

**DETERMINANTS OF DIFFERENTIAL KENYA CERTIFICATE OF
SECONDARY EDUCATION PERFORMANCE AND SCHOOL
EFFECTIVENESS IN KIAMBU AND NYERI COUNTIES, KENYA**

BY

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DECLARATION

This project is my original work and has not been presented for a degree in any other University.

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DEDICATION

I dedicate this work to my beloved parents: Chrisanthus Ogecha Nyagosia and Mama Yuventia Moraa Ogecha and my siblings who urged me to continue with education.

To my dear wife Margaret Mongina Nyagosia and the lovely children; Polycarp, Catherine, Jillian, Sharon and Bill who patiently gave me support as I went through this course.

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I sincerely thank my Creator, the Almighty God, who gave me the physical, mental strength and good health to undertake and accomplish this work.

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God bless you all.

ABSTRACT

The purpose of this study was to determine the relationship between school effectiveness and academic performance in public secondary schools of Kiambu and Nyeri Counties, Kenya. The objectives of the study were to: establish the strategies being employed by public secondary schools to improve students' academic performance; determine the relationship between the academic performance improvement strategies employed and the performance of students in KCSE; and identify academic performance improvement lessons that can be learnt from schools that consistently perform well at the KCSE level. The study was guided by the Effective Schools Model by Lezotte (2010), which states that an effective school is characterised by seven correlates namely: instructional leadership, focus on school mission, safety and orderliness of schools, expectations for success, home-school relations, frequent monitoring of students' progress, and opportunity to learn for students. The research employed a survey design targeting all secondary schools' principals, heads of departments, teachers, and education officers in charge of all the 873 provincial and district public secondary schools in Central region. Data was collected in provincial and district public secondary schools in two counties – Kiambu and Nyeri. Stratified sampling technique was used to select 40 schools for the study, 20 each from Kiambu and Nyeri Counties. The sampled schools were stratified according to performance, that is, those that have been consistently performing well for the last five years (2006-2010), and those that have been consistently performing poorly for the same period. All the principals of the sampled 40 schools took part in the study. Simple random sampling was used to select 360 teachers (120 HODs and 240 regular teachers). Purposive sampling was used to select all the 17 District Education Officers in Kiambu and Nyeri Counties. Of the targeted respondents, 222 teachers, 45 heads of departments 17 DEOs, and 39 principals responded, a total of 398 respondents giving a questionnaire return rate of 95.4%. Questionnaires and an interview guide were used for data collection. Prior to the actual data collection, a pilot study was conducted to ascertain the reliability and validity of the instruments. The study gathered both qualitative and quantitative data. Quantitative data was analyzed using descriptive statistics including frequencies and percentages. Pearson Product Moment correlation coefficient, t-test and multiple linear regression were used to analyze the statistical data. Qualitative data was put under themes consistent with the research objectives. T-test results revealed that, in comparison with bottom performing schools, top performing schools were putting more emphasis on six of the seven correlates, with only frequent monitoring of students progress returning no significant results. Similarly, Pearson Correlation Coefficient analysis revealed significant positive correlations between the KCSE mean deviations (2006-2010) and six of the seven correlates, apart from frequent monitoring of students progress. Multiple regression analysis revealed that the seven correlates of effective schools explained 11.5% of the variation in academic performance among the sample schools. The study recommends that secondary schools should put emphasis on the seven correlates of effective schools that were identified to positively influence academic performance.

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ABBREVIATIONS AND ACRONYMS

ADEA	-	Association for the Development of Education in Africa
DEOs	-	District Education Officers
HODs	-	Heads of Departments
KCSE	-	Kenya Certificate of Secondary Education
MOE	-	Ministry of Education
SPSS	-	Statistical Package for Social Sciences
SSA	-	sub-Saharan Africa
U.S.	-	United States

CHAPTER ONE

INTRODUCTION

1.1 Background Information

One question that has preoccupied researchers for decades is why some public schools consistently perform well in examinations while others consistently perform poorly. A group of school effectiveness researchers, including Edmonds (1981), Scheerens & Bosker (1997), Lezotte, Skaife & Holstead (2002), and Daggett (2005), demonstrated that public schools can make a difference – even if their student body comprised of students whose families had disadvantaged backgrounds. These researchers discovered that the successful schools have unique characteristics and processes, which helped all children learn at high levels (Kirk & Jones, 2004).

The search for factors that account for effective schools in developed countries can be demonstrated through many years of research work conducted in the United States of America. This search culminated with the passing of the *No Child Left Behind* Act of 2001 in the U.S., which placed heavy emphasis on scientific research (Daggett, 2005). Many studies have since then been carried out to determine what accounts for improved academic outcomes.

Edmonds (1981) was the leading researcher in school reform in the 1970s, and his work is still highly respected by education leaders. He initiated what is now known as the Effective Schools Model. Edmonds' (1981) research noted the following characteristics of successful schools: strong administrative leadership, focus on basic skills, high expectations for student success, frequent monitoring of student performance, and safe and orderly schools. Following on the work of Edmonds, research work by Scheerens and Bosker (1997) was well recognized and embraced in

the mid to late 1990s. They did research on a wide variety of school reform initiatives and came up with eight essential characteristics of successful schools. The characteristics they identified were: monitoring of student progress, focus on achievement, parental involvement, creating a safe and orderly climate, focused curriculum, strong leadership, cooperative working environment and time on task.

Another outcome of the effective schools research was published in a report by the U.S. Department of Education (1999). For this report, a team of researchers studied the 300 most comprehensive school reform research studies done in the previous five years. The common characteristics they identified were: commitment to high academic expectations, small learning environments, structure learning around career/student interest, professional development focused on instruction, tying out-of-school learning to classroom learning, career and higher education counselling, flexible, relevant segments of instruction, assessment of what students can do, partnerships with higher education, and support for alliances with parents and community.

Recently Lezotte picked up leadership on the effective school research that Edmonds started in the 1970s. In his recent book, *What Effective Schools Do*, Lezotte (2010) noted the following as the most important characteristics of effective schools: strong instructional leadership, clear and focused mission, safe and orderly schools, climate of high expectations for success, frequent monitoring of student progress, positive home-school relations, and opportunity to learn. Lezotte (2010) argued that these seven Correlates of Effective Schools are powerful indicators of successful places where all children learn, regardless of socioeconomic status or ethnicity.

In comparison to effective schools, the American Federation of Teachers (2000) established that low performing schools are characterized by lack of academic standards, high levels of disruptions and violence, high rates of students and staff absenteeism, high dropout rates, high rates of staff turnover, and an overall negative school atmosphere where parents are hardly involved in school programmes and activities.

Research on effective schools has also been conducted in Africa. For instance, Verspoor's (2006) research on what determines education quality in sub-Saharan Africa (SSA) identified the following: classroom factors (time, grouping procedures, instructional strategies) are key, school factors (leadership, emphasis on academic achievement and staff development) enable and reinforce, system factors (vision, standards, resources, relevant curriculum, incentives) provide direction, and community factors (home environment, support for education) ensure local relevance and ownership. The Association for the Development of Education in Africa (ADEA, 2006) notes that in addition to these quality-affecting factors, improvements in education quality and better learning achievements of students in SSA will ultimately be determined in classrooms by motivated teachers who have the skills and resources to respond effectively to students' learning needs. ADEA (2006) continued to say that effective schools are schools that create a supportive environment for such teachers and for classrooms where all students have the opportunity to learn and acquire the knowledge, skills and the attitudes specified in the curriculum. Therefore, as noted by Verspoor (2006), moving towards an in-depth understanding of how schools in Africa can be helped on the path towards effectiveness is thus a central element of the continuing quest for quality.

Carrim and Shalem (1999) reported findings of two school effectiveness research projects conducted in the Johannesburg area of the Gauteng province in South Africa. Their findings demonstrated that schools in South Africa operated in complex and sometimes contradictory contexts, though the schools may have similar socio-economic backgrounds. The authors argued for a shift from educational production function emphasis to qualitative approaches to capture “the nuances and differences in contexts, diversities of school actors’ perspectives and interests, and the plurality of tensions and conflicts in the social relations of the school” (p.81), so as to better understand the intricacies of everyday school realities and various issues surrounding school effectiveness.

In Burundi, Eisemon, Schwille, Prouty et al. (1993) employed the model of school effectiveness using path analyses to establish what contributed to effective instruction at classroom level. Their findings demonstrated that the most powerful feature of school effectiveness had to do with school management in terms of school director visits, the direct impact of visits on learning outcomes as well as the indirect impact through teacher punctuality. Some instructional practices such as providing extra hours of instruction had a relatively weak impact on learning outcomes, both directly and indirectly as estimated through path models (Eisemon, et al., 1993). On the other hand, Harber (1993) established that low performing schools in Tanzania were characterised by high teacher-pupil ratio which led to teachers being overworked and high rates of indiscipline among students.

In Kenya, a few researchers have reported findings on what accounts for effective schools. For instance, Lloyd, Mensch & Clark (2000), based on a study of primary schools in Kenya, established that there is more to school effectiveness than the

development of academic competency, and there is more to the quality of the school environment than time to learn, material resources for the basic curriculum, and pedagogical practices. Other Kenyan researchers have shown that academic performance is affected by a number of factors, including student-related factors like willingness to learn (Magiri, 1997); school-related factors like adequacy of resources and facilities (Musoko, 1983; Kunguru, 1986); teacher-related factors like teacher morale, teaching methods and job satisfaction (Nkonge, 2010); and school administrators' leadership traits (Anyango, 2001; Orina, 2005) among others. A study by Lloyd, Mensch & Clark (2000) in Kenya found out that low performing schools were characterised by inadequate school facilities, lack of active participation of students in the teaching-learning process, and poor overall school atmosphere in terms of organisation, rules and student-to-student interaction. This study aimed at furthering research on the area of academic performance by advancing the effective schools research in Kenya.

The study was guided by the Effective Schools Model by Lezotte (2010), which argues that an effective school is a school that can, in measured student achievement terms, demonstrate the joint presence of quality and equity. The study was carried out in Nyeri and Kiambu Counties, where statistics from the Ministry of Education show that while some schools in these counties consistently perform well in KCSE examinations, others continue to perform poorly. What was not clear were the factors that enabled some schools to perform well while others keep performing poorly. By utilizing the Effective Schools model, the study shows how the following factors influence academic performance: instructional leadership, focus on vision and mission, school safety and orderliness, communicating high expectations for success,

monitoring of student progress, home-school relations, and opportunity to learn/time on task.

1.2 Statement of the Problem

Education is one of the most important aspects of human resource development. Failure in the national examinations especially at the Kenya Certificate of Secondary Education (KCSE) spells doom for the students whose life becomes uncertain and full of despair. KCSE performance determines whether the students will proceed to university or to other tertiary institutions. Therefore, a student's life is determined by academic performance in the national examinations. It is for this reason that secondary school administrators are pressurized to improve the grades attained by students in KCSE. Public pressure on school administrators and teachers to improve academic performance has led to schools coming up with various performance improvement strategies including extra supplementary tuition, reward and punishment systems for well performing and poor performing students, forced grade repetition among others. However, some of the strategies employed by schools to improve academic performance are not grounded on research evidence, while some like grade repetition and extra supplementary tuition have been shown to be counterproductive (Bray, 2007). In Nyeri and Kiambu Counties, there are secondary schools that consistently perform well in KCSE, while others persistently perform poorly. The study sought to establish the factors accounting for such differential KCSE performance and school effectiveness in Nyeri and Kiambu Counties of Kenya.

1.3 Purpose of the Study

The purpose of this study was to determine the factors that cause differential KCSE performance and school effectiveness in public secondary schools in Nyeri and

Kiambu Counties, Kenya. The study examined how mean scores and grades obtained by schools in KCSE are influenced by the seven correlates of effective schools - instructional leadership, focus on mission and vision, school safety and orderliness, expectations for success, monitoring of student progress, home-school relations, and opportunity to learn/time on task.

1.4 Objectives of the Study

The objectives of this study were:

1. To determine the strategies being employed by public secondary schools in Nyeri and Kiambu Counties to improve students' academic performance and promote school effectiveness.
2. To establish the factors that influence differential KCSE performance in public secondary schools in Nyeri and Kiambu Counties, Kenya.
3. To examine the relationship between school effectiveness and overall school performance in KCSE.
4. To identify academic performance improvement lessons that can be learnt from schools that consistently perform well at the KCSE level.

1.5 Research Questions

The study was guided by the following research questions:

1. Which are the strategies being employed by public secondary schools in Nyeri and Kiambu Counties to improve students' academic performance and promote school effectiveness?
2. What are the factors affecting academic performance in public secondary schools in Nyeri and Kiambu Counties?

3. What is the relationship between school effectiveness and the overall school performance in KCSE?
4. Which academic performance improvement lessons can be learnt from schools that consistently perform well at the KCSE level?

1.6 Significance of the Study

This study utilized the Effective Schools Model (Lezotte, 2010) to profile the characteristics of effective schools in Nyeri and Kiambu Counties, that is, schools that consistently perform well in KCSE. In so doing, the study has implications to policy makers, school administrators, teachers, Ministry of Education officials, students, and the community in various ways. First, the study could allow the policy makers to see the patterns of KSCE performance within the region, districts and different categories of schools. The study brings forth factors affecting performance, which can be a basis of looking into ways of improving overall performance of the region in all areas.

To school administrators, who include principals, deputy principals and heads of departments, the study provides data that could be used to improve management practices for improved academic performance. By establishing the extent to which schools are implementing the seven correlates of effective schools and how this influences academic performance, the study could stimulate strategic thought among school administrators. By identifying the strategies employed by well performing schools, poorly performing schools could learn lessons that could enable them improve academic performance of their students. Secondary school students could benefit from the study because findings reveal the way students in well performing schools interact with other members of the school community and the school environment. Through this, students in poor performing schools could be encouraged

to adopt strategies employed by well performing schools in order to improve academic performance. The study is also significant to the community in that their investment in education is expected to translate to quality education, and the findings show how this can be achieved. The study also adds to the existing body of knowledge on determinants of academic performance and the correlates of effective schools in Kenya.

1.7 Scope and Limitations

1.7.1 Scope

The study was conducted in public secondary schools in Nyeri and Kiambu Counties. Study participants were school principals, heads of departments and teachers. Participating schools were selected from those that have been consistently performing well for the period 2006 - 2010 and those that have been performing poorly for the same period. This enabled the researcher to identify the characteristics of well performing schools in comparison with ineffective schools. The study was conducted in Kiambu and Nyeri counties.

1.7.2 Limitations

The study had a number of limitations. First, it was not possible to explore all the variables that affect academic performance. This study employed the seven variables identified by Lezotte (2010): instructional leadership, focus on vision and mission, school safety and orderliness, communicating high expectations for success, monitoring of student progress, home-school relations, and opportunity to learn.

The study was also limited by the fact that it relied on a self-rating questionnaire for school administrators to measure the extent to which they engage in various correlates of effective schools. This means that respondents could have overrated themselves

because, as Webster, Iannucci & Romney (2002) established, respondents tend to overrate themselves on positive traits. To overcome this, the researcher looked for any contradictory data among responses. Another limitation was that some schools may have had recent changes of leadership which may lead to change of management structures and strategies.

1.8 Assumptions

The study was based on the following assumptions

1. The target respondents would cooperate and give correct information.
2. Well performing schools had adopted Effective Schools' strategies that were not employed by low performing schools to improve academic performance.
3. By adopting the strategies employed by well performing schools, poor performing schools can improve their performance.

1.9 Theoretical Framework

The study was based on the Effective Schools Model by Lezotte (2010). According to this model, an effective school is a school that can, in measured student achievement terms, demonstrates the joint presence of quality and equity. According to Lezotte (2010), there are seven correlates of effective schools - strong instructional leadership, clear and focused mission, safe and orderly schools, climate of high expectations for success, frequent monitoring of student progress, positive home-school relations, and opportunity to learn/time on task. According to Lezotte (2010), strong instructional leaders are proactive and seek help in building team leadership and a culture conducive to learning and professional growth. In the effective school, the principal and others act as instructional leaders and effectively and persistently communicate and model the mission of the school to staff, parents, and students.

