

**INFLUENCE OF INSTITUTIONAL AND LEARNERS'  
CHARACTERISTICS ON STUDENTS' ACADEMIC  
ACHIEVEMENT IN PUBLIC DAY SECONDARY SCHOOLS  
IN TRANS-NZOIA AND WEST POKOT COUNTIES,  
KENYA**

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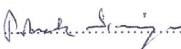
**A Thesis Submitted in Fulfilment of the Requirements for the Award of  
Doctor of Philosophy Degree in Curriculum Studies**

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**DECLARATION**

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




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## **DEDICATION**

Dedicated to my children Maureen, Walter and Hedwig to follow in my footsteps in pursuit of knowledge.

## **ACKNOWLEDGEMENT**

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## **ABBREVIATIONS AND ACRONYMS**

ASAL	Arid and Semi-Arid Lands
B.Ed	Bachelor of Education
CAT	Continuous Assessment Test
CDF	Constituency Development Fund
GOK	Government of Kenya
IMF	International Monetary Fund
KCPE	Kenya Certificate of Primary Education
KCSE	Kenya Certificate of Secondary Education
KEMI	Kenya Education Management Institute
KICD	Kenya Institute of Curriculum Development
KIE	Kenya Institute of Education
KNEC	Kenya National Examinations Council
M.Ed	Master of Education
MOE	Ministry of Education
MOEST	Ministry of Education, Science and Technology
PTA	Parents Teachers Association
SD	Standard Deviation
SSEF	Subsidized Secondary Education Fund
TSC	Teachers' Service Commission
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations International Children's Educational Fund

## ABSTRACT

The purpose of this study was to investigate the influence of institutional and learners' characteristics on students' academic achievement in day secondary schools in Trans-Nzoia and West Pokot Counties in Kenya. Globally, institutional and learners' characteristics have been the subject of on-going debate as reflected, for example, in the effective schools movement in the United States of America. The debate has prompted national as well as local scholars to focus on improvement of academic achievement among learners in different categories of schools. The study sought to establish the influence of teachers attitude towards day schooling, professional qualifications, teaching experience, adequacy of learning resources and student-teacher ratio and learners' attitude towards day schooling, entry behaviour from the primary school level, gender and study time management and parental level of education (institutional and learners' characteristics) on students' academic achievement. The target population consisted of 30 head teachers, 240 teachers, 2,560 Form Four learners, totalling 2,830. Stratified sampling procedure was used to identify a sample size of 384 learners had a response rate of 374 and 79 teachers, while 30 head teachers were automatically selected. Head teachers were sampled because of their knowledge of selected characteristics that was necessary for the study. Ex-post facto and correlational designs were employed. Questionnaires for learners and teachers, an interview schedule for head teachers, and a document analysis guide were used to collect data. Instruments' reliability was established through the split-half technique, yielding reliability coefficients of 0.8 and 0.75 for learners and teachers instrument respectively. The validity of the instruments was established through the pre-test. Descriptive statistics such as means and standard deviation and inferential statistics, Chi - Square interactive, t-test and multiple regression were used to analyse data. The study established that most learners had a favourable attitude towards day schooling which influenced the learners' academic achievement positively. The results further showed that entry behaviour (mean Kenya Certificate of Primary Education (KCPE) score) and study time utilisation, significantly influenced the learners' academic achievement. Given the positive attitude towards day schooling by learners and teachers, the study recommended strengthening of the policy on construction of day secondary schools in most primary schools, hence reducing the cost of education, while improving the KCSE performance of day scholars. Secondly, the Ministry of Education, should formulate a policy that will help create private study time for learners in day schools. Further, the criteria for determining entry behaviour for secondary schools should be strengthened to provide for high mixed ability classes for qualified KCPE graduates. In light of the findings, the study suggested that a comparative study could be undertaken in private secondary schools to establish the influence of the institutional and learners' characteristics on academic achievement.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.1 Background to the problem**

Education systems all over the world have continued to be perceived as dynamic socialisation agents which produce human resources, instil values and bring social cohesion based on academic achievement (World Bank, 2002). In Great Britain and European countries, unlike in the United States of America and Canada, one type of public schools' system, day school, has been gradually developed to ensure quality and equity in provision of educational services (Wright, 1997). Most developed countries' systems of education, as revealed in United Nations Educational, Scientific and Cultural Organisation (UNESCO, 1998) and World Bank (2002) Conferences on Education Development in Africa show a commitment to development of effective and efficient secondary school system. This is because academic achievement remains the main determinant of learners' success in formal education measured through examination ratings and is also predictable (Kolawole & Lugbusi, 2007).

On the regional front, Tanzania and Uganda have continued with a boarding school education system that was introduced by missionaries (Galabawa, 2004). Kenya, like Tanzania and Uganda, followed the system of education that supported a heavily boarding school type which is now gradually perceived by stakeholders as uneconomical (Republic of Kenya, 2005).

The influence of institutional and learners' characteristics on learners' academic achievement has been the subject of on-going debate among scholars



and stakeholders. Several studies that sought to investigate this issue have established that hard work, previous schooling, parents' education, family income and self motivation, are factors that have significant effect on a learners' performance, (Barasa, 2003, Nyagah, 1997, Ike, 1997 & Yeya, 2002). However, most of those studies have focused on learners' achievement in specific subjects and were carried out mainly in the USA (Chapman, 2003) Europe (Weinsten, 2002; Rubie, 2010; Bleeker & Jacob, 2004) hence the need to conduct research on the influence of institutional and learners' achievement on the entire academic curriculum in varied cultural settings in Kenya. Since these studies focused on the influence of specific variables on specific subjects, this study sought to establish the influence of institutional and learners' characteristics on general learners' academic achievement as opposed to academic achievement in a single subject or two subjects in the studies above.

The development of secondary education's middle position between primary and tertiary levels is crucial since its programmes give learners access to higher education and prepares them for life long education and the world of work. In order to improve academic achievement in secondary schools' education, teachers, parents, churches and the Ministry of Education continue to review and initiate new strategies for achieving quality education (Republic of Kenya, 2005). Strategies that have been tried out in order to improve academic achievement include: coaching, motivation for both teachers and learners, maintenance of high levels of discipline among teachers, learners, adequate and

appropriate training, Mbwesa (2004). On the other hand, supervision of teachers was identified as an important function by head teachers that could ensure internal efficiency of a school (Kamindo, 2008). Similarly, a study by Kibera (1993) established that implementation of guidance and counselling programmes helps learners to identify career aspirations besides adjusting to school environment (Ayodo & Jagero, 2009).

It is not established to what extent institutional and learners' characteristics influence learners' academic achievement. To establish the extent to which institutional and learners' characteristics influence academic achievement is important in understanding why academic achievement of day scholars in Trans- Nzoia and West Pokot counties over the past five years is low. The two counties have generally similar institutional characteristics and differ in academic achievement. The knowledge of the influence of such characteristics constitutes a significant step towards obtaining the solution to dismal academic achievement by day scholars.

Table 1.1 shows public schools' five year KCSE performance trend.

**Table 1.1**

**Public schools' five year students' mean KCSE score trends in Kenya**

Year	2007	2008	2009	2010	2011
Boarding mean score	7.3065	7.4005	7.3008	7.6000	7.7230
Day mean score	4.9207	4.8600	5.6000	4.9000	5.000

**Source: Ministry of Education, Trans-Nzoia County, 2012**

Table 1.1 shows that KCSE performance by learners in day schools is below average, given that the average mean score in KCSE performance is 6 while the performance in the previous years has generally been below average. On the other hand, boarding schools' performance is above average mean score. These data reflect poor performance by day schools as compared to boarding schools in Kenya. This picture is not any different for Trans- Nzoia and West Pokot counties, so it is important to establish the extent to which various selected characteristics influence public day learners' academic achievement.

Over the past five years, public boarding schools have gradually reduced in number countrywide as public day secondary schools increase in number but continue to record poor performance in KCSE (KNEC, 2012). Several institutional and learners' characteristics influence KCSE performance in day secondary schools (Ayodo & Jagero, 2009). This is not withstanding the fact that government policies of cost sharing and subsidized secondary education

equipped schools with relevant learning resources. Furthermore, parental involvement in school management has also improved as parents are involved in motivating teachers and learners, besides equipping schools with relevant educational resources and manpower. Although parents have embarked on the expansion of day public secondary schools to increase education opportunities for KCPE graduates, such development has not been justified with quality academic grades by majority of day school learners in the Trans-Nzoia and West Pokot Counties, Rift Valley Province (KNEC, 2011). KCSE performance in the two Counties' public day secondary schools over the last five years shows mounting evidence of poor academic achievement as compared to the public boarding secondary schools.

Table 1.2 shows students' mean KCSE scores trends in Trans- Nzoia and West Pokot public secondary schools from 2008 -2011

**Table 1.2**

**Public schools five year mean KCSE score trends in Trans-Nzoia and West Pokot counties since 2008.**

Year	2008	2009	2010	2011
<b>Trans - Nzoia</b>				
Day KCSE mean	4.8337	5.4099	4.822	5.4779
Boarding KCSE mean	7.4003	7.1511	7.300	7.4003
score				
<b>West Pokot</b>				
Day KCSE mean	4.1000	4.5300	4.3000	4.6777
Boarding KCSE	6.7300	6.5320	6.5000	6.7233
mean score				

**Source: Ministry of Education, Trans-Nzoia and West Pokot Counties, 2013.**

Table 1.2 shows that day schools' students continue to perform poorly in KCSE as compared to their boarding schools counter parts. The mean grade for day schools is below the mean score (6) in KCSE while boarding schools obtain above the average mean score. Poor performance of day secondary school learners has drawn the attention of the Government, educationists, teachers, administrators, researchers and even learners because it constitutes wastage in education (Republic of Kenya, 2001). This is because good

academic results are anticipated by parents, teachers, learners and the community at large since examinations have been justified by educationists and stakeholders as an important aspect of the educational system hence the basis for judging learners' ability and the means of selection for educational advancement and employment (Gogo, 2002). The evidence provided in Table 1.2 shows the need to make day secondary schools more effective, hence the need to analyse the effect of institutional and learners' characteristics on KCSE performance in day secondary schools.

Since the number of day secondary schools is gradually growing as a result of the use of Constituency Development Funds in Trans-Nzoia and West Pokot Counties, there is need to ascertain the effectiveness of such schools to ensure cost effectiveness in terms of quality academic achievement by learners. The government policy of Free Primary Education in 2003 and that of Subsidized Secondary Education (2008), apart from Constituency Development Fund, may have positively influenced school characteristics. The physical facilities may have been improved as many public day secondary schools have been constructed. Besides subsidized tuition, the Government provides funds to purchase essential learning resources that have improved learners'- text book ratio to about 2:1, Republic of Kenya, (2001). Libraries, laboratories and means of transport for schools have been acquired to facilitate internal efficiency of schools. If the schools' characteristics have been improved, could such development be accounted for in terms of learners' academic achievement

for the past five (5) years? Are the day secondary school characteristics influenced by home based characteristics such as parental facilitation of learners' study, provision of conducive study environment at home, prompt fees payment, socio –economic status of the parent, parental reinforcement of learners' academic achievement by providing revision materials and moral support to learners and reliable transport to and from school?

However, the 2011 KCSE results have clearly indicated that a number of learners from day secondary schools performed well in national examinations, registering notable academic achievement. Is the improved performance in a few public day secondary schools in 2011 a result of institutional and learners' characteristics? Which characteristics have significant influence on academic achievement? The results released by the Minister of Education which ranked schools in the 47 counties according to KCSE performance is a clear indication that certain institutional and learners' characteristics could be responsible for the variance noted. In this regard, research in curriculum evaluation is necessary to update curriculum implementers, developers and stakeholders on internal efficiency of the institutions in relation to the nature of curriculum and learner characteristics that could enhance academic achievement. Besides free primary education and subsidized secondary education funds, support from development partners and international organizations, United States of America (USA), United Kingdom (UK), United Nations International Children's Educational Fund (UNICEF), International

Monetary Fund (IMF) and the World Bank, to mention but a few, continue to play a leading role in promoting affordable quality basic education (World Bank, 2002). This financial support needs to be justified in terms of creation and maintenance of a quality school system that provides quality affordable cost effective and efficient schools that are accessible to all.

The quality of public day secondary schools needs to be ascertained as a way of checking internal efficiency of such schools and hence this could help identify strategies that could facilitate maintenance of quality education that would be reflected in improved learners' KCSE performance. KCSE performance has been found to be a reasonable measure for academic success. This will match investment in education to academic outcomes as reflected in the learners' KCSE performance. In light of this, the study has endeavoured to identify and investigate the extent to which school, home and learners' characteristics influence learners' learning in preparation for KCSE Examinations. This contribution, though worthwhile, has remained insignificant since the number of day schools and learners' population has more than doubled (KNEC, 2011). This further entailed determining other variables in the home and school that could influence learners' level of academic achievement. The fact that day secondary school learners in urban and rural regions take up to two hours walking to and from school is a challenge. This scenario may lead to time wastage and improper study time management leading to learners' poor academic achievement.



Reduced study time utilisation could compound the strategy for effective study in the event where parental and teacher supervision of studies depends on the available time after evening lessons. Inadequate school and home study time utilisation in public day schools is unlikely to enable learners to realize quality grades in Kenya Certificate of Secondary Education. Despite the fact that time available for school and home study is a significant issue, little policy framework has been put in place to encourage time creation for effective study. Learners' and teachers' attitude towards day schooling is not adequately investigated while school location, home and school background factors that have been investigated do not show the extent to which they influence learners' performance.

Day school learners' academic achievement which has been noted as poor in the past five years in Trans-Nzoia and West Pokot counties is likely attributed to selected home and school related factors, besides learners' and teachers' attitudes towards day schooling. The study, therefore, investigated the extent to which time available for study and its utilisation influences day school learners' academic achievement. Is school organised public transport a variable that could account for time creation for day scholars who live a long distance from school? A number of studies by Eshiwani (1983), Ayodo and Jagero (2009) and Barasa (2003) identified long distance from school as one of the variables that influence learners' time available for study, besides home chores. Parental involvement in supervision of home study may be of little

value unless time available is checked given the general perception by learners regarding inequitable time available for home study due to variation in distance of home locations for day scholars.

Other variables that needed to be investigated include attitude of day scholars towards day schooling, subjects and towards subject teachers. According to Nyagah, (1997) there is a relationship between attitude towards a school system (subject, quality of resources and teachers' characteristics) and one's academic achievement. These institutional variables include text book- learner ratio, learner-teacher ratio and the extent to which the available library and laboratory are effectively used. Are the schools' Boards of Management thoroughly trained to manage schools to supplement the services of head teachers and their deputies who ensure internal efficiency monitoring for curriculum implementation?

Despite the fact that studies by Kibera (1993), Okoth (2000), Barasa (2003), Ayodo & Jagero (2009) and Wanjala (2010) established that school factors, such as limited teaching and learning resources, learner-teacher ratio and home factors such as parental background, socio-economic status and domestic chores, negatively influence learners' academic achievement, teachers and parental continued interventions by means of extra tuition in schools, such an approach has only made curriculum burdensome with little positive influence on learners' academic achievement. However, institutional effort and

learners' characteristics on learners' academic achievement has remained a significant issue to learners, parents and stakeholders who continue investing in secondary education. It is therefore important to establish the extent to which specific institutional and learners' characteristics influence learners' academic achievement. This endeavour will make it possible to put in place relevant measures to curb the problem of poor academic achievement in day schools. This study therefore was important since it could establish the extent to which institutional and learners' characteristics influence academic achievement, as such knowledge was necessary in finding the solution to the problem.

## **1.2 Statement of the Problem**

The foregoing scenario prompted the researcher to investigate how institutional and learners' characteristics influence effective and efficient learning and subsequently quality academic results by day schools' candidates. The Kenya Government is committed to ensuring that schools offer affordable and quality education as noted in the Sessional Paper on quality of education in institutions (Republic of Kenya, 2005). It is in the light of the foregoing that this study sought to investigate the influence of institutional and learners' characteristics on academic achievement. Such characteristics are perceived to influence academic achievement by learners in public day secondary schools. The trend of low academic achievement by day secondary school learners, if not checked, could ultimately discourage learners and, or parents from investing in

education in schools that are perceived as cost effective (Republic of Kenya, 2005).

Studies by Barasa (2003) on learner characteristics indicate there is a positive correlation between learners' attitude and completion rate, besides the fact that attitude towards a subject among learners influences their private study time utilisation and subsequently could influence overall performance. Gatumu (2002), on performance in Religious Studies, Ike (1997) on institutional and learners' characteristics on academic achievement in Nigeria, Kamindo (2005) on influence on institutional supervision on academic achievement, Kibera (1993) on career aspirations and expectations of learners, Mbwesa (2005) noted that training of teachers influence their morale and motivation and subsequently their ability to handle challenges arising from the influence of teacher-student ratio which has been cited in studies by Fabunni, Brai-Abu and Adeyinka (2007) as having a positive or negative influence on teaching outcomes and subsequently learners' academic achievement. The study on institutional and learner characteristics still remains a crucial subject of research in order to establish the extent to which such characteristics influence the overall learners' academic achievement. This study therefore attempted to fill a knowledge based gap, relationship between variables, methodological and theory based gaps in order to inform theory and practice in education.

### **1.3 Purpose of the study**

The purpose of this study was to investigate the influence of institutional and learners characteristics on students' academic achievement in public day secondary schools as measured by KCSE examination.

### **1.4 Objectives of the study**

To fulfil the purpose of the study, the study explored the following objectives:

- i. to establish whether day secondary school learners' attitude towards day schooling influences their academic achievement in Kenya Certificate of Secondary Education.
- ii. to determine whether learners' entry behaviour influences their academic achievement in Kenya Certificate of Secondary Education.
- iii. to establish the extent to which teachers' attitude towards day schooling influences learners' performance in KCSE.
- iv. to examine the extent to which adequacy of teaching and learning resources in day secondary schools influences learners' academic achievement in Kenya Certificate of Secondary Education.
- v. to establish whether parental educational level influence learners' academic achievement in KCSE.
- vi. to establish whether there is a significant difference in mean KCSE score between rural based students' and urban based students.
- vii. to establish if there is a significant difference between boys and girls in their Kenya Certificate of Secondary Education examination performance.

viii. to establish whether learners' study time management influences their academic achievement.

### **1.5 Research hypotheses**

Based on the objectives provided above on institutional and learners' characteristics on academic achievement (mean Kenya Certificate of Secondary Education examinations score), the following eight null hypotheses were formulated and used to conduct the study.

**Ho1:** there is no significant relationship between learners' attitude towards day secondary schooling and their mean KCSE score.

**Ho2:** there is no significant relationship between learners' entry behaviour and their mean KCSE score.

**Ho3:** there is no significant relationship between teachers' attitude towards day schooling and learners' mean KCSE score.

**Ho4:** there is no significant relationship between level of adequacy of learning and teaching resources in day secondary schools and learners' mean KCSE score.

**Ho5:** there is no significant relationship between parents' educational background and learners' mean KCSE score.

**Ho6:** there is no significant relationship between school location and learners' mean KCSE score.

**Ho7:** There is no significant relationship between students' mean KCSE score when classified by gender.

**Ho8:** There is no significant relationship between day secondary school students' time management and their mean KCSE score.

### **1.6 Significance of the study**

The notable aim of expanding public day secondary schooling is to increase access and completion rates and subsequently achieve the basic goal of education, social equality, besides acquisition of knowledge, skills and attitude necessary for effective socio-economic well being, (Republic of Kenya, 2005). In this respect, it is important to continually monitor and evaluate factors that influence attainment of learning and teaching objective which is perceived as successful attainment of desired academic goals which are objectively measured through examinations such as Kenya Certificate of Secondary education. Such an endeavour would not only guarantee knowledge of the influence of institutional and learner characteristics on how well a student does in KCSE but will also facilitate any intervention that may be necessary in enhancing efficiency in the process of day schooling. This information therefore constitutes a basis on which recommendations can be made with regard to improvement of public day schooling programme which would benefit learners, parents and other stakeholders in education.

The role of attitude towards day schooling, level of learning and teaching resources, parental characteristics, teacher characteristics are but a few of the factors that influence learning and teaching process. The information from this study will constitute vital data that could be used to design appropriate

remedial measures and intervention to improve KCSE performance in day schools and ultimately ensure success of the day secondary programme. Given the perceived general negative attitude towards day schooling as shown by gradual transformation of day schools to boarding, the reason for such attitude ought to be established, as this may be used to explain reasons for learners' poor performance in day schools.

The findings may be used by KNEC to determine the effectiveness of day secondary schools in 8-4-4 curriculum implementation. The study findings may be used by the Ministry of Education and policy makers to enhance a review of the role of day secondary schools in addressing challenges resulting from free day secondary school learning environment. Entry behaviour and time utilisation patterns should influence curriculum development and in particular the concept of mixed ability could influence theory formulation on nature of learning environment. Parents, on the other hand, could use the results to make decisions on the kind of school that they could promote especially since they have realised that there are merits and their underlying responsibility of improving day secondary school system in terms of enhancing learning and teaching resources through effective teacher-parent academic guidance. Such endeavour evidently influences learners' academic achievement in KCSE in public secondary schools. The findings constitute information that enhances theory formulation on reinforcement of learning as this will influence curriculum innovation and change.



### **1.7 Limitations of the study**

The main limitation of this investigation was the timing of the study. The study was on public day schools where a number of already established day secondary schools were being turned into boarding schools, creating an impression that a day school is simply a potential boarding school and not a unique institution that fulfils a special purpose. Day schools which were established recently were being turned into boarding hence a reliability threat to the findings as a result of changing attitudes of respondents towards day schooling. The study therefore concentrated on the day schools that had been established more than five years ago. Further limitation of this study was the fact that institutional characteristics determine learners' academic achievement in day secondary schools and was influenced by the schools' economic inputs that were difficult to ascertain since they differ in individual schools. School characteristics are also dependent on parental socio-economic characteristics (Kamau, 2001). Subsequently, schools that had KCSE performance trend of at least five years were selected as research sites.

Besides, subsidised free secondary education and Constituency Development Fund have been in operation for about five years from the time of introduction in 2008 to the time this research was undertaken. The effect of improved funding for schools may not have been duly realised, hence the learning environment may not be up to date in most day schools due to inflation and variables such as rapid expansion of day secondary schools. Thus, the findings

would probably be different if a study is undertaken at a later time given that expansion of public day secondary schools is encouraged by educationists, parents and other stakeholders. In addition, variance in understanding English language may affect the learners' ability of completing the questionnaires in the rural as compared to the urban areas. Use of English in school is influenced by the learners' characteristics. The piloting of instruments and subsequent substitution of difficult terms with simpler ones helped to remove the limitation of language. Attitude scale responses were compared with data from open ended items to enhance the validity hence reducing the limitation.

### **1.8 Delimitations of the study**

Out of the three categories of public secondary schools namely; national, county and district secondary schools, only the public day schools system was examined in this study. Each category of schools enrolls learners who have been selected competitively at their own level. Previous studies by Nyagah (1997) and Ayodo (2010) have indicated that there are several factors that often influence learners' achievement in learning, including their attitude towards the category of school; that is, whether public boarding/day/mixed/or private in relation to academic achievement.

The study therefore discussed institutional and learners' characteristics delineated by parental occupations, level of education, learners' ability, schools' location, teachers' and learners' attitudes towards day schooling, teachers' quality, peer influence and gender. However, the main thrust of the

study entailed establishing: the extent to which quality schooling and teaching enhance learners' success in KCSE. The study was further limited to the extent to which class size, school location, time utilisation, entry behaviour and teaching/learning resources reinforce and influence academic achievement. Private day secondary schools and public day schools that had done KCSE only once were not included in this study since the researcher wanted to compare performance of learners in KCSE over a period of at least four years in relation to the implementation of Subsidised Secondary Education Fund. Furthermore, the study used data obtained from learners, teachers and head teachers even though there were other stakeholders including Teachers' Service Commission in education, in the area who could have given information on the influence of institutional and learners' characteristics on academic achievement as measured in KCSE.

### **1.9 Basic assumptions of the study**

The following assumptions guided the study:

- i. that institutional and learners' characteristics influence learners' performance in KCSE.
- ii. that the extent to which institutional and learners' characteristics influence performance in KCSE is not known.
- iii. respondents would provide unbiased responses.
- iv. KCSE performance is a reliable and valid measure of academic achievement.

### **1.10 Definition of significant terms**

The following is the meaning of key terms and the operational meaning of variables of the study.

***Academic Achievement*** refers to the level of academic success as measured in Kenya Certificate of Secondary Education (KCSE) examination (grades A-E).

***Attitude*** refers to a generalised mental and neutral state or readiness to respond positively or negatively to a subject/object or service hence influencing students' academic achievement. The attitude was measured using Likert scale.

***Day Secondary school*** refers to a school that offers instruction to learners at secondary level of education but does not provide their accommodation or boarding needs.

***Gender*** is a function of socialisation and refers to being male or female and the resultant sociological role allocation which could affect time available for studies.

***Institutional characteristics*** refers to factors within the school such as teachers' characteristics, teaching /learning resources, school location and parental socio- economic status , which include among others, parents' level of education, level of parental involvement in provision of study material, parental supervision of home study, parents' occupation and role models at home.

