also earlier found that, whilst the average GCSE score increased from 33.1 to 35.9 between 1993-1997, the top 10% of the cohort of pupils experienced an increase of 4.4 and the bottom 10% of the cohort declined from 0.8 to 0.7.

#### **4.6 Teachers' and Students' Perception of Ranking**

The teachers' and students' perception of ranking were determined by use of a variety of open and closed ended questions which sought to establish their own assessment of their school position in the 2006 KCSE results and effects related to their schools' ranks. The choice of this particular year was influenced by the fact that it was the latest examination year and the results were still fresh in the respondents' mind. In addition, it was assumed that most of the teachers who were involved in the preparation of the candidates were most likely to be still in their stations. The questions also tried to establish what they thought was the most important factor that contributed to their school rank in that particular year, how the resultant school rank affected their self esteem, progression and their schools' relationships with other schools. In addition, the respondents were expected to state whether they approved or disapproved of ranking and if this practice had improved results. The analysis of perceptions was done at the levels of the respondents (head teachers, teachers and students). In dealing with objective 4,

the chi-square statistical test (at 0.05 level of significance) was used to test the null hypothesis, HO4. There is no differences among the teachers and students in their perceptions of ranking.

#### 4.6.1 Respondents' views on the ranking of schools using national examination results

Respondents were asked to state whether they approved or disapproved of national ranking. Those who approved were the majority at 146 (57.9%) of the 252 respondents. The approval rating was highest among students at 90 (83.33%) as compared to 34 (31.48%) of the teachers and 22 (61.11%) of the head-teachers (table 21).

**Table 21: Respondents Views on Ranking**

Statement	Head teachers	Teachers	Students	Total
Approves	22	34	90	146(57.9%)
Disapproves	14	74	18	106(42.1%)
Total	36	108	108	252(100.0%)

Source: Field data

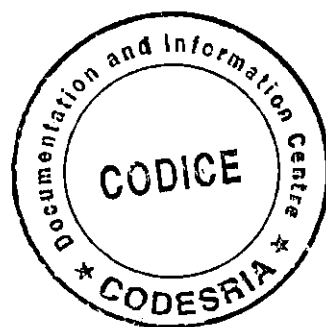
Chi-value 59.75 df 2 p value 0.0001

Analysis by chi-square shows that there was a significant difference in the stand taken on ranking taken by head teachers, teachers and students (p value 0.0001, table 21) at 0.05 level of significance. The chi value of 59.75 is greater than the critical value of 6.00. Consequently, this led to the rejection of the null hypothesis "There are no significant differences among the teachers and students in their perception of ranking". While the head teachers and students approved of ranking, the teachers did not. Most students felt that ranking encouraged positive

competition among schools and students which was bound to improve performance. It also helped weak learners and low performing schools to identify their weaknesses and map out strategies for improvement. It also provided informed choice to the parents and students on which schools to choose. Other proponents of ranking said it provided a score card upon which schools evaluated their previous and current performance so as to arrest falling standards and lay down strategies for improvement like bench-marking. This helped schools to identify and strengthen their weaker areas leading to improved performance. The spiral effect of improved performance was a better position in the school rank, increased self-esteem by the students and teachers, increased enrolment and attraction of better quality KCPE products.

Those who disapproved felt that it made both the teachers and students to abandon low ranked schools for the top ranked ones leading to under staffing, under enrolment and under development in those schools. Conversely it caused over staffing, over enrolment and infrastructural development in the receiving schools. It made weak students to be registered in the low ranked schools further lowering their mean scores and affecting promotions to senior positions. It also resulted in cheating to maintain a positive improvement index and false rank, low self esteem among some students from low ranked schools and general indiscipline.

There were those who felt that ranking was unfair because competition was skewed by a number of factors for example, schools did not have level playing ground as they were diversified in terms of availability of resources and the entry behaviour of the students. It led to teachers being overworked. Some schools and students resorted to unorthodox ways of achieving good results like teaching exam oriented materials in order to maintain or improve their ranking. It also



violated some of the national educational objectives like education for all because of enforced repetition that sometimes resulted in dropping out of school altogether.

#### 4.6.2 Factors that Contributed to the School Position in 2006 KCSE Results.

Factors that were found to directly affect school ranking were teachers, students, the school administration, the community and the government. The majority of the respondents (94, 37.3%) felt that the students contributed greatly to the school rank. Teachers were named by 75 (29.8%) of the respondents. Only 4 (1.6%) said the government played a role in the ranking (Table 22).

**Table 22: The Factor that Contributed to the School Position**

Statement	Head teachers	Teachers	Students	Total
Teachers	14	30	31	75(29.8%)
Students	13	36	45	94(37.3%)
School administration	5	28	26	59(23.4%)
The community	4	12	4	20(7.9%)
The government	-	2	2	4(1.6%)
Total	36	108	108	252(100.0%)

**Source:** Field data

In cases where there was poor performance, it was blamed on students who had very low ability on admission because of very low entry marks. It was reported that, parents insisted on admitting students with the lowest KCPE marks in low ranked schools but struggled to take those with better marks to other schools. Some of the candidates stayed away from school after registration and only resurfaced to sit for examinations. Most district schools were co-educational as well as

day schools. As a result, student love affairs were prevalent in most of these schools which divided the attention of the candidates.

According to the responses received, the communities were reported to have failed to develop and equip the schools. They were uncooperative, and encouraged laziness among the students. In addition, they condoned indiscipline and failed to pay fees and support school activities. Students blamed the poor performance on fellow students being uncooperative, not following instructions, lacking commitment, being generally undisciplined and creating unrest in the schools. The students lacked a competitive spirit and self drive. In addition, they had poor study habits, were generally lazy and undisciplined. They were blamed for unrest in some schools which interfered with performance. The government was blamed for lack of financial resources in some schools because it was felt that it had not provided adequate bursary funds. Incidentally, the teachers were not mentioned by both students and teachers in relation to poor performance and a low school rank.

Where good performance was realised, the teachers were complemented for their hard work and sacrifice which resulted in a positive improvement index in some schools. This was because of their support and guidance of students, early syllabus coverage through the teaching of extra lessons that paved way for thorough revision, rigorous testing and marking, and general selflessness. The school administration not only motivated teachers and learners but also provided a conducive environment for learning and teaching.

#### 4.6.3 Effect of the School Rank on the Respondents' Self-esteem

A total of 57 (22.6%), most of who were students said their school rank made them feel superior; 44 (17.5%) said it made them feel inferior while the majority 151(59.9%); most of who were head teachers and teachers said it made them feel neither superior nor inferior (Table 23). This shows that generally, the school rank has no effect on the self esteem of the respondents.