Having a clear and focused vision and mission means everyone knows where they are going and why. A clear focus assists in aligning programs and activities for school improvement. To effectively determine a specific focus, school leadership and stakeholders use a collaborative process to target a few school goals and then build consensus around them. A safe and orderly school is defined as a school climate and culture characterized by reasonable expectations for behaviour, consistent and fair application of rules and regulations, and caring, responsive relationships among adults and students (Lezotte, 2010). Classrooms are warm and inviting, and learning activities are purposeful, engaging, and significant. Personalized learning environments are created to increase positive relationships among students and between students and their teachers. Students feel that they belong in the school community, and children are valued and honoured; their heritage and backgrounds are viewed as “assets,” not deficiencies.

In a climate of high expectations, the mantra “all students can learn” must be followed by instructional practices and teacher behaviour that demonstrate that teachers believe in the students, believe in their own efficacy to teach students to high standards, and will persist in teaching them. Teaching advanced skills and teaching for understanding together with basic skills are required for all students to achieve at high levels.

Frequent monitoring of teaching and learning requires paying attention both to student learning results and to the effectiveness of school and classroom procedures (Lezotte, 2010). Learning is monitored by tracking a variety of assessment results such as test scores, student developed products, performances, and other evidence of learning. Teaching is monitored by teachers themselves through self-reflection and by supervisors for program and teacher evaluation. Assessment results are used for

planning instruction for individual students as well as for school-wide decision making and planning. Classroom and school practices are modified based on the data.

According to Lezotte (2010), family and community involvement is a general term used to describe a myriad of activities, projects, and programs that bring parents, businesses, and other stakeholders together to support student learning and schools. Families and other adults can be involved in the education of young people through a variety of activities that demonstrate the importance of education and show support and encouragement of students learning. These are legitimate approaches for involvement and do not necessarily require adults spending time at the school site.

Opportunity to learn and student time on a task simply means that students tend to learn most of the lessons they spend time on. Time on task implies that each of the teachers in the school has a clear understanding of what the essential learner objectives are, grade-by-grade and subject-by-subject. Once it is clear what students should be learning, they should be given time to learn it. In an effective school, teachers allocate a significant amount of classroom time to instruction on the essential skills. Students of all abilities, races, gender, and socioeconomic status have equal opportunities to learn (Lezotte, 2010).

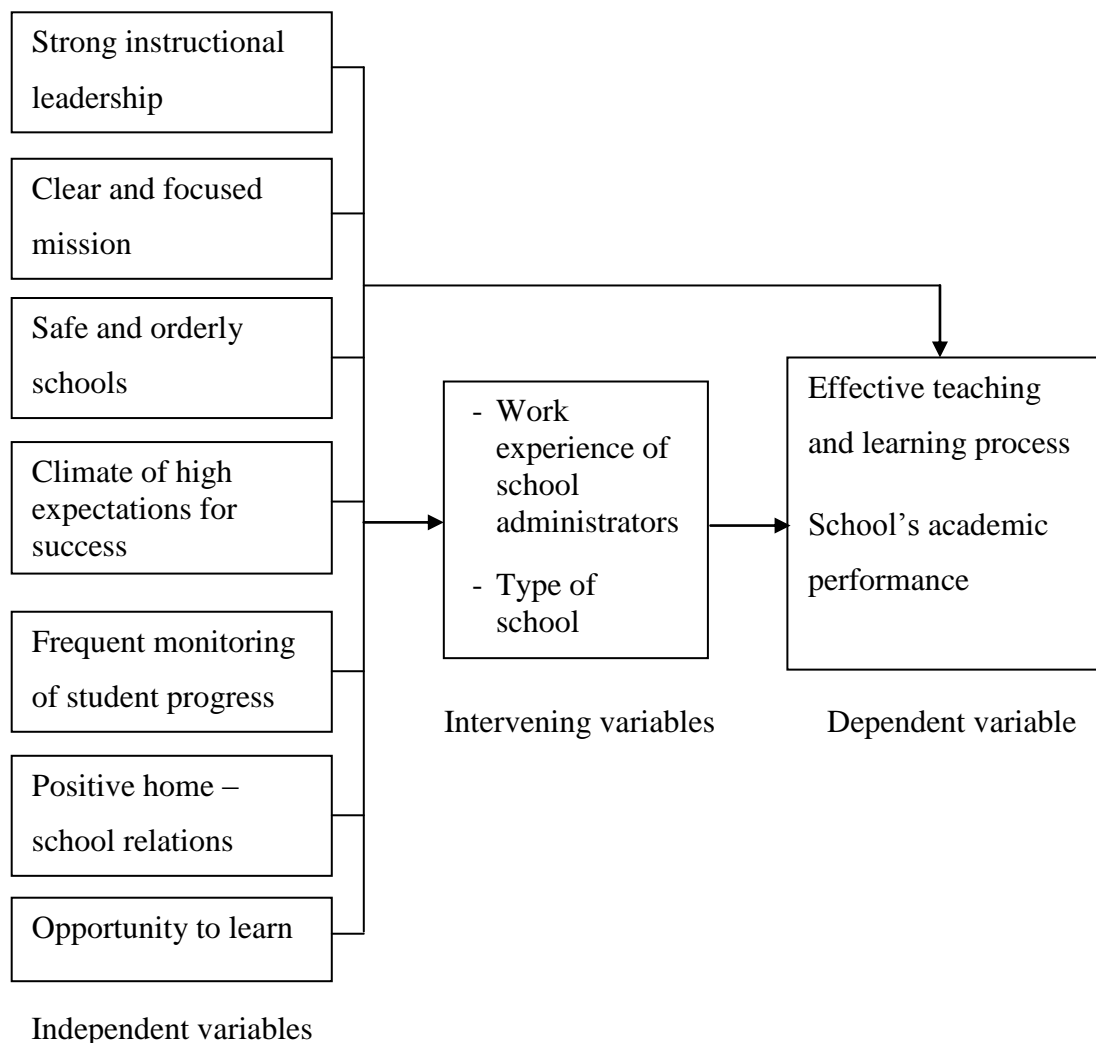
The theory was relevant to this study in that the seven correlates of effective schools require effective leadership in the part of the school administrators. This is in line with Sullivan and Glanz's (2000) assertion that a prime task of school leaders is to exercise instructional leadership of the kind that results in a shared vision of the directions to be pursued by the school, and to manage change in ways that ensure that the school is successful in realizing the vision. By identifying the correlates of well performing schools in Kenya, the study tests Lezotte's (2010) Effective Schools

Model, and also suggests measures that low performing schools can take to improve academic performance.

1.10 Conceptual Framework

The goal of the study was to assess the factors that influence differentiated academic performance of students in secondary schools in Nyeri and Kiambu Counties, Kenya. Figure 1.1 presents the conceptual framework of the study.

Figure 1.1: Conceptual Framework



Source: Adapted from Lezotte, L. W. (2010). *What effective schools do: Re-envisioning the correlates*. Indianapolis, IN: Solution Tree.

The study employed Lezotte's (2010) Effective Schools Model to examine the strategies being employed by the schools to improve academic performance. As shown in Figure 1.1, the independent variables of the study were the extent to which they emphasize on instructional leadership, focus on vision and mission, school safety and orderliness, communicating high expectations for success, monitoring of student progress, home-school relations, and creating an opportunity to learn for each student. It was expected that schools which promote the seven correlates of effective schools enjoy effective teaching and learning processes, and this translates to improved academic performance, which was the dependent variable of the study.

1.11 Definition of Terms

Academic performance – This refers to the ability to study and remember facts, being able to study effectively and see how facts fit together and form larger patterns of knowledge, and being able to think for yourself in relation to facts and being able to communicate your knowledge verbally or down on paper.

Effective learning – This refers to students' being available, focused and committed to undertake learning willingly.

Effective school – This refers to a school whose educators are responsible for producing acceptable results, by putting emphasis on instructional leadership, focus on vision and mission, school safety and orderliness, communicating high expectations for success, monitoring of student progress, home-school relations, and creating an opportunity to learn for each student.

Effective teaching – This refers to helping students to learn by providing adequate context and content, and involving the learners in the process of responding to questions, summarizing findings and discussions and research and report on unanswered questions.

Poor performing school – This refers to a secondary school that consistently obtains a mean grade of below C+ in Kenya Certificate of Secondary Education examinations.

Well performing school – This refers to a secondary school that consistently obtains a mean grade of at least C+ and above in Kenya Certificate of Secondary Education examinations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter gives a review of literature related to the study on the factors that influence differentiated academic performance of students in secondary schools in Nyeri and Kiambu Counties, Kenya. The chapter first presents literature on approaches used to measure school effectiveness. Then literature on each of the independent variables of the study, and how it influences academic performance, is provided.

2.2 Approaches Used to Measure School effectiveness

The search for effective schools is one of the main education reform initiatives taking place in many countries today (Gray 2004; Petty et al., 2007). This has become evident in a variety of forms in Australia, Canada, New Zealand, the United Kingdom and the United States of America (Murphy & Beck, 1995; Johnston, 1997; Taylor & Bogotch, 2004; Petty & Green, 2007). In spite of its widespread practice and implementation of these and other more recent initiatives to enhance school effectiveness in schools, no clear or uniformly accepted set of guidelines or assumptions with regard to the assessment of school effectiveness exists (Botha, 2010).

According to Brouillette (1997), there is no set of shared assumptions about the actual evaluation on school effectiveness. To date, most of the evaluative work on school effectiveness has been conducted as part of policy research, and has tended to focus on monitoring implementation guidelines and using this information to identify features of successful school development plans (Giles, 2005). Academic output

measures have been widely used to identify good practices in schools (Botha, 2010). There is, however, a need for further measures of school effectiveness which capture more of the school processes and measure a broader range of outcomes. Some studies (for example Creemers, 2002; Kyriakides & Tsangaridou, 2008; Lezotte, 2010) have identified such measures and due to these developments in the area of measurement, researchers are constantly undertaking studies on school effectiveness looking at the broader range of the school curriculum (Kyriakides & Creemers, 2008). These indicators may in the future help to provide a wider range of measures for school success and effectiveness, thus better capturing what schools do.

Murphy & Louis (1998) define an effective school as the school with an atmosphere which motivates educators and learners to improve the school and improve themselves. Effective schools are those schools which are in constant state of dissatisfaction with their outcomes (Weller, 1999). These two definitions perceive effective schools as those that always strive for excellence in learner achievement. According to Sybouts & Wendel (1994), an effective school is a school where educators are responsible for producing acceptable results. This definition views an effective school as one which has educators that are effective in their teaching. The essential feature of an effective school is the attainment of high academic achievement (Squelch and Lemmer, 1994).

According to Sun, Creemers and de Jong (2007), studies of school effectiveness have two distinctive aims: firstly, to identify factors that are characteristic of effective schools, and secondly, to identify differences between education outcomes in these schools. The choice and use of outcome measures has been open to debate in many areas of education research (Sun et al., 2007). One of the touchstones of effective

schools is the impact on learners' education outcomes (that is, test or examination results obtained during formal assessment). In this regard, Bennet, Crawford & Cartwright (2003) define an effective school as a school in which students progress further than might be expected.

Researchers working on school effectiveness continuously aim to clarify the dilemma with regard to learners' education outcomes (Petty et al., 2007). A long-standing problem in this regard has been to find ways to measure learner progress or achievement that identifies the school's contribution separately from other factors such as learner ability, background and socio-economic environment. In parallel with this has been a call for schools to be more accountable, which in many cases leads to school effectiveness being judged on academic results, while other contributing factors are ignored (Botha, 2010).

As a result, academic outcomes, usually measured by test and/or examination results, have continued to dominate, while other outcome measures have been neglected or used to a lesser extent. In this regard, Gray (2004) argues that examination results are a measure of academic learning but do not give the whole picture with regard to the effectiveness of a school academically, and give little information about other outcomes.

Morley and Rassool (1999) attempted to highlight the fact that school effectiveness as a paradigm is based on three distinct discourses, namely, leadership, management and organisation. Organisation of the school often has a predestined structure prescribed by the education authorities. The effectiveness of the school could be imposed by the government by the design of evaluation tools such as checklists and inspection, which may not necessarily enhance effectiveness, but seek to determine learner attainment.

Conversely, Harris, Bennet and Preedy (1997) highlight the political nature of school effectiveness by noting that governments determine how schools should function because of the value-for-money idea. However, to counteract the dominance of the government view in the management of the school, aspects such as marketing and the role of the parents and school community are also dominant factors (Botha, 2010).

School effectiveness could indicate how well the school is managed by the principal and how well parents and the community are involved. Apart from the fact that researchers are not always sure what outcome (or category) of school effectiveness to measure, the definition of school effectiveness may also vary from one person or source to the next. Another problem is that school effectiveness is often confused with an aspect such as school efficiency. To clarify the above, each term and category of school effectiveness should first be correctly conceptualised and defined.

This study employed the approach proposed by Lezotte (2010) to measure school effectiveness. According to Lezotte (2010), an effective school is a school that can, in measured student achievement terms, demonstrates the joint presence of quality and equity. Lezotte (2010), after a series of studies, came up with seven correlates of effective schools - strong instructional leadership, clear and focused mission, safe and orderly schools, climate of high expectations for success, frequent monitoring of student progress, positive home-school relations, and opportunity to learn/time on task. The subsequent sections of the literature review are based on these seven correlates, and how each is related to school effectiveness as measured through academic performance.

2.3 Instructional Leadership and Academic Performance

Contemporary educational reform places a great premium on the effective instructional leadership and management of schools. The logic of this position is that an orderly school environment, that is efficient and well managed, provides the preconditions for enhanced student learning. Effective instructional leadership is generally recognized as the most important characteristic of school administrators (Hoy & Hoy, 2009; Lezotte, 2010). According to Lezotte (2010) instructional leadership is one of the correlates of effective schools. Effective instructional leaders are proactive and seek help in building team leadership and a culture conducive to learning and professional growth. In the effective school, the principal, deputy principal and Heads of Departments (HODs) act as instructional leaders and effectively and persistently communicate and model the mission of the school to staff, parents, and students.

Effective instructional leadership has been shown to result in school improvement and effectiveness (Scheerens & Bosker, 1997; Lezotte, Skaife & Holstead, 2002; Lezotte, 2010). The indicators of schools having effective instructional leaders have been shown through research to include factors like teacher morale and satisfaction (MacNeil, 1992), teacher self-efficacy (Lubbers, 1996), school and organizational culture (Reid, 1987), teacher effectiveness and time on task (Watkins, 1992), and improved academic performance (Wilson, 2005).

Schools need effective instructional leaders to communicate the school's mission and vision. By persistently reinforcing the school's mission, the principal creates a shared sense of purpose and establishes a set of common core values among the instructional staff. Having common core values and a shared sense of purpose helps guide all

members of the instructional team and avoids individuals straying from the intended goals (Kirk & Jones, 2004).

Research by Lezotte (2001) led to a conclusion that in the effective school, the principal acts as an instructional leader and effectively and continually communicates the mission of the school to staff, parents, and students. In addition, the principal understands and applies the characteristics of instructional effectiveness in the management of the instructional program. Clearly, the role of the principal as the articulator of the mission of the school is crucial to the overall effectiveness of the school.

The principal is not the sole leader; he or she is a leader of leaders (Lezotte, 1991) empowering teachers and including them in decisions about the school's instructional goals. Cibulka and Nakayama (2000) argue that in order to achieve significant changes in classroom practice; teachers must have an opportunity to participate in shaping a school's vision. Teachers work together with the principal to ensure that expectations for student achievement are understood across classrooms and across grade levels.

Johnson (1997) suggested that certain critical elements need to be in place for a school's leadership to be effective – to create an environment where properly supported students can learn and teachers can teach. He listed these elements as: “effective administrative leadership; positive expectations; strong, integrated curriculum; shared decision making; and school wide responsibility for teaching and success” (pp. 3–4). These elements include the ideas that principals need to create a professional environment in which teachers can thrive in and contribute to the overall school goals and environment.

2.4 Focus on mission and Academic Performance

Lezotte (1991) proposed that in effective schools “there is a clearly articulated school mission through which the staff shares an understanding of and commitment to instructional goals, priorities, assessment procedures, and accountability” (p. 6). This characteristic translates into a focus on the teachers, and how they need to be able to teach all children both lower-level academic skills and higher-level cognitive abilities.

Haberman (2003) puts the onus on the principal to create a clear school mission. The principal should be a leader. To be effective in this role a principal should: “create a common vision, build effective terms to implement that vision, and engender commitment to task – the persistent hard work needed to engender learning” (p. 2). However, for teachers to be an integral part of the change process, they need to do more than blindly accept a principal’s vision. In this respect, Cibulka & Nakayama (2000) argue that too often schools are organized as administrative hierarchies rather than as groups of professionals working toward shared goals. Teachers should be partners with the principal in creating that vision (Cibulka and Nakayama, 2000), or they may even be the sole creators of the vision (Goodman, 1997).