***Kenya Certificate of Secondary Education*** is the certificate issued to a candidate after successful completion of a Form Four national examination in the current 8-4-4 system of education.

***Learners' characteristics*** refers to learners' background information such as KCPE performance mean grade, study time utilisation, attitude towards day schooling and gender.

***Reinforcement*** is a factor associated with institutional functions influencing one to work successfully by providing quality resource material, peers and time for personal study.

***School location*** is where a school is situated whether in rural or urban setting besides accessibility status hence influences learners' time utilisation.

***Study time*** is time allocated for assignments and private revision as indicated on a timetable at school and at home on daily basis.

***Time utilisation/management*** refers to time available to a student to undertake revision and study in or away from school after lessons. It was measured by establishing an average amount of time available to learners after school expressed as percentage of learning class time.

### **1.11 Organisation of the study**

This study was organised under the following five chapters: The first chapter deals with general introduction which consists of the background of the study, statement of the problem, purpose of the study, objectives, research hypotheses, significance of the study, limitations and delimitations of the

study, research assumptions and definition of significant terms. Chapter two comprises of review of related literature on the objectives, the variables of this study, theoretical framework and conceptual framework. On the other hand, chapter three focused on the methodology of the study, research design, target population, sampling procedure and sample size, research instruments, data collection procedure and data analysis techniques.

Chapter four discusses the findings; the first part of the chapter describes the findings on public day schools in particular on KCSE performance. Both descriptive and inferential statistics are used in examining the relationship between the variables of the study. The second part deals with the findings on the learners' and teachers' attitude towards day schooling in relation to academic achievement. In addition, the problems identified in teaching and learning of public day schools are presented. The head teachers' profile and their responses on the influence of institutional and learners' characteristics on learners' KCSE performance is discussed and interpreted. Finally, chapter five provides a summary and conclusion for the study in which the major findings are highlighted. Some important implications are pointed out and recommendations made.

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

#### **2.1 Introduction**

This chapter comprises of review of related literature that is divided into the following subsections: concept of academic achievement, attitudes and academic achievement, parental socio-economic status and learners' academic achievement, school location and learners' academic achievement, learners' attitude towards day schooling and academic achievement, teachers' characteristics and learners' academic achievement, teaching and learning resources and academic achievement, learners' entry behaviour on academic achievement in day schools, summary of reviewed literature, theoretical framework of the study and the conceptual framework.

#### **2.2 Concept of learners' academic achievement**

The concept of academic achievement is related to effective schools' movement that underscores the importance of effectiveness and excellence in curriculum delivery (Beare, Caldwell, & Millikan, 1994). The study of a school as an organisation with objectives requires that learners be tested on the attainment of academic objectives such as literacy and numeracy besides other general educational goals. Accordingly, in drawing up rank orders to demonstrate how well a learner has performed, excellence, has a hypothetical scale that is selected for the purpose of rating performance. The effective school movement identified five criteria to explain the concept of effective

schooling as follows: that a school should produce high achievement in a broad curriculum, which should persist over time, at least two (2) consecutive years, that at least two (2) cohorts of learners' achievement should demonstrate consistently high performance for more than a single grade /year/level, that such a development gains the characteristic of the whole school rather than of individual grades and that the achievement needs to note the socio-economic profile of the learners' population (Hopkins, 2001).

The foregoing criteria for an effective school put forward indicators of academic achievement categorised under proposed subsequent study by Hopkins (2002). Internal performance indicators include: average length of study, success rate in examinations, illustration of learners, teaching performance and learners' learning outcomes. Operating Indicators include: class size, staff, student ratio, student workload, space usage, assets and equipment, resource usage. External performance indicators include: acceptability of graduates and staff productivity indicators which are publications and qualifications, Weinstein (2002). The teacher appraisal component is key in enhancing teacher performance as it encourages a teacher to search for better practices that could lead to enhanced professional teachers' fitness for promotion and school /learners' overall academic improvement. Teacher appraisal is in line with professional accountability as this is done in order to improve learning outcomes besides providing professional feedback that helps to develop new insights about the learning process /frontlines of



knowledge (causes and effects /testing plausible hypothesis). Based on the above indicators of effectiveness, the qualities for excellence in teaching consist of the interest and the ability to diagnose learners' learning needs, selection of appropriate learning and assessment procedures, clear communication of achievement expectation, maintenance of learning environment, continuous monitoring of school progress, Vaillant (2005). Learning values which reflect acceptance, support and recognition of the foregoing qualities require suitable pre-service and in-service support for all teachers. School performance could be improved by adopting a didactic method by which teachers teach less but learners learn more, (Carr & Burnham, 1997). A mixed ability class is likely to provide a more conducive learning environment compared to similar ability class where there is limited peer teaching which prompts effective peer learning. Assessment of the previous and present performance and prediction of future contributions from each member of the teaching staff is key in developing effective school management (Dunham, 1995).

In this regard, it is important to identify teachers' training needs, give an overview of crucial and potential skills and resources available for improving students' study time management. Schools therefore need to improve learners' personal time management besides identifying time pressures, insufficient time for routine tests, Rubie (2010). General overload of the curriculum, increased demand on the teachers' and learners' time, problems caused by

school managers due to inadequate training, poorly managed C.A.Ts, truancy and inadequate time to prepare a lesson/study. This approach calls for strategic planning by identifying strategies that could improve low attaining schools in challenging circumstances, understanding the context of the school and providing appropriate interventions to support improvement processes (Chapman, 2003). Schools characterised by challenging circumstances include those with learners who attained a mean score lower than a cut off of 250 marks and with a poor socio-economic base (socially disadvantaged). Such schools would require resource based intervention which may include education grants, Subsidised Day Secondary School Fund and the Constituency Development Fund.

The concept of academic performance is similar to academic achievement and thus it refers to attainment of a specific set of goals such as successfully completing a programme /curriculum or course as determined by the outcomes of a summative evaluation. KCSE is a summative evaluation that reflects learners' performance or level of attainment. Learners' academic achievement reflects how well or poorly one has acquired or achieved the objectives of a programme. Academic achievement in this study is demonstrated through the results of KCSE examination at the end of a four year secondary school course. A number of researchers, Wright (2001), Barasa (2003) and Nyagah (1997), who cited Eshiwani (1983), identified variables that influence academic achievement of learners in various subjects in school. They cited school

characteristics like equipment and materials, text books, teaching aids and school administration and management. Other variables that influence academic achievement cited by the same researchers include; learners' characteristics such as previous school experiences, Barasa (2003), attitude towards given subjects and sometimes gender, Nyagah (1997). Besides teachers' attributes such as qualifications, attitude and professional commitment, teacher experience also had a significant influence on learners' performance. In this regard, learners' characteristics have been considered to influence internal efficiency of schools in terms of preparation of learners for KCSE. Performance is further influenced by the level and quality of school resources and processes including class size, text book-student ratio, school administration and management, the quality of library and library services, laboratory facilities, teacher-student ratio, regular in- servicing of teachers.

Globally there are two types of evaluations used in learning institutions namely:- formative (during the process of teaching – learning) and summative evaluation. Summative evaluation for instance Kenya Certificate of Secondary Education examination is the main measure of learners' academic achievement. Assessment in humanities and science subjects which include mainly English, Kiswahili, Mathematics as compulsory subjects, science subjects which comprise of Chemistry, Biology and Physics and Applied science like Agriculture, Business studies and Computer Studies and humanities comprising Religious Education, History and Geography.

Assessment and grading of learners in minimum 7 (seven) examinable subjects is delineated in summative evaluation (KCSE) in which a student is awarded a mean grade (score). The Kenya National Examinations Council grading system shows that a student is awarded a grade (score) according to the percentage schedule as follows; with A, B, C, D, E where ‘A’ grade is the highest award and ‘E’ the lowest grade.

Table 2.1 presents KCSE performance grading format.

**Table 2. 1**  
**KCSE performance grading format**

<b>Theoretical Assessment</b>	<b>Grade</b>	<b>Points Allocation</b>
<b>/Rating</b>	<b>allocation</b>	<b>order</b>
i) Excellent	B+, A-, A	10, 11, 12
ii) Good	C+, B-, B	7, 8, 9
iii) Average	C	6
iv) Poor	C-, D+, D, D-, E	5, 4, 3, 2,1

**Source : Kenya National Examinations Council, 2012**

This study has categorised the KCSE grades allocation to reflect four levels of performance as given in Table 2.1. Generally all learners who score a mean grade of A, A- and B+ automatically qualify for undergraduate competitive Joint Admission Board (JAB) university intake while those who score B, B- and C+ are entitled to an alternative selection criteria that require them to apply for admission on the basis of the senate criteria for particular programmes.

Over the last two decades most parents have had a negative attitude towards day schooling since learners in most day schools had a consistently lower academic achievement as compared to those in boarding schools. This perception that day school learners perform poorly due to the fact that such schools are poorly equipped may gradually be changing since the government started rolling out Subsidised Day Secondary School Funds in 2008 and previously Free Primary School Education in 2003. The expansion of public day secondary schools may be influencing learners' performance and hence enhancing the number of parents' and stakeholders' perception of day schools (Republic of Kenya, 2005).

Public day schools are generally perceived as cost effective by the Ministry of Education. Is the home environment of day scholars favourable in adding value to learners' academic pursuit? And if so to what extent? And what factors lead to maintaining internal efficiency in day schools? Parental socio-economic status has an influence on learners' self drive /self concept. Academic achievement is therefore dependent on aligning home experiences to school experiences by the two institutions' endeavour to reinforce the learning environment through creation and management of adequate study time utilisation for all day scholars in the school timetable.

### **2.3 Learners' attitude towards day schooling and academic achievement**

In developed countries, it is evident that factors on attitudes of learners are incorporated in curriculum development as indicated in curriculum designs for Mathematics; Curriculum in Ireland, Britain and New Zealand (Hopkins & Harris, 2000). Other findings were those of studies done in Uganda on academic achievement and perceptions in Economic numeracy among female university learners, teachers' and learners' attitudes on the influence of academic outcomes in performance of economics. The concept of attitude is crucial in learning since it determines what one thinks about, feels and how they would choose to act in a learning environment Gatumu (2002). According to Nyagah (1997) and Kamau (2001), attitude is inferred from what a person says about an attitude object, from the way one feels about that reality, and from the way a person will behave in a situation of the attitude object. The attitude of individuals is often influenced by social norms, habits and by the expected consequences of the behaviour demonstrated, Ike (1997) and Karemera (2003).

In Kenyan secondary schools there are eleven (11) subjects. Each student is expected to study and present a minimum of seven subjects in KCSE examinations (K.I.E, 2002). These subjects are taught by teachers who are trained and qualified but who may have personal traits that tend to influence learners' attitude to their subjects. Is it possible that many learners are

influenced by the teachers' attitude towards them and to their own subjects? Institutional and learners' characteristics may impact positively or negatively on the learners' attitude towards schooling and subsequently on KCSE outcomes for a student. Learners are placed in a secondary school according to interest and ability hence the curriculum is tailored on the needs of specific groups of learners. This understanding of the concept of attitude influenced the researcher's approach to designing the attitude scale for determining learners' and teachers' attitude towards day schooling in relation to KCSE performance. Positive or negative attitude towards a subject and/or teacher may be reflected in KCSE performance. Generally, learners' attitude towards day schooling has been influenced by negative parental attitude towards day schools.

This claim of the scenario of influencing the attitude of learners towards day school type of schooling could be a thing of the past if a study shows that creating unfavourable attitude in learners' learning environment, subjects or teachers could lead to negative effect on academic achievement. As indicated in the background of this study intensive and extensive research has been conducted in Kenya to establish the extent to which learners' and teachers' perception of day schooling and time available for study, subject teacher, may influence learners' academic achievement. Most parents over the last five decades have preferred to take their children to boarding schools which were generally perceived as appropriate for academic excellence since they were also considered well equipped and had a more conducive environment that

could ensure and maintain internal efficiency of a school. Studies by Nyagah (1997), Hopkins & Harris (2000) and Gatumu (2002) support the concept of attitude investigated in relation to academic achievement in this study. KCSE has been perceived as the empirical measure of academic achievement. Schools' educational quality has been associated with the schools' ranking by mean grade in KCSE as revealed by school ranking (KNEC, 2012). This has continued to influence choice of secondary school by KCPE graduates. Universities and tertiary institutions have continued to admit learners based on KCSE performance, further emphasising the importance of a quality secondary school. KCSE performance is therefore, crucial in determining a quality institution hence the need to establish institutional and learners' characteristics on KCSE performance. This entails establishing learners' and teachers' attitudes towards day schooling besides establishing academic achievement. Likert type scales were found appropriate to measure attitudes consistently (Kothari, 2007). This study attempted to fill a knowledge based gap. It sought to establish the attitude of learners towards day secondary schooling since such knowledge is not available. Furthermore, the study attempted to fill the gap based on the relationship between the independent variables (institutional and learners' characteristics) and dependent variable (students' academic achievement) which is not sufficiently clear from previous studies.



#### **2.4 Learners' entry behaviour and students' academic achievement**

In Jamaica, poor attitude towards Mathematics as a subject is evident as some view it as less useful outside school. A study conducted in Nyamira indicated that the attitude of teacher/student to a subject besides teacher qualification, teacher experience, the learners gender and school facilities had the greatest contribution to performance in Mathematics in that order. The same study revealed that teacher experience, qualification; teacher/student attitude and school category will predict learners' academic achievement in Mathematics. Day schools are the most common learning institutions in developed countries since they are managed effectively by stakeholders. Community schools in Ireland have learners of mixed ability and the curriculum offered for Mathematics reflects the different ability of learners (Hopkins & Harris, 2000). Learners' transport to school is facilitated through common transport service that makes it easy for learners to have adequate time for school work.

This arrangement is deemed to enhance academic achievement as indicated by studies conducted on factors that influence academic achievement of learners in community schools in Ireland (Hopkins, 2002). Developing countries are gradually and steadily adopting day schools as a result of demand of such schools by parents and stakeholders who perceived them as cost effective (Republic of Kenya, 2005). Despite the rapid expansion of day schools in the past five years, academic achievement levels of learners in many such schools have remained largely low due to a number of factors.

Infrastructure development still remains key in effective expansion of day schools. On the other hand, curriculum implementation policies that relate to school infrastructure, learners' selection procedure under the new Education Act need to be brought on board to ensure on-going in service for teachers in all disciplines. Previous studies by Hopkins, (2002) on teachers' development have indicated that regular in service of teachers greatly impacts on their motivation and subsequently their passion to favourably influence learners' academic achievement.

Day secondary school setting has been perceived as the most convenient setting for learning since it accords learners an opportunity to receive guidance and counselling from parents when need arises (Griffin, 1994). The Kenya Government, in recognising the crucial role played by day secondary schools has clearly encouraged the expansion of such institutions with the view of achieving affordable education for the Kenyan people, (Republic of Kenya, 2005). The Constituency Development Funds are being used to invest in such institutions as a sign that they are affordable institutions whose effectiveness in learners' performance in KCSE still remains a challenge even as such schools are a solution to the problem of access by free primary school graduates. Do learners have a positive attitude to education as provided in day schools? What would be the effect of learners' positive attitude to education in a day secondary setting?

## **2.5 General school characteristics and students' academic achievement**

In European countries, day secondary school system of education is compulsory and well developed. Such schools accord all learners a sense of social equality (Rubie, 2010). Guidance and counselling services are offered to learners by both teachers and parents on academic and social issues. Mathematics curriculum for instance, is prepared for three ability categories of learners and in line with career aspirations hence enhancing learners' interest in the subject matter.

This curriculum innovation enhances academic achievement in summative evaluation. Further, patterns of work planned to yield real progress, commitment of teachers and quality of relationship in school between learner-learner, teacher-teacher as well as between teacher and class, besides parents'-learners'-teachers' relationship (Wright, 1997). Weinstein (2002), argued that a supportive and reassuring climate of good order is significant not only for personal and social education of learners but for the delivery of an effective curriculum. This point of view is consistent with the idea that schools do make a difference to the learners in terms of ensuring success in both social and academic endeavours. Learners' academic achievement in secondary schools is not just influenced by entry behaviour but several other factors that relate to the school characteristics which include the demands by curriculum and the extent to which the work of learners at school and at home is aligned to their

aptitudes, abilities and learners' involvement as active participants in learning (Weinstein, 2002).

Day secondary schools in Kenya are generally expected to admit learners who obtained between 200 - 300 marks out of 500 marks in KCPE according to KNEC selection criteria, although more often learners with higher marks in KCPE end up in such schools. Although these schools are expected by parents to ensure learners achieve better grades than they obtained in KCPE, this is far from being the case as most learners obtain even poorer grades in KCSE. The KCPE entry grade and the learners' attitude to education could be responsible for dismal KCSE performance, a fact that needs to be established in this research. Parents continue to pay extra fees to motivate the teachers in order to facilitate effective remedial classes for weaker learners but all the learners are provided with holiday tuition, perhaps substituting remedial teaching classes with general syllabus coverage. Schools' inputs are expected to add value to the candidates in summative evaluation- achievement in Kenya Certificate of Secondary Education. For instance, learners who scored between 250-300 marks in KCPE are generally not expected to obtain an average grade at KCSE but are expected to add value on earlier performance especially if they attend quality schools at secondary level. This study attempted to fill the relationship based gap between variables, learners' KCPE score, and students' mean KCSE score since this relationship was not fully established in previous studies.

## **2.6 Teachers' characteristics and learners' academic achievement**

Studies conducted in Mississippi to determine the relationship between teacher quality and student performance in Mathematics, revealed that there is a strong relationship. Teachers' professional training and competencies made them motivated and able to make learners achieve better grades in national examinations irrespective of student-teacher ratio. However, class size and/or student-teacher ratio have been cited as determinants of academic achievement. This means academic achievement is dependent on a variety of variables in a well coordinated organisational structure. In South Africa, Maji & Mategato (2006) observed that non completion of the syllabus is a major determinant to learners' performance in mathematics. Yeya (2002), found that day schools which are characterised by absenteeism of both teachers and learners leads to non completion of the syllabus in a given year.

Furthermore, studies in South Africa by Hugh, Charles, Keeton, & Lehoko (2003), and those of Ike (1997) of Nigeria and Galabawa, Sonkoro and Lwaitama (2000) of Uganda, have indicated that retraining of teachers besides teacher morale, medium of instruction, learning/teaching resources, effective Parents' Teachers' Association, developing managers and school characteristics and making curriculum flexible for multi level instructions, impact on learners' academic achievement. However, the extent to which learners' and teachers' attitude towards day schooling and adequate harmony between home and school based reinforcement in learners in relation to

KCSE performance need to be investigated besides teacher characteristics and organised study time utilisation on daily basis. Kamau (2001), attributed poor performance by curriculum implementers to inadequate specific in-service training of teachers. Furthermore, Mbwesa (2004) argued that lack of effectiveness in learning was as a result of limited in-service training among teachers besides lack of commitment by trainers and Agricultural Extension Officers. In another research, Odundo (2005) found that instructional methods have an impact on learners' achievements. The study further concluded that head teachers' personal characteristics such as democratic style of leadership enhance a learning environment in secondary schools that resulted in improved learners' academic achievement (Okoth, 2000). Teaching experience, workload and learner- teacher ratio have been cited as influencing learners' KCSE performance (Eshiwani, 1983).

It has been noted in day secondary schools that learners with as low as 200 marks in KCPE have outperformed those who scored 350 and above out of the maximum 500 marks (Ministry of Education, 2011). This scenario of dismal academic achievement cannot just be left to chance, hence the need to determine factors that influence the status quo. Despite the findings by Odundo (2005), it is still evident that there are other crucial factors that undermine day secondary learners which need to be unearthed in this study. The Government of Kenya recommended a ratio of one teacher teaching a class of between 35 - 40 children as opposed to the current ratio of nearly 1:70

in a number of public schools which has impacted negatively on the level of effectiveness of teachers. The Minister of Education in indicating there is an enormous shortage of teachers in public schools, placed the deficit at 82,000 teachers. The Teachers' Service Commission further underscored the urgency of hiring teachers and disclosed that Ksh.12 billion was earmarked to employ teachers in 2012 to reduce the shortfall.

Another significant influence of school performance is teachers' ability to teach and assess learners effectively, Hopkins, (2003). Achieving these competencies means that teachers master the content of their subjects besides being role models to the learners by encouraging continued search for knowledge in new frontiers (TSC Director, 2012).

## **2.7 Teaching and learning resources and students' academic achievement**

Previous studies in developed countries indicate that quality of education was a result of effective classroom management, besides the existence of mixed ability learning environment that enhanced learning and subsequently academic achievement (Hopkins, 2002). Other studies by Creswell (2003) indicated that, quality of teaching is influenced by teacher quality as indicated in progressive qualification besides availability of quality learning resources as reflected in provision of class size, adequate text books and reference material.

Raising the quality of education in Kenya's public day secondary schools involves identifying determinants of learners' KCSE performance. According to Fuller (1985), the quality elements that have been found to be consistently related to school achievements include availability of adequate instructional material per student, sufficient school library activities, teacher quality, length of instructional programme and school administration. Although these factors are essential, frequency of homework, teachers' correction of pupils' exercise books and in-service for teachers also contribute to school achievement. The quality of a school is determined by the school output, that is, by the quality grades obtained and number of learners completing Form Four or those passing Kenya Certificate of Secondary Education. It is this fact that makes it easy for one to explain the widely recognised differences in performance between schools with similar level of physical facilities. This claim is supported by Lewis (1984) who held that school quality can only improve through changes in teacher behaviour and the initiatives in those areas which support teachers, boost morale and through providing access to information needed in a school.

Day secondary learners have had to pay high prices of learning in crowded classrooms, lack of adequate reading materials, a few teachers and inadequate proper learning facilities. In spite of the poor learning environment in public day schools, learners' passion for excellence as compared with their counterparts in prestigious public boarding schools selected from among top



performers in KCPE is low. Despite the argument in the preceding literature that quality education can be realised in a quality school, such a school could hardly exist without the co-operative efforts of parents, learners, the management, the employers and the policy makers. Where the stakeholders mentioned above work together, even a rural day secondary school can be improved to a quality school hence be able to offer quality education, that leads to positive improvement in KCSE performance. Hence this study attempted to fill relationship between variables gap, that is, the extent to which the school is equipped and students' mean KCSE score.

## **2.8 School location (urban –rural) and students' academic achievement**

One scenario about day schooling is long distances from school which reduces learners' study time utilisation hence influence academic achievement. A private prestigious school that values education has a strategy for providing official transport for learners to help enhance time utilisation for both teachers and learners. This arrangement and practice portray a positive attitude towards education that is perceived as reinforcement of the interest of learners to have adequate time for effective syllabus coverage and creation of study time in school and at home. The selection criteria for learners joining three categories of public secondary schools namely: national, county and district schools does not encourage mixed ability classes. Learners who have better ability are selected to join national schools while the second best are placed in county schools leaving public day schools with learners who scored lower marks.

Such a policy of selection that places learners in school also denies them effective competition and opportunity to learn from peers which is crucial in basic education. Most National and County schools are situated in urban location as opposed to day schools that are mainly located in rural areas.

This study sought to establish how learners who join public day schools view themselves, their school, teachers, resources and challenges resulting from reduced study time as a result of long distances and the characteristics of a day school. Furthermore, it was important to identify parental socio-economic factors that influence learners' participation in learning, Continuous Assessment Tests and subsequently Kenya Certificate of Secondary Education examinations. Since education is classified as a basic need which is a basic necessity for a decent life alongside proper nutrition, shelter, clothing and good health, its provision should be guided by the national goals of education, social equality (Republic of Kenya, 2002). One of the crucial goals of education is to provide a learning environment in which all learners can achieve their potential. Despite this goal, majority of learners in public day schools continue to perform poorly in national examinations. It is for this reason that the research examined the impact of institutional and learners' characteristics on academic achievement in day secondary schools.

Success in educational institutions is measured by the performance of learners in external examinations used among others to measure the level of candidates'

achievements and clarify the candidates' level of education, training and development. They also provide a basis for evaluating the curriculum both at local and national level. Examinations can, when used properly, improve the quality of teaching and learning and because of this reason when KCSE results are released, the feedback is sent to schools through a report indicating not only how learners have performed but also what teachers and learners should do to improve in future examinations. Teacher experience and competence were the prime predictors of learners' performance in all subjects in secondary schools in Ondo State, Nigeria (Adeyemi, 2008).

## **2.9 Parental educational level and students' academic achievement.**

A number of studies conducted globally in education have revealed that the parental socio-economic status impacts on learners' academic achievement. Ike, (1997) and Eshiwani (1983), noted that the frequency of television viewing at home affects learners' performance in school. The findings were supported by Barasa (2003), who conducted a study on factors affecting the quality of education in public day secondary school learners. He found out that absenteeism by day school learners constituted a drawback in educational investment as it negatively affected learning outcomes in national examinations. Similar studies in Britain by Wright (1997) show parental socio-economic status and influence of institutional factors on learners' outcomes in education.