**Table 23: Effect of School Rank on Self-esteem**

Statement	Head teachers	Teachers	Students	Total
Superior	3	11	43	57 (22.6%)
Inferior	3	14	27	44(17.5%)
Neither	30	83	38	151(59.9%)
Total	36	108	108	252(100.0%)

**Source:** Field data

Table 23 shows that, while the majority of the head teachers and teachers experienced no effect on their self esteem, most of the students felt superior as a result of their school rank. Those who felt superior might be the members of the schools which maintained a positive improvement index during the four years and were therefore proud of their positions. This shows they were proud of being associated with what they considered good results. The majority and most of who were head teachers and teachers, felt that the school rank had no effect on their self esteem because they regarded their role in these schools as a duty. A smaller percentage of 44 (17.5%)

felt inferior showing that they did not regard teaching or enabling students to perform well as being good enough.

#### 4.6.4 The Effect of the School Rank on Respondents' Progression

This study also sought to establish teachers' and students' perceptions of how their schools' ranks affected their progression in terms of promotions for the teachers and promotion to the next level of education for the students. The majority of the respondents 118 (46.8%) felt that their school rank determined to a large extent whether they were promoted or passed KCSE. Those who felt that their school rank decreased or had no effect on their progression were 65 (25.8%) and 69 (27.4%) respectively.

**Table 24: Effect of School Rank on Progression**

Statement	Head teachers	Teachers	Students	Total
Increases chance	14	25	79	118(46.8%)
Decreases chance	13	34	18	65(25.8%)
No effect	9	49	11	69(27.4%)
Total	36	108	108	252(100.0%)

**Source:** Field data                          Chi value 60.23    df 4    p value 0.0001

There was a significant difference in the responses of the head teachers, teachers and students in their perceptions of how the school rank affected their progression (p value 0.0001, Table 24) at 0.05 level of significance. The chi value of 60.23 is greater than the critical value of 9.49. Consequently, this led to the rejection of the null hypothesis "There are no significant differences among the teachers and students in their perception of ranking". Generally, the majority of the

students felt that their school rank increased their chance of success in KCSE while the majority of teachers felt that the school rank had no effect on their promotion.

#### 4.6.5 The effect of the School Rank on Inter-school Relationship

The majority of the respondents 147(58.3%) felt their school rank earned their school respect from other schools, 61(24.2%) said it earned their schools disrespect from other schools while the minority 44(17.5%) said it had no effect on their inter-school relationship.

**Table 25: Effect of School Rank on Inter-school Relationships**

Statement	Head teachers	Teachers	Students	Total
Respect	20	51	76	147(58.3%)
Disrespect	8	29	24	61(24.2%)
No effect	8	28	8	44(17.5%)
Total	36	108	108	252(100.0%)

**Source:** Field data

Chi-value 16.71 df 4 p value 0.002

Analysis by chi-square shows that there was a significant difference in the perceptions of the head teachers, teachers and students on the effect of the school rank on their schools' relationship with other schools (p value 0.002, Table 25) at 0.05 level of significance. The chi value of 16.71 is greater than the critical value of 9.49. Consequently, this led to the rejection of the null hypothesis "There are no significant differences among the teachers and students in their perception of ranking".



Respondents seemed to unanimously agree that being in a school that performed well in KCSE earned their schools respect from other schools implying that it is prestigious to be in a what they considered good performing schools. Despite being in average and low performing schools, some respondents were still proud of their performance in the 2006 KCSE examination results. Probably they realized an improvement that they were proud of the school rank and classification notwithstanding. However, a significant number felt that their school ranks earned their schools disrespect from other schools.

#### **4.6.7 Factors that should be considered in the Ranking.**

Respondents were asked to suggest any other factors that could be used in ranking schools and students in national examinations. From the study, 50 (19.8%) of the respondents felt that there should be use of continuous assessment tests, 39 (15.5%) recommended the use of entry marks at KCPE and value added at the end of form four and extra –curricular activities while 37(14.7%) wanted the number of candidates put into consideration during ranking and 23 (9.1%) of the respondents offered no suggestion (Table 26).

**Table 26: Other Suggested Factors for Consideration in Ranking**

Statement	Head teachers	Teachers	Students	Total
Extra curricular activities	4	14	21	39(15.5%)
Entry and value added	9	25	5	39(15.5%)
Available resources	4	8	5	17(6.7%)
Level of wastage	-	2	1	3(1.2%)
Do regional ranking	1	2	4	7(7.8%)
Continuous assessment	6	15	29	50(19.8%)
Just rank students	5	10	7	22(8.7%)
Consider discipline	1	5	5	11(4.4%)
No suggestion	4	8	11	23(9.1%)
Number of candidates	2	16	19	37(14.7%)
Consider gender	-	3	1	4(1.6%)
Total	36	108	108	252(100.0%)

**Source:** Field data

Most of the head teachers and teachers formed the bulk of those who favoured the use of entry marks and value added. It was important to assess what value a school had added to a student given the KCPE mark during ranking since some schools put in little effort and added very little value yet they received all the glory while others went unrecognized even after adding a lot of value to very low KCPE marks.

Most of the students wanted the use of continuous assessment tests. This is because students were tested and graded throughout the four years they were in school so it was only fair that their cumulative achievement during this entire period of study forms part of the final assessment.

A significant number of teachers and students also suggested that extra curricular activities because they contributed to the building of an all round individual. This would also facilitate nurturing of talent which had been stifled by some parents and schools in favour of the academic work. In addition, even schools considered as non-performing because of the emphasis on the academic would also get a chance to show where they can excel as talent is equally important to the development of the nation.

The number of candidates entered for the examination was the other key factor for consideration. This is because some schools registered too many candidates while others cut down on their numbers through repetition and registration in other centres in order to attain a positive mean score. This would also be an indirect way of checking wastage in schools. The levels of wastage and gender consideration were the least favoured factors (Table 27).

Respondents were asked to generally assess other the effects of ranking by use of a likert scale. Head teachers and teachers had a six item likert scale while the students had a two item likert scale.

Teachers and students were asked whether ranking of schools and students destroyed their morale by creating jealousy. A summary of their responses shows that, 123 (48.8%) agreed, 121 (48.0%) disagreed, while only 8 (3.2%) were undecided (Table 27).

**Table 27: The Effect of Ranking on Morale and Jealousy**

Statement	Head teachers	Teachers	Students	Total
Disagree	17	25	78	121(48.0%)
Undecided	3	3	2	8(3.2%)
Agree	16	80	28	123(48.8%)
Total	36	108	108	252(100.0%)

**Source:** Field data

Most of the respondents who agreed were teachers while those who disagreed were students. This means that, while the students felt that ranking did not destroy their morale by creating jealousy, the teachers on the other hand felt that ranking actually did just that and this explains why they had disapproved of ranking.

Respondents were asked to say to what extend they felt that ranking inculcated a spirit of competition and hard work among schools. A few 34 (13.5%) disagreed and the majority 211

(83.7%) agreed. Only 7(2.8%) were undecided (Table 28). From the response of the overwhelming majority ranking indeed had the positive effect of creating competition and hard work.