By including teachers in the change process, a school is more likely to keep good teachers despite the traditionally high turnover rate among teachers early in their careers (Dunne and Delisio, 2001; Mugo, 2010). Creating an atmosphere in which teachers are considered professionals and have opportunities to continue their professional development, both within and without the school they teach in, leads teachers towards excellence. This atmosphere, in turn, will help them lead the children to excellence.

A few studies have been conducted showing the status of focus on mission and vision in secondary schools in Kenya. In the first one, the Kenya Education Management Capacity Assessment (KEMACA, 2008) conducted a survey aimed at ascertaining capacity weaknesses in the Kenyan education system, which might impede the proper execution of the Kenya Education Sector Support Programme (KESSP). The survey established that 27% of the schools did not engage in strategic planning at all. In addition, of those who claimed they did, only 49% were able to produce the strategic plans. So, the survey (KEMACA, 2008) concluded that there is clearly a problem with school planning skills. On strategic planning, KEMACA (2008) concluded that, mission and vision statements for Kenyan schools tend to be rather general and not sufficiently focused on outputs and outcomes. The ability to strategize in order to turn the mission and vision into operational plans is not yet optimal. Plans often read more like lists, with little apparent sense of prioritization. Top leadership is clear and able to prioritize, but mid-level management does not seem to have the skills needed, or the tradition, to turn top-level visions into operational plans (KEMACA, 2008).

The other study was conducted by Ngware, Wamukuru & Odebero (2006) to determine the extent of practice of Total Quality Management (TQM) in Kenyan secondary schools. Just like KEMACA, this study revealed that most schools did not have strategic plans. Among the few schools that showed evidence of strategic planning, the strategic plan acts not only as the roadmap but also as a tool to communicate quality expectations to all employees. The researchers noted that unfortunately, such schools are weak in systematic follow-up to ascertain the implementation of the plans. In addition there seemed to be no deliberate attempts to do a formal internal evaluation with a view to ascertain the extent to which qualitative and or quantitative targets have been met. Failure to do such an evaluation denies the

organization the opportunity to reflect on the quality planning and inculcate a culture of quality assurance in schools. These findings suggest that most schools in Kenya lack evidence of focus on mission and vision.

2.5 School Safety and orderliness and Academic Performance

According to Lezotte (2001), in effective schools there is an orderly, purposeful, business-like atmosphere, which is free from the threat of physical harm. The school climate is not oppressive and is conducive to teaching and learning. Lezotte (1991) also spoke of schools not only needing to eliminate undesirable behaviour but of teaching students the necessary behaviours to make the school safe and orderly. Desirable behaviours would include cooperative team learning, respect for human diversity, and an appreciation of democratic values. Teachers must also model these desirable behaviours (Lezotte, 1991).

Research has identified multiple factors within the area of school climate that are positively linked to students' academic achievement and social well-being. Gottfredson, Gottfredson, Payne, & Gottfredson (2005) identified four significant domains: a sense of physical safety; high expectations for both academic learning and behaviour; a feeling of connectedness to both school and the community at large; and high levels of support from administration for school staff and students for both academic achievement and social-skill building. Greene & Ross (2005) established that current best practices include monitoring student perceptions of the above domains and working to improve areas identified as not meeting their needs.

A number of studies have found that exposure to violence can increase the likelihood that a child will behave aggressively and/or become the victim of violence or aggression (Rosenberg, 1999). For those children whose exposure to violence occurs

outside of school, the climate inside their school may be even more important. A school climate that is disorderly reduces teaching time, therefore reducing academic achievement (Crosse et al., 2002). This type of environment often creates distrust in both staff and students, so social development is misdirected, and social skills are not modeled or learned. It also can place children in a survival mode that increases their acting-out behaviors. Some studies indicate that exposure to violence results in distractibility, irritability, anxiety, anger and even attention deficit hyperactivity disorder (ADHD) in cases of chronic exposure (Flannery, 1997).

Even those schools that are relatively safe can have individual students or groups of students who feel unsafe due to aggression and bullying. In addition, victims of chronic bullying are responsible for many school shootings in the United States (Vossekuil, Fein, Reddy, Borum, & Modzeleski, 2002). Failure to address bullying is a disservice to the bully, their victims and bystanders. School safety is associated with academic achievement, whereby students learning under safe school environments have been reported to perform better academically than those learning under insecure environments (Marshall, 2004).

2.6 Expectations for success and Academic Performance

Success in any meaningful endeavor is marked by a history of high expectations that provide the challenge and inspiration necessary to press the individual to his/her highest level of performance. Though there are supportive components of success – environment, general and special abilities, personal work habits and attitudes, and even chance (Tannenbaum, 1997) –, the central factor is high expectations. One's own expectations of oneself are important in the sense that people usually set their goals first and then develop their action plans accordingly. Others' expectations of

individuals are also critical, since people tend to strive to accomplish what is expected of them. In both cases, without high expectations, individuals invariably drift toward mediocrity or even failure.

The case is no less true in education. Research by Lezotte (2001; 2010) revealed that in the effective school, there is a climate of high expectations in which the staff believes and demonstrates that all students can obtain mastery of the school's essential curriculum. They also believe that they, the staff, have the capability to help all students obtain that mastery. The effective school movement emphasizes teacher excellence, collaboration, and mentoring so that schools become places where every educator is recognized as a valuable contributor with unique strengths and impressive potential to learn, grow, and improve (Johnson, 1997). The same approach is true for students. In high performing schools, students are given challenging curricula and demanding tasks, and they are expected to succeed. High performing schools regard every child as an asset. Moreover, each child is considered to possess a unique gift to offer to society (Bauer, 1997).

The strong relationship between expectations and academic achievement has been well established both theoretically and empirically (Johnson, Livingston, Schwartz, and Slate, 2000; Marzano, 2003). Schools with exceptional levels of academic achievement consistently demonstrate high expectations and goals supported by data-driven collaboration and ongoing assessments (Schmoker, 2001). Within the individual classroom, there is a clear correlation between teacher expectations and student achievement. "High expectations represent an overall orientation toward improvement and growth in the classroom, which has been demonstrated to be a defining characteristic of benchmark schools. Effective teachers not only express and

clarify expectations for student achievement, but also stress student responsibility and accountability for striving to meet those expectations (Stronge, 2002).

Perhaps as important as expectations by schools and teachers are parents' academic expectations for their children. Parents' expectations have been shown to be a significant predictor of student success across age groups, races, and nationalities (Seginer, 1983; Kaplan, Liu, and Kaplan, 2001). For this reason, the relationship between expectations and achievement has remained a recurring theme in education reform discussions since Edmonds spawned the effective schools movement (Thomas and Bainbridge, 2001). Certainly, there are other factors that augment high expectations, but the linchpin of academic achievement is high expectations. Even if educators could straighten out all of the supporting factors – finance, teacher quality, equity issues, and so on – without high academic expectations for themselves and/or high expectations of others for them, students would still not reach high levels of achievement.

2.7 Monitoring Student Progress and Academic Performance

The Programme for International Student Assessment (PISA, 2005) allows a classification of policy-amenable school characteristics into three main categories: school resources, school climate, and school policies. The school policies category includes various accountability issues such as whether or not the school conducts self-evaluations and monitors student progress and whether or not the school communicates student performance information to parents or the local authorities (PISA, 2005).

In the effective school, pupil progress on the essential objectives are measured frequently, monitored frequently, and the results of those assessments are used to

improve the individual student behaviours and performances, as well as to improve the curriculum as a whole (Lezotte, 2001). In his paper, *Correlates of Effective Schools: The First and Second Generation*, Lezotte (1991) cites that after what he terms the first generation of frequent monitoring of student progress is accomplished, schools will need to advance into a second generation of frequent monitoring of student progress. During the second generation, the use of technology will permit teachers to do a better job of monitoring their students' progress. This same technology will allow students to monitor their own learning and, where necessary, adjust their own behaviour. The use of computerized practice tests, the ability to get immediate results on homework, and the ability to see correct solutions developed on the screen are a few of the available tools for assuring student learning (Lezotte, 1991).

Writing about the U.S., Hayes (2008) argued that perhaps as a result of a strong focus on improving achievement, high-poverty, high-achieving schools have put great stock in continuously assessing students' progress above and beyond the annual testing required by the law. Many of the studies of successful schools mention schools' reliance on assessment for monitoring progress toward school-wide objectives and teachers' use of assessment data for tracking individual students' progress as well as feedback on their own teaching. A survey of teachers in the U.S. revealed that those at schools successfully closing the gap were more likely to respond that they use data a few times a week or month (rather than a few times a year) than teachers at schools where the gap was stagnant or widening (Symonds, 2003).

High-poverty, high-performing schools in North Carolina also reported relying on periodic assessments of student progress along with detailed data disaggregation of

results by teacher, student, student subgroups and curriculum objectives. Schools participated in district-wide testing every few weeks and often conducted additional, school-based assessments, as well (Hayes, 2008). Successful schools in Texas undertook a similar approach to student assessment. Teachers and principals reported using state assessment data, reading inventories and information from early intervention programs to monitor student progress. Staff would meet about the needs of struggling students and identify appropriate levels of support to ensure that students did not fall behind grade level. As one principal reported, “We use data for one purpose: to find out where kids are weak and to attack those weaknesses” (Ragland et al, 2002).

Use of school- and classroom-based assessments emerged as a common trait of effective schools as well. Teachers administered frequent assessments as a way of communicating to students that there are multiple opportunities to improve and that a consequence of poor performance is not a bad grade (Reeves, 2003). As a result of these frequent assessments, teachers reported being able to provide students more consistent and timely feedback on their performance. In addition, the schools that demonstrated the greatest improvements were those that used common assessments.

2.8 Homes-School Relations and Academic Performance

Henderson and Berla (2004) argue that the most accurate predictor of a student’s achievement in school is not income or social status, but the extent to which that student's family is able to: create a home environment that encourages learning; express high (but not unrealistic) expectations for their children's achievement and future careers; and become involved in their children's education at school and in the

community. Henderson and Berla (2004) argue that when parents are involved in their children's education at home they do better in school.

Student achievement improves when parents become involved in their children's education at school and in the community. Steinberg (2006) shows that the type of parental involvement that has the most impact on student performance requires their direct participation in school activities. Steinberg's (2006) three-year study of 12,000 students in nine high schools in the US revealed that community involvement draws parents into the schools physically and are most effective in improving academic achievement through attending school programs, extracurricular activities, conferences, and 'back to school' nights. It was concluded that when parents come to school regularly, it reinforces the view in the child's mind that school and home are connected and that school is an integral part of the whole family's life.

Snow, Barnes & Chandler (2001) in their two-year study of home and school influences on literacy achievement among children from low-income families, found that the single variable most positively connected to all literacy skills was formal involvement in parent-school activities such as PTA participation, attending school activities, and serving as a volunteer. It is therefore clear that financial factors aside, community involvement has a significant impact on the success of a school in terms of academic achievement.

Studies have also been conducted in Africa on the role of community participation in education. In South Africa for instance, Singh, Mbokodi and Msila (2004) conducted a study on the effects of parental participation on the educational success of their children. Their study revealed that parental support in provision of good learning

environment, physical facilities and spiritual health is crucial in the success of the learner.

A series of studies by Lezotte (2010) showed that home environment is one of the key correlates of effective schools. According to Lezotte's (2010) Effective Schools Model, home-school relations is a general term used to describe a myriad of activities, projects, and programs that bring parents, businesses, and other stakeholders together to support student learning and schools. Wright and Saks (2008) are of the opinion that inviting parents to identify academic goals and standards and quantify measures of progress sends the message that what students learn and how well they learn it is not an issue just for teachers and administrators but is a real priority for the community as well.

According to Hammer (2003) the home environment is as important as what goes on in the school. Important factors include parental involvement in their children's education, how much parents read to young children, how much TV children are allowed to watch and how often students change schools. Achievement gap is not only about what goes on once students get into the classroom. It's also about what happens to them before and after school. Parents and teachers have a crucial role to play to make sure that every child becomes a high achiever. Parental influence has been identified as an important factor affecting student achievement. Results indicate that parent education and encouragement are strongly related to improved student achievement (Odhiambo, 2005).

2.9 Opportunity to Learn/Time on Task and Academic Performance

Knowing what to teach and providing adequate time to teach are essential for effective instruction. Teachers and administrators must balance issues of increasing

curricular demands with limited instructional time. In the effective school, teachers allocate a significant amount of classroom time to instruction in the essential curricular areas. For a high percentage of this time, students are actively engaged in whole-class or large group, teacher-directed, planned learning activity (Lezotte, 2001). Lezotte (1991) suggests creating an “interdisciplinary curriculum” to teach the necessary skills in the least amount of time, making decisions about what is most important and letting go of the rest – what he calls “organized abandonment” (p. 4).

The time that students spend engaged in focused learning activities is clearly considered the most valuable in terms of their academic performance and many researchers advocate for increased attention to strategies that enhance the quality of this time rather than simply adding more student school days (Erling, 2007). An overview of studies on the relationship between time and learning in industrialized nations (Aronson, Zimmerman & Carlos, 1998), explored the limitations of existing research and defined the terms used in research, such as allocated time, engaged time, and academic-learning time. They concluded that: there is little or no relationship between allocated time and student achievement, there is some relationship between engaged time and achievement, there is a larger relationship between academic-learning time and achievement, there is no consistent relationship between the amount of time allocated for instruction, and the amount of time students spend engaged in learning activities (Aronson, et al., 1998).

There has been a tendency for researchers to look at the total amount of school time, because quantity is easier to identify and measure. Such studies conclude however that allocated time alone is not a helpful measure because it does not consider how time is being used or the quality of instructional activities, and suggest that their

findings should encourage educators to focus instead on the time that matters (Cooper, Valentine, Charlton & Melson, 2003; Prendergast, Spradlin & Palozzi, 2007).

Given that actual time-on-learning appears to be a more important determinant of student success in school, consideration should be devoted first to strategies that increase the overall *quality* of instructional time for all students. For students who may be struggling to meet standards or for priority program areas that have been targeted for significant improvement by a school district, there could be an additional benefit to extending the *quantity* of instructional time, but only if it is used effectively and productively (Aronson, et al., 1998). A study of schools successfully closing the achievement gap in the San Francisco Bay Area found that they had a narrower reform focus and were therefore better at zeroing in on what needs to be done” than schools that were maintaining or widening the gap (Symonds, 2003).

2.10 Summary

The literature reviewed in this section shows that academic performance can be influenced by a number of factors. The literature shows that schools that perform well are those that have effective instructional leadership (Hoy & Hoy, 2009; Lezotte, 2010). Studies were identified showing that effective instructional leadership correlates with school improvement and effectiveness (Scheerens & Bosker, 1997; Lezotte, Skaife & Holstead, 2002; Lezotte, 2010).

Focus on school mission has also emerged as an important determinant of school effectiveness, with Lezotte (1991) stating that in effective schools there is a clearly articulated school mission through which the staff shares an understanding of and commitment to instructional goals, priorities, assessment procedures, and

accountability. Studies conducted in Kenya (KEMACA, 2008; Ngware, et al. 2006) show that schools in the country do not demonstrate focus on mission and vision.

Another factor identified is school safety and orderliness, whereby reviewed literature shows multiple factors within the area of school climate that are positively linked to students' academic achievement and social well-being (Gottfredson, Gottfredson, Payne, & Gottfredson (2005). It also emerges from the literature that expectations for success significantly influences academic performance (Johnson, Livingston, Schwartz, and Slate, 2000; Marzano, 2003).

Frequent monitoring of students' progress also emerged as an important determinant of academic performance (Ragland et al, 2002; Symonds, 2003; Hayes, 2008). Other researchers have argued that home-school relations are the most important predictors of educational outcomes of students (Henderson & Berla, 2004; Steinberg, 2006; Singh, et al., 2004; Snow, et al., 2001). The review finally shows that time on task is an important predictor of academic performance (Erling, 2007; Aronson, et al., 1998).