Studies by Kibera (1993) and Odundo (2005) in Kenya, have revealed that factors related to instructional methods and teacher quality influence academic

achievement. While these factors are important to this study, as a point of departure, summative evaluation by the Kenya National Examinations Council on 8-4-4 curriculum has continued to reflect poor performance by most candidates from day secondary schools. This underperformance in KCSE by candidates cannot be generally attributed to the low entry grades by majority of learners or to teachers', schools' and individual learners' characteristics (Barasa, 2003). In this regard, the extent of the effect of each factor on academic should be established.

Parental facilitation of children's study influences learners' performance. For instance it has been noted that the level of parental education in the family has an impact on children's aspiration or educational reinforcement (Oloo, 2003). Oloo, (2003) noted that children whose parents are of high educational standard have a better statistical chance of undertaking secondary education. This view is supported by Otula who maintained that effective learning is realised where there is partnership of learners, teachers and parents. This partnership can be properly realised in a day school where learners have adequate time to interact with teachers and parents. This view is further supported by Ayodo (2010) who cited a similar view by Ahawo (2009). The quest for provision of quality basic education is today termed a basic right for children whose parents ought to facilitate as a matter of policy. Parental facilitation of children's education continues to be a matter of concern in the Kenya Constitution besides reflecting global concern for quality basic

education in Sub-Saharan Africa (UNESCO, 2006). Educated parents with high incomes have continued to provide conducive remedial teaching and a conducive learning environment for their children to supplement the work of teachers (Ayodo & Jagero, 2009).

Such endeavours have helped reduce negative socio-cultural attitudes and practices such as forced class repetition which influence negative attitude among learners towards their school and subject teachers despite the fact that fees is paid on time. Parents have a role to ensure that their children's education is conducted in the most conducive environment and this should necessitate the need to devise strategies of saving time for study and syllabus coverage so as to accord a learner adequate opportunity to learn efficiently and effectively in a school. This study therefore attempted to fill a relationship between variables gap, parental educational background and students' academic achievement.

## **2.10 Summary of reviewed literature**

None of the foregoing reviewed studies by Yeya (2002), Chariswa (2003) and Oloo (2003) incorporated all vital features of institutional and learners' characteristics on academic achievement in a single study as this would have been outside the scope of their study. In addition, the reviewed studies did not cover the extent to which learners' time utilisation influence academic achievement. Little effort has been made to explain the extent to which attitude influences learners' academic achievement. The studies made little specific

contribution to learners' time utilisation in relation to academic achievement. The studies did not address the extent to which attitude influences learners' academic achievement.

Similarly, the studies did not establish the extent to which time available for study influences learners' academic achievement. Although the studies indicated that long distance from home to school affected learners' time available for study, it did not show the extent or indicate how time could be created for study. Previous studies do not demonstrate the advantage of high mixed ability classes but only appreciate learners' self drive as key in academic achievement in education that require a study that could need a basis for policy formulation. Institutional characteristics such as teacher quality, class size, school location, teachers' attitudes and adequacy of teaching/learning resources have been the subject of ongoing debate among scholars globally and by extension nationally hence the need to investigate the extent of their influence on academic achievement

### **2.11 Theoretical framework of the study**

This study is based on Hull's theory of reinforcement which postulates that, reinforcement of learners leads to acquisition of knowledge, skills and attitudes (Siddiqui, 2011). Hull's theory assumes that reinforcement accounts for academic success that is measured through examinations such as KCSE. The type and subsequently the quality of reinforcement constitute predictors

of academic achievement hence influence institutional and learners' characteristics on academic achievement which continue to be a major concern to educationists. Education has a direct impact on the socio-economic status of learners, stakeholders and governments that invest in education, increasing the stock of knowledge, skills, besides inculcating relevant and right attitudes, influence the socio-economic status of people as reflected in increased desire for more knowledge at university level (Khatete, 2010). In this regard, the nature and quality of the knowledge, skills and attitudes depend on the quality of the type of basic education offered to learners.

Reinforcement of learners' academic achievement involves enhancing institutional and learners' characteristics. This endeavour involves mixed ability classes to promote and enhance peer learning, providing adequate and equitable relevant quality teaching /learning resources to all learners, provision of study time for learners on daily basis, provision of adequate reliable transport for learners who live far from school, regular in-servicing of teachers on curriculum delivery techniques and enhancing learners' attitude towards schooling. Enhancing institutional and learners' characteristics subsequently influences academic achievement. This is because facilitation of effective study time can be achieved in a situation where both teachers and learners play a definite role.

The foregoing aspects of improving institutional and learners' characteristics has a likelihood of influencing favourably academic achievement which the

study seeks to investigate. Hull's educational reinforcement theory which guided this study outlines the factors of reinforcement as educational resources, teachers' and learners' characteristics, type of curriculum offered, time available for study and syllabus coverage, besides teachers' characteristics. The foregoing characteristics influence academic achievement. High academic achievement is as a result of hard work and hard work is influenced by relevant reinforcement hence Hull's Theory of reinforcement is relevant to this study which seeks to establish the extent to which a variety of institutional and learners' characteristics influence learners' academic achievement.

This study therefore adopted a theoretical basis of influence of institutional and learners' characteristics on learners' academic achievement as advanced by educational psychologist, Hull's (1950) needs reduction reinforcement theory cited by Siddiqui (2011). This theory postulates that learning achievements are influenced by positive reinforcement of the learners in the process of teaching / learning. In this respect, it encourages curriculum implementers to break down complex tasks into simpler and manageable levels for effective instruction. Hull claims that, there is a linkage between reinforcement of the learner to achieve the objectives of teaching and learning and academic achievement.

Hull's theory is relevant to this study since it puts to the fore institutional and learners' characteristics that require relevant reinforcement to enhance



learning achievements which are in line with the influence of institutional and learners' characteristics on academic achievement which the study seeks to investigate. In this respect, the researcher investigated the extent to which the characteristics influenced academic achievement in day secondary schools (as measured in KCSE examinations) which are implicitly and inherently related to Hull's theory of reinforcement that influence success in learning.

Although Hull's theory does not indicate circumstances in which needs reduction is applicable, the fact that it encourages positive reinforcement as an essential component in promoting success in learning prompted the researcher to ground this study to its content base. This study thus attempted to fill theory based gap that claims that favourable reinforcement of the independent variables (institutional and learners' characteristics) of the study influence favourably the dependent variable irrespective of the learning environment. Although this theory does not suggest the circumstances under which reinforcement could lead to improved students' academic achievement, reinforcement remains a central factor in a learning process hence the theory was adopted to guide this study.

## 2.12 Conceptual framework of the study

Figure 2.1 shows linkage between institutional and learners' characteristics on academic achievement (mean KCSE score).

**Figure 2.1**

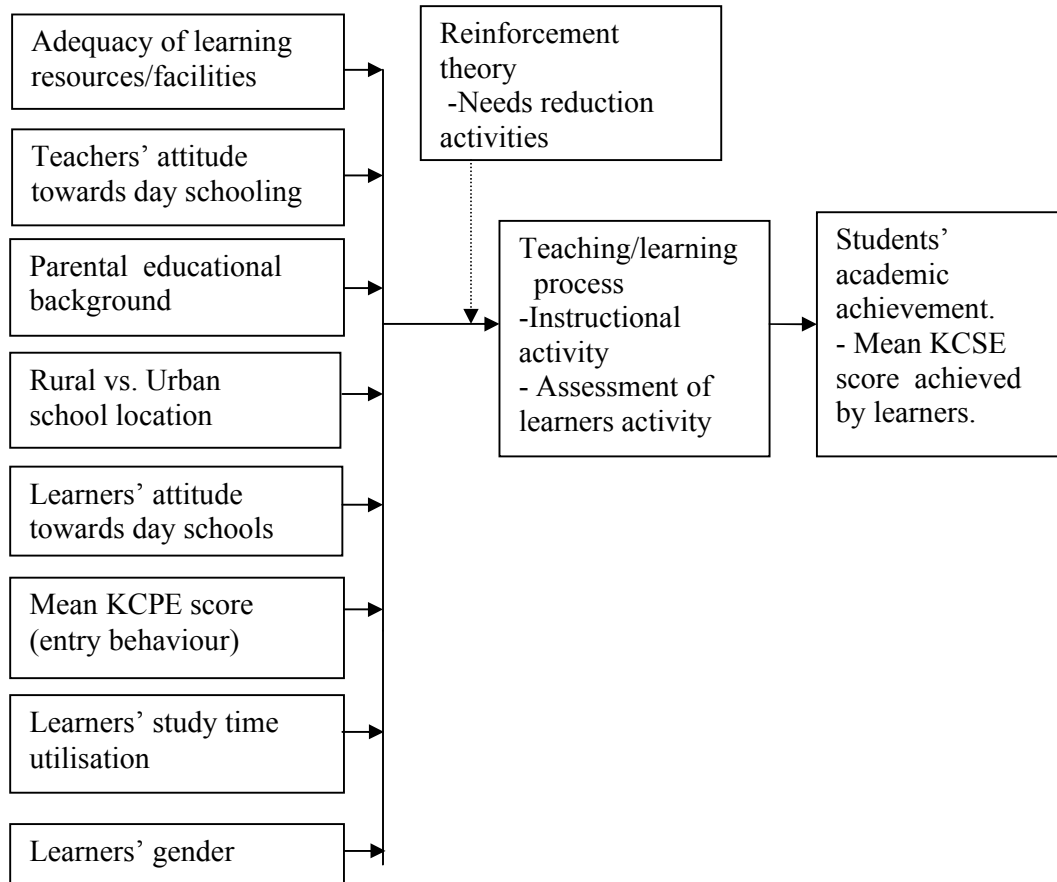


Figure 2.1 Conceptual Framework relating to institutional and learner characteristics with students' academic achievement.

There are various independent variables that seem to account for learners' academic achievement which is the dependent variable. Independent variables which have been noted in a number of studies include institutional related attributes such as adequacy of resources, teacher quality, learning environment,

quality of academic support services (academic guidance, guidance and counselling, library service, laboratory service, effective teacher-student ratio, and mixed ability class among others). Besides institutional characteristics indicated above, learners' characteristics include: parental socio-economic status that is observable in facilitation of learners' private study, learners' time management, provision of study material and reinforcement of learners' study on academic achievement.

The foregoing conceptual framework, figure 2.1, derived from the reviewed literature and the objectives of the study was used to show groups of variables and their expected directions on the dependent variable. It shows the kind of relationship between groups of independent variables and the dependent variable. School related factors include: updated instructional material per student, library activities, teacher quality, student- teacher ratio and school location. These have an effect on learners' potential and aspirations. For example, a student is expected to perform well in most subjects if there are sufficient instructional materials per student and if such materials per student are effectively used to attain the objectives of the educational programme and learners are more likely to work towards improving academic achievement than in a school with inadequate instructional materials and unmotivated teachers. On the other hand, learner related characteristics include: entry behaviour, attitudes towards day schooling, parental socio-economic status, learners' gender and study time management which have an influence on

academic achievement. Institutional characteristics' indicators include: adequacy of teaching/learning resources, guidance and counselling services, teachers' attitude towards the type of school/learners, these similarly influence academic achievement.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter presents research design, target population, sample size, sampling procedure, research instruments, instrument validity and reliability. It also covers data collection procedure, pre-testing instruments, data analysis techniques and ethical considerations. This chapter presents response rate, general information on the variables of the study, findings on objectives and hypothesis testing, institutional and learners' characteristics and academic achievement, Head teachers' response on teachers' and learners' time constraints, parental educational and occupational characteristics, schools' location and academic achievement, learners' study time utilisation and academic achievement, perceived learners' study time utilisation in relation to academic achievement and Results of multiple regression test.

#### **3.2 Research design**

This research used ex post facto and correlational designs. These designs are appropriate for collecting data in order to test hypotheses on the status of the phenomenon under study such as characteristics that influence academic achievements (Best & Kahn, 2007). In particular correlational design is suitable in establishing the extent of the influence of independent variables on the dependent variable. The ex post facto design was found appropriate since it investigates events that have already occurred without manipulating the

variables of the study (Kerlinger, 2007). The study describes characteristics in day secondary schools that influenced learners' KCSE achievement in Trans-Nzoia and West Pokot Counties. The choice of the two counties as research sites was prompted by the fact that rural schools in the two counties differ greatly in institutional characteristics especially in relation to schools located in rural setting. West Pokot has very few day schools (1 day school out of 10 boarding schools) whereas in Trans Nzoia 16 day schools is the opposite. Institutional and learner characteristics that influence academic achievement are researchable since they are inherent in the institutional and learners' characteristics that are measurable and observable. In this regard, the design answers questions on the extent to which selected characteristics of public day secondary schools and learners' characteristics, attitudes and practices influence learners' KCSE performance.

### **3.3 Target population**

Given that the main purpose of the study was to measure the extent to which institutional and learners' characteristics of public day secondary schools influence learners' KCSE performance, an appropriate target population was Form Four learners, their subject teachers and head teachers of the schools in Trans-Nzoia and West Pokot counties. In this respect, Form Four learners who had registered for KCSE examinations in 2012 and were beneficiaries of subsidised secondary education and/or Constituency Development Fund in public day secondary schools were targeted since most of them would have

stayed at least two years in day school and would have confidence to give adequate information besides their ability to understand the question. It was further expected that these learners have been exposed to the day schooling environment and its attendant effect that has been enhanced over the last decade as evidenced in increased funding for public schools in Kenya.

The target learners' population therefore consisted of all Form Four students, their teachers and head teachers of the respective schools; twenty five (25) public day secondary schools out of ninety one (91) district schools in Trans-Nzoia, with 2150 Form Four learners and five schools out of thirty one in West Pokot County with 430 Form Four learners who had benefited from SSEF and CDF in the past five years (Ministry of Education County offices, 2012). The majority of day schools in Trans-Nzoia County are mixed public day schools located in the rural setting as compared to four schools in a similar setting in West Pokot County. Even as public day secondary schools continue to increase in number due to favourable attitude of stake holders, parents and the Ministry of Education, Subsidised Secondary Education and Constituency Development Fund are perceived to influence the growth of such schools (Republic of Kenya, 2005).

The study sought possible explanation of learners' KCSE performance from their subject teachers, who participated in this study. Teachers were well placed to provide information that could explain challenges encountered by

learners who scored low marks in the teaching - learning process since they prepare learners for KCSE examination. Teacher respondents were expected to have taught their respective subjects for at least four years, hence were perceived to be knowledgeable about challenges involving curriculum implementation, study time utilisation, learners' attitude towards day schooling, influence of entry behaviour on academic progression among other variables and evaluation in day school setting. Besides, such teachers were likely to have a favourable experience and attitude towards their teaching subject/s. Thirty (30) day school head teachers from the two counties constituted a third category of respondents since they were in charge of their respective schools /research sites hence their participation ensured acquisition of complete data on the variables.

### **3.4 Sample size and sampling procedure**

Sampling involves selecting a small part of the population; the sample chosen must be representative of the population from which it is drawn. However, how representative a sample is, as Kerlinger (2007) points out, is determined by the sample size, sampling frame and procedures used for selection of the sample. The sample size is influenced by several factors which include access, funding, overall size of population and number of variables (Creswell, 2005).

According to Rubie (2010), the sample size is affected by the degree of error that a researcher is prepared to tolerate when probability sampling is used. This



means the higher the confidence level expected, the bigger the sample should be to ensure that all characteristics of the population are included. This also reduces the sampling error. Schindler and Kooper (2006) indicate that the type of research is the main determinant of the minimum sample a researcher should use. They cite 30 percent of the target population for co-rrrelation, causal-comparative and true experimental research. For descriptive study they give a guide of 10-20 percent of the population (Rubie, 2010). Schindler and Kooper (2006) further noted that, descriptive research and the overall population is the appropriate determinant of the sample size. The number of variables can therefore influence the sample size, hence research hypotheses may be the basis for the sample size. The researcher employed purposive and stratified random sampling technique.

Purposive sampling ensures the researcher uses relevant respondents while stratified sampling allows the researcher to select samples that are proportionate to the size of each stratum in the population under study. The sample size of 36 respondents for pilot study was drawn from teachers', head teachers' and learners' strata using a sampling fraction  $36/2830$ . Every stratum was multiplied by the sampling fraction to determine an equal representation of a sample size from the particular stratum (Sekaran, 2006). This meant, 4 teachers, 2 head teachers and 30 learners participated in the pilot study. Three hundred and eighty four (384) Form Four learners, seventy nine (79) teachers out of a target of 240 and all thirty(30) head teachers constituted a sample

adequate for the main study. According to Fishers', the formula for determining sample size in Mugenda (2008) is given below

$$n = \frac{z^2 pq}{d^2}$$

**n** is the sample size to be estimated

**z** is the standard normal deviation at 95% confidence level i.e. 1.96

**p** is a proportion in the target population estimated to have characteristics being measured, 50%.

$$q = 1 - p$$

while **d**, is level of statistical significance set at 0.05.

In this regard, the sample for 2560 learners in the two counties is as follows:

$$n = \frac{3.841 \times 0.5^2}{0.0025} = 384$$

To determine the main sample for the study, the researcher scheduled the target population into two categories, namely: Trans-Nzoia and West Pokot Counties. Public day Secondary Schools in the two counties that had sat KCSE at least three times were purposively sampled to take part in the study excluding public day schools which did not meet the criterion above. Selecting schools that had done KCSE enabled the researcher to examine KCSE performance trends that could more appropriately explain institutional and learners' characteristics on day scholars' academic achievement. Furthermore,

all Form Four learners constituted the target population from which a sample for the study was obtained using stratified sampling procedure.

**Table 3.1**

**Target population and sample size of learners and teachers per county**

<b>County</b>	<b>Number of learners</b>	<b>Sample</b>	<b>Sample Percentage</b>
Trans-Nzoia	2130	319	15.0
	(200)	(66)	(33.0)
West Pokot	430	65	15.1
	(40)	(13)	(32.5)
<b>Total</b>	<b>2560 (240)</b>	<b>384 (79)</b>	<b>15.0 (32.9)</b>

**Legend:** Teachers population and sample in parenthesis

**Source:** Trans-Nzoia and West Pokot County Education offices

Table 3.1 shows that 15.0 percent, (319) students from Trans -Nzoia County were sampled to take part in the study while 15.1 percent, (66) were sampled from West Pokot. This sample was deemed adequate for a descriptive study. A sample of between 10 and 20 percent of the population is considered adequate for a descriptive study (Rubie, 2010). The sample size for learners in Trans -Nzoia and West Pokot counties was thus 15.0 percent. Outlined students of the sample were identified using the following formula. Number of learners per school was determined by dividing the sample by the number of day schools in each county. The sample size per school was therefore 12 learners in West Pokot and 13 in Trans Nzoia.

### **Determining sample size for teachers**

Teachers were purposively sampled from the two counties based on the subjects' category the teacher taught in Form Four class from the various subject groupings. Table 3.1 presents sample of teachers in Trans-Nzoia and West Pokot counties in relation to teacher target population divided by three subject categories as follows:

$$\text{Sample} = \frac{\text{No. of teachers}}{\text{Subject categories}}$$

where subject categories identified are languages , sciences and humanities.

Table 3.1 further shows the sample of teachers in Trans-Nzoia and West Pokot counties. Stratified sampling was used to identify the sample of teachers in the two counties' public day secondary schools. Trans-Nzoia County teacher respondents were 33 percent (66) while West Pokot County teacher sample was 32.5 percent (13) teachers. The samples in either county meet the criterion for an adequate sample for a descriptive research hence appropriate for generalisation of the findings to the target population. This is because a sample of between 10 and 20 percent is deemed representative of a heterogeneous population under investigation (Rubie, 2010). All head teachers for the thirty (30) schools were automatically selected to take part in the study to increase the quality of data obtained from other respondents.

### **3.5 Research instruments**

This study will use the following instruments to collect data; questionnaire, interview schedule and observation list.

#### **Questionnaire**

Two sets of questionnaires were designed to guide data collection. One set was administered to Form Four learners in day secondary schools and another to teachers. The questionnaires comprised of structured and open ended items.

**Learners' questionnaire** (Appendix II), was used to obtain data on the variables related to demographic characteristics of the participants. The questionnaire was prepared by the researcher with the guidance of the supervisors. This instrument was preferred because its application is appropriate to learners as compared to interview since it gathers a lot of data in a short period of time. It is thus economical for this particular purpose since the target sample size is large. The data solicited was meant to establish institutional and learners' characteristics that constitute background information for the respondents. In this regard, both quantitative and qualitative information was gathered in Part 1A. Part 1B had four (4) items that solicited information on the school variables that influence learners' KCSE performance. The questionnaire items required a learner to evaluate the performance of each subject teacher in relation to preparing learners for KCSE examinations.

Learners were further required to rate the quality and quantity of learning and teaching resources available in school and to state whether a day school was their school of choice. On the other hand, Part 1C, solicited information on parental socio-economic variables that influence learners' KCSE performance. This part had six (6) items that focused on learners' home characteristics in relation to private study time utilisation, study activities and challenges encountered in learning in a day school, the grade the respondent expected to get in KCSE and why. To indicate whether study is done at home and how it is organised, the availability of text books and reference materials at home and suggestions on how KCSE performance in day schools would be improved. Just like in Part 1A and B, this part utilised qualitative and quantitative items in form of open and close - ended items. Part 2 of the questionnaire had ten (10) Likert type of scales which were a necessary component of the questionnaire because they facilitate obtaining attitude scores on the variable items of learners towards public day schools in relation to KCSE performance.

**A teachers' questionnaire** was prepared to facilitate gathering information on teachers' demographic and background variables. It, therefore, focused on teachers' gender, age, academic and professional qualifications, teaching subjects, training as examiner and participation in KCSE examinations marking, and length of service in a secondary school. Besides, other information solicited included, whether the teacher coaches Form Four learners , time plan for learners' study and supervision strategy, learner –teacher ratio,

school location and distance from home to school and mode of transport to school. The questionnaire was divided into two (2) main parts. Part 1 was further subdivided into three sections A, B and C. Section A deals with background information and hence gathered quantitative and limited qualitative information. Section B, had twenty (20) items that focused on school variables that influence learners' KCSE performance. The purpose of this section was to provide information that would be used to supplement information given by learners on similar variables.

However, teachers were to further indicate what time of the year they complete the syllabus for Form Four learners. This was in order to help the researcher establish and assess time management by teachers in school. The respondents were further required to indicate what motivated them to join the teaching profession and whether day secondary schools are adequately equipped to ensure and sustain internal efficiency. Responses to open and close-ended items were both qualitative and quantitative in form. Attitude scales with ten (10) items were incorporated in Part 2 of the questionnaire. This instrument was designed to determine teachers' attitude towards day schooling in relation to KCSE examination performance. Qualitative data was quantified by computing the frequency of responses.

### **Interview Instrument**

Although interview is an instrument that is widely used in collecting data due to its ability to obtain comprehensive responses from all respondents, its

administration in research includes challenges in ascertaining instrument validity and reliability (Schumacher & McMillan, 2010). Schumacher and McMillan noted that effective use of interview requires assuring the respondent confidentiality through enhancing informant's rapport. In this regard, one of the main strategies for successful use of the interview schedule whether structured or unstructured necessitated providing an explanation on the benefits of the study as well as motivating the respondents to participate in the study.

For the pilot study, only one head teacher was purposively sampled to participate in the study. A probing technique enhanced communication of full and accurate response from the interviewee. The validity was further achieved by structuring respondents' answers, making sure that all topics of interest to the interviewer were covered as irrelevant information was omitted.

The results of the interview, quantified and analysed using descriptive statistics means and standard deviation, were further compared to those of the questionnaire to validate or confirm the validity of the interview. Visiting the head teacher's office to seek an appointment for interview to conduct research in the school familiarised the researcher with the research site. The interview with the head teacher took an average of 30 minutes. The feedback was written on the interview sheet as the interview was being conducted. It was conducted in the school office at lunch time as scheduled by the respondent. The pilot



study enabled the researcher to estimate time required to complete data collection and other subsequent processes.

**Head teachers' interview schedule** comprised of ten items and the information was used to validate the findings from other respondents. Hence, the items obtained qualitative data that was organised under relevant themes as per the objectives of the study before analysing using descriptive statistics. The focus of the interview was to establish school related factors that impact either positively or negatively on learners' academic achievement. In this regard, the principals were given subject areas on which the interview would be based to make prior preparation for the interview. This approach helped to enhance effective data collection since the subject of the study had been made known to the respondent in advance. Data from the interview was recorded by the researcher on a response sheet and was organised, analysed and interpreted using descriptive statistics.

**Document analysis** check lists instruments were used to collect data from the head teachers on institutional characteristics. The checklist that was constructed ensured empirical verification of elements such as records of learners' attendance and KCSE results for the previous four years and fees payment status. The instrument was used to obtain information on the library facility besides distance of learners from school. Guidance and counselling records and reinforcement techniques for learners' and teachers' status were

assessed. The information from the KCSE documents' analysis was used to validate data from the questionnaires and interview schedule. The trend of performance in KCSE and continuous assessment tests (CATs') was noted and used for analysis and validation of the findings. Frequency and level of CATs' performance indicate teachers' and learners' commitment to enhancing performance.