**Table 28: The effect of ranking on competition and hard work**

statement	Head teachers	Teachers	Students	Total
Disagree	4	24	6	34(13.5%)
Undecided	1	4	2	7(2.8%)
Agree	31	80	100	211(83.0%)
Total	36	108	108	252(100.0%)

**Source:** Field data

The spirit of competition and hard work is clearly depicted by what is happening in most secondary schools where teachers and students have doubled their efforts in order to improve their ranking in the local league tables. This has been done through bench marking, extra teaching and remedial lessons for early completion of the syllabus and rigorous revision.

When asked to show to what extent they agreed or disagreed with the suggestion that results could be improved by promoting teachers who excelled in their respective subject areas irrespective of school rank, 74(51.4%) of the respondents and most of who were teachers disagreed. Those who strongly agreed and most of who were head teachers were 65(45.1%). Those who were undecided were only 5 (3.5% Table 29).

**Table 29: Improvement of Results and Teachers' Promotions**

Statement	Head teachers	Teachers	Total
Disagree	11	63	74 (51.4%)
Undecided	1	4	5 (3.5%)
Agree	24	41	65 (45.1%)
Total	36	108	144(100.0%)

**Source:** Field data

From the findings, results cannot be improved by promoting teachers who excel in their respective subject areas irrespective of school rank.

Respondents were also asked to say to what extent they agreed or disagreed with the feeling that promotions in the service were based on the mean score of ones school in national examinations. Generally, respondents disagreed with this observation as shown by the fact that 76(52.8%) disagreed and only 50 (34.7%) agreed but 18 (12.5%) of the respondents were undecided (Table 30).

**Table 30: Influence of Ranking on Promotion**

Statement	Head teachers	Teachers	Total
Disagree	23	53	76(52.0%)
Undecided	3	15	18(12.5%)
Agree	10	40	50(34.7%)
Total	36	108	144(100.0%)

**Source:** Field data

This shows that promotions in teaching service are not necessarily based on the performance of ones school in national examinations because there are other factors that come into play like experience and number of years in the service.

Respondents were asked to say to what extend they agreed that results had been improved by promoting teachers from top ranked schools to headship positions in low ranked schools. A total of 96 (66.0%) disagreed, while 39 (27.3%) agreed but 10(6.0%) were however undecided. Half of the head teachers disagreed while most of the teachers disagreed (Table 31).

**Table 31: Ranking and headship**

Statement	Head teachers	Teachers	Total
Disagree	22	73	95(66.0%)
Undecided	2	8	10(6.9%)
Agree	12	27	39(27.3%)
Total	36	108	144(100.0%)

**Source:** Field data

That an overwhelming majority refuted this shows that results had not been improved by promoting teachers from top ranked schools to headship positions in low ranked schools.

Finally, respondents were asked to state to what extend they felt results had been improved by ranking schools and students in national examinations. A total of 67 (46.5%) respondents, most of

who were teachers disagreed, 69 (47.9%) most of who were head teachers agreed while only 8 (5.6%) of the respondents were undecided (Table 32).

**Table 32: Ranking and improvement of results**

Statement	Head teachers	Teachers	Total
Disagree	14	53	67(46.5%)
Undecided	1	7	8(5.6%)
Agree	21	48	69(47.9%)
Total	36	108	144(100.0%)

**Source:** Field data

The difference between those who disagreed and agreed is 2(1.39%) implying that, there is no significant relationship between ranking and performance as the respondents are divided on whether ranking has actually improved results.

Ranking is a good practice that can be upheld. However, other factors suggested should be incorporated to ensure that schools produce all round students who can fit in society and not just academic robots. This will also ensure that the practice does not de-motivate some schools and students.

#### **4.6.8 Discussion of Findings on The teachers' and students' Perception of Ranking**

From the findings, the majority of respondents (57.9%) approved of it of ranking. An equally large number (42.1%) disapproved of it (Table 21). The majority who approved of ranking felt that it was the perfect performance measure which also stimulated competition that led to improvement in performance. It kept teachers and students on their toes as it helped them to



evaluate themselves and step up the pressure of hard work. This agrees with James (1998), that the issue of assessment is critical to the functioning of schools as it served as a motivator of student performance. It also serves the function of providing a feedback to the teacher and communicates to the students, parents and others what had been learnt. Similarly, it agrees with Somerset (1987) who adds that the publication of mean performance statistics for each school and for each district in the league tables made it possible for schools to see where they stood with respect to other schools in the district and for districts to compare themselves with other districts. Proponents of ranking also felt that ranking of schools and students provided informed choice to the parents and students on which schools to choose which equally agreed with the findings of Burgess *at al* (2002).

Those who disapproved of ranking said that it was unfair because competition was skewed by a number of factors. Schools did not have level playing ground as they were diversified in terms of availability of resources and the entry behaviour of the students which is in line with Kellaghan (1996) and Ndago (2004). Other opponents of ranking also felt that, in order to maintain or improve their ranking teachers were over-worked. Some schools and students resorted to unorthodox ways of achieving good results like cheating and teaching exam oriented materials. This concurs with IPAR (2004), that ranking in national examinations at the individual student and the school level had resulted in fierce competition which sometimes led to departure from teaching to preparation for passing examinations. According to Kellaghan & Greaney (1996), at a general level, high stakes were associated with malpractice because in their effort to obtain high grades. Students and sometimes teachers resorted to various forms of cheating designed to give a candidate unfair advantage over others. This took many forms including copying from other

students during examinations, collusion between students and supervisors, use of material smuggled into the examination rooms and purchasing of examination papers.

On factors contributing to the school rank, the school administration was rated positively by 59 (23.4%) of the respondents, for being instrumental in contributing to the school position through motivation of teachers, creating team work and a conducive environment for teaching and learning. The Report of the Provincial Working Committee on the Improvement of Education in Western Province (1998) similarly noted that, there was motivation in some schools by the PTA members who bought and gave awards to performing school teachers and students in order to stimulate hard work. In Chile, there was a clear cut motivation practice where the schools were ranked within each group (student population, socio-economic status of the community where the school was based whether the school were rural or urban) according to the score index and awards given to teachers of schools in that order to be divided among themselves according to hours worked (McMakin, 2000).

A total of 19.8% of the respondents, most of who were students, recommended the use of continuous assessment tests (table 26). This suggestion agrees with the practice in Tanzania and New South Wales where the examination system at the secondary school level consists of continuous assessment and final examinations (URT, 2002; Board of Studies-NSW, 2008). The other factors that were heavily favoured were the use of co-curricular activities (15.5%) and the use of the KCPE entry mark and value added measure at the end of form IV (15.5%). This concurs with the grading system in England where before 2003, the league tables were based only on raw output— unadjusted test scores—and information was provided at the school average level but since then, the league tables have also included indicators of the value added by the school

between key stages. The value added measure is used to describe the difference between 'materials brought in and the finished product' and thus measures the value added by the production process (Wilson, 2003). This is the measure also recommended by Ndago (2004) when he suggested that instead of ranking schools using the percentage of candidates who attained a certain level of performance, we should use deviations ( positive or negative ) of the KCSE grades from the KCPE mark. This observation is in line with the findings of the study where 39 (15.5%) of the respondents suggested the use of entry marks at KCPE and value added at the KCSE.