While studies have been conducted in Kenya on factors influencing KCSE performance (Musoko, 1983; Magiri, 1997; Anyango, 2001; Orina, 2005; Nkonge, 2010), the researcher did not come across any that addresses all the factors in the Effective Schools Model by Lezotte (2010), which argues that effective schools are characterized by strong instructional leadership, clear and focused mission, safe and orderly schools, climate of high expectations for success, frequent monitoring of student progress, positive home-school relations, and opportunity to learn/time on task. The study examined how these factors influence academic performance in well performing and poor performing schools in Nyeri and Kiambu Counties, and identified academic performance improvement strategies employed in the schools.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology of the study. The chapter highlights the research design, target population, sample and sampling procedures, research instruments, data collection techniques, validity and reliability of instruments and data analysis.

3.2 Study Design

The survey design was used in this research to obtain the research data. According to Lokesh (1984) survey studies are designed to obtain persistent and precise information concerning the current state of phenomena and whenever possible to draw varied general conclusions from the facts discovered. Survey methods are non-experimental for they deal with the relationships among non-manipulated variables. Since the events or conditions have already occurred or exist the researcher merely selects the relevant variable for the analysis of their relationships (Best and Khan, 1993). The choice of this research design for the study was based on the fact that the researcher did not manipulate variables. The dependent variable of the study was academic performance, which was measured by the KCSE grades and mean scores obtained by schools for the period 2006 – 2010. The independent variables of the study were the extent to which schools practiced the seven correlates of effective schools as described in the effective schools model (Lezotte, 2010). These were: instructional leadership, focus on vision and mission, school safety and orderliness, communicating high expectations for success, monitoring of student progress, home-school relations, and opportunity to learn.

3.3 Study Localé

This study was conducted in secondary schools in the Central region of Kenya. Central region of Kenya has five Counties: Nyandarua, Kiambu, Kirinyaga, Murang'a, and Nyeri. The total number of secondary schools in Central region is 1,049. Among these schools, 167 are private schools, 3 are special schools, and 879 are regular public schools, of which 6 are National schools situated in Kiambu County. The study was conducted in the 873 Provincial and District Public secondary schools.

3.4 Target Population

The target population of the study included the secondary schools' principals, heads of departments, teachers, and education officers in charge of all the 873 Provincial and District Public Secondary Schools in Central region. Table 3.1 shows the distribution of the target population.

Table 3.1: Distribution of the Study Population

County	Provincial Schools	District Schools	Total No. of schools	No. of teachers		
				Male	Female	Total
Nyeri	26	154	204	1,069	827	1896
Kiambu	26	193	297	1,643	1,814	3,457
Kirinyaga	19	89	119	791	886	1,677
Murang'a	22	235	280	1,583	1,113	2,696
Nyandarua	13	96	143	756	355	1,111
Totals	106	767	873	5,842	4,995	10,837

Source: Central Region Education Office (2011)

As shown in Table 3.1, there are 873 regular public schools in Central region, of which 204 are in Nyeri, 297 in Kiambu, 119 in Kirinyaga, 280 in Murang'a and 143 in Nyandarua County. The total number of teachers in the region is 10,837, with 5,842

male and 4,995 female teachers. The accessible population for the study was the public secondary schools and 5,353 teachers in Kiambu and Nyeri counties.

3.5 Sample Frame and Sampling Procedure

3.5.1 Sampling Frame

For the purpose of this study, data was collected in public secondary schools in two counties – Kiambu and Nyeri. The choice of the two counties was based on the fact that most of the schools in one of them – Nyeri County – have consistently been posting good performance in KCSE. On the other hand, most of the schools in Kiambu County have been persistently performing poorly in KCSE. The other reason for choosing the two counties was that Kiambu County is near Nairobi City, thus most of her schools can be influenced by urban factors, while Nyeri County is largely rural. This allowed the researcher to control for the moderating effects of school location (rural versus urban). This study adopted the multiphase sampling technique whereby both probability and non-probability sampling design were used as described below.

3.5.2 Stratified sampling

In a stratified sample the sampling frame is divided into non-overlapping groups or strata, e.g. geographical areas, age-groups, genders. A sample is taken from each stratum, and when this sample is a simple random sample it is referred to as stratified random sampling. Stratification achieves greater precision provided that the strata have been chosen so that members of the same stratum are as similar as possible in respect of the characteristics of interest. In this regard, the researcher used stratified sampling to select 40 schools for the study, 20 each from Kiambu and Nyeri Counties.

The schools in the two counties were stratified according to performance. The first stratum comprised of schools that have been consistently performing well for the last

five years (2006 – 2010), and the other stratum comprised those that have been consistently performing poorly for the same period. The researcher wrote names of the schools of each stratum on pieces of paper and picked the required sample size from each cluster. Since all the six National Schools in the region are based in Kiambu County, this category of schools was not included in the study. The study involved comparing schools of similar types (provincial versus provincial; district versus district; boarding versus boarding; day versus day) to ensure similarity considerations in the two counties under study. All the principals of the 40 schools thus selected were included in the study sample.

3.5.3 Purposive Sampling

Purposive sampling is a non-probability sampling technique that is used to select individuals from a given population who have unique characteristics and hold specific information desired for the study. The power of purposive sampling lies in selecting information rich-cases for in-depth analysis related to the central issues being studied. For this reason, purposive sampling was used to select all the 17 District Education Officers in Kiambu and Nyeri Counties.

3.5.4 Simple Random Sampling

In simple random sampling, each item or element of the population has an equal chance of being chosen at each draw. A sample is random if the method for obtaining the sample meets the criterion of randomness (each element having an equal chance at each draw). The actual composition of the sample itself does not determine whether or not it was a random sample. Therefore, simple random sampling was used to select teachers and Heads of Departments (HODs).

Out of the 5,353 teachers in public secondary schools in Kiambu and Nyeri counties, a representative sample was selected using simple random sampling. The method proposed by Kathuri and Pals (1993) was used to determine the sample size of teachers. Kathuri and Pals (1993) came up with a guide for determining needed size of a randomly chosen sample from a given finite population of N cases such that the sample proportion P will be within plus or minus 0.05 of the population proportion P with a 95% level of confidence. From this guide, a minimum sample of 358 cases should be chosen from a population of 5,353 cases. Therefore, a sample of 360 teachers was selected for the study, with each of the 40 schools contributing 9 teachers. To obtain the 9 teachers per school, the researcher first selected 3 HODs, and then 6 teachers were randomly selected. Table 3.2 shows the sampling matrix.

Table 3.2: Sampling Matrix

County	Schools/Principals		Teachers	
	Population	Sample size	Population	Sample size
Nyeri	204	20	1,896	180
Kiambu	297	20	3,457	180
Totals	501	40	5,353	360

Consequently, the sample size for the study was comprised of 40 principals and 360 teachers (120 HODs and 240 regular teachers) drawn from 40 public secondary schools in Kiambu and Nyeri Counties. All the 17 District Education Officers in Kiambu and Nyeri Counties also took part in the study, giving a total of 417 respondents.

3.6 Research Instruments

In this study, the researcher used questionnaires and an interview guide to collect data. There were two sets of questionnaires, one for principals and one for teachers and HODs. On the other hand, the interview guide was used to conduct interviews with the district education officers. Details about the instruments are as provided below.

3.6.1 Questionnaire for Principals

The questionnaire for principals was used to gather data from school principals on the factors that influence academic performance in their schools. The questionnaire had both open-ended questions and closed questions. The questionnaire had the following sections. Section one gathered background data of the principals and their schools, including gender, work experience and academic/professional qualifications, and type of school. Section two of the questionnaire gathered data on the academic performance of the schools for the past five years – from 2006 to 2010. Section three was comprised of Likert scales to measure the extent to which schools engage in the seven correlates of effective schools. Section four had open-ended questions for principals to propose measures for improving academic performance in their schools.

3.6.2 Questionnaire for Teachers/HODs

This questionnaire was used to gather data from teachers and HODs on the factors that influence academic performance in their schools. The questionnaire for teachers and HODs had the following sections. Section one gathered background data of the respondents, including gender, work experience and academic/professional qualifications. Section two was comprised of Likert scales to measure the extent to which schools engage in the seven correlates of effective schools. The third section

was comprised of open ended questions for respondents to propose measures for improving academic performance in their schools.

3.7 Pilot Study

Before actual data collection, a pilot study was conducted in six schools in Central region, which were not included in the actual study. The respondents in the pilot study were 6 principals and 18 HODs and 36 teachers from the 6 pilot schools. The aim of this pilot study was to test the reliability and to assess the validity of the instruments as described below:

3.7.1 Reliability of the Instruments

Mugenda and Mugenda (1999) define reliability as a measure of the degree to which a research instrument yields consistent results or data after repeated trials. In order to improve the reliability of the instrument, an assessment of the consistency of the responses on the pilot questionnaires was made to make a judgement on their reliability. Test-retest technique of reliability testing was employed whereby the pilot questionnaires were administered twice to the respondents, with a one week interval, to allow for reliability testing. Then the scores were correlated using Pearson Product-Moment Correlation formula to determine the reliability coefficient. A correlation coefficient of 0.83 was obtained and accepted as recommended by Mugenda and Mugenda (1999).

3.7.2 Validity of the Instruments

Validity is defined as the accuracy and meaningfulness of inferences, which are based on the research results (Mugenda and Mugenda, 1999). Face validity refers to the likelihood that a question will be misunderstood or misinterpreted, thus, the pilot study helped to iron out ambiguity. Pre-testing a survey is a good way to increase the

likelihood of face validity. According to Borg and Gall (1989), content validity of an instrument is improved through expert judgment. Content validity refers to whether an instrument provides adequate coverage of a topic. Expert opinions help to establish content validity (Wilkinson, 1991). As such, assistance was sought from the supervisors and other experts from the University, in order to help improve content validity of the instruments.

3.8 Data Collection Procedure

A research permit was obtained from the National Council for Science and Technology. Thereafter the offices of the District Education Officers (DEOs) for the respective districts were notified before the start of the study. The selected schools were visited and the questionnaire administered to the respondents. The respondents were assured that strict confidentiality would be maintained in dealing with the responses. The filled-in questionnaires were collected after one week.

3.9 Data Analysis

This study generated both qualitative and quantitative data; hence both qualitative and quantitative techniques were used to analyze the data obtained. Quantitative data were analyzed using descriptive and inferential statistics. Mugenda and Mugenda (1999) assert that the purpose of descriptive statistics is to enable the researcher to meaningfully describe a distribution of scores or measurement using a few indices or statistics. Descriptive statistics involved the use of means, standard deviations, frequencies and percentages. The process of data analysis required the use of a computer spreadsheet, and for this reason the Statistical Package for Social Sciences (SPSS) was used. In order to determine the relationship between independent and

dependent variables of the study, Pearson Product Moment correlation coefficient and the t-test were used at the 0.05 level of significance.

In order to establish the relative contribution of each independent variable on academic performance, a linear regression model was specified as depicted by the formula below:

$$Y = a_1X_1 + a_2X_2 + a_3X_3 + a_4X_4 + a_5X_5 + a_6X_6 + a_7X_7 + c$$

Where:

Y = Academic performance (KCSE mean scores for the schools)

X₁ = Emphasis on instructional leadership,

X₂ = Focus on vision and mission

X₃ = School safety and orderliness

X₄ = Communicating high expectations for success

X₅ = Monitoring of student progress

X₆ = Home-school relations

X₇ = opportunity to learn

c = Constant; and a₁..a₇ are regression coefficients

The multiple linear regression equation above was used to examine the relationship between the two sets of variables, one of which is referred to as the predictor variable (in this case the seven correlates), and the other of which is referred to as the criterion variable (in this case academic performance).

Qualitative analysis considered the inferences that were made from the opinions of the respondents. Qualitative data were analyzed qualitatively using content analysis based on analysis of meanings and implications emanating from respondent information and comparing responses to documented data on factors influencing academic

performance. The qualitative data were presented thematically in line with the objectives of the study.

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter presents the results of the study based on the data collected from the field. The purpose of this study was to determine the factors that cause differential KCSE performance and school effectiveness in public secondary schools in Nyeri and Kiambu Counties. The study had the following research objectives.

1. To determine the strategies being employed by public secondary schools in Nyeri and Kiambu Counties to improve students' academic performance and promote school effectiveness.
2. To establish the factors determining differential KCSE performance in public secondary schools in Nyeri and Kiambu Counties.
3. To examine the relationship between school effectiveness and overall school performance in KCSE.
4. To identify academic performance improvement lessons that can be learnt from schools that consistently perform well at the KCSE level.

To obtain data for the study, questionnaires were distributed to 40 principals, 120 heads of departments and 240 teachers, and 17 District Education Officers (DEOs) a total of 417 target respondents. Of the targeted 417 respondents, 226 teachers, 120 heads of departments, 17 DEOs, and 39 principals responded, a total of 402 respondents giving a questionnaire return rate of 96.4% which was high enough.

4.2 Demographic Data of the Respondents

Table 4.1 shows the academic qualifications of the teachers, heads of departments and the principals who took part in the study.

Table 4.1: Levels of Education Attained by Respondents

Level of education	Teachers		HODs		Principals		Total	
	No.	%	No.	%	No.	%	No.	%
Masters degree	11	4.9	5	4.2	5	12.8	21	5.5
B.Ed	109	48.2	59	49.2	20	51.3	188	48.8
Bachelors Degree (B.A. or BSC)	56	24.8	29	24.2	12	30.8	97	25.2
Diploma	50	22.1	26	21.6	2	5.1	78	20.3
PGDE	0	0.0	1	0.8	0	0.0	1	0.3
Total	226	100.0	120	100.0	39	100.0	385	100.0

Table 4.1 shows that majority of the respondents (comprising 51.3% principals, 49.2% HODs and 48.2% teachers) had Bachelor of Education qualifications. There were 20.3% of the respondents with diplomas, 25.2% with Bachelor Degrees, and 5.5% with Masters Qualifications. Level of education of teachers has been shown through previous studies to be associated with teacher effectiveness, especially for those with Bachelor of Arts or Science degrees without any training related to education. Majority of the respondents in this study had Bachelor of Education qualifications, hence it would be expected that they were aware of factors influencing school effectiveness and academic performance.

Table 4.2 shows the work experience of the principals.

Table 4.2: Years of Experience in Headship

Years of experience	No of principals	Percent
1 - 5 years	7	17.9
6 - 10 years	18	46.3
10 - 15 years	7	17.9
Over 15 years	7	17.9
Total	39	100.0

Table 4.2 shows that majority of the principals had over 5 years of experience in school management. This implies that they had served in the schools long enough to have an in depth understanding of the factors that influence academic achievement of their students. They had also been in a position to influence academic performance in their schools.

Table 4.3 shows the years of teaching experience of teachers and the heads of departments.

Table 4.3: Teaching Experience of Teachers

Years of experience	Teachers		HoDs		Total	
	No.	%	No.	%	No.	%
1 - 5 years	67	29.6	7	5.8	74	21.4
6 - 10	49	21.7	12	10.0	61	17.6
10 - 15	45	19.9	32	26.7	77	22.3
16 - 20	35	15.5	41	34.2	76	22.0
More than 20 years	30	13.3	28	23.3	58	16.7
Total	226	100.0	120	100.0	346	100.0

As shown in Table 4.3, teaching experience was almost equally spread over all the years for the teachers. It is clear from the table that majority of the teachers and HoDs

had over 5 years of work experience, meaning they were conversant with the factors that influenced academic performance in their schools in relation to the seven correlates of effective schools.

4.7 Strategies being employed to Improve Academic Performance

The first research objective was to determine the strategies being employed by public secondary schools in Nyeri and Kiambu Counties to improve students' academic performance and promote school effectiveness. To address this objective, the study participants were presented with a number of statements based on the seven correlates of effective schools as proposed by Lezotte (2010), which are: instructional leadership, focus on school vision and mission, safety and orderliness of schools, expectations for success, monitoring of students' progress, home-school relations, and opportunity to learn for students. The respondents (teachers, principals and HODs) were asked to indicate the extent to which their schools practiced the various aspects of the seven variables that influence academic performance. Their ratings were scored on a four-point Likert-scale ranging from 1 (never) to 4 (always). The findings are as discussed below for each of the seven correlates.

4.3.1 Strategies related to Instructional Leadership

One of the correlates of effective schools according to Lezotte (2010) is strong instructional leadership, which is characterized by having instructional leaders who are proactive and seek help in building team leadership and a culture conducive to learning and professional growth. To determine the extent to which schools engaged in various instructional leadership practices, the teachers, heads of departments and the principals were presented with an 8-item 4-point scale. High mean scores on the scale (close to 4) denoted that schools mostly emphasised on instructional leadership

while low scores (close to 1) denoted that schools rarely put emphasis on this correlate of effective schools. Table 4.4 shows the mean scores and standard deviations obtained by the respondents on emphasis placed on various aspects of instructional leadership.