### **Pre-testing Questionnaires**

Before the commencement of the pilot and main study, the research assistant was introduced to the head teacher, teachers and learners in the schools where research was to be conducted. The introduction of the research assistant to the research site constitutes a strategy for enhancing rapport which is necessary for effective communication and study. The questionnaire instrument comprised of close-ended and open-ended items. The open-ended items were used to explore the various determinants of day secondary schools' learners' KCSE performance in great details. The use of both open and close-ended approaches gave the researcher an opportunity to obtain all relevant and accurate responses. The informant was required to volunteer information that constituted appropriate answers to questions centred on the objectives of the study. Information on school and home based reinforcement strategies on learning were explored. The availability and status of learning materials, activities, environment, time management by learners and teachers at school, parental role in facilitating learners' study was investigated from the point of

view of effort to create and manage learners' study time, besides provision of relevant tuition and revision resources at school and at home; parental ability to pay school fees and to provide effective supervision of study apart from providing academic career guidance and counselling was explored. The feedback on the questionnaire showed that some items were unclear and hence were improved to make them effective for the study. Redundant questions were substituted with those in line with the objectives of the study. The length and layout of the instruments were assessed to enhance the ability to achieve desired reliability and validity. Testing the content of instrument was authenticated by research supervisors. In this regard, the relevance of instruments in establishing the influence of institutional and learners' characteristics that influence learners' KCSE academic achievement was confirmed when the respondents gave consistent and accurate responses to the items of the questionnaire in a Test-retest reliability process.

The pre-testing ascertained the clarity of questionnaire items hence the suitability of the items in establishing the influence of institutional and learners' characteristics on academic achievement (mean KCSE score), the researcher ascertained clarity of questions and time required to complete the questionnaire which in this case was an average of 32 minutes. Instrument validity was confirmed for both questionnaire and interview instruments based on the content of the responses that were found consistent with the study items.

Criteria for determining the strength of relationship /influence

<b>Coefficient (r)</b>	<b>Relationship</b>
00 to .20	Negligible
.20 to .40	Low
.40 to .60	Moderate
.60 to .80	Substantial

**Source : Best and Kahn, (2007)**

Learners' and teachers' questionnaires and interview and document analysis check list were critiqued by the supervisors, and by educational experts before adoption. Part 1 of the teachers' questionnaire has 20 items, while Part 2 consists of Likert type of scales since they have been found to be effective in determining the respondents' perception on the variables of the study. Using a five point scale, strongly agree (SA), agree (A), do not know (DK), disagree (D) and strongly disagree (SD), respondents confirmed their perception of the 10 statements based on the attributes of the study.

To obtain attitude scores from the Likert scale items, it was required that half of the items, that is five (5) out of the ten (10) were written in a positive form and the other in a negative form. The positive items were scored using the following guideline of hypothetical scores:

Strongly Agree (SA) = 5 points, Agree (A) = 4 points, Undecided (U) = 3 points, Disagree (D) = 2 points, Strongly Disagree (SD) = 1 point

On the other hand, for negative items, the following arbitrary scores were scored as follows:

Strongly Agree (SA) = 1 point , Agree (A) = 2 points, Undecided (U)= 3 points, Disagree (D)= 4 points, Strongly Disagree (SD) = 5 points

Reversing the scoring as indicated above, of the negative items, has the advantage of reflecting positiveness towards the item in question. To determine the measure of the attitude of learners and teachers the scores for all items were added. The maximum score possible was therefore five (5) points per item multiplied by ten (10) items, that is fifty (50) points representing extremely positive attitudes. On the other hand, the lowest score was equal to ten (10) that is one (1) point per item multiplied by ten (10) items, representing negative attitude. Besides, a perfectly neutral attitude level was represented by a score of thirty (30) that is three (3) multiplied by ten (10). In this regard, attitudes were thus classified as positive, neutral or negative. The attitude scores for the different ratings were as given here:

<b>Score</b>	<b>Attitude rating</b>
10-29	Negative (N)
30	Neutral (Ne)
31-50	Positive (P)

### **3.6 Instrument validity**

American Psychological Association (APA) (2010) emphasises that, validity is determined by ascertaining level of application and meaning. This is because

validity refers to the extent to which the instrument used obtains the data it was intended to gather (Borg and Gall, 2011). The initial draft questionnaire was first subjected to scrutiny by the supervisors and the panel during the proposal school defence and appropriate corrections recommended and done. The copy of approved questionnaire was then pre-tested. English teachers from selected schools made contribution on the content of the items to ensure they are understood by learners in both urban and rural schools. They gave useful comments that led to improving on clarity and appropriateness of the content of the items in the instruments. Each participant responded to 30 items that were used to obtain the respondents' details in relation to the objectives and hypotheses of the study. Arbitrary scores ranging from 1-5 were used to score on the attitudinal test items.

The validity of questionnaire instrument was established by a pilot study of 36 respondents who did not take part in the main study. A pilot sample of between 1-2% of the accessible population is considered adequate for a representative sample (Best & Kahn, 2007). Content validity was ascertained by expert judgment from lecturers in the field of study at the University of Nairobi. Using Chi-square test, to test hypotheses on institutional and learners' characteristics on learners' academic achievement was crucial in establishing accurate outcome. The results of testing the hypotheses were compared with data from questionnaire, interview and document checklist instruments. The

validity was ascertained when the instruments used obtained the outcome it purported to effectively measure.

### **3.7 Instrument reliability**

The questionnaire's reliability was established through split Half of the instruments (Schumacher & McMillan, 2010). The reliability for attitudes' scale items 1-10 was obtained through Split-Half method. The split-half technique reliability test is the most appropriate because it represents the degree to which two halves of the tests are equivalent or consistent in terms of its items (Best & Kahn, 2007).

In calculating the scores for each respondent from attitudinal items, the items were weighted with integers which range from zero to four. After scoring the odd and even numbers separately, the Pearson's Correlation Coefficient Formula was applied. Where the Pearson's Correlation obtained was  $r = 0.6 - 0.8$  representing half of the reliability coefficient of the instrument, this showed a substantial relationship (Best & Kahn, 2007). The Spearman Brown's prophecy formula was used to obtain full reliability of the instrument. Spearman Brown's prophecy formula is as follows:

$$\text{Reliability of entire instrument} = \frac{\mathbf{2 \times Reliability\ of\ 0.5\ test}}{\mathbf{1 \times Reliability\ of\ 0.5\ test}}$$

Since the computation of the above yielded a reliability of  $r = 0.80$ , this reflected the magnitude of the relationship for the entire test, hence the questionnaire instrument was found a reliable tool in measuring determinants of academic achievement in day secondary schools (Kerlinger, 2007). The

reliability test for questionnaire items 1-20 was determined by repeated applications of the items to the pilot study and ascertaining that there is no contradiction in the responses obtained (Wanjala, 2001). The reliability with the  $r$  value of 0.8 and 0.75 for learners and teachers was respectively established.

### **3.8 Data collection procedures**

The researcher obtained a permit from the National Council for Science and Technology in order to conduct the study. The researcher then reported to the County Commissioners at the headquarters to obtain further authorisation from respective County Commissioners and County Education Officers. Principals of schools were contacted for appointment in order to create a rapport with research site. Two sets of questionnaires were then given to learners and teachers to fill during the main study. Head teachers were interviewed to provide information on the variables of the study. Learners' questionnaires were administered in the classrooms by the researcher. Teachers' questionnaires were administered by research assistants to the teachers who completed them promptly. The research assistants, one in each county, were trained on how to administer the instruments and were required to collect completed questionnaires from teachers on the same day to avoid loss or interference with the responses.



### **3.9 Data analysis techniques**

Data was obtained from previous KCSE examination results for the previous five years. This data was necessary in determining the trend of public day secondary school learners' KCSE performance since the inception of the Subsidised Secondary Education and Constituency Development Fund.

Records of the schools' learners' continuous assessment test, fees payment status, class attendance, discipline of learners and staff, school transport, list of learners who qualified for university intake/who obtained a minimum of C+ grade in KCSE in the previous five years and guidance and counselling records/ activities data were used to determine their influence on KCSE achievement. Of the Form Four learners from the two counties who registered for KCSE in March, 2012, a sample of 374 learners, 79 subject teachers and 30 head teachers of public day secondary schools was taken.

The variables examined in this study are as given here below:

- i) Dependent variable: students' academic achievement. The indicator is students' mean KCSE score.
- ii) Independent variables : These include the following:

Learners' attitudes towards day schooling, learners' mean KCPE score, day school learners' private study time utilisation, the extent to which public day secondary schools are equipped to facilitate effective preparation of learners for KCSE, rural versus urban school location, distance from home to school,

learners' parental educational background, teachers' attitude towards day schooling and availability of school transport for learners' daily use.

To make a judgment whether the questionnaires indeed measure the variables they are supposed to, and that they measure them accurately, a goodness of measures was first established. To test hypothesis (HO<sub>1</sub>): there is no significant relationship between the learners' attitude towards day secondary schooling and their academic achievement as measured by KCSE, the chi square test was used. This test is generally used to establish whether there is a difference between the obtained frequencies for two or more independent samples. By inference the test was able to establish if the frequency distributions were related significantly.

To determine the chi – square values, the data was first put into categories. The chi square values were determined from the following formula:

The expected frequencies were calculated from the contingency tables from the formula;

$$E = \frac{(c_1 r_1)}{N}$$

Where : c<sub>1</sub>= frequency in a respective column margin

r<sub>1</sub> = frequency in a respective row margin

N = total number of valid cases (Schumacher, 2010)

The chi- square values obtained were compared with the critical values for the relevant number of degrees of freedom to establish if they were statistically significant. The number of degrees of freedom were calculated from the formula

$$df=(n_1 -1) (n_2 -1)$$

where:  $n_1$ = number of rows ; and

$n_2$  = number of columns.

(Schumacher, & McMillan,2010)

Where the obtained value is greater than the critical value, this indicated a significant relationship exists between the variables in question. The other hypotheses tested through the use of chi – square test were Ho2, Ho3, Ho4, Ho5 and Ho8.

On the other hand, hypotheses Ho6 and Ho7 were tested using the “t” statistic. This is because these hypotheses sought to establish whether there was any significant difference in stated values in the performance for two different groups of learners in each case. The t - value was obtained from the following formula:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{(s.d_1)^2 / N_1 + (s.d_2)^2 / N_2}}^{1/2}$$

Where  $\bar{x}_1$  = mean score in the performance of the first group

$\bar{x}_2$  = mean score for the second group

s.d<sub>1</sub>= standard deviation for the first set of scores

s.d<sub>2</sub> = standard deviation for the second set of scores

To facilitate interpretation of the t- value obtained was important to determine the number of degree of freedom (df) for a t-test; for the difference between independent means, the number of degrees of freedom was calculated from the formula:

$$df = (n_1-1) + (n_2-1) = n_1 + n_2 - 2)$$

where : n<sub>1</sub> = number of cases in the first sample, and

n<sub>2</sub> = number of cases in the second sample,

(Schumacher & McMillan, 2010)

The t - value obtained was compared with the critical t-value for the same number of degrees of freedom at a given level of significance, in this case 0.05 was used to determine whether to accept or reject the hypothesis being tested. Due to the value of data and the nature of statistics required, the Statistical Package for Social Sciences (SPSS) computer programme was used as evidenced by the data presented in chapter four.

The multiple regression analysis technique was used since it shows the individual effect each independent variable had on the dependent variable. Furthermore, it is a statistical technique for exploring the strength of the relationship between several independent variables and one dependent variable. Multiple regression analysis has the advantage of permitting one to analyse the relationships and predicting the extent of the influence among a large number of variables in a single study (Borg & Gall, 2007)

Therefore using the SPSS computer statistical analysis shows beta values and the values of the constant. Stepwise multiple regression analysis was appropriate as it estimated the independent variables whose contribution to the regression model had declined to a non significant level and all the included independent variables in the regression model were significant at 0.05 confidence level in a two tailed test. In testing null hypotheses, the chi-square ( $\chi^2$ ) interaction formula was used to determine either to reject or accept the hypotheses of the study. It helped to establish whether the probability that the observed relationship results from chance when the observations are based on randomly selected objects (nominal data).

Computation of  $\chi^2$  is as follows:

$$\chi^2 = \sum \left[ \frac{(f_o - f_e)^2}{f_e} \right]$$

Where:

$f_o$  represents actual observed frequencies and  $f_e$  represents expected frequencies.

To test hypotheses i to v and viii chi-square formula was used. On the other hand, the hypotheses on day secondary school learners' gender and school locations' characteristics in relation to KCSE performance were tested using the t-test. T-test is appropriate when comparing means of two independent groups like male and female (Borg & Gall, 2007). Hence it is appropriate in determining whether the means of learners' academic achievement in respect

to gender and school location were too different to attribute to chance or sampling error. Significance of the difference between two means formula is:

$$t = \frac{\text{Difference between means}}{\text{Standard error of the difference}}$$

This formula is appropriate for determining the significance of the difference between the means of the dependent and independent variables of the study. (Best & Kahn, 2007) To enhance the plausibility of the findings, multiple regression equation test was employed to analyse data. This technique allowed the researcher to “control” selected variables to determine the relationship between independent and dependent variables (Kerlinger, 2007).

### **3.10 Ethical considerations**

While researchers aim at producing new knowledge, they must ensure their respondents are protected from harm that may arise as a result of the researchers’ activities. American Psychological Association (2009), put to the fore the ethical standards and principles that should govern researchers when undertaking a study. The long standing principles are designed to achieve three goals: ensure the accuracy of scientific knowledge, protect the rights and welfare of research participants and to protect intellectual property rights (APA, 2009). In this regard, the following ethical principles were adopted by the researcher to ensure adherence to ethical and legal standards: piloting and the main study conformed to the following requirements:

- a) respect for research site: a research permit and authorisation to conduct research in schools ensured compliance with legal standards in a research process.
- b) informed consent: students, teachers and head teachers were made to understand the purpose of the research.
- c) anonymity of respondents: this was enhanced by reassuring students, teachers and head teachers that they had been insulated against harm by not requiring them to write their identity/name.
- d) openness: the use of open- ended items enhanced access to in-depth information and hence encouraged voluntary participation in line with ethical requirements.

The researcher therefore ensured data was collected with due regard for ethical consideration which entailed insulating subjects against psychological harm by maintaining confidentiality, anonymity and privacy. Consent and assent of head teachers on behalf of parents was sought to promote voluntary participation of students. All cited work is referenced to conform to ethical reporting of research results (APA, 2009).

## **CHAPTER FOUR**

### **DATA PRESENTATION, ANALYSIS AND INTERPRETATION**

#### **4.1 Introduction**

This chapter provides the report of the findings of the study, analysis and interpretations. The sources of data were Form Four learners, their teachers and head teachers of the respective schools. Learners and teachers responded to questionnaire items while the Head teachers were engaged in a face to face interview. A checklist was utilised to gather information that validated data from other instruments. Data from the questionnaires and interview schedules are presented, analysed and interpreted.

#### **4.2 Response rate**

A total sample of 463 respondents from learners and teachers was randomly sampled and used for the study. On the other hand, Head teachers were purposefully selected. The research was conducted from March, 2012 to July, 2012 the period when there was heavy rain hence travelling to different schools in the interior of the sub counties was quite involving. However, this was the most appropriate time for schools as there were less examination activities for Form Four learners. In this regard, it was a convenient time for respondents at the research site. Thirty (30) interviews with Head teachers (H/Ts) were used to gather data. The teachers' questionnaires were seventy



nine (79) while the learners' questionnaires were three hundred and eighty four (384).

Table 4.1 presents data on instrument return rate from the three categories of respondents.

**Table 4.1**

**Response rate of the learners, teachers and head teachers**

<b>Instrument Category</b>	<b>Issued</b>	<b>Returned</b>	<b>Percent</b>
Learners' questionnaire	384	374	97.4
Teachers	79	79	100
<b>Total</b>	<b>463</b>	<b>453</b>	

The total number of research questionnaires delivered to the schools was 463, out of which 453 were returned. This constitutes a significant return rate. The return rate of questionnaires was more than 70 percent which is perceived as adequate for generalisation of the findings (Kerlinger, 2007). On the other hand, Head teachers' interview response rate was 100% (30) because all the school heads were interviewed as this was important to ensure the views of all the three categories of respondents in all the schools that were captured. The study thus obtained adequate and relevant data for analysis. The response rate from teacher responses was affected by the busy schedule that made them request to fill the questionnaires away from school hence a few were misplaced.

### 4.3 General information on the variables of the study

The study sought to identify the dimensions of the independent and those of the dependent variables which are outlined here. The variables of the study helped to obtain data that facilitated hypotheses testing that led to the achievement of objectives of the study.

Table 4.2 presents general information on schools' location in Trans-Nzoia and West Pokot Counties.

The following information is on schools' location in the two counties.

**Table 4.2**

#### **Distribution of public day schools by location**

<b>Location</b>	<b>West Pokot N= 5</b>		<b>Trans-Nzoia N=25</b>	
	<b>F</b>	<b>%</b>	<b>F</b>	<b>%</b>
Urban	2	(40.0)	7	(28.0)
Rural	3	(60.0)	18	(72.0)
<b>Total</b>	<b>5</b>	<b>100</b>	<b>25</b>	<b>100</b>

According to table 4.2, 40.0%, (2) West Pokot schools are situated in an urban setting while 60.0%, (3) schools are in the rural location. Urban locations have a small number of schools compared to the rural area. This could be as a result of Constituency Development Fund and Subsidised Secondary Education Fund, besides urban-parents' favourable attitude in expanding schools in West Pokot County. This is the distribution of day

schools in West Pokot sub - county and not in other sub counties of Pokot County that are located in Arid and Semi-Arid Lands (ASAL) which have mainly boarding schools. The purpose of comparison of schools on the basis of location is to establish the extent of the influence of institutional and learner characteristics on the mean KCSE score in respect to the counties' geographical and socio-economic status. On the other hand, majority, 72.0%, (18) Trans-Nzoia County schools are located in the rural area as opposed to 28.0%, (7) schools that are in the urban locations. The expansion of day secondary schools in rural areas could be attributed to availability of Constituency Development Fund and Subsidised Secondary Education Fund besides cost sharing policy that have encouraged greater parental involvement in the expansion and maintenance of physical facilities in the schools. In so far as parents remain committed to improving educational facilities, day schools are likely to become preferred public schools hence the expansion of day schools should check on quality of education. Over the past decade there was only a handful of day schools in rural areas. This scenario was explained by a limited number of day primary schools in the catchment area that would have called for expansion of day schools.

Previous studies by Wanjala and Onyango (2009); Barasa (2003); Ayodo & Jagero (2009) confirm that school location has an influence on learners' academic achievement given that distance from school and learners' parental

socio-economic status influence provision of teaching and learning resources in school.

Table 4.3 presents data on learners' gender.

**Table 4.3**

**Distribution of learners by gender**

County	learners' gender and percent				Total	Percent
	M	%	F	%		
Trans-Nzoia	173	56.2	135	44.8	308	100
West Pokot	34	51.5	32	48.5	66	100
<b>Total</b>	<b>207</b>	<b>55.3</b>	<b>167</b>	<b>44.7</b>	<b>374</b>	<b>100</b>

Table 4.3 indicates male learners were the majority in public day secondary schools as reflected in the 56.2% (173) and 51.5% (34) of male respectively against the female 44.8% (135) and 48.5% (32) in Trans-Nzoia and West Pokot counties respectively. Day schooling generally requires that a student is able to walk to school, a practice which is often challenging to learners. It is generally believed that many parents are more likely to take boys to day schools than girls. Girls are often taken to boarding schools to ensure that they are not disadvantaged as a result of domestic chores that are traditionally assigned to girls in rural areas. This could explain the disparity between boys and girls attending day schools in the two counties ( Nyagah,1997). Findings of factors influencing participation rates of learners in primary schools by Wanjala and Onyango (2010) support the growth of primary schools in the rural areas. This explains expansion of day schools in the rural areas.

Table 4.4 provides information on learners' distribution per county in terms of rural and urban settings location.

**Table 4.4**

**Learners' population distribution per county and location**

County	Location				Total	Percent
	Urban	%	Rural	%		
Trans-Nzoia	104	34	204	66	308	100
West Pokot	21	32	45	68	66	100
Total	125	(33)	249	(67)	374	100

In Table 4.4, 66% (204) of KCSE candidates were found in rural schools and 34% (104) in the urban schools in Trans-Nzoia County. On the other hand, West Pokot County has 68% (45) of KCSE candidates in the rural schools while 32% (21) are in the urban schools. The high percentage of day scholars in rural schools could be explained by the increased investment in public day schools as a result of Subsidised Day Secondary Education Fund and Constituency Development Fund in particular. Besides, the cost sharing policy and improved Parent –Teacher Association efforts have led to enhanced investment in day schools (M.O.E, 2011). There is an increase in enrolment of KCPE candidates whose performance has improved as a result of better facilities and resources in primary schools. Although there has been an increase in day schooling in West Pokot County, the characteristic features such as harsh climatic conditions and terrain have made it difficult for parents

and the government to invest adequately in day schools, hence they opt to turn day schools into boarding.

This table 4.5, presents age details of learners' age and duration in day school per county.

**Table 4.5**

**Learners' age and duration in day school per county**

<b>County</b>	<b>Age range</b>	<b>F</b>	<b>%</b>	<b>Time in day school</b>	<b>F</b>	<b>%</b>
Trans-Nzoia (N=308)	17-18 years	210	56.1	1-2 years	182	48.7
	19-20 years	98	26.2	3-4 years	126	33.7
West Pokot (N=66)	17-18 years	34	9.1	1-2 years	34	9
	19-20 years	32	8.6	3-4 years	32	8.6
<b>Total</b>		<b>374</b>	<b>100</b>		<b>374</b>	<b>100</b>

Table 4.5, indicates 244 learners from Trans-Nzoia and West Pokot counties are aged between 17-18 years while 130 are of ages between 19-20 years and 158 have been in day schools for between 3 - 4 years, 216 have been in day schools for at least one year. This means 216 learners transferred to day schools from either another day or boarding schools. This means that some learners chose day schools at KCPE or moved to day schools later for whatever reason. It further means that day schools have a significant role to play in providing secondary education which includes providing for learners a second choice to school in form two and three when attending boarding school is not sustainable due to fees increase. The study established that some learners transferred to day schools due to low fees and learners' favourable

attitude towards day schooling. On the other hand, day schools have been considered by teachers convenient for learners with discipline problems that require parental intervention.

Table 4.6 shows data on teachers' academic status.

**Table 4.6**

**Distribution of teachers by their professional qualifications**

Academic level	West Pokot		Trans-Nzoia	
	No. of teachers	%	No. of teachers	%
Diploma in Education	1	7.7	6	9.1
Degree B.Ed	12	92.3	48	72.7
Masters M.Ed	0	0	12	18.2
Total	13	100.0	66	100.0

This table, 4.6, indicates that the majority, 92.3%, (12) teachers in West Pokot hold undergraduate degree and 7.7%, (1) teacher holds diploma qualification. However, this qualification would not influence data collection or the outcome of the study. It is notable that most teachers had attained the necessary academic knowledge hence could teach effectively. However, such qualifications need to be supported with adequate regional subject networking besides in-service training and sharing newer techniques of preparing learners for national examinations which include: use of cyber cafes to access relevant knowledge and experience. It is held that those who use internet improve academic ability and subsequently their academic attainment in certain subjects (Bawanch, 2011).

On the other hand, majority, 72.7%, (48) teachers in Trans-Nzoia County hold degree qualifications in education while 18.2%, (12) have Masters in Education. 9.1% (6) teachers hold diploma qualifications. Unlike West Pokot county, a significant number of day school teachers in Trans-Nzoia county hold second degree qualifications. Since further competencies enhance teacher motivation, this could explain improved performance in a few day schools in the region. The findings are in agreement with previous studies by Mbwesa, (2004), who attributed effective performance of trainers on improved competencies.

Teachers should thus aim at improving their pedagogical skills and competencies regularly in organised annual regional in-service courses for curriculum implementers. Subject networking seminars are crucial in keeping a teacher abreast with knowledge, skills and effective coaching techniques in a society where the curriculum is so broad and the task of selecting relevant knowledge for learners is necessary and urgent.



This data is on teachers' KNEC training and Professional status in Trans-Nzoia and West Pokot counties

Table 4.7 shows teachers' KNEC training status

**Table 4.7**

**Teachers' KNEC training**

Statement	West Pokot			Trans-Nzoia	
	Response	No.	%	No.	%
Are you a professionally trained teacher?	Yes	13	(100)	63	(95.5)
	No	0	(0)	3	(4.5)
Are you a KNEC trained examiner	Yes	3	(23)	14	(21.2)
	No	10	(77)	52	(78.8)

It is notable in Table 4.7 that teachers in West Pokot are professionally trained while 77%, (10) are not trained KNEC examiners. Only 23% (3) are trained as examiners. It is generally perceived by learners that teachers who mark KCSE pay great interest to learners' academic achievement. This is because it is believed such teachers acquire relevant current skills and competencies related to curriculum evaluation hence thereafter disseminate it to learners.

On the other hand, 95.5%, (63) teachers in Trans-Nzoia are teachers by profession with 21.2%, (14) also trained to mark national examinations as shown in table 4.7. However, 78.8%, (52) indicated that they are not trained by KNEC to mark national examinations and a small percent 4.5%, (3) teachers are untrained. It is notable that only a handful of teachers, 21.2%, (14)

are trained KNEC examiners in their respective teaching subjects as opposed to 78.8%, (52) teachers who are yet to train. This information is important to stakeholders in education since training as an examiner adds value, that is skills and competency, and is necessary for teachers under the training and practice of marking national examinations for the sake of the development of the profession besides the concern for the success of their learners.