Additionally, the number of candidates, available resources, regional ranking, level of wastage were suggested for consideration during ranking students. This would be in line with what happens in Chile where schools were stratified into homogeneous groups so that competition was roughly between schools that were comparable in terms of student population, socio-economic status of the community where the school was based whether the schools were rural or urban. Enrolment in the winning school accounted for 25 % of the score (McMakin, 2000).

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1 Introduction

This chapter deals with the summary of research findings, conclusion and recommendations. The purpose of the study was to investigate the effects of ranking schools and students in national examinations. The study had a response rate of 100% which is similar to that of Ngala *et al* (2005). The high response rate can be attributed to the fact that the study was carried out in secondary school and most respondents being professional colleagues were willing to take part in the study. The respondents found the topic of study equally interesting and were eager to contribute to the findings. The questionnaire was also simple and straight forward.

The objectives of this study were:

1. To determine the effect of ranking on enrolment between 2003-2006.
2. To establish the effect of the ranking on students' promotion rates.
3. To establish the effect of ranking on schools' performance trends between 2003-2006.
4. To investigate teachers' and students' perception of ranking.

The study was guided by the following Null hypotheses:

- HO1 There is no significant relationship between the school performance index and enrolment.
- HO2 There is no significant relationship between the school performance index and promotion rates.
- HO3 There is no significant difference in the performance trends of the various secondary schools.
- HO4 There are no significant differences among the teachers and students in their perception of ranking.

## **5.2 Summary of Research Findings**

This sub-section deals with the summary of the research findings as established in the previous chapter on the relationship between ranking and enrolment, promotion rates and performance trends as well as the teachers' and students' perceptions of the practice.

### **5.2.1 The Influence of the School Performance Index on Enrolment**

Ranking of schools and students in national examinations in Kenya is based on the performance index. Therefore the higher the mean score, the better the rank. This in turn influences the demand for places in top ranked schools while at the same time reducing the low ranked ones.

This study shows that during the four year cycle, of the total 54,070 students who were handled in all the 36 sample schools, the 12 low ranked schools handled only 8,521(15.75%) of the students, the 12 average ranked schools handled 13,571(25.1%) of the students while the top ranked schools handled 31,978(59.14%) of the students, which was higher than the low and average ranked schools combined (Table 4). The overall mean enrolment for the three categories of schools during the four years was 23.51, 35.58 and 43.02 for the low ranked schools, average ranked schools and top ranked schools respectively (Table 5).

The fact that the top ranked category of schools had the highest number of streams and classes can be explained by the Report of the Provincial Working Committee on Improvement of Education in Western Province (1998) which recommended the creation of 3-6 streams in established and top performing schools in order to cater for the surplus KCPE graduates. The publication of local league tables in Kenya which has led to informed parental choice has thus heightened the demand for places in the top ranked schools.

Performance index has a direct bearing on enrolment. This study found that a unit improvement in the performance index brought about a 5.86 times unit increase in enrolment. Other statistical tests used led to rejection of the null hypothesis “ There is no significant relationship between the school performance index and enrolment.”

### **5.2.2 The Effect of the School Performance Index on the Students’ Promotion Rates.**

Students’ promotion rate refers to their transition from one class to another and was calculated by use of the Crude Grade Survival Rate formula (CGSR). This was used because of the unavailability of data on repeaters. It was meant to determine whether ranking affected the percentage of those who survived into the subsequent grade during the subsequent year.

Generally, the lower classes had higher promotion rates while higher classes had lower promotion rates. However, analysis of the promotion rates for the different performance categories of schools revealed that they had different promotion trends. In the low ranked schools, the average promotion rate for the form II-III was quite high unlike in the average and top ranked schools. Of all the categories of schools, the top ranked schools had the highest average promotion rate between form I-II. Since these are schools which are constantly in high demand, the very high promotion rate means that most of the form ones who secured admission in these schools moved as a block to form II irrespective of their academic performance in order to create room for new admissions. Top ranked schools are always in high demand so those who secure places in them do everything to remain enrolled. Some constituencies are known to pay all the fees for poor students who secure places in such schools. These schools allow weak students to repeat in form II or III but rarely in form I because of the demand for form I places.

### **5.2.3 The Effect of Ranking on the Schools' Performance Trends**

The effect of ranking on the schools' performance trends was determined by obtaining the mean score of each of the schools in the study sample during each of the four years. The ANOVA statistical test was then used to determine if there was any significant difference in the performance of individual schools within each performance category and among the different categories of schools during the four years. The overall mean performance index for all the years during the four years was 5.16. Analysis by ANOVA shows that while there was no significant difference in the general performance of the schools during the four years (Table 19). There was a significant difference in the performance index among the different categories of schools (Table 20). This led to the rejection of the null hypothesis HO 3 There is no significant difference in the performance trends of the various secondary schools. These findings concur with those of Bradley & Taylor (2000) that the top ranked schools remained in the high performing category while the low ranked schools remained in the poor performing category thus widening the gap between the high and low achievers.

### **5.2.4 The Teachers' and Students' Perception of Ranking**

Teachers and students are the primary stakeholders in education and they are more affected by the posting of examination outcomes either positively or negatively more than anybody else. It was therefore found necessary to establish their perceptions of ranking. Those who approved were the majority at 146 (57.9%) of the 252 respondents. On the most important factor that contributed to the stated school position in 2006, the majority of the respondents, 37.3%, said the student was responsible. They focussed on a number of student factors especially their entry behaviour. Top ranked schools had the priority over low ranked schools during form one selection and were therefore regarded as admitting the cream of the students in the district. In addition, they had

better learning and teaching resources. Respondents felt that the system of ranking was therefore unfair in so far as it did not take into consideration the entry behaviour of the students and the facilities thus concurring with sentiments that were expressed by Ndago (2004) and Kellaghan & Greaney (2001).

The perception of the effect of ranking on self esteem received mixed reactions with the majority of the students responding that it made them feel superior and therefore the better the school rank the higher the self esteem. On the contrary, the head teachers and teachers felt that their school rank made them feel neither superior nor inferior (Table 23). The majority of students felt that their school rank determined to a great extent whether they were promoted to the next level of education. The teachers felt that it really had no effect on their progression (Table 24). The majority of respondents from all the categories were unanimous in their perception of the effect of the school rank on their schools' relationship with other schools. A good school rank earned it respect from the other schools (Table 25). Analysis of responses using the Chi square led to the rejection of the null hypothesis HO4 There are no significant differences among the teachers and students in their perception of ranking.

Both those who approved and disapproved of ranking felt that it should be improved upon by putting into consideration a number of other factors. A total of 19.8% of the respondents, most of who were students, recommended the use of continuous assessment tests (table 26). This suggestion agrees with the practice in Tanzania and New South Wales where the examination system at the secondary school level consists of continuous assessment and final examinations (URT, 2002; Board of Studies-NSW, 2008).