Table 4.4: Strategies Related to Instructional Leadership

Instructional leadership	Principals (n=39)		HODs (n=120)		Teachers (n=226)		Total (n=385)	
	M	SD	M	SD	M	SD	M	SD
Making sure teachers keep updated professional documents (schemes of work, lessons plans)	3.95	0.223	3.79	0.466	3.87	0.395	3.85	0.416
Providing all the teaching and learning resources needed for improved performances	3.87	0.339	3.82	0.430	3.74	0.556	3.78	0.501
Holding regular staff meetings to discuss academic progress.	3.77	0.485	3.72	0.565	3.68	0.640	3.70	0.607
Involving teachers to decide on best strategies to improve teaching and learning	3.82	0.389	3.69	0.531	3.66	0.644	3.68	0.594
Supervising teachers to ensure they complete syllabus on time	3.82	0.389	3.68	0.580	3.64	0.620	3.68	0.586
Building teamwork among teachers to ensure they support one another	3.87	0.339	3.57	0.683	3.50	0.850	3.56	0.769
Holding staff appraisal meetings to discuss opportunities for academic improvement.	3.15	0.745	3.32	0.758	3.24	0.924	3.26	0.859
Visiting teachers in class to supervise teaching	2.28	0.724	2.34	0.983	2.41	0.965	2.38	0.947

Table 4.4 shows that the mean scores obtained on strategies employed on instructional leadership ranged from 3.95 to 2.28. Mean scores above 3.5 denoted that the school administrators were always engaging in the instructional leadership factors while

mean scores below 3.5 denoted that the school administrators sometimes or rarely engage in the instructional leadership factors in question. Based on the results in Table 4.5, the principals were strongly providing instructional leadership except in the last two areas (visiting teachers in class to supervise teaching and holding staff appraisal meetings to discuss strengths, weaknesses and opportunities for academic improvement) where the means were very low.

Based on the ratings given on this scale, an overall score on instructional leadership was computed, with the highest possible score being 32 (high emphasis on instructional leadership) and the lowest possible score being 8 (low emphasis on instructional leadership). Figure 4.1 shows the overall scores obtained by the respondents on the instructional leadership strategies employed to improve academic performance in the schools.

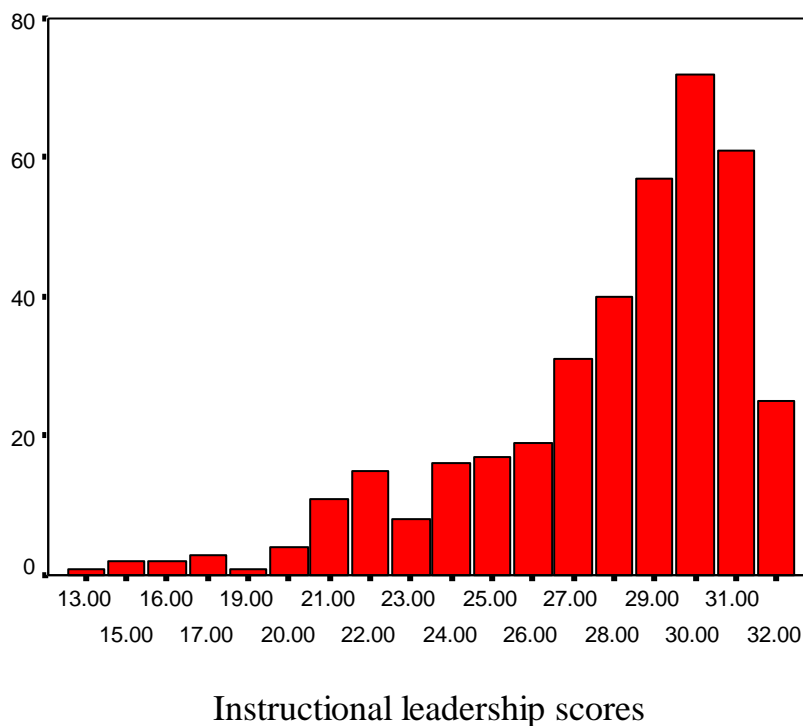


Figure 4.1: Overall Scores on Instructional Leadership

As shown in Figure 4.1 the scores obtained on instructional leadership ranged from 13 to 32. It emerges from this bar graph that most of the respondents were of the view that their schools put a high emphasis on instructional leadership. Previous research had shown the indicators of schools having effective instructional leaders to include factors like teacher morale and satisfaction (MacNeil, 1992), teacher self-efficacy (Lubbers, 1996), school and organizational culture (Reid, 1987), teacher effectiveness and time on task (Watkins, 1992), and improved academic performance (Wilson, 2005). Lezotte (2010) argued that schools need effective instructional leaders to communicate the school's mission and vision. By persistently reinforcing the school's mission, the instructional leader created a shared sense of purpose and established a set of common core values among the teachers. Kirk and Jones (2004) on the other hand argued that having common core values and a shared sense of purpose helped guide all members of the instructional team and avoided individuals straying from the intended goals.

4.3.2 Strategies Related to School Safety and Orderliness

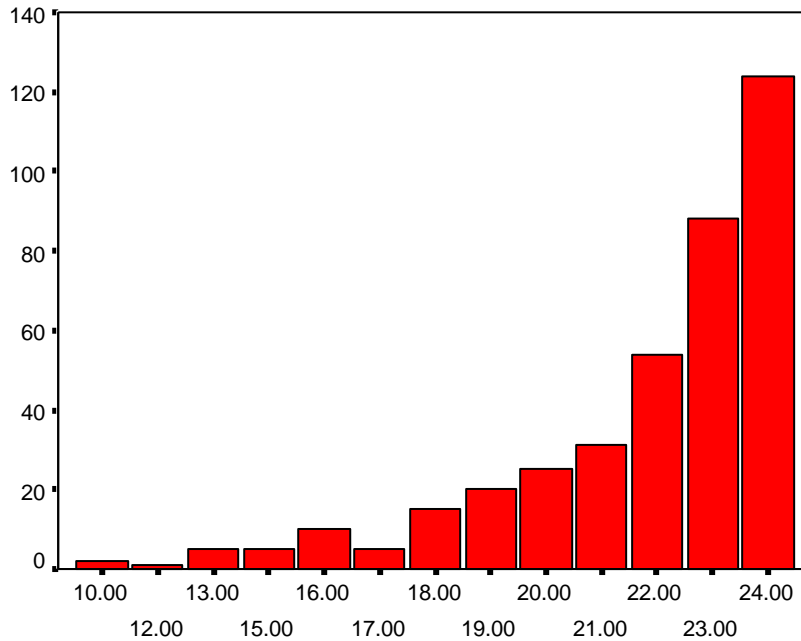
School safety and orderliness is another correlate of effective schools. Consequently, the respondents were presented with a 6-item 4-point scale to measure the extent to which their schools put emphasis on school safety and orderliness. High scores on the scale (close to 4) denoted that schools mostly emphasised on this correlate while low scores (close to 1) denoted that schools rarely put emphasis on this correlate of effective schools. Table 4.5 presents the mean scores and standard deviations obtained by the respondents on emphasis placed on various aspects of school safety and orderliness.

Table 4.5: Strategies Related to School Safety and Orderliness

School safety and orderliness	Principals (n=39)		HODs (n=120)		Teachers (n=226)		Total (n=385)	
	M	SD	M	SD	M	SD	M	SD
Ensuring that the school climate is conducive for teaching and learning	3.97	0.160	3.73	0.530	3.72	0.597	3.75	0.550
Ensuring the school compound is clean and orderly	3.92	0.270	3.73	0.498	3.64	0.655	3.70	0.583
Providing guidance and counseling to students	3.85	0.366	3.67	0.540	3.65	0.589	3.68	0.555
Discussing students' discipline with parents	3.62	0.493	3.52	0.565	3.62	0.556	3.58	0.553
Involving teachers to identify ways of improving discipline in the school	3.79	0.409	3.62	0.582	3.52	0.747	3.58	0.673
Ensuring the school has all the necessary physical and material resources	3.56	0.502	3.63	0.647	3.49	0.735	3.54	0.688

As shown in Table 4.5, the mean scores obtained by the principals, HoDs and teachers on strategies related to school safety and orderliness ranged from 3.75 to 3.54. The highest ranked factors were: ensuring that the school climate is conducive for teaching and learning and ensuring the school compound is clean and orderly. On the other hand, the lowest ranked factors were: ensuring the school had all the necessary physical and material resources and involving teachers to identify ways of improving discipline in the school.

An overall score for school safety and orderliness was computed for emphasis on school safety and orderliness, with the highest possible score being 24 (denoting high emphasis) and the lowest possible score being 6 (denoting low emphasis on this correlate). Figure 4.2 shows scores obtained on school safety and orderliness.



School safety and orderliness scores

Figure 4.2: Overall Scores on School Safety and Orderliness

As shown in Figure 4.2, the scores obtained on the school safety and orderliness scale ranged from 10 to 24, with majority of the respondents scoring highly. This implies that most of the teachers and principals rated their schools as highly emphasising on safety and orderliness. According to Lezotte (2010), a safe and orderly school is one that has a climate and culture characterized by reasonable expectations for behaviour, consistent and fair application of rules and regulations, and caring, responsive relationships among adults and students. Based on a series of research, Lezotte (1991) indicated that desirable behaviours would include cooperative team learning, respect for human diversity, and an appreciation of democratic values. The findings of this study agreed with the previous study findings, since most of the respondents indicated the school administrators put emphasis in ensuring that the school climate is conducive for teaching and learning.

4.3.3 Strategies Related to Clarification of School Vision and Mission

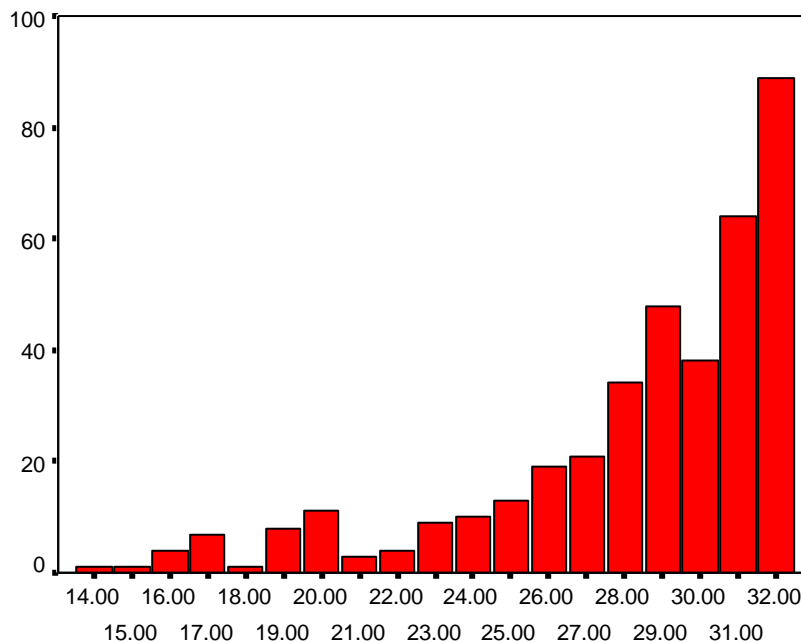
The other correlate of effective schools according to the Effective Schools Model (Lezotte, 2010) is having a clear and focused mission. To measure the extent to which schools clarified the school vision and mission to students, teachers and stakeholders, an 8-item 4-point Likert scale was used. High scores on the scale (close to 4) denoted that schools mostly emphasised on this correlate while low scores (close to 1) denoted that schools rarely put emphasis on clarifying the school vision and mission. Table 4.6 shows the mean scores and standard deviations obtained by the respondents on emphasis placed on various aspects of emphasising school vision and mission.

Table 4.6: Strategies Related to Clarification of Vision and Mission

Clarification of vision and mission	Principals (n=39)		HODs (n=120)		Teachers (n=226)		Total (n=385)	
	M	SD	M	SD	M	SD	M	SD
Reminding students of their core business in the school and ensuring they remain focused.	3.87	0.339	3.86	0.416	3.85	0.457	3.86	0.430
Ensuring that teachers are working towards realization of their goals	3.77	0.427	3.68	0.637	3.67	0.590	3.68	0.590
Encouraging students to set academic performance goals at the beginning of each term	3.56	0.598	3.67	0.640	3.59	0.691	3.62	0.664
Ensuring teachers set achievable academic performance goals for their subjects	3.72	0.456	3.56	0.708	3.58	0.673	3.59	0.664
Setting overall school goals with the teachers and motivating them towards attainment of the set goals	3.77	0.427	3.48	0.733	3.43	0.873	3.48	0.797
Ensuring that teachers, students, parents participate in setting school goals and objectives.	3.51	0.644	3.39	0.714	3.34	0.824	3.38	0.771
Clarifying school vision & mission to teachers, students and parents	3.54	0.555	3.31	0.731	3.34	0.807	3.36	0.761
Comparing the goals set by students at the beginning of the term and their end of term performance to identify causes of failure to attain targets	3.46	0.720	3.39	0.813	3.32	0.867	3.36	0.836

Table 4.6 shows that the mean scores obtained on the individual items of the scale ranged from 3.86 to 3.36. The highest ranked factors were reminding students of their core business in the school and encouraging them to remain focused, and ensuring that teachers are working towards realization of their goals. On the other hand, the lowest ranked factors were comparing the goals set by students at the beginning of the term and their end of term performance to identify causes of failure to attain targets, and clarifying the school vision and mission to teachers, students and parents.

Based on the ratings given on the scale, an overall score on clarification of school vision and mission was computed, with the highest possible score being 32 (high emphasis on the correlate) and the lowest possible score being 8 (low emphasis on the correlate). Figure 4.3 shows the overall scores obtained by the respondents on the strategies employed to improve academic performance in the schools in relation to emphasis on school vision and mission.



Clarification of vision and mission scores

Figure 4.3: Overall Scores on Clarification of School Vision and Mission

The scores obtained on the scale as shown in Figure 4.3 ranged from 14 to 32, with the majority of the respondents obtaining high scores. This means that most of the teachers and principals rated their schools as putting a high emphasis on clarification of school vision and mission. This contradicts the findings of previous studies (Ngware, Wamukuru & Odebero, 2006; KEMACA, 2008), which suggest that schools in Kenya do not put adequate emphasis on this correlate. For instance, the study by Ngware *et al.* (2006) established that most schools in the country did not engage in strategic planning. These researchers further established that even the schools with strategic plans were weak in systematic follow-up to ascertain the implementation of the plans. Another research by KEMACA (2008) concluded that, mission and vision statements for Kenyan schools tended to be rather general and not sufficiently focused on outputs and outcomes. The findings of this study could be an early indication of positive change from previous findings.

4.3.4 Strategies Related to Communicating Expectations for Success

According to the Effective schools model, the other correlate of effective schools is communicating expectations for success (Lezotte, 2010). The study therefore sought to find out the extent to which schools in Kiambu and Nyeri Counties emphasised on this correlate. Consequently, the respondents were presented with an 5-item, 4-point Likert scale. High scores on the scale (close to 4) denoted that schools mostly emphasised on this correlate while low scores (close to 1) denoted that schools rarely communicated expectations for success to students and teachers. Table 4.7 shows the mean scores and standard deviations obtained by the respondents on emphasis placed on communicating expectations for success to students and teachers.

Table 4.7: Strategies Related to Expectations for Success

Expectations for success	Principals (n=39)		HODs (n=120)		Teachers (n=226)		Total (n=385)	
	M	SD	M	SD	M	SD	M	SD
Making it clear to students that the school has high hopes that they will perform well in KCSE	3.90	0.307	3.83	0.455	3.78	0.579	3.81	0.518
Making clear to teachers that the school has confidence in them that they can lead students to academic success	3.92	0.270	3.68	0.580	3.46	0.816	3.58	0.721
Ensuring all teachers have a ‘no child left behind attitude’, i.e. all students can do well irrespective of their entry behaviour	3.54	0.643	3.57	0.644	3.55	0.669	3.56	0.655
Encouraging teachers to ‘think and act like winners not losers’	3.82	0.389	3.51	0.686	3.46	0.816	3.51	0.747
Assisting teachers to identify threats that may hinder academic success.	3.64	0.537	3.47	0.710	3.38	0.785	3.43	0.747

The mean scores obtained on individual items of the expectation for success scale ranged from 3.81 to 3.43. The highest ranked factors on the scale were making it clear to students that the school has high hopes that they will perform well in KCSE exams, and making clear to teachers that the school administration has confidence in them that they can lead students to academic success. On the other hand, the lowest ranked factors on the scale were assisting teachers to identify threats that may hinder academic success, and encouraging teachers to ‘think and act like winners and not losers’.