The following data constitute teachers' teaching experience. Table 4.8 indicates teachers' professional experience.

**Table 4.8**

**Teachers' professional experience**

<b>Length of Service</b>	<b>West Pokot</b>		<b>Trans-Nzoia</b>	
	<b>No. of teachers</b>	<b>%</b>	<b>No. of teachers</b>	<b>%</b>
1-3 years	7	53.8	24	36.4
4-6 years	6	0	13	19.7
Over 6 years	6	46.2	29	43.9
<b>Total</b>	<b>13</b>	<b>100</b>	<b>66</b>	<b>100</b>

In Table 4.8, 53.8%, (7) teachers in West Pokot County have taught Form Four class for a period between 1-3 years and 46.2%, (6) with over 6 years' teaching experience. Previous studies by Mbwesa (2004), found that those teachers with long teaching experience are generally considered to have a passion for improved student academic achievement and often do extra work to make them excel in examinations, (Mbwesa, 2004). Mbwesa's findings were

in agreement with Eshiwani (1983) on studies of factors influencing performance. Similar findings were supported by Kamindo, (2008), in the studies on Instructional Supervision Policy. In this regard, data given by teachers constitute crucial information on facts concerning learners' attitude towards day schooling in relation to academic achievement. Teaching experience is valued by educationists since it is considered a requirement for prospective teachers and indeed for Form Four learners. Experience in particular service is taken as an indicator of the level of competency and hence those with relevant experience are considered to have favourable morale for effective job performance. The implication is that, teachers' experience influences their teaching and subsequently, learners' academic achievement.

It is notable that the majority, 43.9%, (29) teachers have had a long experience in teaching Form Four class hence could provide fundamental data to explain institutional and learners' characteristics on academic achievement. A further 36.4%, have had 1-3 years' experience; while 19.7%, (13) teachers have taught Form Four class for between 4 and 6 years. Long teaching experience is often regarded as important in enhancing teachers' competencies. Many organisations seeking to have new staff would put experience as a crucial component of the job requirement. However, having teachers with varied experience could be more beneficial as they will learn from each other and enhance subject networking. Senior teachers, with long teaching experience and favourable morale for academic excellence, ought to share skills and

competencies with other teachers teaching similar subjects once a year in subject in-service meetings.

#### **4.4. Findings on objectives and hypotheses testing**

This study was meant to achieve eight objectives. To facilitate the investigation, eight hypotheses were formulated to guide the attainment of the objectives. The hypothesis testing is meant to ascertain the extent to which the eight objectives have been achieved. The hypotheses serve as the themes for analysis. The data based on KCSE performance for 2012, attitudinal scores for learners and teachers, data from document analysis and Head teachers' interview responses were used in determining to reject or accept the hypothesis.

##### **4.4.1 Learners' attitude towards day schooling in relation to students' academic achievement**

Table 4.9, contains data on learners' attitudinal scores on their perception towards day school in respect to academic achievement. The study sought data on learners' attitude towards day schooling in the two counties because it was important in testing the first hypothesis of the study.

**Table 4.9**

**Mean learners' attitude towards day schooling**

**N =374**

<b>Category of Attitude</b>	<b>No. of Learners</b>	<b>Percent per Category</b>	
Negative	51	13.6	
Neutral	40	10.8	
Positive	283	75.6	
<b>Total</b>	<b>374</b>	<b>100</b>	
Mean Score	3.4557	SD	1.14127
Minimum Score	10	Maximum Score	50

It is evident in table 4.9, that most learners, 75.6% (283) have a positive attitude towards day schooling as opposed to 13.6% (51) with a contrary view and 10.8% (40) who were undecided on the perception. A positive attitude is an important disposition because it influences one's behaviour favourably. Learners with positive attitude towards day schooling are likely to work hard and excel in such schools since their enhanced morale and self determination could lead to success in academic achievement. However, there is need to reverse the negative and neutral attitude towards day schooling in managing that attitude of 24.4% (91) learners since such attitude could have adverse effects on their educational progress. Gatumu (2010) observed that the remedy for unfavourable attitude to the curriculum is destruction of such an attitude in order to create a useful attitude for ensuring success in educational endeavour. The following data constitute learners' attitudinal scores expressed in means

and standard deviation based on their perception of day schooling in relation to academic achievement.

Table 4.10 shows learners' perception of day schools in respect to KCSE performance.

**Table 4.10**

**Learners' attitude towards day schooling in respect to academic achievement (N=374)**

Statement	Min. Score 1	Max. Score 5	Mean	SD
My day secondary school environment is conducive for academic achievement.	1	5	4.0027	1.0873
KCSE performance does not depend on learners' KCPE achievement.	1	5	1.7219	1.2133
Day secondary schools provide quality education.	1	5	3.7005	1.1721
Day secondary school teachers have less work to do in preparing learners for KCSE.	1	5	3.6952	1.3315
Day schools are cost effective.	1	5	3.4278	1.4568
Day schools are a waste of valuable school time.	1	5	3.5481	1.5693
Academic achievement of learners in day secondary schools depends on learners' commitment besides KCPE achievement.	1	5	4.4091	1.0489
Academic achievement of day secondary learners does not depend on learners' commitment.	1	5	4.2321	1.1312
A day school system allows teachers adequate time to provide academic guidance to learners during study .	1	5	2.8521	1.2123
Day secondary schools do not provide adequate study time for learners under guidance of teachers.	1	5	3.10	1.112

**Source: Author**

Table 4.10 shows that, most learners have a favourable attitude to their school as indicated by a mean score of 4.0027 out of the possible 5. The findings show a favourable attitude of respondents towards day school as an environment that could help the learner achieve quality and cost effective education. Furthermore, Table 4.10 indicates that day schools are perceived as cost effective since they accord teachers adequate time to provide academic guidance besides study time for learners. Table 4.10 presents the second half of learners' perception of day school expressed in means and standard deviation using arbitrary Likert scale scores.

It is worth noting that academic achievement of a student depends on multiple factors besides one's commitment. Table 4.10 shows that a score of 4.4091 out of 5 by learners supports the view that academic achievement in day secondary schools depends on learners' commitment.

**Objective 1** – to establish the extent to which learners' attitude towards day schooling influences their academic achievement.

Academic performance level such as better KCSE results is perceived to have a direct relationship to one's commitment to academic work. This commitment is influenced by the adequacy of conducive learning environment of a school and one's attitude to the type of school can significantly influence how effectively one will use the facility available hence attitudes are key in establishing the level of commitment of learners in preparation for KCSE and

subsequently level of performance. An effort was made to establish learners' attitude towards day schooling in relation to effective and efficient preparation of learners for KCSE. The attitudes' scale was derived to ascertain learners' attitudes(negative, neutral or positive) towards day schooling in respect to academic achievement besides such schools' ability to have learners obtain home support that could positively influence school outcomes.

Table 4.9 presents the summary of the attitude scores obtained from learners' responses. The results show that majority of learners in the sample had positive attitude towards day schooling. This is delineated by a significant percentage of learners, 75.6 percent, (283) out of the 374 learners studied who obtained a score range of 31-50 out of a maximum of fifty (50). The mean score was also high, standing at 3.4557 with a standard deviation of 1.14127. The high mean score is another indicator of the findings that learners overall had a favourable attitude towards day schooling. Further support to the findings is the large percentage of learners, 75.6 percent, who strongly agreed with the statement that, "My day school environment is conducive for academic achievement." Similarly, 61.7 percent of learners strongly disagreed with the statement that "Day schools are a waste of valuable time."

Generally, learners overwhelmingly agreed with statements that reflected favourable disposition and opinion towards day schooling. Only 13.6 percent of the learners displayed an unfavourable attitude towards day schooling as shown in Table 4.9. These findings appear to contradict the commonly held



opinion about many parents with respect to attitude towards day schooling. For instance, Barasa (2003) and Ayodo (2012) had observed that there was a general unfavourable attitude towards day schooling among parents, teachers and learners. It is evident in the former education system in the country that boarding schools were preferred schools since parents had some of their primary responsibilities such as accommodation and care of children transferred to teachers making it easy for parents to provide mainly financial support and periodically guidance and counselling. The aspect of limited time for teaching and facilitated study may have accounted for the negative attitude towards day schooling. Since education is geared towards success in examinations, day secondary schools, unlike boarding schools were deemed not cost effective and a waste of valuable time for learners

#### **Testing Null Hypothesis Ho1**

Ho1 There is no significant relationship between learners' attitude towards day secondary schooling and their academic achievement (mean KCSE score)

Ha1 There is a significant relationship between the learners' attitude towards day schooling and their performance at KCSE.

Day schools are not conducive for academic achievement.

The following contingency Table, 4.11, presents data that was used to conduct chi – square interactive test, to test the Ho1: there is no significant relationship between learners' attitude towards day schooling and their academic achievement.

**Table 4.11**

**Learners' attitude towards day schooling and academic achievement**

<b>Category</b>	<b>Negative</b>	<b>Neutral</b>	<b>Positive</b>
Attitude status	216	10	148
Mean KCSE score	51	40	283

DF =2

SL=0.05

Obtained Chi-square =302.123

P-Value =0

Critical Chi =299.589

The results of testing the hypothesis show that the obtained chi-square is greater than the critical chi-square 299.589 value hence the null hypothesis ( $H_0$ ) is rejected and the research hypothesis( $H_{a1}$ ) is accepted. This means there is a significant relationship between the learners' attitude towards day schooling and learners' performance in KCSE.

Day schools have continued to attract learners with below 250 marks at KCPE as those with over 250 marks sought placement in prestigious boarding schools currently referred to as county and national schools. However, taking a child to a day school has for a long time been perceived as a waste of valuable time. The main possible reason for the favourable attitude towards day schooling in the 8-4-4 education system is the fact that day schools' KCSE performance is gradually improving as parents, the government and stakeholders contribute to the quality of learning/teaching facilities, Parents

Teachers Associations' efforts to invest more in public day schools due to their cost effective nature (Republic of Kenya, 2005) unlike the situation in the previous system where day schools were rare.

The implication of the findings that learners have a favourable attitude towards day schools is important as attitudes are the basis of constructive human behaviour. Learners with positive attitude towards schooling will work hard to realise better results since positive self image leads to self drive and hence achievement motivation. These findings are in agreement with those of Gatumu, (2002), on how attitudes influence one's self image, self drive and subsequently academic achievement. Similar findings were supported by related studies by Nyagah (1997), Kimani (1992) and Hopkins (2002).

#### 4.4.2 Learners' mean KCPE score and students' mean KCSE score

The study sought data on learners' entry behaviour because it was important for the testing of the second hypothesis of the study that led to achieving the objective to establish whether learners' entry behaviour influences students' mean KCSE score.

The following Table, 4.12, indicates day schools' academic achievement trend.

**Table 4.12 a**

##### **Five year day secondary schools' KCSE performance trend**

<b>County</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>Mean</b>
Trans-Nzoia	5.0	4.682	4.2861	4.9502	5.4779	4.9381
West Pokot	4.3423	4.1208	4.3271	4.5469	4.6777	4.5354

**Source : Ministry of Education, Trans-Nzoia and West Pokot Counties.**

Table 4.12a indicates day scholars' KCSE performance trend in Trans-Nzoia and West Pokot Counties. It is evident from Table 4.12 that urban day scholars perform better (C) than their rural counterparts whose performance trend is below average grade (C-).

The implication is that most public day schools in Trans-Nzoia and West Pokot learners' KCSE performance is below average score of six (6) out of the possible mean score of twelve (12). This trend of performance is attributed to a number of factors which include low entry mean KCPE score of day learners, limited time for school and home study due to long distances to school, lack of mixed ability learning environment as a result of using selection

criteria that segregate learners on the basis of category of ability hence making secondary education sustain social inequality in basic education. The academic inequality reflected in day, county and national schools is attributed to the extent to which schools are equipped with relevant and adequate teaching /learning resources which contribute significantly to students' academic achievement. The fact that schools receive teaching and learning resources in form of text books fund from the government does not ensure equitable distribution of such resources to public schools. This is because the extent to which a school is equipped is majorly dependent on parental socio – economic characteristics besides the Subsidised Secondary Education and Constituency Development Fund in enhancing learning environment.

Learners' KCSE performance in West Pokot County indicates a mean grade of D+ in 2007 through 2009 and a slight improvement to C- mean grade from 2010 through 2012. This performance is still below average mean grade C, given that the majority of teachers are graduates and are rated by learners as effective in teaching their respective KCSE subjects. This trend of below average KCSE performance could be attributed to other factors including learners' characteristics indicated by entry grade, KCPE performance and/or lack of challenging mixed ability in learning environment in day schools. Mixed ability classes have a likelihood of enhancing peer teaching and hence contribute positively to a learning process and subsequently improved performance by learners, (Hopkins, 2002).

It was established that the learning environment of day scholars is significantly influenced by long distance from school which evidently undermined learners' time management at school and home influences learners' mean KCSE score performance in day secondary schools. They include: study time management, entry behaviour, equitable distribution and use of quality teaching and learning resources, as revealed by these study findings and as discussed in the following results of testing hypotheses. Students' mean KCSE score trend in Trans Nzoia is however slightly better than those for students in West Pokot county, with only a few day schools located mainly in urban setting. This limited number of day schools in West Pokot rural location could be attributed to unfavourable climate and other factors that this study did not investigate.

#### **Kenya Certificate of Secondary Education performance for 2012**

Table 4.12b presents KCSE performance for West Pokot and Trans-Nzoia Counties' schools that took part in the study.

**Table 4.12 b**

**Mean KCSE performance for 2012**

<b>County</b>	<b>Urban</b>			<b>Rural</b>		
	<b>Mean</b>	<b>No.</b>	<b>%</b>	<b>Mean</b>	<b>No.</b>	<b>%</b>
West Pokot	5.32	2	40	4.71	3	60
Trans-Nzoia	6.99	6	24	4.52	19	76
<b>Mean</b>	<b>6.17</b>	<b>8</b>		<b>4.61</b>	<b>22</b>	

**Source : KNEC KCSE results document**

Table 4.12 b, indicates that day secondary schools located in urban areas had better KCSE results as compared to day secondary schools located in rural areas, as indicated by the mean scores 6.17 and 4.61 respectively. The results are in agreement with those established through computation of the results for previous years and learners' attitude towards day school was positive. Hence, these findings have demonstrated that there is a significant relationship between learners' attitude towards day schooling and their academic achievement. It was further established that learners in urban day schools with mixed ability classroom environment continue to perform better than their counterparts in rural schools.

**Objective 2:** to establish the relationship between learners' mean KCPE score and students' mean KCSE score.

To achieve the above objective the null and research hypotheses given below were formulated and tested to establish whether either of them could be

substantiated. There is no significant relationship between day secondary learners' KCPE entry score and their mean KCSE score. Learners' KCPE mean entry score was first obtained and correlated with the previous year's day school learners' KCSE results. Chi- square test was identified as an appropriate test for the perceived relationship based on the respondents' mean KCPE score in relation to the past day scholars' mean KCSE scores.

**Testing Null Hypothesis, Ho2**

**Ho2** There is no significant relationship between learners' mean KCPE score and their mean KCSE score.

**Ha2** There is a significant relationship between learners' mean KCPE score and their mean KCSE score.

KCSE performance does not depend on learners' KCPE achievement.

Table 4.12c, provides data on learners' KCPE entry score and its influence on students' KCSE achievement. The data were used to compute chi-square interactive test whose findings are given as shown.

**Table 4.12 c**

**Learners' entry behaviour (mean KCPE score) and mean KCSE score**

<b>Category</b>	<b>Good</b>	<b>Average</b>	<b>Poor</b>
KCPE	157	187	30
KCSE	148	216	10

Df = 2

SL= 0.05

Obtained Chi-square Value = 16.627      Critical Chi-square value = 14.366



P-value = 0.0002

The computed Chi-square for the attributes in the hypothesis is at the significance level of 0.05 while the degree of freedom is 2.

The corresponding critical chi-square value at 0.05 significance level and 1 degree of freedom is two (2). This shows that the obtained  $\chi^2$  is greater than the critical Chi-square, so the  $H_0$  is rejected. It is thus concluded and held that there is significant relationship between learners' mean KCPE score and the students' mean KCSE score. Similarly, multiple regression test results show that learners' mean KCPE score has a significant influence on students' mean KCSE score since it shows substantial prediction of academic success.

Those findings are in agreement with results of a related study by Barasa (2003) which held that academic background of a learner influences later academic achievement as measured by KCSE. Learners who obtain above average grades in KCPE have high Intelligence Quotient or achievement motivation hence have a passion for academic excellence and subsequently work hard to realise better academic results.

#### **4.4.3 Teachers' characteristics and students' academic achievement**

It is indicated that most teachers in Trans Nzoia and West Pokot Counties' day secondary schools have a favourable attitude towards day schooling as shown in the 61.5% (8) favourable rating of such schools while 23% (3) had each a negative attitude towards day school. The positive attitude could be as a result of improved learning and teaching environment which may be as a

result of Free Day Secondary Education and Constituency Development Fund. On the other hand, the unfavourable attitude could be as a result of over crowded classrooms due to over enrolment of learners, poor infrastructure and long distance to school. Day schooling is not common in rural areas in West Pokot County but it is growing in popularity in urban regions. However, day schools are gradually being transformed into boarding schools with the view of according learners adequate time for study, besides non-educational reasons. The need to create time for school and home study is likely to prompt day school management to introduce a management strategy that could help teachers and learners to save time for study and syllabus coverage.

Table 4.13 a) data constitute mean attitude of teachers, based on arbitrary scores on their perception of day schooling in relation to learners' academic achievement expressed in means and standard deviation.

**Table 4.13 a)**  
**Mean Teachers' attitude towards day schooling and academic achievement**

Statement	N=79	Min. Score 1	Max. Score 5	Mean	SD
Day secondary education system offers a learner an opportunity for all round education.		1	5	3.4557	1.1413
Day schools are not conducive for academic achievement		1	5	3.2911	1.3316
Day secondary schools provide quality education.		1	5	3.5316	1.0480
Day schools offer learners less time to prepare for KCSE.		1	5	3.3797	1.2122
Learners feel at ease in day secondary schools.		1	5	3.8987	1.1389
Day schooling is not conducive without organised school transport		1	5	3.2275	1.3296
Day school learners have sufficient time to receive guidance and counselling from parents on daily basis.		1	5	3.4810	1.1752
Day schools are meant for learners who did not score high marks at KCPE.		1	5	3.2278	1.1088
A day school system allows parents adequate time to take care of the needs of their children.		1	5	3.2785	1.2904
Day secondary schools do not provide learners with adequate study time guided by teachers.		1	5	2.9114	1.4779

Table 4.13 a) shows that more than average number of teachers in Trans-Nzoia and West Pokot County day schools have a favourable attitude towards day school in relation to KCSE performance as indicated by the mean score 3.4557 out of 5 on the variable. There is adequate evidence that day schools accord

learners a conducive atmosphere /extensive motivation and quality education. However, day schools are not considered conducive for effective study as a result of time constraints that lead to learners getting too tired to study effectively at home. Day schools offer learners less time for study as indicated by 3.3797 mean score, just slightly below average. Day schools deny teachers adequate time to provide supervised study for learners.

The table 4.13 a) shows that teachers have slightly above average (3.2278) favourable attitude towards day schooling. However, they indicated a more favourable attitude (3.4810) towards day schooling on the basis that it enables learners sufficient time to receive guidance and counselling from parents daily. The feedback from teachers' mean score of 3.2278, further indicates that, day schools are not generally meant for learners who score low marks in KCPE. On a mean score of 3.2785 out of 5, teachers indicated that day schools offer adequate time to take care of their learners' immediate needs. It is notable in a mean score of 2.9114 that day schools are rated just slightly above the mean on adequacy of time for learners' study. It is thus important to note that day school learners do not have sufficient time for study hence the need for a strategy that could create more time for learners.

The following table presents teachers' attitude towards day schooling in respect to students' academic achievement.

**Table 4.13 b)****Status of teachers' attitude towards day schooling in relation to students' academic achievement**

Attitude statement	Strongly Disagree(SD)	Disagree (D)	Undecided (U)	Agree (A)	Strongly Agree (SA)
Day schools offer a learner all round education	4 (5.1)	19 (24.1)	3 (3.8)	43 (54.4)	10 (12.7)
Day schools are not conducive for academic achievement	16 (20.3)	27 (34.2)	9 (11.4)	18 (22.8)	9 (11.4)
Teachers' perception whether day schools provide quality education.	2 (2.5)	16 (20.3)	10 (12.7)	40 (50.6)	11 (13.9)
Teachers' response on whether day schools offer learners less time to prepare for KCSE.	4 (5.1)	18 (22.8)	0 (0)	39 (49.3)	18 (22.8)
Teachers' response on whether learners feel at ease in day schools	7 (8.9)	29 (36.7)	13 (16.5)	25 (31.6)	5 (6.3)
Teachers' response on whether day school is not conducive without organised school transport	15 (19.0)	26 (32.9)	9 (11.4)	20 (25.3)	9 (11.4)
Whether day scholars have sufficient time to receive guidance and counselling from parents on daily basis.	6 (7.6)	14 (17.7)	7 (8.9)	40 (50.6)	12 (15.2)
Day schools system allows parents adequate time to take care of the education needs of their children.	14 (17.7)	30 (38.0)	6 (7.6)	22 (27.8)	7 (8.9)
Day secondary schools do not provide learners with adequate teacher guided study time.	0 (0)	14 (17.7)	4 (5.1)	29 (36.7)	32 (40.5)

Legend: percentage in parenthesis ( )

Influence of institutional characteristics of day schools on academic achievement was studied using teachers' perception of the institutions' characteristics as provided in the foregoing Table 4.13 b). The indicators

experienced were: the extent of all round education, conduciveness of day schools, the extent of provision of quality education, adequacy of time for private study, whether availability of transport for learners influences academic achievement, whether day schools have adequate time for parental guidance, whether day schools' arrangement allows parents time to offer academic assistance to learners and whether day school system offers teachers adequate time for academic guidance.

As seen from Table 4.13 b), in terms of indicators, most teachers, 67.1%(53) have a favourable attitude towards day schooling as institutions that offer all round education. The favourable attitude implies that such an institution is capable of making learners attain quality education hence the teachers' favourable attitude could be instrumental in influencing a favourable attitude among learners towards academic success, besides improved self image. On the other hand, creation of a conducive environment for improved academic achievement continues to be an important subject to most teachers, 27 (34.2%) as reflected on the indicator on the extent to which day schools are conducive for academic achievement.

These findings are in line with the previous studies by Harlen and Crick (2003) that underscored the need to make day schools more efficient by enhancing internal efficiency. The implication of these findings is that there is need to enhance learners' self determination. Learners' self determination is

dependent on their discipline, hence self discipline is a key indicator. Learners' self discipline is measured in private study time utilisation. Most teachers, 51 (64.5%), are of the view that day schools provide quality education. Quality education is seen in the fact that day schools offer official curriculum; however the ability of the learners to receive quality education as measured by KCSE is influenced by private study.

Table 4.13 b) reveals that most teachers, 72.1%, (57) were of the opinion that day schools accord learners less time to prepare for KCSE as opposed to 27.9% (22) who held a contrary view. The implication of the findings is that a strategy for time creation is needed and could include provision of regular transport for day scholars and teachers as part of curriculum innovation and change. On the other hand, providing a mixed ability learning environment in all schools could lead to improved learning environment given that there is equitable distribution of learning resources through CDF and Subsidised Secondary Education Fund.

The findings presented in Table 4.13 b) show that only 45.6% (36) teachers indicated that learners do not feel at ease in day secondary schools. As much as day schools are popular to learners as reflected by the favourable attitude towards such institutions, teachers feel majority of learners do not feel at ease in day school from the fact that learners trek long distances to school. These findings are in agreement with those of previous related studies by Barasa

(2003) which indicated that, distance from school may impact negatively on learners' attitude towards day schooling.

Table 4.13 b), shows that 36.7%, (29) agree that day schooling is not conducive without organised school transport. On the other hand, 51.9%, (41) teachers held a contrary view while 11.4% (9) were undecided on whether day schooling is not conducive without organised school transport. The discrepancy in the opinions could be attributed to the fact that day schooling environment is dependent on a variety of factors. The many factors that enhance day schooling environment include adequacy of learning resources, teacher-learner ratio, learner –text book ratio, besides provision of academic support services and infrastructure.

It is notable from Table 4.13 b) that 65.8% (52) teachers were of the opinion that day scholars have sufficient time to receive guidance and counselling from parents as opposed to 25.3% (20) who held a contrary view. On the other hand, 8.9 % (7) reserved their judgment on whether learners receive guidance and counselling. From the limited record of strikes by day school learners, it could be inferred that day schooling accords learners time to receive guidance and counselling that resolves conflicts that are experienced while in school. This study confirms the findings by Kibera (1993) that, guidance and counselling provided by parents played a crucial role in learners' discipline. The implication of these findings is that more day schools need to be established to increase opportunity for learners to benefit from parental guidance and



counselling as such service could help sustain general learners' discipline besides being a worthwhile aspect in curriculum innovation and change.