On other effects of ranking, most respondents affirmed that it created competition and hard work which again concurs with Somerset (1987). While ranking was highly favoured by the students, the teachers felt that it destroyed the morale of the teaching force by creating jealousy, suspicion and distrust. The study also found that results could not be improved by promoting teachers who excelled in their respective subject areas irrespective of school rank. Similarly, results had not been improved by promoting teachers from top ranked schools to headship positions in low ranked schools. The respondents' views on whether results had been improved by ranking had a mixed reaction with 46.53% disagreeing while 47.92% agreed.

Generally, the teachers and students called for a system of assessment that encompassed all the aspects instead of focusing on academic performance only. This view agrees with the argument that the grading system should capture and reward everything that the school teaches and nurtures, including talent (Marenya, 2007). This would be in line with the practice in England (OFSTED, 2003), in Chile (McMakin, 2000) and in Hungary (World Bank, 2001). Focusing on exam results ignores many other important outcomes of schooling. These include physical well being, life skills, integrity, confidence and deportment. It may also lead to a narrowing of the curriculum due to the neglect of non-examined subjects (World Bank, 2001). Using examination results for accountability purposes encourages schools to focus their efforts on borderline students, neglecting both the very able and those for whom success is unlikely. At the same time, talent in some of the students remains latent because of laying too much emphasis on academic performance. Where parents with social and/or economic advantage are encouraged to support schools with good results, morale and performance in poorer performing schools can be depressed (World Bank, 2001).

### 5.3 Conclusions

Following the main objectives of the study stated in Chapter One, the following concluding remarks can be made from the findings of the study as presented in chapter four.

This study found out that ranking has a direct effect on enrolment. This effect of ranking on enrolment is demonstrated by the gross under enrolment in the low ranked schools and in the average ranked schools; and over enrolment in the top ranked schools. The correlation coefficient of  $r_{xy} = 0.71$  demonstrates that there is quite a strong linear relationship between performance and enrolment. The use of linear regression equally shows that, for a unit improvement in performance which determines the school rank; there is a 5.86 times unit increase in enrolment.

The study also found that ranking affects promotion rates in the different categories of schools in different ways. All the categories of schools had their lowest promotion rates between forms III-IV, with the top ranked schools having the lowest average promotion rate for this level, a trend that can be attributed to drop out and discontinuation of weak students as schools strove to safeguard their performance indexes in the national examinations. Promotion rates are lower in the low ranked schools' category for the form I-II but quite high in the top ranked one. The average promotion rate for the form II-III was higher for the low ranked schools but low for the average and top ranked schools. There was a total enrolment loss of 469, 1,016 and 4,829 students from the low, average and top ranked schools respectively during the four years. This indicates that the better the school performance the higher the loss of students experienced.

Ranking affects the performance trends of the different categories of schools but not the individual schools within the categories. Analysis by ANOVA shows that there was no significant

difference in the general performance of the schools during the four years ( p value 0.875, table 19). There was however a significant difference in the performance index among the different categories of schools (p value 0.0001, Table 20). Performance per individual category of schools revealed that there was no significant difference in the mean performance index among individual schools in the low, average and top rank categories. The study found that ranking did not affect the performance of the individual schools during the four years.

On their views on ranking, most of the students 90 (83.3%) and most head teachers 22 (63.3%) approve of ranking while most of the teachers 74 (68.52%) disapprove of ranking. Students, teachers and the school administration contribute most to the school rank while the community and the government contribute the least. Despite this stand on ranking, both the teachers and students felt that ranking should be improved. They called for a system of assessment that encompassed all the aspects of the school experience instead of focusing on academic performance only. The respondents' stand on whether results had been improved by ranking had a mixed opinion with 46.53% disagreeing while 47.92% agreed.

#### **5.4 Recommendations**

From the findings of the study, it is recommended that:

- 1) Funds should be channelled towards the improvement of facilities in the low and average ranked schools in the district in order to improve performance and boost enrolment. Therefore as the Government plans to build other schools and equip them in line with Vision 2030, it should also revamp the already established but poorly equipped ones.

2) To improve on the promotion rates, the education office in each district, should closely monitor enrolment returns for all the levels of secondary schooling instead of focussing on the upper classes alone.

3) As the Ministry plans to establish a number of Centres of Excellence, It should favour schools which are under enrolled due to poor performance arising from lack of adequate facilities. This will reduce the performance gap between the low and top ranked. In other words the low ranked schools should be heavily favoured in the provision of any kind of support that can improve their performance and thus narrow the gap with the top ranked schools.

4) Ranking of schools should be based on the factors suggested by the students and teachers who are the primary stakeholders so that it does not glorify academic achievement at the expense of talent and other virtues. The use of continuous assessment tests, extra-curricular activities, entry mark and value added and the number of candidates are key factors that should be considered during the ranking of schools.

5) Schools and communities should be sensitized to the realization that a school rank provides a score card upon which schools evaluate their performance so as to arrest falling standards and lay down strategies for improvement. Therefore while a good rank should be celebrated, a poor one should invite concerted effort from all the stakeholders to improve on it.

## **5.5 Suggestions for further research**

On the basis of the findings of this study, the following recommendations are made for further research.

- 1) There should be further research on the effects of ranking schools and students in national examinations in the other parts of the country for comparative purposes.
- 2) This study limited itself to the perceptions of the teachers and students. It is therefore suggested that a study be carried out to establish the perceptions of the parents towards ranking since they are key stakeholders in education.
- 3) A study should be carried to determine the effect of ranking schools and students in national examinations on equality of opportunity in access to secondary schools. This will involve studying how ranking of secondary schools in national examinations affects the access of private as well as public primary school graduates to the different performance categories of schools.
- 4) There were indications from some respondents that ranking affects staffing. This calls for further research on the effect of ranking on staffing and deployment of teachers within the district.
- 5) There should be further research into other practices that top ranked schools engage in so as to realise and sustain improved performance.

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## APPENDIXES

### APPENDIX 1: Questionnaire for head teachers

#### Part I

Fill the following questionnaire by either ticking in the appropriate box or filling the required information.

#### School Data

- 1) a). Type of school ..... a) Public..... [    ]  
b) Private.....[    ]

b). School Category

- a) Provincial..... [    ]  
b) District.....[    ]

2. How many streams does your school have?

- a) Officially allowed streams..... [    ]  
b) Current available streams..... [    ]

3. From your records, what was your school enrolment between the year 2003 to 2007? Fill the table below.

School Enrolment by Year and Form

	2003	2004	2005	2006	2007
Form I					
Form II					
Form III					
Form IV					

4. Indicate your school's performance index (Mean Score) during the following years;

- 2003 .....
- 2004 .....
- 2005 .....

- 2006 .....

5. Indicate your school's position in the District during the following years;

- 2003 .....
- 2004 .....
- 2005 .....
- 2006 .....