An overall score for emphasis on communicating expectations for success was computed, with the highest possible score being 20 (denoting high emphasis) and the lowest possible score being 5 (denoting low emphasis on this correlate). Figure 4.4 shows scores obtained on emphasis on communicating expectations for success.

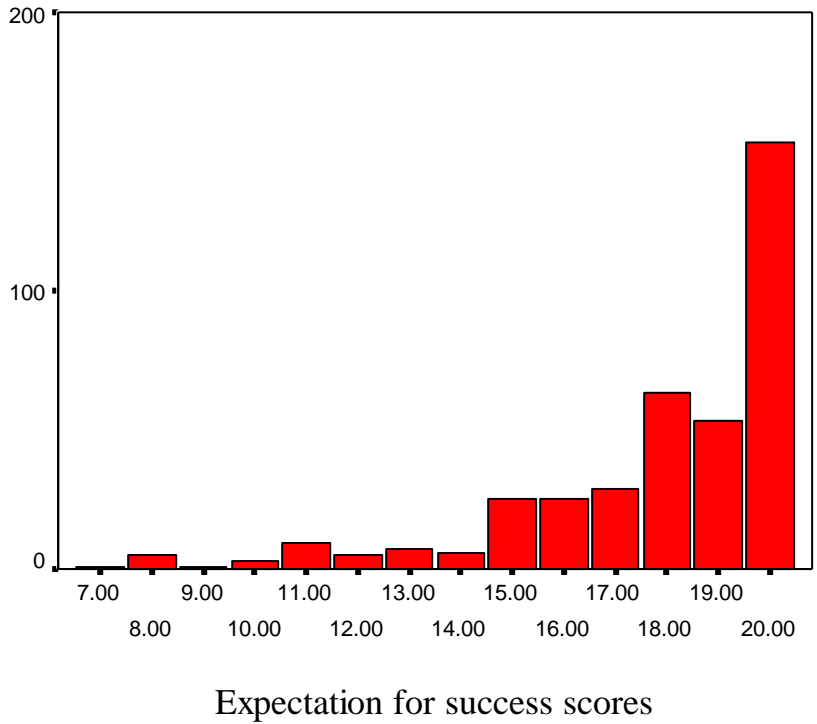


Figure 4.4: Overall Scores on Emphasis on Expectations for Success

It emerges from Figure 4.4 that the scores obtained on the scale ranged from 7 to 20. Again in this scale most of the respondents obtained high scores, meaning they rated their schools to most of the times lay emphasis on communicating expectations for success to students and teachers. Previous research by Lezotte (2001; 2010) reported that in the effective school, there is a climate of high expectations in which the staff believes and demonstrates that all students can obtain mastery of the school’s essential curriculum. Other researchers such as Ross & Victoria (2009) reported that setting high expectations for success results to motivation to learn among the students, and this motivation contributes to good academic performance. The fact that the scores on all expectation for success aspects were high could be an indication that secondary school administrators in Kiambu and Nyeri Counties had recognised the need to motivate students to work towards achieving their educational goals. This was

confirmed by the District Education Officers, who indicated that schools that perform well are characterised by high levels of motivation among students and teachers.

4.3.5 Strategies Related to Strong Home-School Relations

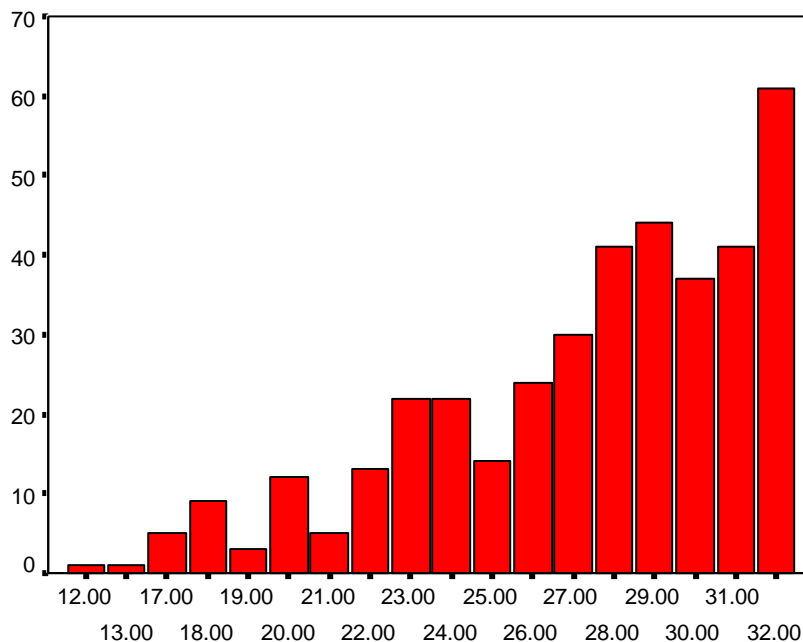
The other correlate of effective schools according to Lezotte (2010) is having strong home-school relations. To measure the extent to which schools ensured there exist strong home-school relations, an 8-item 4-point Likert scale was used. High scores on the scale (close to 4) denoted that schools mostly emphasised on this correlate while low scores (close to 1) denoted that schools rarely ensured that there were strong home-school relations. Table 4.8 shows the mean scores and standard deviations obtained on this correlate.

Table 4.8: Strategies Related to Home-School Relations

Home-school relations	Principals (n=39)		HODs (n=120)		Teachers (n=226)		Total (n=385)	
	M	SD	M	SD	M	SD	M	SD
Reminding parents of their duty in ensuring students are disciplined	3.69	0.521	3.64	0.632	3.65	0.596	3.65	0.599
Inviting parents to discuss academic progress of students	3.67	0.478	3.58	0.574	3.61	0.573	3.61	0.563
Ensuring all parents attend meetings	3.74	0.498	3.44	0.683	3.49	0.765	3.50	0.722
Advising parents on home environment factors that promote learning of their children	3.62	0.544	3.43	0.657	3.38	0.707	3.42	0.677
Parents supporting the school to procure resources for improved teaching and learning	3.59	0.595	3.43	0.796	3.34	0.845	3.40	0.807
Parents providing all necessary support materials to students	3.44	0.718	3.42	0.773	3.29	0.866	3.34	0.826
Holding academic clinics with parents of poor performing students	3.26	0.751	3.43	0.752	3.26	0.898	3.30	0.841
Parents offering moral support to teachers	3.49	0.644	3.19	0.863	3.07	0.975	3.15	0.914

As shown in Table 4.8, the mean scores obtained by principals, HODs and teachers on individual items related to home-school relations ranged from 3.65 to 3.15. The most highly ranked factors were reminding parents of their duty in ensuring students are disciplined and inviting parents to discuss academic progress of their children. On the other hand, the lowest ranked factors were parents offering moral support to teachers and the school administration and holding ‘academic clinics’ at the beginning of each term with parents of students who perform poorly to explore possible measures.

Based on the ratings given on the scale, an overall score on home-school relations was computed, with the highest possible score being 32 (high emphasis on the correlate) and the lowest possible score being 8 (low emphasis on the correlate). Figure 4.5 shows the overall scores obtained by the respondents on the strategies employed to improve home-school relations.



Home-school relations scores

Figure 4.5: Overall Scores on Strategies Related to Home-School Relations

The results in Figure 4.5 show that the overall scores ranged from 12 to 32, with most of the respondents obtaining high scores on the scale. It therefore emerges that most of the principals and teachers rated their schools high on emphasis on strong home-school relations. Findings of previous studies indicate that student achievement improves when parents become involved in their children's education at school and in the community (Steinberg, 2006). A previous study by Snow, et al. (2001) revealed that the single variable most positively connected to all literacy skills was formal involvement in parent-school activities such as PTA participation, attending school activities, and serving as a volunteer. The findings of this study however contradict those by other Kenyan researchers (Ng'ethe, 2004; Theuri, 2006). Ng'ethe (2004) found out that one of the main challenges facing the implementation of free education in Kenya was negative societal attitudes toward education. Ng'ethe (2004) found out that when FPE was introduced, many parents developed the belief that the government should entirely shoulder the load of education provision. They therefore withdrew their social support for schools like attending PTA meetings, reporting bad behaviours of students and providing proper counselling to them. Theuri (2006) established that some parents withdraw their children from school and engaged them in wage labour, which had resulted in reduced retention rates and poor academic achievement. The findings of this study that schools in Kiambu and Nyeri Counties scored high on home-school relations imply that the situation is changing, whereby parents are becoming more supportive of the schools. As reported by the DEOs who were interviewed, parental involvement and strong home-school relations play a role in determining academic achievement of students.

4.3.6 Strategies Related to Monitoring Students' Progress

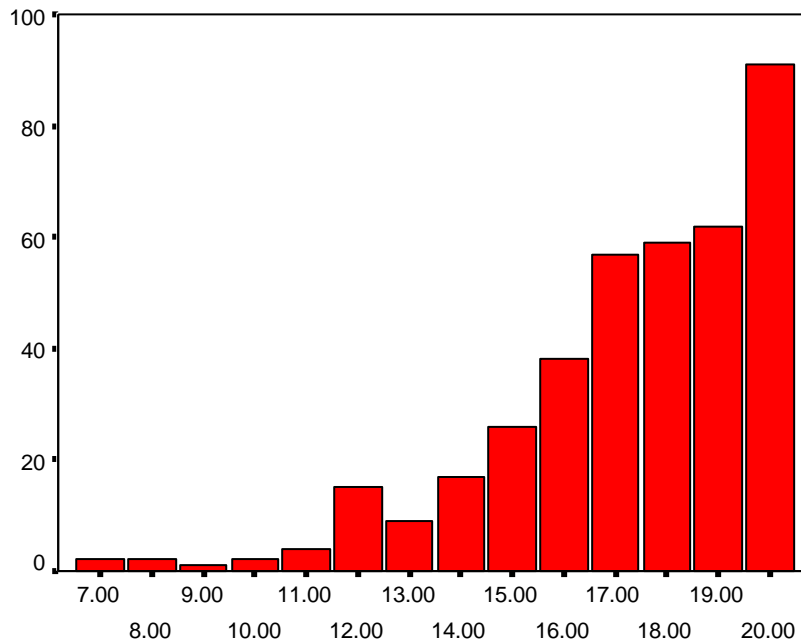
Monitoring students' progress is another correlate of effective schools. Consequently, the respondents were presented with a 5-item, 4-point Likert scale to find out the extent to which schools emphasised on this correlate. High scores on the scale (close to 4) denoted that schools mostly emphasised on this correlate while low scores (close to 1) denoted that schools rarely emphasise on the correlate. Table 4.9 shows the mean scores and standard deviations obtained by the respondents on emphasis placed by school administrators on monitoring students' progress.

Table 4.9: Strategies Related to Monitoring Students' Progress

Monitoring student progress	Principals (n=39)		HODs (n=120)		Teachers (n=226)		Total (n=385)	
	M	SD	M	SD	M	SD	M	SD
Ensuring there are regular continuous assessment tests to monitor students' progress	3.97	0.160	3.89	0.3.62	3.85	0.495	3.88	0.431
Holding academic meetings with teachers to discuss students' progress on specific subjects	3.56	0.641	3.43	0.742	3.45	0.804	3.46	0.767
Ensuring teachers revise exams with students after marking	3.54	0.555	3.30	0.740	3.34	0.912	3.35	0.829
Supervising teacher-made exams to ensure they are of high quality	3.64	0.486	3.33	0.842	3.27	0.911	3.32	0.858
Discussing academic progress with individual students	3.33	0.772	3.28	0.747	3.29	0.755	3.30	0.750

The results in Table 4.9 show that the mean scores on the individual items on the scale ranged from 3.30 to 3.88. The top ranked factors on the scale were ensuring there are regular continuous assessment test to monitor students' progress and holding academic meetings with teachers to discuss students' progress on specific subjects. On the other hand, the lowest ranked factors were discussing academic progress with individual students and supervising teacher-made exams to ensure they are of high

quality. An overall score for monitoring of students' progress was computed, with the highest possible score being 20 (high emphasis on the correlate) and the lowest possible score being 5 (low emphasis on the correlate). Figure 4.6 shows the overall scores obtained on the strategies employed to monitor students' progress.



Monitoring of progress scores

Figure 4.6: Overall Scores on Monitoring of Students' Progress

The scores obtained on the scale ranged from 7 to 20, with the majority of the respondents obtaining relatively high scores. This implied that most of the study participants rated their schools high on the correlate. Previous research by Reeves (2003) revealed that use of assessments is a common trait of effective schools. In highly effective schools, teachers administer frequent assessments as a way of communicating to students that there are multiple opportunities to improve and that a consequence of poor performance is not a bad grade. As a result of these frequent assessments, teachers reported being able to provide students more consistent and timely feedback on their performance (Reeves, 2003). The findings therefore show

that secondary schools in Kiambu and Nyeri Counties have been putting emphasis on monitoring progress of students, which could be associated with improved academic performance in some schools within this region.

4.3.7 Strategies Related to Ensuring Opportunity to Learn for all Students

The other correlate of effective schools according to Lezotte (2010) is opportunity to learn. To determine the extent to which schools ensured opportunity to learn for all students, a 6-item, 4-point Likert scale was used. High scores on the scale (close to 4) denoted that schools mostly emphasised on this correlate while low scores (close to 1) denoted that schools rarely ensured that there were strong emphasis on opportunity to learn. Table 4.10 shows the mean scores and standard deviations obtained by the respondents on emphasis placed on monitoring students' progress.

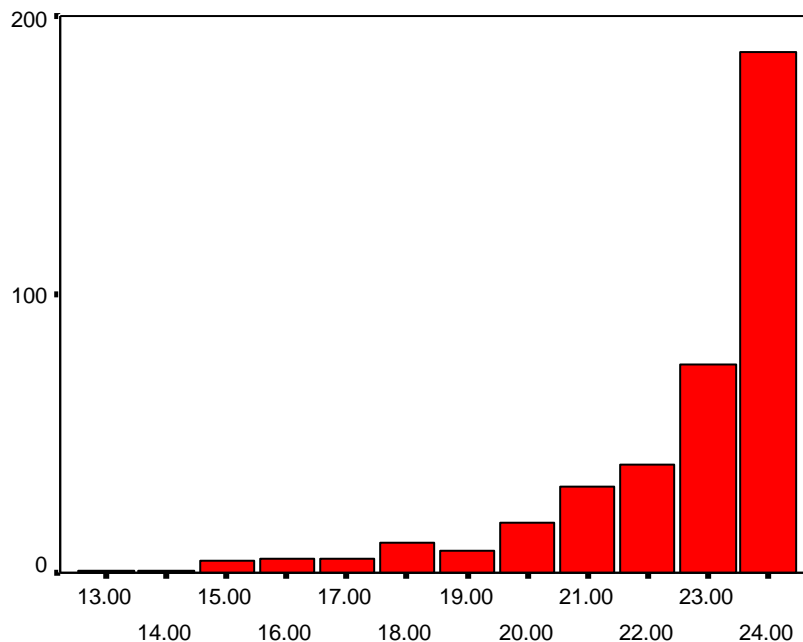
Table 4.10: Strategies Related to Opportunity to Learn/ Time on Task

Opportunity to Learn/ Time on Task	Principals (n=39)		HODs (n=120)		Teachers (n=226)		Total (n=385)	
	M	SD	M	SD	M	SD	M	SD
Ensuring that teachers attend schools and are punctual to the largest extent possible	3.92	0.480	3.80	0.528	3.84	0.467	3.83	0.488
Ensuring instructional time allocated for each subject is adequate for syllabus coverage and learning to take place	3.79	0.469	3.80	0.460	3.82	0.443	3.81	0.452
Ensuring that there is adequate time in the classroom for learning each task.	3.82	0.389	3.76	0.502	3.81	0.469	3.79	0.473
Monitoring school attendance and punctuality by students to ensure they do not miss classes	3.87	0.522	3.78	0.586	3.73	0.636	3.76	0.607
Ensuring that teacher-student ratio is manageable for all subjects e.g. by hiring BoG teachers where necessary	3.87	0.409	3.68	0.565	3.68	0.659	3.71	0.608
Ensuring there are adequate instructional materials for learning at school and at home	3.74	0.442	3.69	0.577	3.62	0.610	3.66	0.584

Table 4.10 shows that the mean scores obtained on the individual items of the opportunity to learn scale ranged from 3.83 to 3.66. The items that were ranked most highly on this scale included ensuring that teachers attend schools and are punctual to the largest extent possible, and ensuring that instructional time allocated for each subject is adequate to ensure syllabus is covered and learning takes place. On the other hand, the items that were ranked least on the scale were ensuring that there are adequate instructional materials per student both for learning at school and at home and ensuring that the teacher-student ratio is manageable for all subjects e.g. by hiring additional BoG teachers where necessary.