The responses in Table 4.13 b) indicate that most teachers, 55.7%, (44) consider day schooling does not accord parents adequate time to cater for children's educational needs. On the other hand, 36.7% (29) teachers were of the opinion that parents offer their children adequate academic assistance while 7.6% (6) were undecided on parental facilitation of learners' education needs. Although parents depend on teachers to ensure learners succeed in KCSE, parental facilitation of learners' study in day schools is significant in supplementing and complementing teachers' effort. It is notable that parents are role models of their children as indicated by the findings of Nyagah (1997) on learners' performance in relation to parental academic qualification. Parents with better educational background are likely to inspire their children to succeed in academic endeavours.

Table 4.13 b) shows that 77.2% (61) teachers were of the view that day schools provide learners with inadequate study time under the supervision of teachers as opposed to 17.7% (14) who held a contrary view. Only 5.1% (4) teachers were undecided on whether day schools accorded learners adequate study time under the guidance of teachers. Operations of day schools delineate the fact that both learners and teachers do not have adequate time for organised study in the morning and evening. Although some schools do have electricity or a reliable source of lighting, learners live far from school and should leave

school early before time scheduled for study and come late for morning study. If a learner is not able to be in school on time for morning study the teacher will not supervise study and subsequently study time is considered inadequate. The researcher observed that many schools that were desperate to create time for study in the morning and evening temporarily created boarding school facilities for form three and four learners while maintaining the day schools.

The data present teachers' attitude towards day schooling in relation to providing effective learning environment for academic success.

**Table 4.13 c)**

**Summary of teachers' attitude towards day schooling in relation to students' KCSE performance**

<b>Categories of Attitude</b>	<b>Number of Respondents</b>	<b>Percent</b>
Negative	23	29.2
Neutral	3	3.8
Positive	53	67.0
<b>Total</b>	<b>79</b>	<b>100</b>

Table 4.13 c) shows that 67.0 % (53) teachers indicated that day schooling is favourable for KCSE performance while 3.8 % (3) were undecided and 29.2% (23) indicated otherwise. The positive attitude towards day schooling in Trans-Nzoia County is seen in the rapid expansion of day schools in the rural area. Since the inception of Constituency Development Fund (2002) and Subsidised

Secondary Education Fund (2008), the number of day secondary schools in rural areas has doubled and out numbered boarding schools. The enrolment of learners in the schools has also doubled over the last four years. It is thus reasonable to hold that parental attitude towards investing in day schools is more favourable now than ever before. This attitude is likely to be maintained if learners record good academic achievement in the rural and urban day secondary schools to be at par with their counter-parts in boarding schools. The findings provided in table 4.13 c) show that day secondary schools are gradually being preferred or are popular schools as indicated by 67.0% (53) teachers' favourable rating. Implications of this scenario were that institutional characteristics have a significant influence on academic achievement.

**Objective 3:** to establish the extent to which teachers' attitude towards day secondary schooling influences students' mean KCSE score.

To achieve this objective, the researcher identified a null and corresponding research hypothesis. The data obtained was based on a statement to the respondents that was used to generate results for the obtained Chi-square value in relation to the critical chi-square at 0.05 level of significance. A contingent Table 4.13 d) given below, was used to give details of the data and the resultant test that led to substantiation of the hypothesis.

Data from the respondents on the following statement was utilised in computing chi-square value and hence the results given in the Table, 4.13 d) below:

### **Testing the Null Hypothesis, Ho3**

Ho3 there is no significant relationship between teachers' attitude towards day schools and students' mean KCSE score.

Ha3 there is a significant relationship between teachers' attitude towards day schooling and the students' mean KCSE score.

To determine whether there is a substantial relationship between variables, data based on two statements given below was computed as given in Table 4.13d) using chi-square interactive calculation mode.

- (i) Day schools are not conducive for academic achievement.
- (ii) Day school leads to quality mean KCSE score.

The data in Table 4.13d), constitute teachers' and learners' attitudinal score on their perception of day schooling as a school that is efficient and effective:

**Table 4.13d)**

**Teachers' and learners' attitude towards day schooling and students' academic achievement**

Category	Agree	Disagree	Undecided	Total
Observed i	53	23	3	79
Observed ii	255	75	44	374

df=2

SL= 0.05

Obtained Chi-square value = 6.477

P-value = 0.0392

Critical Chi –square value = 5.334

From the results of testing the null hypothesis, the obtained Chi-square is greater than the critical Chi-square. In this regard, the null hypothesis is rejected in favour of the alternative hypothesis which states that there is a significant relationship between the teachers' attitude towards day schooling and the learners' KCSE performance. Related studies by Hopkins (2011) on classroom research support the findings that there is a relationship between teachers' attitude towards the type of learning style and learners' academic achievement.

**4.4.4 Adequacy of teaching and learning resources and students’ academic achievement**

Data in Table 4.14 a) is teachers’ responses on adequacy of teaching / learning resources and services provided by the schools.

**Table 4.14 a)**

**Level of adequacy of teaching and learning resources**

Item	Level of adequacy			
	West Pokot		Trans- Nzoia	
	Available	Not available	Available	Not available
	F. %	F. %	F. %	F. %
Library Services	48 (72.7)	18 (27.3)	245(79. 5)	63(20. 5)
Laboratory	57 (86.4)	9 (13.6)	239 (69)	69 (22.4)
Text books	36 (54.5)	30 (45.5)	248 (80.5)	60 (19.5)
Supervised study	22 (33.3)	44 (66.7)	171 (55.5)	137 (44.5)
Career guidance	41 (62.1)	25 (37.9)	219 (71.1)	89 (28.9)
Guidance and counselling	58 (87.9)	8 (12.1)	282 (91.6)	26 (8.4)

Table 4.14 a), shows that only 33.3% (22) supervised study in West Pokot is available for day scholars as opposed to 66.7% (44) that is not provided. This scenario implies that 87.9% (58) of students receive guidance and counselling service and 62.1% (41) on career guidance services are not adequately guided to improve academic achievement in Kenya Certificate of Secondary Education Examination. Therefore, there is need to create more time for

personal study as a strategy to encourage effective study. On the other hand, 54.5% (36) text book availability rate per student is not adequate for day scholars who mainly study away from school and in homes where such resources are scarce. Table 4.14 a), further shows that only 72.7% (48) of library service is available to students. Although this is better than lack of library service; unless there is a lending system, many learners may not find time to enter a school library given the tight tuition schedule and limited evening study. The laboratory services in day schools are quite adequate as reflected in the 86.4% (57) availability. This is a significant percentage of a facility that is used in turns hence such provision is likely to influence academic achievement in practical subjects in West Pokot County.

Trans-Nzoia county day schools on the other hand, provide 79.5% (245) library service, 69%(239) laboratory service, 80.5% (248) text books per student, 71.1 % (219) receive career guidance service and 91.6% (282) guidance and counselling services. However, there is only 55.5 % (171) supervised study and 44.5 % (137) unsupervised study. This means 44.5% (137) of the students organise their own private study at school. That there is no regular timetable during week days for study due to time constraints is as a result of long distances to school by day scholars especially those who cannot afford public transport or where such transport is not available due to impassable roads during heavy rains season. Laboratory service of 69 % ( 239) is quite adequate when resources are shared but 79.5 % (245) library service

where there is time constraint and an inadequate library lending policy in day schools is likely to affect use of school books that are in short supply. A strategy where more evening time could be created for study at school by initiating subsidised school transport for day scholars is likely to recover time for effective use of libraries and daily morning and evening study.

The data provided here is teachers' performance evaluation status as obtained from learners' responses on teaching in West Pokot County.

Table 4.14 b) shows results of learners' rating of teachers' competency.

**Table 4.14 b)**

**Learners' rating of teachers' competency in relation to KCSE performance.**

Statement	Rating Scale	West Pokot		Trans-Nzoia	
		No.	%	No.	%
How do you rate your teachers' performance?	Effective	57	(86.4)	284	(92.2)
	Average	8	(12.1)	21	(6.8)
	Ineffective	1	(1.5)	3	(1.0)
<b>Total</b>		<b>66</b>	<b>100</b>	<b>308</b>	<b>100</b>

Table 4.14 b), indicates the majority of the students have a favourable attitude towards their teachers as shown by the rating 86.4 % (57) as effective as opposed to 12.1 % (8) and 1.5% (1) who consider teachers as ineffective. The implication is that day school teachers are adequately trained to handle their subject areas to the satisfaction of the majority of learners. The small



percentage of dissatisfied learners may reflect specific attitude or perception to different subjects that learners traditionally consider difficult and those teachers who handle the subjects are likely to be rated low in performance compared to those whose subjects are easy to follow. These findings have certain implications on teachers' appraisal. An opportunity of learners evaluating their teachers' effectiveness in curriculum implementation could help obtain crucial information that could be used in determining teacher quality, mastery of content and subsequently encourage the need for teachers' development programme besides subject networking among teachers.

On the other hand, learners in Trans-Nzoia County have a favourable attitude towards their teachers as shown by 92.2% (284) representing effective teachers, with only 6.8%(21) and 1.0% (3) representing average and ineffective performance by teachers in the county's day secondary schools respectively. Such favourable perception of teachers' performance of duties is likely to motivate learners to study effectively in order to do better in KCSE. The implication is that 9% (24) learners may be in the range of slow learners and hence may be identified for special coaching which is subject based. Remedial teaching for low achievers in specific subjects is therefore a felt need in day schools. The high score of teachers' performance at the level of "effective" is important feedback for subject teachers as such information may prompt them to match the outcome of this appraisal with learners' KCSE performance. The teacher's evaluation of teaching is therefore motivational to

teachers who will need to ensure their teaching is consistent with learners' academic outcomes and aspirations.

#### **4.5 Interview and document analysis data on institutional and learners' characteristics and students' academic achievement**

Most qualitative data was recorded by note taking since this was performed by most head teachers. Analysis of the interview and documentary data started as soon as each session with the head teacher of a school ended. The notes taken during the interview were immediately examined for gaps and any discrepancies removed to ensure only relevant information is used. Head teachers from day secondary schools were given identification labels as follows; T1, –T25 for Trans Nzoia head teachers and W1 –W5 for West Pokot ones. The notes were recorded and analysed in a format that had been prepared using hypotheses based on themes and hypotheses.

The findings are presented and discussed after quantitative data analysis that dealt with objectives 1 – 5, 7 and 8. Although the interview themes were identified to guide the presentations, analysis and interpretations, most of the qualitative data generated are verbatim.

The following is a tabulation of qualitative data obtained from 30 head teachers' interview on institutional and learner characteristics and students' mean KCSE score. Table 4.15 presents school characteristics in relation to

academic achievement. These characteristics include: learner- teacher ratio, teacher characteristics, schools' socio -economic status and learners' discipline. The study sought to obtain these data because the data contributed important information that was necessary in testing hypotheses 4, 5 and 6. Document analysis data supplemented data from head teachers' interview. The data in this section is presented in tables of frequencies and percentage. The data in Tables 4.16 to 4.25 constitute vital information in understanding the findings of testing hypothesis 4, 5 and 6.

**Table 4.15 Head teachers' responses on institutional and learners' characteristics in respect to academic achievement**  
**N=30**

<b>Nature of determinants</b>	<b>Response</b>	<b>F</b>	<b>%</b>
How many graduate teachers do you have?	one per subject (11)	30	100
What is the ratio of Form Four learners to teachers ?	1:8	30	100
How do you rate Form Four learners' discipline?	Good	20	67.8
	Average	5	16.6
	Poor	5	16.6
How do you rate the schools' financial ability?	Adequate	2	6.7
	Inadequate	28	93.3
Adequacy of academic guidance to learners?	a) Effective and adequate	10	33.3
	b) Effective but inadequate	20	66.7
When is Form Four syllabus completed?	March – May	5	16.7
	June – August	25	83.3
How do you rate the learners' attitude towards day schooling?	Favourable	25	83.3
	Unfavourable	5	16.7
Do teachers enjoy teaching in day school?	Yes	28	93.3
	No	2	6.7

This Table, 4.15, indicates that all the 100% (30) schools have at least one graduate teacher in every examinable subject which puts teacher- student ratio at 1:8. It is notable that 66.7% (20) schools reported that learners have good discipline compared to 33.3% (10) whose learners' discipline was perceived as either average or poor. 93.3% (28) head teachers in Trans-Nzoia and West Pokot counties reported that schools had poor economic base hence this may explain lack of school vehicles in the majority of schools. Only 6.7% (2) head teachers noted that their financial ability was adequate. These are schools that are situated in the urban location of Trans-Nzoia County which are perhaps well endowed economically as a result of greater parental financial support.

It is notable in Table 4.15, that majority of public schools, 83.3% (25) schools complete Form Four syllabus between June and August of the examination years. This timing may not allow learners adequate time to revise effectively before KCSE examinations that begin generally in September. Only 16.7% (5) schools complete the syllabus between March and May of the examination year allowing both learners and teachers ample time for revision. It is evident from the table that 83.3% (25) teachers indicated that learners in their schools have favourable attitude towards day schooling. Positive attitude towards day school could prompt a student to work hard leading to improvement in KCSE performance. In this regard, a favourable attitude towards day school is important since it encourages expansion of such schools. It is notable that 66.7% (20) head teachers considered academic guidance as effective but it was

not adequately provided where 33.3% (10) held that it was effectively and adequately provided. 93.3% (28) head teachers reported that teachers enjoy teaching in day schools as opposed to 6.7% (2) who held contrary views.

#### 4.6 Teachers' and learners' time constraints

These data constitute head teachers' responses to challenges encountered by teachers and learners.

**Table 4.16**

**Teachers' and learners' challenges in creating time for studies**

<b>Indicator of constraint</b>	<b>Response</b>	<b>F</b>	<b>%</b>
Teachers' major challenge	Inadequate time for syllabus coverage	3	10
	Poor utilisation of time/lack of study strategy	27	90
Learners' constraints	Trekking to school, insufficient study time	20	66.7
	Social Problems / inadequate parental support	10	33.3

Table 4.16 indicates that 90%, (27) schools do not have an effective learners' study strategy supervised by teachers. Likewise, 10% (3) schools show that the major challenge is inadequate time for syllabus coverage. On the other hand, 66.7% (20) schools reported that learners had insufficient time for study as a

result of living far from school. Other, 33.3%, (10) schools indicate that social problems and inadequate parental support of learners contribute to day scholars' poor academic achievement.

These are strategies proposed by head teachers for improving academic achievement.

**Table 4.17**

**Strategies for academic achievement: head teachers' perspectives**

<b>Suggested strategies</b>	<b>Frequency</b>	<b>Percent</b>
Reinforce study supervision strategy /Study time creation and management at school	20	66.67
Provide adequate infrastructure and resources	19	63.00
Encourage parental facilitation of home study/homework	18	60.0
Encourage learner mixed ability classes	14	46.66
Foster learners' discipline	14	46.66
Ensure timely syllabus coverage	10	33.33
Reinforce teachers' competencies through in-service	8	26.67
Provide transport /create extra time for learners and teachers	7	23.33
Provide adequate teachers per subject	6	20.00
Provide team work /spirit	5	16.67

This Table, 4.17, presents ten (10) strategies / proposals that could help reverse poor learners' academic achievement in public day schools in Trans-Nzoia and West Pokot counties. It is notable that 66.67%, (20) head teachers indicated that creation of extra time for study could enable the schools to provide an

effective study strategy for learners. Similarly, 33.33%, (10) Head teachers hold that there needs to be a strategy for efficient and effective completion of the syllabus. Besides, 63%, (19) head teachers indicated the need to improve infrastructure and resources and 60%, (18) hold the view that parental facilitation of learners' study/homework is key in enhancing KCSE performance. The need to foster learners' discipline and encouraging mixed ability classes was scored at 46.66%, (14), making it clear that the two strategies could make a difference in schools' learners' KCSE performance. Other suggested strategies to provide team work scored between 16.67% (5) and reinforce teachers' competencies 26.67% (8) hence not very significant but they are worth noting since they relate to individual schools.



This Table 4.18, provides data on teaching/learning resources in relation to academic achievement

**Table 4.18**

**Head teachers' responses on the status of schools' and learners' characteristics that influence students' achievement**

Category of response	West Pokot		Trans-Nzoia	
	Yes	No	Yes	No
Do Form Four learners use the library regularly?	2 (40)	3 (60)	12 (48)	13 (52)
Does school management provide transport for learners?	1 (20)	4 (80)	3 (12)	22 (88)
Is learners' CATs' performance above average?	2 (40)	3 (60)	10 (40)	15 (60)
Do majority of learners pay fees at the beginning of term?	1 (20)	4 (80)	15 (60)	10 (40)

Legend: Percentage in parenthesis ( )

Table 4.18 above shows that 60%, (3) schools, as by head teachers responses, have library facilities that learners do not make use of regularly while 40%, (2) head teachers hold that learners use the library regularly. Most respondents, 80% (4) schools' head teachers reported that majority of learners do not pay fees at the beginning of term as opposed to 20%, (1) schools' head teacher who hold that majority of the fees is paid at the beginning of term. Similarly, 60%, (3) head teachers noted that learners' performance in C.A.Ts is below average.

On creation of study time through providing school transport for learners, 80%, (4) head teachers indicated that the school management has no interest in addressing the issue while 20% (1) held a contrary view. It was established that transport for day scholars had not been discussed by schools' Boards of Governors.

In this table, 4.18, 48%, (12) head teachers indicated that Form Four learners use the library regularly as opposed to 52%, (13) who indicated otherwise. 88%, (22) head teachers reported that school management is not interested in provision of transport for day scholars. Only 12%, (3) head teachers indicated the school management is interested in facilitating transport for day school learners. Majority, 60%, (15) head teachers noted that most learners paid fees at the beginning of term and only 40%, (10) later in the term. Learners' C.A.Ts' performance was rated at 60%, (15) a below average performance and 40%, (10) for above average. This information constitutes important facts that influence learners' Kenya Certificate of Secondary Education performance in Trans-Nzoia County.

These data constitute head teachers' report on challenges encountered by learners.

**Objective 4:** to examine the extent to which adequacy of teaching and learning resources in day secondary schools influence learners' academic achievement as measured in KCSE.

This objective led to the formulation of hypothesis based on the fact that over the past four years most day secondary schools may have improved teaching and learning resources as a result of Constituency Development Fund and Subsidised Secondary Education Fund and parental contribution in response to the cost sharing policy, stakeholders, development partners, and government. Hence, it is expected that the learning environment has been enhanced through the various financial sources given above. The null hypothesis identified is given here below.

**Testing Null Hypothesis, Ho4**

Ho4 There is no significant relationship between level of adequacy of learning and teaching resources in day secondary schools and learners' academic achievement as indicated in KCSE.

Ha4 There is a significant relationship between level of adequacy of learning and teaching resources in day secondary schools and learners' academic achievement as indicated in KCSE.

Data based on the response of the respondents to the statement provided here below was used to determine the correlation. In order to test the null hypothesis, data was obtained using the items given here below.

1. How do you rate the adequacy of the following facilities in relation to KCSE performance?
2. How do you rate learners' KCSE performance?

Table 4.19, provides data on adequacy of teaching /learning resources that was used to test the hypothesis on whether there is a relationship between adequacy of teaching and learning resources and learners’ academic achievements.

**Table 4.19**

**Teaching and learning resources and academic achievement**

Category		Sufficient/Moderate/Insufficient/			Total
		Good	Average	Poor	
Observed	1	11	29	39	79
Observed	2	30	46	3	79

Df=2

SL= 0.05

Obtained Chi-square 13.818

P-Value 0.0009

Critical Chi-square 12.705

The study rejected the null hypothesis and accepted the alternative hypothesis that there is a significant relationship between adequacy of learning resources and learners’ academic achievement. These findings are in agreement with findings in related studies by Eshiwani (1987), Nyagah (1992) and Onyango (2010). However, this study makes an additional contribution to knowledge since it established that adequate resources and an effective teacher-learner ratio, besides parental facilitation of home study influence learners’ academic achievement. The computed  $\chi^2$  is greater than the critical value necessary for the rejection of the null hypothesis at the 0.05 level; the null hypothesis is rejected and thus the alternative is accepted. It is held that there is a significant

relationship between adequacy of teaching /learning resources and learners' academic achievement (KCSE).

**Table 4.20**

**Challenges encountered by learners as reported by school heads in West Pokot and Trans-Nzoia Counties**

Category of Challenge	West Pokot		Trans -Nzoia	
	Yes	No	Yes	No
Trek to school / live over 2 km away from school	4 (80)	1 (20)	20 (80)	5 (20)
Inadequate peer teaching/ Mixed ability environment/ Academic role models	4 (80)	1 (20)	18 (72)	7 (28)
Lack adequate academic guidance	3 (60)	2 (40)	16 (64)	14 (36)

Legend: Percentage in parenthesis ( )

Table 4.20, shows that 80%, (4) schools in West Pokot County have learners who live more than 2 kilometres from school hence they trek long distances to school. It is further noted that 80%, (4) schools' learners are of lower ability hence limited peer teaching in day schools due to few academic role models in day school setting. Learners' academic achievement is further undermined by inadequate academic guidance and counselling whose adequacy is rated at 40%, (2) schools while the inadequacy is at 60%, (3) schools.

It is notable in Table 4.20, that 80%, (20) schools in Trans-Nzoia County are situated more than 2 kilometres away from where learners live hence majority of learners trek to school as opposed to a few, 20% (5) schools where learners live closer to school or spend little time on commuting. It is notable that there are limited mixed ability classes as indicated by 72%, (18) schools that indicated peer teaching. Academic role models are limited in such schools hence learners lack effective peer teaching. Only 28%, (7) schools' learners have adequate peer teaching environment that could have a favourable influence on learners' academic achievement in a school.

Furthermore, 64%, (16) schools have insufficient academic guidance which is an important ingredient in a learning environment. It is notable that 36% (14) schools have adequate academic guidance and counselling support service. This scenario of inadequate academic guidance could lead to poor learning environment especially in schools where majority of learners are of lower academic ability.

Table 4.21 data is on teachers' remedial teaching strategies

**Table 4.21**

**Teachers' strategies for improving academic achievement**

Statement	West Pokot N=13		Trans-Nzoia N=66	
	respondents		respondents	
	Yes	No	Yes	No
Is remedial teaching offered in your school?	13 (100)	0 (0)	64 (97)	2 (3)
Is study organised for learners?	9 (69.2)	4 (30.8)	65 (98.5)	1 (1.5)

This Table, 4.21, shows 97.0%, (64) Trans-Nzoia teacher respondents indicated that their schools offer remedial teaching while 98.5% (65) indicated that study is organised to ensure learners study to enhance learning. Only 1.5%, (1) teacher indicated there is no study programme for learners. Another 3.0%, (2) teachers indicated that remedial teaching is not offered in their schools.

On the other hand, 100%, (13) teachers indicated that there is remedial teaching for learners at school and 69.2%, (9) teachers noted that study is also organised in school. However, 30.8%, (4) teachers indicated there is no study in their schools. The fact that remedial teaching is offered in day schools is an ambitious plan that may require innovation and change of day schools' management to create time for remedial teaching. A situation where 30.8%,

(4) teachers reported that study is not organised in schools casts doubt on adequacy of remedial teaching and calls for a time creation strategy in day schools. The passion of teachers to offer remedial teaching is significant in improving academic achievement if the remedial performance would be used to target lower academic achievers in individual subjects instead of general remedial that has no regard for one's ability in the subject that demotivates learners.

The implication of this high percent favourable remedial teaching and organised study for learners in Trans- Nzoia explains the gradual improvement in KCSE performance by day school learners as shown in 2011 results in chapter one. Despite this high number of remedial teaching report, it is important to identify learners who require remedial teaching in each subject to avoid a situation where remedial teaching is fast an extension of a syllabus coverage exercise that could lead to negative attitude towards its practice. This is in agreement with previous studies on strategies of improving academic achievement by Creswell (2003) that show how student centred study strategies favourably influence learning outcomes and consequently academic achievement.



Table 4.22 presents teachers' report on provision of supervised study.

**Table 4.22**

**Study time management in relation to students' academic achievement**

Statement	Trans- Nzoia N=66		West Pokot N=13	
	respondents	No. %	respondents	No. %
Who supervises studies?	Teacher	47 (71.2)	10	(76.9)
	Prefect	3 (4.6)	3	(23.1)
	Not supervised	16 (24.2)		
How long is study time per day?	1-2 hours	0 (0)	3	(23.1)
	3 - 4 hrs	66 (100)	7	(53.8)
	Not supervised		3	(23.1)

Table 4.22 shows that 71.2 %, (47) teachers in Trans- Nzoia indicated that study time is supervised by teachers while 4.6%, (3) indicated it is supervised by prefects. 24.2%, (16) teachers reported that study in school is not supervised. All the teachers, 100%, (66) revealed that study took between 3-4 hours daily. Although study time is 3-4 hours daily, 24.2 %, (16) teachers reported that study is not supervised which is a challenge to learners, teachers, head teachers, parents, stakeholders and the government since provision of education is costly and thus there is need to monitor schools' internal efficiency which is based on effective teaching and learners' study activities. These findings confirm previous studies which show that supervision of learners' studies has a positive influence on performance, Creswell (2003). Thus, studies conducted in Nigeria and Britain indicate supervision of learners'

study and learning activities have a favourable academic outcome. The implication of the findings is that there is need for a clear study time utilisation policy for day scholars that has provision for equitable study time for all categories of schools in the county. This will ensure there is clear direction on when study is done and who provides supervision to reduce wastage of time occasioned by effects of unsupervised or lack of study in school. On the other hand, 76.9%, (10) teachers in West Pokot reported that study in schools is supervised by teachers while 23.1%, (3) indicated that supervision is carried out by prefects. The majority, 53.8%, (7) teachers indicated that study takes 3-4 hours daily while 23.1%, (3) teachers indicated that study takes 1-2 hours daily. It is notable that another 23.1%, (3) teachers indicated study is not supervised.