**Part II:**

1) What is your assessment of your School's position in the district in the 2006 KCSE Examinations results?

- Good..... [    ]
- Average..... [    ]
- Poor..... [    ]
- Briefly comment.....

2) In your opinion, who do you think contributed most in realising the School position you have rated as "Good", "Average" or "Poor" in question 1 above (*please tick one*):

- Teachers ..... [    ]
- Students ..... [    ]
- The School Administration ..... [    ]
- The community ..... [    ]
- Government ..... [    ]
- Politicians..... [    ]

Please give reasons for your choice in the question above.....  
 .....  
 .....

3) Please read the following statements and tick the one you agree with most.



Being in –charge of a school that is ranked as above makes you feel	Superior	Inferior	Neither superior nor inferior
Being in-charge of a school that is ranked as above affects your progression by	Increasing your chance of promotion	Decreasing your chance of promotion	Has no effect on your promotion
Being in-charge of a school that is ranked as above earns your school	Respect from other schools	Disrespect from other schools	Neither respect nor disrespect from other schools

4) What is your perception of ranking of schools and students in national examinations?.....  
 .....

5) Do you approve of ranking of schools in national examinations?

Yes            No  
 [   ]        [   ]

Please give reasons for your response.....  
 .....  
 .....

6) What other ways of grading schools and students would you recommend?  
 .....  
 .....  
 .....  
 .....

7) Using the scale below, please indicate your response to each of the items that follow by ticking the number that best describes your feeling.

Statement	Strongly agree 5	Agree 4	Undecided 3	Disagree 2	strongly disagree 1
Merit ranking of schools destroys the morale of the teaching force by creating jealousy, suspicion and distrust.					
Merit ranking inculcates a spirit of hard work and competition among schools.					
Results can be improved by promoting those teachers who realize good results in their respective subject areas irrespective of the school position in the Exams.					
Promotions in the teaching service are usually based on the performance of ones school and subject in National Examinations.					
Results have been improved by promoting the teachers in schools that are ranked among the top in national examinations to headship positions in poorly performing schools.					
Results have been improved by ranking schools and students in national examinations.					

## APPENDIX 2: Questionnaire for teachers

(Fill the following questionnaire as truthfully as you can. Do not discuss or fill with a friend. You need not provide your name).

1. What is your assessment of your School position in the district in the 2006 KCSE Examinations results?

Good..... [    ]

Average..... [    ]

Poor..... [    ]

Briefly comment.....

2) In your opinion, who do you think contributed most in realising the School position you have rated as “Good”, “Average” or “Poor” in question 1 above (*please tick one*):

• Teachers ..... [    ]

• Students ..... [    ]

• The School Administration ..... [    ]

• The community ..... [    ]

• Government ..... [    ]

• Politicians..... [    ]

Please give reasons for your choice above.....

.....

.....

3) Please read the following statements and tick the one you agree with most.

Being a teacher in a school that is ranked as above makes you feel	Superior	Inferior	Neither superior nor inferior
Being a teacher in a school that is ranked as above affects your progression by	Increasing your chance of promotion	Decreasing your chance of promotion	Has no effect on your promotion
Being a teacher in a school that is ranked as above earns your school	Respect from other schools	Disrespect from other schools	Neither respect nor disrespect from other schools

4) What is your perception of ranking of schools and students in national examinations?.....  
 .....

5) Do you approve of ranking of schools in national examinations?

Yes            No  
 [    ]        [    ]

Please give reasons for your response .....

5) What other ways of grading schools and students would you recommend?

.....  
 .....

6) Using the scale below, please indicate your response to each of the items that follow by ticking the number that best describes your feeling.

Statement	Strongly agree 5	Agree 4	Undecided 3	Disagree 2	strongly disagree 1
Merit ranking of schools destroys the morale of the teaching force by creating jealousy, suspicion and distrust.					
Merit ranking inculcates a spirit of hard work and competition among schools.					
Results can be improved by promoting those teachers who realize good results in their respective subject areas irrespective of the school position in the Exams.					
Promotions in the teaching service are usually based on the performance of ones school and subject in National Examinations.					
Results have been improved by promoting the teachers in schools that are ranked among the top in national examinations to headship positions in poorly performing schools.					
Results have been improved by ranking schools and students in national examinations.					

### APPENDIX 3: Questionnaire for students

Fill the following questionnaire as truthfully as you can. Do not discuss or fill with a friend. You need not provide your name.

1. What is your assessment of your School position in the district in the 2006 KCSE Examinations results?

Good..... [ ]

Average..... [ ]

Poor..... [ ]

Briefly comment.....

2) In your opinion, who do you think contributed most in realising the School position you have rated as “Good”, “Average” or “Poor” in question 1 above (*please tick one*):

• Teachers ..... [ ]

• Students ..... [ ]

• The School Administration ..... [ ]

• The community ..... [ ]

• Government ..... [ ]

• Politicians..... [ ]

b). Please give reasons for your choice above.....

.....

.....

Please read the following statements and tick the one you agree with most.

Being a student in a school that is ranked as above makes you feel	Superior	Inferior	Neither superior nor inferior
Being a student in a school that is ranked as above affects your progression by	Increasing your chance of promotion	Decreasing your chance of promotion	Has no effect on your promotion
Being a student of a school that is ranked as above earns your school	Respect from other schools	Disrespect from other schools	Neither respect nor disrespect from other schools

4) What is your perception of ranking of schools and students in national examinations?.....

.....

5) Do you approve of ranking of schools in national examinations?

Yes                  No

[   ]                  [   ]

Please give reasons for your response .....

.....

.....

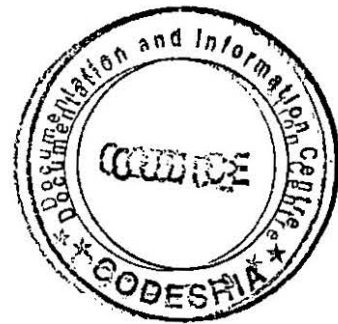
6) What other ways of grading schools and students would you recommend?

.....

.....  
 .....  
 .....

7) Using the scale below, please indicate your response to each of the items that follow by ticking the number that best describes your feeling.

	Strongly agree 5	Agree 4	Undecided 3	Disagree 2	strongly disagree 1
Merit ranking of schools destroys the morale of the students by creating jealousy, suspicion and distrust.					
Merit ranking inculcates a spirit of hard work and competition among schools and students.					