Based on the ratings given on the scale, an overall score for the opportunity to learn scale was computed, with the highest possible score being 24 (high emphasis on the correlate) and the lowest possible score being 6 (low emphasis on the correlate).

Figure 4.7 shows the findings of this analysis.



Opportunity to learn scores

Figure 4.7: Overall Scores on Opportunity to Learn

The overall scores obtained on the opportunity to learn scale ranged from 13 to 24, with most of the respondents obtaining high scores on the scale. This implied that most of the respondents rated their schools highly on ensuring opportunity to learn for all students. Previous studies by Lezotte (2010) showed that when students get the opportunity to learn most of the lessons they spend time on, their performance improves. Therefore, each of the teachers in the school should have a clear understanding of what the essential learner objectives are, and then give all students time to learn them. In an effective school, teachers allocate a significant amount of classroom time to instruction on the essential skills. Students of all abilities, races, gender, and socioeconomic status have equal opportunities to learn (Lezotte, 2001). Interviews held with the district education officers revealed they all agreed that the seven correlates of effective schools are key determinants of academic performance. It emerged from the interviews that the concept of “Operation Effective 40” which was introduced in the schools in Central region in 2008 has had a positive impact on academic performance in the region. The concept ensures efficient and effective coordination of action-based teaching and learning activities within the 40 minutes lesson in secondary schools.

4.8 Factors that Determine Differential KCSE Performance

The second research objective of the study was to establish the factors that determine differential KCSE performance in public secondary schools in Nyeri and Kiambu Counties, Kenya. To address this objective, t- test was conducted to find out whether the top performing schools and the bottom performing schools differed significantly on the strategies employed on the seven correlates of effective schools – instructional leadership, focus on school mission, safety and orderliness of schools, expectations

for success, monitoring of student progress, home-school relations, and opportunity to learn for students. Table 4.11 shows the results obtained.

Table 4.11 T-Test Results for Scores Obtained on the Seven Correlates

Effective schools' correlate	School Rank	N	Mean	Std. Deviation	t	df	Sig.																																																																				
Instructional leadership	Top	194	28.5567	2.99384	3.920	383	0.000*																																																																				
	Bottom	191	27.1937	3.78768				School safety and orderliness	Top	194	22.6031	1.87213	6.057	383	0.000*	Bottom	191	21.0524	3.02575	Clarification of vision and mission	Top	194	29.1392	3.77834	4.099	383	0.000*	Bottom	191	27.4817	4.14963	Expectation for success	Top	194	18.3402	2.53631	3.313	383	0.001*	Bottom	191	17.4398	2.79196	Home-school relations	Top	194	28.5722	3.31232	6.209	383	0.000*	Bottom	191	26.1361	4.32646	Monitoring of progress	Top	194	17.5361	2.36144	1.719	383	0.086	Bottom	191	17.0838	2.78592	Opportunity to learn	Top	194	22.9536	1.75520	3.802	383	0.000*
School safety and orderliness	Top	194	22.6031	1.87213	6.057	383	0.000*																																																																				
	Bottom	191	21.0524	3.02575				Clarification of vision and mission	Top	194	29.1392	3.77834	4.099	383	0.000*	Bottom	191	27.4817	4.14963	Expectation for success	Top	194	18.3402	2.53631	3.313	383	0.001*	Bottom	191	17.4398	2.79196	Home-school relations	Top	194	28.5722	3.31232	6.209	383	0.000*	Bottom	191	26.1361	4.32646	Monitoring of progress	Top	194	17.5361	2.36144	1.719	383	0.086	Bottom	191	17.0838	2.78592	Opportunity to learn	Top	194	22.9536	1.75520	3.802	383	0.000*	Bottom	191	22.1518	2.34476								
Clarification of vision and mission	Top	194	29.1392	3.77834	4.099	383	0.000*																																																																				
	Bottom	191	27.4817	4.14963				Expectation for success	Top	194	18.3402	2.53631	3.313	383	0.001*	Bottom	191	17.4398	2.79196	Home-school relations	Top	194	28.5722	3.31232	6.209	383	0.000*	Bottom	191	26.1361	4.32646	Monitoring of progress	Top	194	17.5361	2.36144	1.719	383	0.086	Bottom	191	17.0838	2.78592	Opportunity to learn	Top	194	22.9536	1.75520	3.802	383	0.000*	Bottom	191	22.1518	2.34476																				
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	Bottom	191	22.1518	2.34476																																																																							

*Significant at $p < 0.05$ level.

As shown in Table 4.11, t-test analysis results revealed that there were significant differences, at $p < 0.05$, between the top performing schools and bottom performing schools in the extent to which they emphasized on the following correlates: instructional leadership, focus on school mission, safety and orderliness of schools, expectations for success, home-school relations, and opportunity to learn for students.

The only correlate that did not return a significant difference for the two groups (top performing and bottom performing schools) was monitoring of students' progress. For all the other six correlates, top performing schools obtained higher mean scores than the bottom performing schools, meaning that top performing schools were putting more emphasis on the correlates than the bottom performing schools. The findings therefore confirm the effective schools model by Lezotte (2010). Other researchers such as Rutter *et al.* (1979) and Wekesa (1993) have noted that to improve students' performance, school leaders are required first to improve the management of the schools. This can be done by setting a clear vision for the schools and communicate this vision to students, support its achievement by giving instructional leadership, and provision of resources (Ayot and Briggs, 1992). Such environment is expected to be firm, purposive and participatory in nature.

The reason why the top performing schools and bottom performing schools did not differ on the extent to which they monitor academic progress of students could be explained by the fact that all schools are expected to give a minimum number of tests in form of continuous assessments. In addition, secondary schools in Central region have been implementing a concept referred to as "Operation Effective 40" (Ministry of Education, 2010). The concept ensures efficient and effective coordination of action-based teaching and learning activities within the 40 minutes lesson in secondary schools.

4.9 Relationship between School Effectiveness and KCSE Performance

The third research objective of the study was to examine the relationship between school effectiveness and overall school performance in KCSE. To address this objective a correlation analysis was conducted to determine whether there was a significant correlation between the KCSE mean score deviations for the period 2006 to 2010 and the scores obtained on the seven correlates. Table 4.12 shows the KSCE mean scores obtained by the participating schools in 2006 and 2010, and the mean deviations in performance for this period.

Table 4.12: KCSE Mean Scores (2006 – 2010)

Top Performing Schools				Bottom Performing Schools			
S/NO.	2010 Mean	2006 Mean	KCSE deviation	S/NO.	2010 Mean	2006 Mean	KCSE deviation
1.	5.5672	4.6984	0.8688	21.	3.128	2.478	0.65
2.	8.0155	7.1562	0.8593	22.	3.4	2.8	0.6
3.	5.69	4.837	0.853	23.	4.109	3.594	0.515
4.	6.1	5.4	0.7	24.	2.6	2.22	0.38
5.	5.38	4.71	0.67	25.	2.6	2.391	0.209
6.	8.0352	7.5147	0.5205	26.	2.3	2.1	0.2
7.	7	6.6	0.4	27.	2.63	2.51	0.12
8.	6.23	5.89	0.34	28.	2.8	2.7	0.1
9.	6.03	5.69	0.34	29.	2.3	2.294	0.006
10.	8.8544	8.5251	0.3293	30.	2.18	New	-
11.	6.14	5.87	0.27	31.	2.82	2.82	0
12.	7	6.74	0.26	32.	2.5306	2.5517	-0.0211
13.	7	6.9	0.1	33.	2.7	2.75	-0.05
14.	7.841	7.772	0.069	34.	2.774	2.96	-0.186
15.	9.78	9.768	0.012	35.	2.921	3.233	-0.312
16.	6.634	6.75	-0.116	36.	2.095	2.67	-0.575
17.	5.569	5.785	-0.216	37.	3.149	4.04	-0.891
18.	5.8	6.081	-0.281	38.	2.386	3.342	-0.956
19.	8.4	9.087	-0.687	39.	2.926	3.963	-1.037
20.	6.944	8.102	-1.158	40.	3.0408	4.175	-1.1342

The deviation in KCSE mean scores for 2006 to 2010 ranged from 0.87 to -1.16. Of the 40 schools in the study, 14 recorded a decline in performance while 24 recorded

improved performance for the period. Of those that recorded a decline in KCSE performance, 5 were in the top performing category while 9 were in the bottom performing category. KCSE mean score for one school remained constant while another one was new and therefore only 2010 data was available.

Table 4.13 shows the correlation coefficients for KCSE mean deviations across the seven correlates of effective schools.

Table 4.13: Correlation Coefficients of KCSE Deviations across the Correlates

Correlate	Correlation with KCSE mean Deviation (2006-2010)		
	Correlation co-efficient (<i>r</i>)	Sig.	N
Instructional leadership	0.227	0.000*	375
School safety and orderliness	0.247	0.000*	375
Clarification of vision and mission	0.156	0.002*	375
Expectation for success	0.261	0.000*	375
Home-school relations	0.112	0.029*	375
Monitoring of progress	0.052	0.312	375
Opportunity to learn	0.168	0.001*	375

*Significant at $p < 0.05$

As shown in Table 4.13, there were significant correlations, at $p < 0.05$, between the KCSE mean deviations (2006 – 2010) and the following correlates: instructional leadership, school safety and orderliness, clarification of vision and mission, expectation for success, home-school relations, and opportunity to learn. The correlation coefficients for the six correlates were positive, meaning that high scores on these factors correlated with high mean score deviations. This implied that schools putting more emphasis on these correlates recorded more improved KCSE mean scores than those putting less emphasis on the correlates. Again this confirmed that

effective schools were characterized by strong instructional leadership, clear and focused mission, safe and orderly schools, climate of high expectations for success, frequent monitoring of student progress, positive home-school relations, and opportunity to learn (Lezotte, 2010). It should be noted however that the correlation coefficients, r , were low, meaning that although significant, the relationships were weak.

In order to establish the relative contribution of each effective schools correlate on academic performance, the following linear regression model was specified with the KCSE mean deviations as the dependent variable.

$$Y = a_1X_1 + a_2X_2 + a_3X_3 + a_4X_4 + a_5X_5 + a_6X_6 + a_7X_7 + c$$

Where:

Y = Academic performance (KCSE mean scores deviations for the schools)

X_1 = Emphasis on instructional leadership,

X_2 = Focus on vision and mission

X_3 = School safety and orderliness

X_4 = Communicating high expectations for success

X_5 = Monitoring of student progress

X_6 = Home-school relations

X_7 = opportunity to learn

c = Constant; and $a_1...a_7$ are regression coefficients

Table 4.14 shows the regression model summary.

Table 4.14: Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.339	.115	.098	0.51665

Table 4.14 shows an R-Square value of 0.115, meaning the independent variables (instructional leadership, focus on mission, school safety and orderliness, expectations for success, monitoring of student progress, home-school relations, and opportunity to learn) explained 11.5% of the variation in academic performance. Table 4.15 shows the regression coefficients for the model.

Table 4.15: Regression Coefficients

Independent variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-1.203	.300		-4.013	.000
Instructional leadership	2.68 x10 ⁻²	.012	.171	2.177	.030
School safety and orderliness	1.89x10 ⁻²	.018	.090	1.055	.292
Clarification of vision and mission	1.67x10 ⁻²	.012	-.125	-1.342	.180
Expectation for success	5.60x10 ⁻²	.018	.280	3.173	.002
Home-school relations	1.75x10 ⁻³	.010	.013	.184	.854
Monitoring of progress	5.13x10 ⁻²	.017	-.245	-2.965	.003
Opportunity to learn	1.77x10 ⁻²	.019	.069	.920	.358

Dependent Variable: KCSE mean deviation (2006-2010)

Table 4.15 shows that the prediction equation for academic performance (Y) becomes:

$$Y = 0.026 [\text{instructional leadership}] + 0.0189 [\text{school safety}] + 0.0167 [\text{focus on mission}] + 0.056 [\text{expectation for success}] + 0.00175 [\text{home-school relations}] + 0.0513 [\text{monitoring of progress}] + 0.0177 [\text{opportunity to learn}] - 1.203.$$

This means that academic performance is predicted to increase by 0.026 when instructional leadership goes up by one, increase by 0.0189 when school safety goes up by one, increase by 0.0167 when focus on school vision and mission goes up by one and so on. The findings confirm that the effective schools model is applicable in Kenyan schools, which is in line with other studies in sub-Saharan Africa (see for example Verspoor, 2006; ADEA, 2006; Yu, 2007). The regression analysis revealed that indeed the seven correlates of effective schools (Lezotte, 2010) do account for improvements in academic achievement in Kenyan secondary schools. Schools that put more emphasis on the seven correlates improved their academic performance more than those that put less emphasis. In a previous research based in Kenya, Lloyd, Mensch & Clark (2000) concluded that there is more to school effectiveness than the development of academic competency, and there is more to the quality of the school environment than time to learn, material resources for the basic curriculum, and pedagogical practices.

4.10 Academic Performance Improvement Lessons Learnt

The fourth research objective was to identify academic performance improvement lessons that can be learnt from schools that consistently perform well at the KCSE level. To address this objective, the factors that were identified to differ significantly across top performing and bottom performing schools were considered. As

established in the preceding sections, top performing schools were found to have been putting more emphasis on the following factors: instructional leadership, school safety and orderliness, clarification of vision and mission, expectation for success, home-school relations, and opportunity to learn. Therefore, poor performing schools could improve the academic performance of their students by ensuring that they have in place these six correlates.

The study participants - DEOs, teachers, HoDs and principals – proposed that, to improve academic performance, low performing schools can adopt the strategies being employed by effective schools. For instance, the DEOs were of the opinion that school principals should supervise teachers more keenly and have HoDs and subject heads keenly observing students under their care. The issue of instructional supervision came out as one key strategy that effective schools employ effectively. In such schools, principals regularly inspect professional documents such as lesson plans, schemes of work, records of work covered and students' progress records.

The principals indicated that for poor performing schools to improve there is need for proper time management by both teachers and students. For instance, the clarion call of Operation Effective 40 schools in Central region has been implemented in most schools leading to highly improved performance. Operation Effective 40 emphasises on prudent time utilization and syllabus coverage, and this translates to improved academic performance. A principal from one of the top performing schools emphasised the need for close monitoring of teachers to ensure they attend lessons and complete syllabus in time. One of the DEOs recommended that poor performing schools should visit better performing schools to benchmark on best practices. This

calls for leadership and teacher information exchange conferences, seminars and workshops.

Teachers and HoDs were of the opinion that schools should hold more motivational talks to students and teachers to get them fired up to perform better, and strengthening of guidance and counselling including mentorship. This, according to teachers, would lead to developing a positive culture of consultation among students and teachers on subject matter, careers and life skills.

According to the DEOs, there was great emphasis that schools work closely with the community and stakeholders especially to put in place required physical infrastructure such as dormitories, classrooms, laboratories, libraries and administrative blocks. The respondents also recommended the introduction of IT/ICT for teaching and learning purposes as well as school management. Another recommendation was rewarding best performing students to encourage good performance.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the study findings, conclusions, recommendations, and suggestions for further studies.

5.2 Summary of the Study

The purpose of the study was to determine the factors that cause differential KCSE performance and school effectiveness in public secondary schools in Nyeri and Kiambu Counties, Kenya. The study sought to find out how mean scores and grades obtained by schools in KCSE are influenced by the seven correlates of effective schools - instructional leadership, focus on mission and vision, school safety and orderliness, expectations for success, monitoring of student progress, home-school relations, and opportunity to learn/time on task. The following is a summary of the major study findings of the research/study.