It is notable that most study is supervised by teachers for between 3 and 4 hours daily, a significant strategy that is likely to improve learners' academic achievement. Supervision of study is a reinforcement strategy that could influence positively learners' attitude to study and subsequently their academic achievement. However, 23.1%, (3) indicating that study is not supervised, is a cause of concern. It is important that teachers and head teachers ensure that learners benefit from school by reversing trends that are likely to undermine individual learners' investment in education.

The following table presents data on learners' attitude towards day schooling and curriculum.

**Table 4.23**

**Learners' attitude towards day schooling and curriculum**

<b>Statement</b>	<b>Trans-Nzoia response</b>	<b>Trans-Nzoia</b>		<b>West Pokot</b>	
		<b>No</b>	<b>%</b>	<b>No.</b>	<b>%</b>
How do you rate learners' attitude towards day schooling?	Favourable	65	(82.3)	8	(61.5)
	Unfavourable	14	(17.7)	5	(38.5)
Do learners have a favourable attitude towards your subject?	Yes	69	(87.3)	12	(92.3)
	No	10	(12.7)	1	(7.7)

This Table, 4.23, indicates majority of learners in Trans-Nzoia have a favourable attitude towards day schooling and the curriculum as reflected by the 82.3%, (65) and 87.3%, (69) teachers' rating of learners' attitudes towards day schooling. Only 17.7 %, (14) and 12.7%, (10) teachers reported that learners have unfavourable attitude towards day schooling and subjects taught respectively. Positive attitude towards a school and the curriculum is crucial in ensuring internal efficiency of schools as reflected in Kenya Certificate of Secondary Education performance. The implication of 17.7%, (14) and 12.7%, (10) negative attitude towards day schooling and subjects taught respectively means there is need to devise a strategy that could improve attitude of all learners towards school and curriculum activities.

Similarly, 92.3%, (12) West Pokot teachers indicated that learners have a favourable attitude towards day schooling and a further 61.5%, (8) reported that learners have favourable attitude to subjects taught. 7.7%, (1) teacher indicated that learners have a negative attitude to the subject they teach. 38.5%, (5) teachers reported that learners have an unfavourable attitude towards day schooling. The implication of favourable attitude of learners towards the school and the curriculum is important since attitude influences one's behaviour. In education, a positive attitude towards learning is generally associated with success while a negative attitude towards school subjects is blamed for failure in Kenya Certificate of Secondary Education. This is because attitude influences one to act or not to act leading to favourable or unfavourable outcomes. Study findings on the effects of attitude towards learning and curriculum indicate that negative attitude needs to be reversed or be replaced by positive attitude as this will reinforce effective curriculum implementation (Gatumu, 2002).

Table 4.24 presents data on remedial programme status in day schools

**Table 4.24**

**Remedial teaching programme in relation to study time management**

<b>County</b>	<b>Category of remedial teaching programme</b>	<b>No</b>	<b>Percent</b>
Trans-Nzoia	Weekend (Saturday)	37	56.1
	Evening and Morning	26	39.4
	Not done	3	4.5
West Pokot	Weekend (Saturday)	7	53.9
	Evening and Morning	4	30.8
	Not done	2	15.4

Table 4.24, shows that most, 56.1%, (37) teachers indicated that remedial teaching takes place mainly at the weekend, while 39.4%, (26) held that study is done in the evening and morning. However, 4.5%, (3) teachers indicated remedial teaching is not offered in school in Trans-Nzoia County. This means learners in the particular school (s) experience real challenges in preparing for KCSE, a factor that is likely to negatively affect their academic achievement. It was established that weekend remedial teaching programme was in place in majority of schools 24, (80%). However, this information indicates that there is no clear policy on study time utilisation since such time is confused with remedial teaching as shown in Table 4.22 and Table 4.24 respectively.

The findings on the need for adequate study time for learners in day schools is a matter that requires curriculum review input. It is evident from this study that day schools experience time constraint in planning for supervised learners' study at school due to inadequate reliable transport arrangements for day scholars.

This table presents teachers' responses on the adequacy of learning resources.

**Table 4.25**

**Level of teaching and learning resources**

Statement	Trans -Nzoia N= 66		West Pokot N=13		
	response No.	%	No.	%	
What is the teacher –learner Ratio in your class?	1:40	60	90.9	11	84.6
	1:80	6	9.1	2	5.4
Indicate text book- learner Ratio in the class	1:2	50	75.8	7	53.9
	1:3	8	12.1	2	15.4
	1:4	8	12.1	4	30.8

According to this Table, 4.25, 90.9% (60) teachers in Trans-Nzoia county indicated teacher –learner ratio is at 1:40 as opposed to 9.1%, (6) teachers who reported a 1:80 ratio. 75.8%, (50) teachers indicated text –book to learner ratio is 1:2 while 12.1%, (8) teachers put it at 1:3. However, 12.1%, (8) indicated that text book –learner ratio is 1:4. This ratio 1:4 is very low considering that two learners share a desk. The implication here is that half of the class in such a school have inadequate text books for effective learning, hence this is likely to affect their participation in class and subsequently influence negatively their

performance in the particular subject. On the other hand, the table indicates that 84.62%, (11) teachers in West Pokot reported that teacher to learner ratio is 1:40 while 5.4%, (2) teachers put the ratio at 1:80. It is notable that 53.9%, (7) teachers stated that text book- learner ratio is 1:2, 15.4%, (2) teachers indicated the ratio at 1:3. Another 30.8% (4) teachers indicated that text book-learner ratio is 1:4, this ratio is low considering two learners share a desk and hence having one book among four learners shows that text books are inadequate in the particular subject (s). The implication here is that parents ought to be involved to raise text book - learner ratio in order to ensure learners have sufficient resources for a teaching/learning process. The challenge of inadequate learner–textbook ratio calls for a monitoring and evaluation procedure for teaching and learning resources to ensure the short fall is addressed on time to avoid negative impact of the short fall on educational service provision.

These findings are in agreement with those by Eshiwani (1983) on related studies on factors that influence academic achievement among primary and secondary learners that showed that learner –text book ratio had a significant impact on learners’ academic outcomes. Given that these findings validate previous findings, it is evident that adequate teaching /learning resources’ status has been established hence there is need to make necessary budgetary adjustments in allocation of funds to public schools to tackle the short fall in

Subsidised Secondary Education Fund. This recommendation is in line with the findings of this study.

#### 4.7 Parental educational and occupational characteristics

Table 4.26, presents data on student responses on education level of fathers and mothers in West Pokot and Trans-Nzoia Counties

**Table 4.26**

##### **Parental educational level**

<b>Parental educational level</b>		<b>West Pokot N=66</b>		<b>Trans -Nzoia N=308</b>	
		<b>Fathers</b>	<b>Mothers</b>	<b>Fathers</b>	<b>Mothers</b>
University	f	2	1	25	13
	%	(3)	(2)	(8.1)	(4.2)
Tertiary	f	4	5	58	60
	%	(6)	(8)	(18.8)	(19.5)
Secondary	f	17	6	125	131
	%	(26)	(9)	(40.6)	(42.5)
Primary	f	29	36	60	60
	%	(44)	(54)	(19.5)	(19.5)
N/A	f	14	18	40	44
	%	(21)	(27)	(13)	(14.3)

Legend: Percentages in parenthesis ( )

Table 4.26, shows that most mothers 54% (36) are of primary level of education as compared to the fathers 44% (29) with similar level of education.



Only 2%(1) mother and 3% (2) fathers had attained university education. On the other hand, 21%(14) fathers as opposed to 27% (8) mothers had no formal education. This implies that majority of parents in West Pokot who take children to day schools have attained at least primary education.

On the other hand, majority of fathers and mothers 40.6% (125) and 42.5% (131) respectively in Trans-Nzoia have attained secondary education as shown by the responses given above. 18.8% (58) fathers and 19.5% (60) mothers have attained tertiary education respectively as shown by the respondents rating. Similarly, there is a slight variation among fathers and mothers who have attained university education as shown by 8.1% (25) and 4.2% (13) respectively. This educational level of fathers and mothers implies the likelihood of favourable parental provision of home study material to their children. The findings are in line with those of related studies by Ayodo et al (2012) which established that higher income and conducive home environment positively influence academic achievement of learners.

Table 4.27 indicate parental occupational status

**Table 4.27**

**Parental occupational status**

Parental occupation		West Pokot N=66		Trans-Nzoia N=308	
		Fathers	Mothers	Fathers	Mothers
Professional	f	5	1	25	19
	%	(7)	(2)	(8.1)	(6.3)
Skilled	f	7	3	99	60
	%	(11)	(4)	(32.1)	(19.5)
Semi skilled	f	14	7	105	99
	%	(21)	(11)	(34)	(32.1)
Unskilled	f	36	52	54	105
	%	(55)	(79)	(17.5)	(34.0)
N/A	f	4	3	25	25
	%	(6)	(4)	(8.1)	(8.1)

Table 4.27 shows that, most mothers 79% (52) in West Pokot county are unskilled as opposed to 55% (36) fathers. Only 2% (1) mother is a professional and 7% (5) fathers. The majority of fathers and mothers with learners in day school are unskilled. This implies that day scholars may experience low achievement of motivation from their parents, a factor that is likely to influence negatively their academic achievement. This category of parents may also have limited resources to facilitate provision of study material for learners' home study.

However, Table 4.27 indicates that most fathers 34.0% (105) in Trans-Nzoia county are semi skilled as opposed to 32.1% (99) mothers. On the other hand, 8.1% (25) fathers and 6.3%(19) mothers are professionals. The data show 19.5% (60) mothers are skilled as opposed to 32.1% (99) fathers. This implies majority of Trans-Nzoia fathers and mothers with children in day school are semi skilled hence may have limited ability to provide home study material for their children.

**Objective 5:** to establish the extent to which parental educational background status influence learners' KCSE performance in day secondary schools.

This objective was meant to be achieved through data obtained for analysing based on the hypotheses given here below.

Ho5 There is no significant relationship between parental educational background status on learners' mean KCSE score in day secondary schools.

Ha5 There is a significant relationship between parental educational background status on learners' mean KCSE score in day secondary schools.

The respondents' response to the statement provided below led to the generation of data for Chi-square value determination and substantiating the hypothesis.

### Testing the Null Hypothesis, Ho5

**Ho5** There is no significant relationship between the level of parental educational background status and learners' mean KCSE score.

**Ha5** There is a significant relationship between parental educational background status and learners' mean KCSE score.

To facilitate the null hypothesis testing, data based on whether parents provide conducive study environment for learners, reference materials and supervision of study was obtained and applied accordingly.

Table 4.28 below, gives data on learners' responses on parental facilitation of home study that was used to test the hypothesis on whether a significant relationship exists between parental facilitation of homework and learners' KCSE performance.

**Table 4.28**

#### **Learners' study facilitation and academic achievement**

<b>Availability of academic support service</b>	<b>Yes</b>	<b>No</b>
Home study facilitation by parents	306	68
Home study supervision	279	95
Reference books at home	205	169
Df=2	Sl= 0.05	
Obtained Chi-square = 70.183	P – value = 0	
Critical Chi-square = 68.695		

The obtained Chi-square is greater than the critical Chi-square, so the null hypothesis is rejected and the alternative hypothesis is accepted. This means there is a significant relationship between learners' academic achievement and parental facilitation of home study. These findings are in collaboration with related studies by Wanjala and Onyango (2010) which held that household facilitation of pupils' study is necessary in enhancing their participation in learning.

#### 4.8 Schools' location and students' academic achievement

Table 4.29 presents data on the distance covered by learners to school.

**Table 4.29**

**Distance covered by learners from home to school and private study time management N=374**

County	Distance range in Kilometres	Urban		Rural	
		Frequency	%	Frequency	%
One way					
Trans-Nzoia	1-3km	50	58.1	151	68
	4-6km	22	25.6	20	9
	Over 6km	14	16.3	51	23
West Pokot	1-3 km	14	66.7	28	62.2
	4-6km	5	23.8	9	20
	Over 6 km	2	9.5	8	17.8
<b>Total</b>		<b>107</b>	<b>200</b>	<b>267</b>	<b>200</b>

**Key : K.M – Kilometre**

It is clear from table 4.29 that most urban respondents stay 1-3kilometres away from school in Trans-Nzoia and West Pokot counties. This is represented by 58.1% (50) and 66.7 % (14) respectively as opposed to 25.6% (22) and 23.8 % (5) whose homes are situated 4-6 kilometres away from school. The 20% (75) of respondents from the two counties stay over 6 kilometres from school. This is a very significant figure considering that learners in day schools require time in the morning and evening to study at school and at home. Since most day schools are double streamed the catchment areas do not have adequate learners, so learners come from other areas away from the place where the school is located. This implies that 20% of the learners experienced time constraints for home study while another 15% (57) also face challenges of time constraints.

On the other hand, 68% (151) from Trans-Nzoia County stay at least 1-3 kilometres from school while 9% (20) are 4-6 kilometres away. In West Pokot County, 62.2 (28) % stay 1-3 kilometres from school as opposed to 20% (9) who stay 4-6 km from where they learn. It is noted that 23% (51) of the respondents in Trans- Nzoia County stay more than 6 kilometres from school as opposed to 17.8% (8) in West Pokot county which also has fewer day schools as compared to Trans-Nzoia County. Respondents in both counties experience time constraints as a result of long distances to school which need to be addressed by providing subsidised reliable transport for day scholars. This strategy will help save time for school and home based study hence enhancing chances of performing better in KCSE.

This implies the majority of learners cover an average 3-6 km per day on foot, leaving them tired and less able to undertake effective study and /or lessons. These findings are in agreement with those of Wanjala and Onyango (2010) which noted that long distances from school have negative effect on participation rate and /or performance. Studies by Hopkins (2001) on factors that influence academic achievement made similar observation. Other studies done in Korea on factors that influence academic achievement cited learners' perception of classroom environment as a factor that influences academic achievement (Back & Choi, 2002).

These data constitute learners' attitudinal responses expressed as arbitrary scores. Table 4.30 shows learners' attitude towards school location and academic achievement.

**Table 4.30**

**Learners' attitude towards day schools' location and academic achievement**

County	Category of Attitude	Total No. of Students					
		Urban		Rural			
		No.	%	No.	%		
West Pokot	Negative	2	9.5	12	26.7	66	
	Neutral	0	0	6	13.3		
	Positive	19	90.5	27	60.0		
Trans-Nzoia	Negative	16	15.4	26	12.8	308	
	Neutral	6	5.8	8	3.9		
	Positive	82	78.8	170	83.3		
<b>Total</b>		<b>125</b>		<b>249</b>		<b>374</b>	

It is evident from Table 4.30, that in West Pokot County 90.5% (19) students have a favourable attitude towards day schooling as opposed to 78.8% (82) in Trans-Nzoia county. The reason for the attitude in West Pokot could be due to the fact that urban setting in West Pokot has few schools and hence is likely to attract more learners. A small number of students, 13.3% (6) in West Pokot and 3.9% (8) in Trans-Nzoia County, have a neutral attitude towards day schooling, while 26.7% (12) and 12.8% (26) have an unfavourable attitude



towards day schooling. It is important to note that while 83.3% (170) respondents in rural setting in Trans-Nzoia County have a favourable attitude towards day schooling, 60% (27) have similar attitude towards day schooling in West Pokot County. The difference could be accounted for as a result of limited day schools in West Pokot which is within Arid and Semi- Arid Land (ASAL) that is characterised by hardships such as poor infrastructure.

**Objective 6:** to determine if there is a relationship in mean KCSE score among learners in urban and rural day secondary schools.

This objective was achieved through data generated using the hypothesis given here.

**Testing Null Hypothesis, Ho6**

Ho6 there is no significant relationship between mean KCSE score by learners from public urban and rural day secondary schools.

Ha6 there is significant relationship between mean KCSE score by learners from public urban and rural day secondary schools.

To achieve the above objective, data on learners' mean KCSE score based on school location was used to compute T-test.

Unpaired T-test was used to substantiate the hypothesis as shown in the computation provided here below.

Table 4.31 below, provides computed data on learners' mean KCSE difference in relation to urban-rural setting

**Table 4.31**

**School location and students' mean KCSE score**

Mean score	Urban N=7	Rural N= 23
KCSE Performance		
%	53.4	44
SD	5.7	9.2
Df = 28	P value = 0.0216 < 0.05	
t(320) = 2.4325	t-critical = 1.96	

The results of the t-test shown in table 4.31 indicate that urban schools had a higher score, 53.4%, than the rural schools with 44%. The t-value of 2.4325 is significant so the null hypothesis is rejected. Urban day school learners have a higher mean grade on average ( C ) versus (D+) of the rural learners' academic outcomes. The difference in mean score could be explained by the varied learners' characteristics. The findings are in collaboration with previous studies by Stedman (1996) on factors that influence academic achievement of high school learners as measured by learners' academic achievement index.

The two-tailed P-value is equal to 0.0216. the t-value found is 2.4325 and the degree of freedom is the standard error of the difference which was equal to 3.7. The mean of urban learners' KCSE performance minus that of the rural learners' academic achievement is 9.0. 95% confidence interval of this difference is from 1.421 to 16.579. By conventional criteria, this difference is considered to be statistically significant hence the null hypothesis was rejected.

**Objective 7:** to establish whether there is a significant relationship between K.C.S.E mean grade of girls and boys in public day secondary schools.

**Testing Null Hypothesis, Ho7**

Ho7 there is no significant difference in KCSE performance among public day school learners in relation to gender.

Ha7 there is significant difference in KCSE performance among public day school learners in relation to gender.

The learners' KCSE mean score by gender was established and used to compute the t-test. The outcome of the t-test is provided in table 4.32. From the results given in table 4.32, it is evident that there is a negligible significant difference in the KCSE performance between boys and girls, given that the means are nearly the same, 55 % and 54 % for boys and girls respectively. In addition, the t-score obtained is much less at 1.0071 than the t-critical value of 1.96 which is further support of the findings that there is no significant difference between the two sets of performance. Hence, hypothesis 7 (H<sub>7</sub>) is not rejected.

The table below gives the result of T-test that established learners' mean KCSE significant difference in relation to gender.

**Table 4.32**

**Learners' gender versus performance t-test results**

<b>Mean score</b>	<b>M</b>	<b>F</b>
<b>KCSE performance</b>	<b>N=207</b>	<b>N=167</b>
%	55	54
SD	9.2	10

M=Male

F= Female

Df = 372

P value = 0.3145 = < 0.05

t = 1.0071

t critical = 1.96,

Table 4.32, provides a summary of the previous performance achieved by both boys and girls in KCSE. The findings show t- value 1.0071 and the t – critical is at 1.96 hence the null hypothesis is rejected. The standard error of difference is 0.993. The mean of the male minus that of female is equal to one (1). 95% Confidence interval of this difference is -0.952 to 2.952. The two tailed P value is 0.3145. By conventional criteria, this difference is considered to be not statistically significant hence the null hypothesis is rejected.

These studies show gender has no significant effect on one's academic achievement. The results are in agreement with related studies' findings by Nyagah (1997) on attitudes and gender on pupils' performance outcomes.

Other related studies by Kibera (1993) who held similar results. The current findings therefore validate previous findings in related studies.

#### 4.9 Learners' study time management and academic achievement

Table 4.33 presents data on learners' responses that constitute determinants of academic achievement.

**Table 4.33**

##### **Learners' home characteristics and academic achievement**

<b>Statement</b>	<b>Response</b>	<b>F</b>	<b>%</b>	<b>Total</b>
Do you have home study?	Yes	260	69.7	<b>374</b>
	No	114	30.3	
How is home study supervised?	Parent	40	10.7	<b>374</b>
	Self	238	63.6	
	No home study	96	25.7	
How do you make sure you study effectively?	Use a study timetable	244	65.2	<b>374</b>
	I do not study	130	34.8	
Do you have reference books at home?	Yes	176	47	<b>374</b>
	No	198	53	
How do you use reference books at home?	Do exercises	181	48.5	<b>374</b>
	Not applicable	193	51.5	
Do your parents facilitate remedial teaching?	Yes	125	33.3	<b>374</b>
	No	249	66.7	

Table 4.33, shows that 69.7 % (260) students have home study but only 10.6% (40) is supervised by parents while 25.7% (96) do not have home study. Furthermore, 63.6 % (238) students oversee their own study; as 65.2% (244) prepare a study timetable. On the other hand, 30.3% (114) of the respondents do not have home study while 53% (198) have reference books; out of whom 48.5 % (181) use the reference books to do exercises. Table 4.33, further indicates that 33.3% (125) of the students' parents facilitate remedial teaching at home as opposed to 66.7% (249) who do not support the respondents. However, 53% (198) of the students do not have reference books at home while 25.7% (96) indicate that their study at home is not supervised at all as study at home is not valued as indicated by 34.8% (130) of the respondents who hold study at home is not done.

These findings imply that day scholars have many challenges that include inadequate parental facilitation of remedial teaching, besides inadequate reference material that needs to be addressed by parents since they influence unfavourably academic achievement. These findings are in agreement with those of Wanjala and Onyango (2010) in Homabay which found that poverty, feckless parents, lack of household interest in school work and student motivation influence participation rate in school and by extension academic achievement.

#### 4.10 Learners' study environment in relation to students' academic achievement

These data constitute learners' perception of home environment in relation to effective home study.

**Table 4.34**

#### Learners' rating of home study environment in relation to academic achievement

Statement	Response	Frequency	%
How do you rate home environment for effective study?	Conducive	177	47.33
	Unfavourable	197	52.67
<b>Total</b>		<b>374</b>	<b>100</b>

Table 4.34 shows that 52.67% (197) of the students have an unfavourable attitude towards home environment for effective study as opposed to 47.33% (177) who hold a contrary view. This little difference in the rating of home environment for effective study could be explained by the fact that effective study is based on self determination, besides availability of conducive space and adequate resources. However, it is worth noting that home environment requires improvement that could be parent based. Every home has its unique shortcomings, so it is important for parents to talk to their children to establish how the home could be designed for effective study.

Most parents are generally believed to want the best for their children especially in education, so parents need to motivate the learners to attain better

academic grades by providing conducive home environment where study time and materials are readily available, besides effective lighting and study facilitation. The unfavourable rating of the home environment for study could be based on unfavourable perception of the home space, resources and parental ability to facilitate remedial teaching. Parental facilitation of remedial teaching may be lacking in most homes, hence making respondents doubtful of the existence of conducive environment for effective study at home. The knowledge of the nature of home environment is necessary for parents to identify strategies of improving the environment to enable learners study effectively. West Pokot County which covers a large region in the Arid and Semi-Arid Lands (ASAL) generally has a large population, mainly near the county headquarter and in a few sub county centres. In the past two decades, the region provided 99% boarding education ( Republic of Kenya, 2003) but this is slowly changing as currently there is a small number of day schools concentrated mainly in the county headquarters, besides a few partial day secondary schools scattered in the three sub counties.

**Objective 8:** to establish the extent to which study time utilisation influences learners' academic achievement.

This objective facilitated determination of data that was correlated with learners' academic achievement



### **Testing Null Hypothesis, Ho8**

The hypothesis formulated for this objective was stated in the null and alternative as follows:

Ho8 There is no significant relationship between study time utilisation by learners and their academic achievement.

Ha8 There is a significant relationship between study time utilisation by learners and their academic achievement. This hypothesis was tested using data based on learners' study time utilisation in reference to academic achievement. The response to the following statements was used to substantiate the hypothesis.

1. How do you rate day school learners' study time utilisation?
2. How will such study time utilisation determine academic achievement?

This table shows learners' study time usage plan as contained in their own and teachers' responses.

**Table 4.35 a**

**Learners' study time utilisation and academic achievement**

Statement	N =374	Response	
		Yes	No
Undertake home study	f	306	68
	%	(81.8)	(18.2)
Use personal study timetable	f	251	123
at home	%	(67.1)	(32.9)
Undertake definite study activities	f	251	123
	%	(67.1)	(32.9)
Use own/ borrowed study	f	276	98
material	%	(73.8)	(26.2)

Table 4.35 a, above shows that majority of learners have a study timetable and undertake specific study activities at home besides attending remedial teaching as indicated by 67.1%, (251) and 100% (374) rating in the schedule. This shows a favourable attitude towards day schooling which is the basis for discipline and good performance. However, the study established that private study time indicated above was mainly used for remedial teaching. The implication of these findings is that there is inadequate time for learners' private study in day schools.