**APPENDIX 4: Data for the flow rates****Overall flow rates**

Class	Year			
	2003	2004	2005	2006
Form I	3420	3497	3666	3738
Form II	3580	3403	3448	3610
Form III	3180	3500	3375	3362
Form IV	2907	3009	3368	3008

**Low ranked schools' flow rates**

Class	Year			
	2003	2004	2005	2006
Form I	525	518	602	543
Form II	576	523	500	593
Form III	529	576	523	495
Form IV	457	528	562	471

**Average ranked schools' flow rates**

Class	Year			
	2003	2004	2005	2006
Form I	882	827	908	1018
Form II	895	872	820	880
Form III	771	863	872	803
Form IV	757	734	848	821

**Top ranked schools' flow rates**

Class	Year			
	2003	2004	2005	2006
Form I	2044	2099	2162	2273
Form II	2190	2046	2099	2162
Form III	1923	2126	1995	2004
Form IV	1526	1706	1972	1655

Appendix 5: Low ranked schools' enrolment data, 2003-2006.

School characteristics			Year									
			2003		2004		2005		2006		TT. 2003-2006	
code	streams	classes	T.enrol	Mean	T.enrol	Mean	T.enrol	Mean	T.enrol	Mean	T.enrol	Mean
1	1	4	115	29	109	27	105	26	107	28	436	27
2	2	8	210	26	221	28	224	28	192	24	847	26
3	2	8	106	13	127	16	103	13	118	15	454	14
4	2	8	222	28	223	28	229	29	222	28	896	28
5	1	4	114	29	102	25	96	24	89	22	401	25
6	1	4	36	9	81	20	115	29	121	30	355	22
7	4	16	265	17	256	16	261	16	241	15	1023	16
8	2	8	71	9	97	12	144	18	191	24	503	16
9	1	4	101	25	110	28	104	26	92	23	407	25
10	2	8	125	16	121	15	124	16	121	15	491	15
11	2	8	267	33	245	31	221	28	212	27	945	30
12	3	12	455	38	453	38	461	38	396	33	1765	37
Total enrolment and mean			2,087	22.54	2,145	23.59	2,187	24.20	2,102	23.74	8,521	23.51

Appendix 6: Average ranked schools' enrolment data, 2003-2006.

School characteristics			Year									
			2003		2004		2005		2006		TT. 2003-2006	
code	streams	classes	T.enrol	Mean	T.enrol	Mean	T.enrol	Mean	T.enrol	Mean	T.enrol	Mean
1	4	16	485	30	521	33	606	38	681	43	2293	36
2	1	4	100	25	111	28	126	32	115	29	452	28
3	2	8	234	30	251	31	280	35	280	35	1045	33
4	4	16	388	24	347	22	339	21	349	22	1423	22
5	2	8	235	29	237	30	214	27	180	23	866	27
6	2	8	320	40	308	39	298	37	263	33	1189	37
7	2	8	474	59	378	47	402	50	391	49	1645	51
8	3	12	380	32	394	33	411	34	398	33	1583	33
9	1	4	157	39	155	39	165	41	200	50	677	42
10	1	4	90	23	113	28	141	35	164	41	508	32
11	2	8	245	31	256	32	276	35	285	36	1062	33
12	4	4	197	49	225	56	190	48	216	54	828	52
Total enrolment and mean			3,305	34.22	3,296	34.74	3,448	36.05	3,552	37.20	13,571	35.55

Appendix 7: Top ranked schools' enrolment data, 2003-2006.

School characteristics			Year									
			2003		2004		2005		2006		TT. 2003-2006	
code	streams	classes	T.enrol	Mean	T.enrol	Mean	T.enrol	Mean	T.enrol	Mean	T.enrol	Mean
1	6	24	1182	48	1118	47	1070	45	984	41	4354	44
2	5	20	553	28	621	31	728	36	703	35	2605	33
3	4	16	638	40	573	36	596	37	567	36	2374	37
4	3	12	420	36	390	33	430	36	438	37	1678	35
5	5	20	922	43	1023	49	1015	51	983	50	3943	49
6	6	24	1009	42	1032	43	1067	44	1074	45	4182	44
7	5	20	879	44	1003	50	952	48	966	48	3800	48
8	4	16	584	37	674	42	715	45	757	47	2730	43
9	1	4	152	31	164	41	169	42	160	40	645	40
10	5	20	759	38	765	38	814	41	772	39	3110	39
11	1	4	212	53	225	56	215	54	217	54	869	54
12	2	8	375	47	389	49	451	56	473	59	1688	53
Total enrolment and mean			7,685	40.48	7,977	42.82	8,222	44.56	8,094	44.21	31,978	43.02

**APPENDIX 8: Formula for the calculation of the Pearson Product Moment Correlation Coefficient (for the pilot study).**

$$r_{xy} = \frac{N(\sum XY - \sum X \sum Y)}{$$

$$\sqrt{[(N\sum X^2 - (\sum X)^2)(N\sum Y^2 - (\sum Y)^2)]}$$

Where  $r_{xy}$  = coefficient of reliability

$\sum XY$  = Sum of the product of X and Y

$\sum X$  = Sum of the X rated values (test 1)

$\sum Y$  = Sum of the Y rated values (test 2)