5.2.1 Strategies Employed by Schools to Improve Students' Academic Performance and Promote School Effectiveness

The study established that most of the schools were emphasizing on all the seven correlates of effective schools, that is, instructional leadership, focus on mission and vision, school safety and orderliness, expectations for success, monitoring of student progress, home-school relations, and opportunity to learn/time on task. This implied that most of the schools in Nyeri and Kiambu Counties were committed to improvement of academic performance. This could be attributed to the region's clarion call of Operation Effective 40 concept, which emphasises on prudent time utilization and syllabus coverage.

5.2.2 Factors that Determine Differential KCSE Performance

Results of t-test analysis revealed that there were significant differences, at $p < 0.05$, between the top performing schools and bottom performing schools on the extent to which they emphasized on the following correlates: instructional leadership, focus on school mission, safety and orderliness of schools, expectations for success, home-school relations, and opportunity to learn for students. The only correlate that did not return a significant difference for the two groups was monitoring of students' progress. For all the other six correlates, top performing schools obtained higher mean scores than the bottom performing schools, meaning that top performing schools were putting more emphasis on the correlates than the bottom performing schools. In Kiambu and Nyeri counties, top performing schools were characterised by teachers keeping updated professional documents, a climate conducive to teaching and learning, keeping students focused on their core business in school, giving students a high expectation for high performance, involving parents in students' discipline, and teacher commitment characterised by regular attendance and punctuality.

5.2.3 Relationship between School Effectiveness and KCSE Performance

The deviations in KCSE mean scores for 2006 to 2010 ranged from -1.16 to 0.87. Of the 40 schools in the study, 14 recorded a decline in performance while 24 recorded improved performance for the period. KCSE mean score for one school remained constant for this period, while one school was new and had only sat for examinations for the 2010 session. Pearson correlation coefficient analysis revealed that there were significant correlations, at $p < 0.05$, between the KCSE mean deviations (2006 – 2010) and the following correlates: instructional leadership, school safety and orderliness, clarification of vision and mission, expectation for success, home-school relations,

and opportunity to learn. The correlation coefficients for the six correlates were positive, meaning that high scores on these factors correlated with high KCSE mean score deviations. This implies that schools that had put emphasis on these correlates recorded more improved KCSE mean scores than those putting less emphasis on the correlates. Linear regression analysis revealed that the seven correlates explained 11.5% of the variation in academic performance.

5.2.4 Academic Performance Improvement Lessons Learnt

The study revealed that schools that perform poorly in KCSE could improve their academic performance by putting more emphasis on the seven correlates of effective schools. In addition, the respondents indicated that schools could improve performance of their students by supervising teachers more keenly and have HoDs and subject heads keenly observing students under their care, proper time management by both teachers and students, benchmarking better performing schools to find out the secret behind good performance, more motivational talks to students and teachers to get them fired up to perform, strengthening guidance and counselling, and developing a positive culture of consultation among students and teachers on subject matter among others.

5.3 Conclusions

This study concluded that the seven correlates of effective schools by Lezotte (2010) were good predictors of academic achievement in secondary schools. The study concluded that, in comparison to low performing schools, top performing schools were putting more emphasis on six of the correlates of effective schools, namely: instructional leadership, focus on school mission and vision, safety and orderliness of schools, expectations for success, home-school relations, and opportunity to learn for

students. Top performing schools were characterised by teachers keeping updated professional documents, a climate conducive to teaching and learning, keeping students focused on their core business in school, giving students a high expectation for high performance, involving parents in students' discipline, and teacher commitment characterised by regular attendance and punctuality.

From the findings of t-test and Pearson Correlation Coefficient analysis, it can be concluded that, in comparison with bottom performing schools, top performing schools were putting more emphasis on six of the seven correlates, with only frequent monitoring of students progress returning no significant results. Schools' KCSE performance trends for the period 2006 – 2010 significantly differed across six of the seven correlates, apart from frequent monitoring of students progress. The seven correlates of effective schools explained 11.5% of the variation in academic performance among the schools Kiambu and Nyeri Counties.

The study also concludes that, to improve academic performance, low performing schools can adopt the strategies being employed by effective schools. School principals from low performing schools should improve on their instructional supervision. Low performing schools can also improve by observing prudent time utilization and syllabus coverage. Provision of adequate teaching and learning and involvement of parents in students' discipline are also strategies that low performing schools need to adopt to improve academic performance.

5.4 Recommendations

Based on the findings of the study, the researcher recommends that:

1. Secondary school administrators should put emphasis on the seven correlates of effective schools that were identified to influence academic performance. These include: instructional leadership, focus on school mission, safety and orderliness of schools, expectations for success, home-school relations, and opportunity to learn for students. The school administrators should improve on instructional leadership especially visiting teachers in class to supervise teaching and holding staff appraisal meetings to discuss strengths, weaknesses and opportunities for academic improvement.
2. Educational policy makers in the Ministry of Education should ensure that schools are equipped with all the necessary physical and material resources. The Ministry of Education should ensure school administrators and teachers are offered in-service training on the factors influencing school effectiveness and develop monitoring tools to evaluate school effectiveness.
3. The parents and the general community should be informed through public meetings of the need to support the teaching/learning process and offer moral support to teachers and the school administration. The schools should ensure they hold academic clinics at the beginning of each term with parents of students who perform poorly to explore possible measures.
4. Teachers should always discuss academic progress with individual students as a form of monitoring progress. In relation to focus on school vision and mission, the teachers should ensure they regularly compare the goals set by students at the beginning of the term and their end of term performance to identify causes of failure to attain targets, and clarify the school vision and

mission to students and parents. The teachers should ensure they adequately communicate expectations for success to students and ensure prudent time management for syllabus coverage.

5.5 Suggestions for Further Studies

1. In order to find out whether the effective schools model is applicable to all secondary schools in Kenya, similar studies should be conducted in other parts of the country.
2. This study established that the seven correlates explained only 11.5% of the variation in academic performance. More studies should be conducted to find other factors that influence academic performance in Kenya.

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APPENDIX 1: LETTER OF INTRODUCTION

Patrick O. Nyagosia
Kenyatta University
P.O Box
NAIROBI

Dear Sir/Madam,

REF : Study of Factors Influencing Academic Performance in KCSE in Public Secondary Schools in Nyeri and Kiambu Counties, Kenya.

I am a post graduate student pursuing a Masters Degree in Education at Kenyatta University. My area of study is as stated above.

I hereby kindly request you to fill in this questionnaire which will enable the researcher to obtain important information for the research.

The information offered will be treated with the utmost confidentiality and will not be unduly disclosed. The information will only be used as pertaining to this study and not otherwise.

Your assistance and cooperation will be greatly appreciated.

Yours faithfully

Patrick O. Nyagosia

Signature _____

APPENDIX II: QUESTIONNAIRE FOR TEACHERS AND HODs

The purpose of this questionnaire is to collect data on factors affecting academic performance in secondary schools. The researcher assures you that the information gathered will be treated with utmost confidentiality and for academic purposes only. Please tick (√) where appropriate or fill in the required information.

Section 1: Background Information

1. Your gender Male () Female ()
2. Level of education
 Masters () Bachelors Degree ()
 B. Ed () Diploma ()
 Others (**Specify**).....
3. Designation Teacher () HOD ()
4. Years of experience a teacheryears.

Section 2: Strategies for Improving Academic Performance

In the tables below, indicate the extent to which your school principal engages in the activities provided. Use the scale below to respond.

A - Always S - Sometimes R - Rarely N - Never

Instructional leadership	A	S	R	N
Making sure teachers keep updated professional documents (schemes of work, lesson plans and records of work)				
Visiting teachers in class to supervise teaching				
Involving teachers to decide on best strategies to improve teaching and learning				
Providing all the teaching and learning resources needed for improved performance				
Supervising teachers to ensure they complete the syllabus on time				
Building teamwork among teachers to ensure they support one another				
Holding regular staff meetings to discuss academic progress				
Holding staff appraisal meetings to discuss strengths, weaknesses and opportunities for academic improvement				
School safety and orderliness	A	S	R	N
Discussing students' discipline with parents				

Involving teachers to identify ways of improving discipline in the school				
Ensuring that the school climate is conducive for teaching and learning				
The school compound is clean and orderly				
The school has all the necessary physical and material resources				
Providing guidance and counselling to students				
Clarification of Vision and Mission	A	S	R	N
Clarifying the school vision and mission to teachers, students and parents				
Ensuring teachers set achievable and realistic academic performance goals for their subjects				
Ensuring that teachers are working towards realization of their goals				
Encouraging students to set academic performance goals at the beginning of each term				
Comparing the goals set by students at the beginning of the term and their end of term performance to identify causes of failure to attain targets				
Reminding students of their core business in the school and encouraging them to remain focused				
Setting overall school goals with the teachers and motivating them towards attainment of the set goals				
Ensuring that all stakeholders (teachers, students, parents) participate in setting school goals and objectives				
Expectations for success	A	S	R	N
Making it clear to students that the school has high hopes that they will perform well in KCSE exams				
Encouraging teachers to ‘think and act like winners and not losers’				
Assisting teachers to identify threats that may hinder academic success				
Making clear to teachers that the school administration has confidence in them that they can lead students to academic success				
Ensuring that all teachers have a ‘no child left behind attitude’, that is, all students can do well irrespective of their entry behaviour				
Home – School Relations	A	S	R	N
Inviting parents to discuss academic progress of their children				
Ensuring all parents attend school meetings				
At the beginning of each term, holding ‘academic clinics’ with parents of students who perform poorly to explore possible measures				
Advising parents on home environment factors that promote learning of their children				
Reminding parents of their duty in ensuring students are disciplined				
Parents providing all the necessary support materials (e.g. textbooks) to the students				

Parents supporting the school to purchase or construct required resources for improved teaching and learning				
Parents offering moral support to teachers and the school administration				
Monitoring of student progress	A	S	R	N
Ensuring there are regular continuous assessment tests to monitor students' progress				
Supervising teacher-made exams to ensure they are of high quality				
Ensuring teachers revise all exams with students after marking				
Discussing academic progress with individual students				
Holding meetings with teachers to discuss students' progress on specific subjects				
Opportunity to Learn/Time on Task	A	S	R	N
Ensuring that instructional time allocated for each subject is adequate to ensure syllabus is covered and learning takes place				
Ensuring that teachers attend schools and are punctual to the largest extent possible				
Monitoring school attendance and punctuality by students to ensure that they do not miss classes				
Ensuring that the teacher-student ratio is manageable for all subjects e.g. by hiring additional BoG teachers where necessary				
Ensuring that there are adequate instructional materials per student, both for learning at school and at home				
Ensuring that there is adequate time in the classroom for learning each task				

Section 3: Open Ended Questions

1. What other factors affect academic performance of the students in your school?

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2. What measures would you recommend your school to take to improve academic performance?

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Section 3: Strategies for Improving Academic Performance

In the tables below, indicate the extent to which you engage in the following activities as a school principal. Use the scale below to respond.

A - Always S - Sometimes R - Rarely N - Never

Instructional leadership	A	S	R	N
Making sure teachers keep updated professional documents (schemes of work, lesson plans and records of work)				
Visiting teachers in class to supervise teaching				
Involving teachers to decide on best strategies to improve teaching and learning				
Providing all the teaching and learning resources needed for improved performance				
Supervising teachers to ensure they complete the syllabus on time				
Building teamwork among teachers to ensure they support one another				
Holding regular staff meetings to discuss academic progress				
Holding staff appraisal meetings to discuss strengths, weaknesses and opportunities for academic improvement				
School safety and orderliness	A	S	R	N
Discussing students' discipline with parents				
Involving teachers to identify ways of improving discipline in the school				
Ensuring that the school climate is conducive for teaching and learning				
Ensuring the school compound is clean and orderly				
Ensuring the school has all the necessary physical and material resources				
Providing guidance and counselling to students				
Clarification of Vision and Mission	A	S	R	N
Clarifying the school vision and mission to teachers, students and parents				
Ensuring teachers set achievable and realistic academic performance goals for their subjects				
Ensuring that teachers are working towards realization of their goals				
Encouraging students to set academic performance goals at the beginning of each term				
Comparing the goals set by students at the beginning of the term and their end of term performance to identify causes of failure to attain targets				
Reminding students of their core business in the school and encouraging them to remain focused				

Setting overall school goals with the teachers and motivating them towards attainment of the set goals				
Ensuring that all stakeholders (teachers, students, parents) participate in setting school goals and objectives				
Expectations for success	A	S	R	N
Making it clear to students that the school has high hopes that they will perform well in KCSE exams				
Encouraging teachers to ‘think and act like winners and not losers’				
Assisting teachers to identify threats that may hinder academic success				
Making clear to teachers that the school administration has confidence in them that they can lead students to academic success				
Ensuring that all teachers have a ‘no child left behind attitude’, that is, all students can do well irrespective of their entry behaviour				
Home – School Relations	A	S	R	N
Inviting parents to discuss academic progress of their children				
Ensuring all parents attend school meetings				
At the beginning of each term, holding ‘academic clinics’ with parents of students who perform poorly to explore possible measures				
Advising parents on home environment factors that promote learning of their children				
Reminding parents of their duty in ensuring students are disciplined				
Parents providing all the necessary support materials (e.g. textbooks) to the students				
Parents supporting the school to purchase or construct required resources for improved teaching and learning				
Parents offering moral support to teachers and the school administration				
Monitoring of student progress	A	S	R	N
Ensuring there are regular continuous assessment tests to monitor students’ progress				
Supervising teacher-made exams to ensure they are of high quality				
Ensuring teachers revise all exams with students after marking				
Discussing academic progress with individual students				
Holding meetings with teachers to discuss students’ progress on specific subjects				
Opportunity to Learn/Time on Task	A	S	R	N
Ensuring that instructional time allocated for each subject is adequate to ensure syllabus is covered and learning takes place				
Ensuring that teachers attend schools and are punctual to the largest extent possible				
Monitoring school attendance and punctuality by students to ensure that they do not miss classes				

Ensuring that the teacher-student ratio is manageable for all subjects e.g. by hiring additional BoG teachers where necessary				
Ensuring that there are adequate instructional materials per student, both for learning at school and at home				
Ensuring that there is adequate time in the classroom for learning each task				

Section 4: Open Ended Questions

1. What other factors affect academic performance of the students in your school?

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2. What measures would you recommend your school to take to improve academic performance?

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APPENDIX IV: INTERVIEW SCHEDULE FOR THE DEOs

1. What is your experience with the running of the schools in your District regarding the following issues?
 - (a) Physical facilities
 - (b) Human resources
 - (c) Financial resources
2. What in your view are the factors influencing academic performance in the schools in your district?
3. What are the salient characteristics of effective schools in your district that poor performing schools can adopt?
4. What proportion of schools in your district has prepared school strategic plans?
5. How does your office seek to assist schools improve academic performance of the students?
6. What do you propose could be done by the schools, the Ministry of Education, the government and the Community to improve academic performance of the schools in your district?

APPENDIX V: RESEARCH TIMEFRAME

ACTIVITY	2010			2011												
	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	
Development of Concept Note	■															
Literature Review	■	■	■	■	■	■	■	■	■	■						
Development of Proposal		■	■													
Defence of Proposal				■												
Data Collection					■	■										
Data Analysis							■	■								
Presentation of Results								■	■							
Thesis Compilation								■	■							
Thesis Submission									■							
Thesis Defence										■						
Final Compilation of Thesis											■					
Submission to Graduate School											■					
Seminar Presentation											■					

APPENDIX VI: RESEARCH BUDGET

Non-Consumables Items			
Item	Number	Cost per item	Total cost
1. Laptop Computer	1	65,000	65,000
2. STATA Software (Version 9.0)	1	25,000	25,000
3. Printer	1	9,500	9,500
4. Flash Disk	1	2,800	2,800
5. Stapler	1	1,500	1,500
6. Compact Disks (CDS)	1	2,000	2,000
SUB-TOTAL			105,800
Consumables Items			
Item	Number	Cost per item	Total cost
1. Cartridge	2	5,500	11,000
2. Printing Papers	30	600	18,000
3. Staples	2	300	600
4. Pens	10	30	300
5. Pencils	5	20	100
6. Eraser	2	15	30
Sub-Total			30,030
Service Charges			
Item	Number	Cost per item	Total cost
1. Internet	-	-	30,000
2. Data Analysis	-	-	30,000
3. Report Binding	-	-	30,000
SUB-TOTAL			90,000
Grand Total			225,830 =====