$\sum X^2$  = Sum of the X values squared

$\sum Y^2$  = Sum of the Y values squared

$N$  = Number of pairs of scores

## APPENDIX 9: Formula for promotion/survival rate

$$\text{CGSR} = \frac{N_t^k}{N_{t+1}^{k+1}}$$

CGSR = Crude Grade Survival Rate

$N_t^k$  = Enrolment in the initial/previous year, initial/previous grade

$N_{t+1}^{k+1}$  = Enrolment in the subsequent year, subsequent grade

## APPENDIX 10: Letter of introduction

P. O. Box 193

Kakamega

The Principal,

.....High School

**REF: RESEARCH**

Dear sir/ Madam,

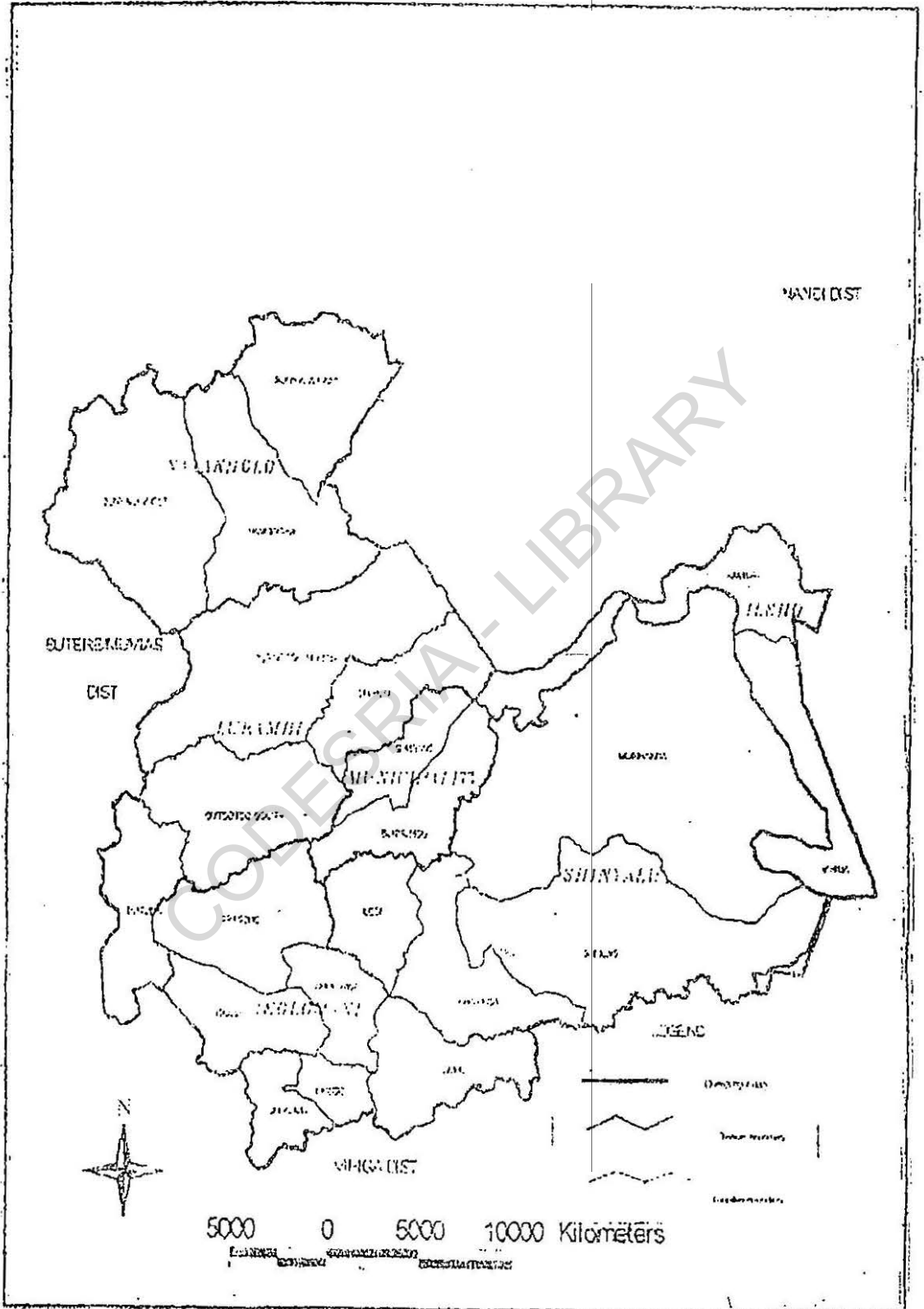
My name is Jane Amunga, a post -graduate student from Masinde Muliro University. I am conducting a study on the Effects of Ranking of Schools and Students in National Examinations in Kenya. Your school has been randomly selected to participate in this study. All the information you volunteer will be confidential and you or your school will not be identified in any report arising from the study. I humbly request you to participate.

Thanks.

Yours faithfully,

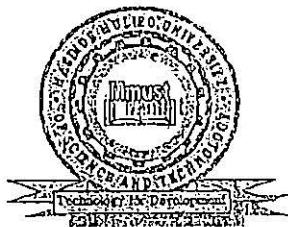
Jane K. Amunga.

KAKAMEGA DISTRICT: Administrative boundaries





Tel: 056-31375  
Fax: 056-30153  
E-mail: [mmust@wust.ac.ke](mailto:mmust@wust.ac.ke)  
Website <http://www.wust.ac.ke>



P.O Box 190  
Kakamega  
50100

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY

Office of the Director

INSTITUTE OF GRADUATE STUDIES, RESEARCH AND EXTENSION

Our Ref: MMUST/IGSRE/RES/1 (49)

Date: 17<sup>th</sup> December, 2007

The Permanent Secretary,  
Ministry of Education  
P.O Box 30040,  
NAIROBI, KENYA.

Dear Sir,

RE: STAFF AND GRADUATE STUDENT RESEARCH PROGRAMME

I am happy to introduce to you Mrs. Amunga Kwambitsa Jane EPM/G/18/06 who is a bonafide graduate student of Masinde Muliro University of Science and Technology. Mrs. Amunga is currently conducting a research and is expected to come up with a dissertation/publication that could be relevant to socio-economic development of our country and society.

The purpose of writing this letter is to request you to grant her a research permit to enable her carry out the said research. The title of the research in question is 'The Effects of Ranking Secondary Schools and Students in National Examinations in Kenya: A Case Study of Kakamega South District.'

Should you require further information regarding the research project, I will oblige to provide it.

Yours sincerely,

Z. M. Getenga, Ph. D.  
DIRECTOR, IGSRE

INSTITUTE OF GRADUATE STUDIES, RESEARCH AND EXTENSION

Tel: (056) 30870 Fax: (056) 30153 Email: [mmust@wust.ac.ke](mailto:mmust@wust.ac.ke)  
(KNOWLEDGE FOR DEVELOPMENT)



REPUBLIC OF KENYA

MINISTRY OF SCIENCE & TECHNOLOGY

Telegrams: "SCIENCE TEC". Nairobi  
Telephone: 02-318581  
E-Mail: ps@scienceandtechnology.go.ke

JOGOO HOUSE "B"  
HARAMBEE AVENUE,  
P.O. Box 9583-00200  
NAIROBI

When Replying please quote  
Ref. NO. MoST/13/001/37C 722/2

24<sup>th</sup> December, 2007

Jane K. Amunga  
Masinde Muliro University  
P.O. BOX 190  
KAKAMEGA

Dear Madam

RE: RESEARCH AUTHORIZATION

Following your application for authority to conduct research on "*The effects of ranking secondary schools and students in National Examinations in Kenya; A case of Kakamega south district*".

This is to inform you that you have been authorized to research in Kakamega South District for a period ending 30<sup>th</sup> November, 2008.

You are advised to report the District Commissioner and the District Education Officer of Kakamega South district before embarking on your research project.

On completion, you are expected to submit two copies of your research report to this office.

Yours faithfully,

  
M. O. ONDIEKI

FOR: PERMANENT SECRETARY

CC: The District Commissioner  
Kakamega South District

The District Education Officer  
Kakamega South District

Research Permit No. MoST 13/001/37C 722

Date of issue 24th DECEMBER 2007

Fee received 500

THIS IS TO CERTIFY THAT:

Prof./Dr./Mr./Mrs./Miss JANE K. AMUNGA

of (Address) MASINDE MULIRO UNIVERSITY  
P.O. BOX 190 KAKAMEGA

has been permitted to conduct research in.....

.....Location,  
KAKAMEGA SOUTH

.....District,  
WESTERN

.....Province,

on the topic THE EFFECTS OF RANKING  
SECONDARY SCHOOLS AND STUDENTS IN  
NATIONAL EXAMINATIONS IN KENYA: A CASE  
OF KAKAMEGA SOUTH DISTRICT

for a period ending 30th NOVEMBER, 2008



*(Signature)*  
M. O. ONDIEKI  
Applicant: FOR: Permanent Secretary  
Signature: SECRETARY  
Ministry of EDUCATION  
Science and Technology  
SCIENCE & TECHNOLOGY

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