This table 4.35 b presents teachers' responses on learners' study time management as quantified and interpreted by the researcher.

**Table 4.35 b**

**Learners' time utilisation and academic achievement**

<b>Condition</b>	<b>Continuum</b>			<b>Total</b>
	<b>Good</b>	<b>Average</b>	<b>Poor</b>	
Time utilisation	50	27	2	79
Academic achievement	30	46	3	79

Df=2

SL : 0.005

Chi-square : 10.145

P-Value : 0.0063

Critical chi-square value : 8.951

The obtained chi-square value is greater than Critical chi-square hence the null hypothesis is rejected. The alternative hypothesis is accepted and held that there is a significant relationship between study time utilisation and their academic achievement as reflected in KCSE performance. The findings that study time management is a significant determinant of academic achievement have important implications for curriculum implementers. Study time as a factor in learning constantly requires review to ensure schools maintain efficiency and effectiveness in curriculum implementation. The fact that day scholars have limited study time for effective study as compared to their counter parts in boarding schools calls for action in curriculum innovation and change to ensure equitable study time is available to learners in day schools

without denying them an opportunity of interacting with parents on regular basis.

This table presents data on learners that constitute suggestions that could improve academic achievement.

**Table 4.36**

**Learners' suggestions on improving KCSE performance in day schools**

<b>Learners' suggestions</b>	<b>Frequency</b>	<b>Percent</b>	<b>Total No. of respondents</b>
Learners to improve on time management by creating study time.	Yes 300	80.2	374
	No 74	19.8	
School to introduce subsidised reliable transport for day scholars and teachers	Yes 350	93.58	374
	No 24	6.42	
Teachers to improve self image of learners through reinforcing peer teaching	Yes 280	74.87	374
	No 194	25.13	

The table 4.36, presents learners' suggestions on strategies for improving KCSE performance in day schools. Majority of the learners, 93.58%, (350) learners considered availability of reliable school transport as likely to create more study time for day scholars which could enhance time available for study at school and at home. This is followed by 80.2%, (300) learners who hold that the school needs to improve on study time management for learners by creating

more study time. This point is closely related to provision of daily transport for day scholars as a strategy for creating more time for curriculum coverage, besides improved organised study time for learners. Last, but not least, 74.87%, (280) respondents suggested that teachers need to enhance learners' self image through reinforcing peer teaching. Although this is a worthwhile suggestion, effective peer teaching is best realised where there is mixed ability class.

#### 4.11 Results of multiple regression test

Regression analysis was conducted on institutional and learners' characteristics on academic achievement to ascertain the influence of independent variables on the dependent variable, learners' academic achievement. The results are shown in Table 4.37 and 4.38 multi- regression analysis output. Multiple regression analysis is the determination of statistical relationship between two or more variables. Table 4.38 shows the summary of the regression model on school and home based determinants of learners' academic achievement.

**Table 4.37**

#### **Regression of institutional and learners' characteristics and students' academic achievement**

Model	R	R square (R <sup>2</sup> )	Adjusted R	Std Error
1	.545(a)	.297	.206	.642

Predictor : (constant), KCPE entry score, learners' study time utilisation, learners' attitude, teaching /learning resources, teachers' attitude, parental facilitation of study, school location and learners' gender.

Table 4.37, provides the R and  $R^2$  values; regression analysis yields a statistics called coefficient of determinants or  $R^2$ . The  $R^2$  refers to the amount of variation explained by the independent variable (s) in the equation. The values of R range from -1 to 1. The absolute value of R indicates the strength, hence the larger absolute values indicate the strength of the relationship. The R value is 0.545 which represents the multiple correlations and therefore indicates a significant degree of correlation. The R value indicates how much of the dependent variable, performance grade can be explained by the independent variables. Adjusted  $R^2$  attempts to correct the  $R^2$  to more closely reflect the goodness of fit of the model in the population. In this case,  $R^2$  is calculated to be 0.297 which means 29.7 percent of the variation in the students' mean KCSE score (dependent variable) can be explained/predicted by the institutional and learners' variables.

Table 4.38 presents data on regression of institutional and learners' characteristics and students' academic achievement.

**Table 4.38**

**Institutional and learners' characteristics on academic achievement**

Model	Unstandardised		Standardised		
	Coefficient		Coefficient		
	Beta	Std error	Beta	t	Significant
Constant (learners' KCSE grade)	3.476	2.309		1.505	.139
KCPE entry behaviour	-.199	.059	-.185	-3.389	.000
Learners' attitude	-.084	.036	-.123	-2.323	.021
Learners' time management	.116	.043	.138	2.700	.007
Teachers' attitude	-.913	.390	-.291	-2.340	.024
Parental educational level	.071	.054	.070	1.326	.186
Teaching/learning resources	.115	.059	.112	-1.958	.051
School location	.181	.095	.0294	1.913	.062
Learners' gender	.367	.073	.255	5.056	.000

**Dependent variable: students' academic achievement (Mean KCSE score)**

The coefficient table provides multiple regression information on each variable. This provides the information necessary to predict learners' KCSE mean score in respect to the institutional and learners' characteristics on academic performance. Table 4.38 shows that, both the constant (learners' mean score) and the variables contribute to the model by looking at the

significance column at a confidence level of 0.05. According to the table, the most significant predictors are: attitudes, KCPE entry score and learners' study time management, learners' attitude are generally low or equal to significance level of 0.021 at the confidence level of 0.05. A significance level of below 0.05, shows that there is a significant influence of the independent variables on the dependent variables. A significance level of more than 0.05 shows there is a reduced or minimal influence of the independent variable on the dependent variable.

These findings are in collaboration with earlier research on the influence of attitude towards academic achievement. Nyagah (1997), on research on attitude of pupils towards Art and Craft and KCPE performance had found out that a favourable attitude towards a subject and teacher had a positive effect on academic achievement. The study findings were also in agreement with earlier findings on influence of parental socio-economic status on learners' academic achievement, Barasa (2003). Furthermore, table 4.38 shows that learners' KCPE performance, study time management, teaching and learning resources, teachers' attitude significantly predict and determine learners' KCSE performance. Learners' KCPE performance was among the best predictors of learners' academic achievement besides learners' study time management and attitude towards day schooling respectively; learners' gender, adequacy of teaching /learning resources, school location and parental facilitation of learners' study.



## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter presents a summary of the study, major findings, conclusions and recommendations. It also provides suggestions for further study.

#### **5.2 Summary of the study**

The purpose of the study was to establish the extent to which institutional and learners' characteristics of public day secondary schools influence students' academic achievement as measured in the Kenya Certificate of Secondary Education (KCSE) examinations in Trans-Nzoia and West Pokot Counties. It entailed examining closely related learners' challenges arising from day schooling in relation to academic achievement. Institutional and learners' characteristics were therefore investigated to establish the extent to which they influence learners' academic achievement in public day secondary schools. The following objectives guided the study: to establish whether attitudes of learners, entry behaviour, gender and learners' time management (objectives on learners' characteristics) and teachers' attitudes, professional qualifications, learning resources, parental educational levels and schools' location (institutional based objectives) influence students' academic achievement.

The above objectives were used to formulate eight null hypotheses. The study administered questionnaires to Form Four learners and their teachers. On the other hand, interview and document analysis checklist were used to collect data from head teachers. The three categories of respondents constituted mixed sources of data that improved triangulation of methods and source of data that led to credibility of data. Instrument validity and reliability were ascertained through a pilot study whose data facilitated correction of errors and inconsistencies in form of unclear and repeated items in the questionnaire. The study used ex post facto and correlational research designs.

The target population consisted of 30 head teachers, 240 teachers, 2,560 Form Four learners, totalling 2,830. Stratified sampling procedure was used to identify a sample size of 384 learners and 79 teachers, while 30 head teachers were automatically selected. Head teachers were sampled because of their knowledge of selected institutional characteristics that was necessary for the study. Questionnaires for learners and teachers had a response rate of 374 and 66 respectively. An interview schedule for 30 head teachers, and 30 document analysis guide were used to collect data from head teachers. Instruments' reliability was established through the split half technique, yielding reliability coefficients of 0.8 and 0.75 for learners' and teachers' instruments respectively. The validity of the instruments was established through the pilot study and confirmed by senior lecturers in the department of Educational Administration and Planning.

Descriptive statistics, means and standard deviation were used to analyse data. Inferential statistics, chi-square interactive tests were employed to test all the eight null hypotheses on influence of institutional and learners' characteristics on academic achievement (mean KCSE score). Furthermore, multiple regression was utilised to predict the influence of teachers' and learners' attitudes towards day schooling, learners' KCPE mean score (entry behaviour), learners' management of study time, gender, parental level of education, teaching and learning resources and urban and rural school location on students' academic achievement at 0.05 significant level.

In regard to learners' mean KCSE score and study time utilisation, the study established that learners' study time management had influence on students' mean KCSE score. The indicators of time management was the number of hours allocated to students after classes. Study time management indicator was expressed as a percentage of class time. Students' study time management was studied in relation to schools' location (urban-rural). The results show that the urban learners had more time available for private study and subsequently they outperformed those in the rural based schools. With regard to learners' academic achievement in KCSE in relation to gender, there was no significant difference found between boys and girls in KCSE performance. However, boys slightly outperformed girls in rural based schools while girls did slightly better than boys in urban based schools. Regarding learners' attitude towards day schooling in relation to KCSE performance, the study demonstrated that

majority of learners, (79 percent), had a favourable attitude towards day schooling. The favourable attitude towards day schooling did influence students' mean KCSE score performance level in the sampled schools. The results of testing null hypothesis show the observed Chi square was greater than the critical Chi square. In this regard, the null hypothesis was rejected in favour of alternative hypothesis thus confirming there is a significant relationship between learners' attitude towards day schooling and students' academic achievement.

Regarding learners' academic achievement and the extent to which the school was equipped, it was established there was a significant relationship with regard to students' KCSE performance. However, there was a weak relationship between the teachers' attitude towards day schooling and learners' KCSE performance as indicated by the low scores on their mean and standard deviation of tests carried out. Regarding the influence of institutional characteristics on academic achievement, most learners 75.6 percent and 67.1 percent teachers agreed on what characteristics they considered had significant influence on academic achievement. Institutional characteristics included: adequate study material, reference books, adequate time for study, parental educational level, parental facilitation of study, availability of supervised study and conducive or organised study. These variables' influence was found to be inadequate in predicting students' academic achievement among day scholars. The findings are also in collaboration with Hull's needs reduction

reinforcement theory that postulates that learning achievements are influenced and determined by positive reinforcement of a learner in a process of learning. In this regard, there was need to reinforce positively learners' attitude towards day schooling by strengthening Form one selection procedure and mixed ability classes (form one entry behaviour), monitoring study time management, teacher quality, learner-teacher ratio, teaching/learning resources and school location as a technique of improving academic achievement.

### **5.3.0 Summary of findings**

The major findings of this study were that 75.6% learners have favourable attitude towards day schooling which favourably influences students' academic achievement. Students with positive attitude towards day schooling had above average (C+) mean KCSE grade. On the other hand, students with a negative attitude towards day schooling had a below average (D+) mean KCSE grade. Day scholars have limited study time, a scenario that influences unfavourably learners' academic achievement as indicated by multiple regression test results of 0.007 significant level. Similarly, (low mean KCPE score) low entry behaviour of day scholars had a negative influence on their subsequent academic achievement a fact that could further be negatively influenced by limited mixed ability class. The study further established that learners' attitude towards day schooling significantly influenced and predicted their overall KCSE performance as shown by regression results 0.21 significant level. This is consistent with research findings on attitude towards

specific subjects by Kolawole, Oginni and Fayomi (2011) and Ayodo, Juma and Simatwa (2012) who found out that attitude towards a subject and entry behaviour predict academic achievement.

The data generated by this study demonstrate that students' academic achievement is negatively influenced by inadequate teaching and learning resources as indicated by multiple regression results 0.051 significant level. Furthermore, inadequate organised study, unfavourable teachers' characteristics, unfavourable class size, inadequate learning resources influenced negatively students' mean KCSE score. On the other hand, favourable learners' characteristics namely: high mean KCPE score (entry behaviour), study time utilisation and attitude towards day schooling significantly influenced and predicted academic achievement as indicated by the multiple regression coefficient (R) value of 0.545. The coefficient values range from -1 to 1. The absolute value of the coefficient (R) indicates the strength of the influence of the institutional and learners' variables on students' academic achievement. In this respect, the coefficient of 0.545 demonstrate there is significant influence of institutional and learners' characteristics on students' academic performance. The correlation indicates how much students' academic achievement can be explained by the institutional and learners' characteristics. The findings of this study therefore demonstrate the fact that 29.7% of the variation in the students' mean KCSE score can be influenced by institutional and learners' characteristics. The

findings could be used to improve on Hull's reinforcement theory concept that has limited application to type of school.

### **5.3.1 Influence of learners' attitude towards day schooling on students' academic achievement**

The study established that learners have a positive attitude towards day schooling. However, according to the opinion of learner, teacher and head teacher respondents, most public day scholars have inadequate opportunity to develop their academic potential. This scenario is attributed to a discriminative selection process which offers weaker learners less conducive learning environment in respect to time available for school study. It was established that day scholars spend valuable time trekking to and from school at the expense of undertaking morning and evening study.

The results show that all the respondents have a favourable attitude towards day schooling as indicated by a mean percent of positive attitude by student and teacher respondents. Most, 67.1% (53) teachers and 75.6% (283) learners had a favourable attitude towards day schooling. Furthermore, 74.7% (59) teachers held that their learners had a favourable attitude towards day schooling. However, day scholars had many challenges that led to variation in the mean KCSE score of girls and boys besides the variance in KCSE performance among students in schools in urban and rural settings. In day schools, peer teaching remained a challenge as most learners were of similar

ability and hence lacked adequate academic role models to enhance and reinforce group and class discussions.

This was because learners in day schools perceived themselves as segregated due to the low KCPE performance and thus their low self esteem could influence negatively their attitude towards academic excellence. Such learners were likely not to volunteer to answer questions in class, creating a situation where the curriculum delivery mode has remained largely teacher-centred and hence burdensome. Learners' voluntary use of the library was rated as average by 57.6% (40) teachers, poor by 42.4% (39) teachers. The 57.6% (40) teachers felt that day school learners would maximise their potential in enhanced mixed ability classes. In such classes, academic role models prompt weak learners to increase their participation in group discussions and subsequently in class participation. The results of testing the null hypothesis on entry behaviour revealed there was a significant relationship between entry behaviour and students' academic achievement (Mean KCSE score).

It is notable that learners in enhanced mixed ability day schools out-performed those of low mixed ability besides performing better in national examinations. This was noted in the performance of six urban public day schools that had admitted learners with above average marks at KCPE. These urban day school learners recorded higher grades ( a mean grade of C) compared to that of learners in rural schools who recorded a mean grade of C-. This implies that



school location influences learners' academic achievement. Since most urban schools had enhanced mixed ability learners this explained why they were more confident and committed to academic excellence compared to those in the rural schools who had generally low similar ability learners. Learners' attitude towards day schooling had a positive influence on academic achievement as indicated by the results of multiple regression of 0.021 at 0.05 significant level in respect to learners' academic achievement. The outcome, r value of 0.75 shows high correlation between learners' attitude towards day schooling and KCSE performance according to correlation coefficient test. In this regard, the findings have demonstrated that learners' favourable attitude towards day schooling has a positive influence on academic achievement as measured by the mean KCSE score. The findings are in line with those of a related study by Yara (2011) on performance determinants of Kenya Certificate of Secondary Education in Mathematics of secondary schools. The study established that teachers' and learners' attitude determines learners' KCSE performance in Mathematics.

### **5.3.2 Entry behaviour and students' academic achievement**

It was noted from the findings that most learners who joined public day secondary schools are of average or low ability. Their mean KCPE score was between 250- 300 marks, a mean score that is below the one obtained by learners who join boarding schools (County and National Schools). This study established that day schools were mainly composed of low academic achievers

and hence need adequate academic role models besides adequate learning resources to influence the quality of learning. Peer teaching is an aspect of curriculum innovation that would be effectively adopted if a mixed ability admission criterion is strengthened to select learners to form one. Such a criterion could ensure average and above average learners are admitted in all categories of public schools to ensure substantially high mixed ability classes, hence enhance a conducive learning environment for all. Multiple regression analysis indicated learners' mean KCPE score significantly influenced and predicted mean KCSE score at 0.00 significant level. The findings are in line with those of Barasa (2003) which established that there was a significant relationship between low entry behaviour and poor academic achievement in day secondary schools. The results of testing the null hypothesis on entry behaviour further confirmed there was significant relationship between entry behaviour and students' academic achievement.

### **5.3.3 Teachers' attitude towards day schooling and students' academic achievement**

The findings revealed that most teachers have a favourable attitude towards day schooling system of education as indicated by the favourable attitude. This positive attitude towards day schooling has certain implications to curriculum coverage and learners' academic success. The positive attitude towards day schools gives a teacher an impetus to work hard towards the academic success of learners. Success of learners depends on how effectively the curriculum is

covered. Effective syllabus coverage depends on time available for learning, revision and evaluation. Both the hypotheses test and multiple regression analysis indicated attitude has a positive correlation with academic achievement of teachers at 0.024 significant level.

#### **5.3.4 Teaching and learning resources in relation to students' academic achievement.**

Testing of the null hypothesis on teaching and learning resources demonstrated there is a significant relationship between adequacy of learning resources and students' academic achievement. However, multiple regression test show adequacy of learning resources influence on students' academic achievement is 0.051 significant level. This means students' academic achievement is influenced by several institutional factors besides teaching and learning resources. The findings showed that school related factors such as text book-learner ratio, teacher-learner ratio, timely completion of syllabus, planned and supervised school study, subject based coaching strategy for weak learners, learners' discipline, high mixed ability learning environment, regular formative evaluation and effective teacher-learner relationships were crucial in achieving and sustaining better academic achievement. Students from 9 urban based schools that had adequate learning resources outperformed those from 21 rural based schools with inadequate learning resources as demonstrated in their mean KCSE scores of 6 (C) and 4 (D+) respectively. Creating such a learning environment calls for investing in an annual subject networking by teachers at

county and sub county level schools besides providing regular transport for teachers and learners as a strategy for study time creation for day schools to sustain an effective study system at school. Adopting form one learners' selection policy that would ensure effective mixed ability learning environment in all the schools would enhance peer teaching hence making the curriculum learner centered, which will promote efficiency in learning.

This approach to teaching and learning will challenge the popular view that day schools are for average learners and put on course the process of strengthening equitable distribution of teaching/learning resources in the provision of basic education service. Learning from peers supplements and perfects learning from adults. It is desirable that secondary education, which is considered basic education, be offered on the principle of equity and justice and not on the narrow criterion of the category of marks scored. Deliberate high mixed ability peer interaction creates a learning experience that boosts teacher –learner interaction in terms of promoting effectiveness and efficiency in learning. Effectiveness and efficiency in learning are crucial in ensuring improved academic achievement besides the realisation of socio-economic goals.

### **5.3.5 Parental educational level and students' academic achievement**

The study showed that there was inadequate parental facilitation of learners' education at home. Twenty (6.7%) head teachers indicated that most parents neither supervised their children's studies, nor provided adequate reference

materials at home. The study findings further showed that only a small percentage of parents had attained university education or were professionals. The implication here is that only a few learners are from families where parental facilitation of home study is likely to be enhanced as opposed to a scenario that is likely to be experienced by most day scholars. Learners whose parents had higher education were likely to provide adequate academic support service to their children unlike those who are less educated. This is because parents act as role models to their children and if they have no ability to provide academic support, learners will continue being underperforming as indicated by unfavourable parental characteristics (poor academic role models) that negatively influence KCSE performance. The findings are in line with Ayodo, Juma and Simatwa (2012) who established that high level of parental education, high income and conducive home environment influence academic achievement. This study has demonstrated that parental educational level (socio-economic) characteristics influence and predict their academic achievement.

### **5.3.6 Schools' location and learners' academic achievement**

Some parents did not provide reliable transport for learners, contributing to learners' lateness, absenteeism from school, besides creating shortage of time for study for learners at home and school. Learners who lacked transport trekked to school, a situation that impacted negatively on time available for study.

Performance of learners in KCSE in the day schools situated in urban areas was slightly better obtaining a mean score of 6 (C) than that of learners in the schools located in the rural areas in the past four years who obtained below average score (4 points and below). There is however, significant improvement in performance by a few schools in the rural setting, a situation which could be explained by the fact that such schools admitted learners with better KCPE grades besides learners' self determination. It was noted that Arid and Semi-arid regions effects had led to limited day schools as parents preferred taking their children to boarding schools due to the hardship in relation to limited effects on student population to warrant a day school in some rural catchment areas. The result of testing hypothesis on school location against academic achievement shows a significant relationship. These findings are supported by the multiple regression results that showed that school location moderately influenced and predicted academic achievement at 0.06 significant level. This is because the coefficient of determinants (R) demonstrate that 29.6% of students' academic achievement can be explained by institutional and learners' variables such as school location.

### **5.3.7 Learners' gender in respect to academic achievement**

The findings of this study revealed that there was insignificant difference in performance between boys and girls in day secondary schools. Girls in urban schools perform slightly better than girls in schools located in rural areas but they are only dismally out performed by boys in urban and rural schools. Multiple regression results demonstrated there was no relationship between

gender and students' academic achievement as reflected in the coefficient of 0.00 R value. In this regard, the variation in performance between boys and girls in day schools in 2012 KCSE could be explained by the traditional habits of girls' involvement in domestic chores at home after school than boys, making them slightly disadvantaged in terms of study time management. However, generally there was no significant gender influence on learners' academic achievement as indicated by the results of testing hypothesis which indicated there is insignificant relationship between learners' gender and academic achievement. The findings are in line with those of related studies by Nyagah (1997) and Yara (2011) that established that learners' gender cannot be used to predict academic achievement in Arts and Craft and Mathematics respectively. The results of testing the null hypothesis on gender and academic achievement using the results of 2012 KCSE results indicate there was no significant relationship between gender and mean KCSE score.

### **5.3.8 Learners' study time management and academic achievement**

The study found that day scholars have limited study time and this was considered one of the factors that influenced academic achievement. Day scholars' time available for study at school and at home depended entirely on how far the school is situated away from home. This study revealed that most learners live over six kilometres from school and this evidently denied them adequate study time besides tiredness occasioned by regularly walking long distances to school as a result of limited parental financial support for fare.

Although learners, teachers and head teachers held that study time should at least take 4 hours daily. Most learners in urban based schools had 50% (2 hours) study time daily as opposed to students in a rural based schools who had 30% (1 ¼ hours) study time which was inadequate for effective study. The results of testing hypotheses indicated learners' study time management significantly influenced and predicted the level of academic achievement at 0.007. The implication of this study is that learners' study time should be factored within the class timetable along side remedial teaching. The findings are in line with those of previous related studies which established that parents take their children to boarding schools that are considered to have an organised learners' study time management (Karemera, 2003).

## **5.4 Conclusions**

### **5.4.1 Conclusion on learners' characteristics and students' academic achievement**

The results of testing hypothesis 1 (Ho1) on whether learners' attitude towards day schooling influences students' academic achievement, demonstrated that favourable attitude of learners towards day schooling positively influenced students' academic achievement. In this regard, it was concluded that students' mean KCSE score was influenced by students' attitude. Therefore, learners' negative attitude towards day schooling influenced unfavourably students' academic performance as demonstrated by the results of multiple regression.



The study established that schools in the urban location enrolled learners of high mixed ability and hence their academic achievement was evidently better than that of learners in schools in rural setting that admitted learners of low mixed ability. High mixed ability learners had higher mean KCSE score as compared to learners in low mixed ability day schools. In this regard, learners' favourable entry behaviour has a positive influence on students' academic achievement.

The results of testing null hypothesis 5 (Ho5) and that of multiple regression on influence of parental educational level on students' mean KCSE score demonstrates that low parental educational level unfavourably influences students' academic achievement. The findings could be attributed to the fact that many learners' fathers and mothers in public day schools in both Trans Nzoia and West Pokot counties were of primary level of education and hence had little influence on their children's academic achievement. Most learners in public day secondary schools were from families of low social economic status, a fact that negatively influenced learners' academic aspirations.

The study found that learners from urban schools outperformed those from rural schools. It was noted that more day schools in rural settings in West Pokot were being turned into boarding schools as compared to those in Trans Nzoia that had a steady increase in the number of day schools in both rural and urban settings. The students in urban schools had more favourable attitude

towards day schooling unlike those in schools in rural location. The results of testing null hypothesis 6 (Ho6) and multiple regression on whether there was a difference in performance when candidates are categorised according to school location (urban versus rural) demonstrated that there is a difference in students' mean KCSE score.

It was therefore concluded that school location negatively influenced students' academic achievement in schools located in rural than those in urban setting. Provision of transport for day scholars in the rural schools is likely to contribute to positive attitude of learners towards day schooling which could subsequently influence favourably students' academic performance.

T-test and multiple regression results regarding gender factor on students' academic achievement, established that there is no significant difference in mean KCSE score between boys and girls. Gender difference was however found to have influence on mean KCSE score in certain subjects such as Mathematics and Science in rural schools (Mburu, 2012). The difference in performance was minimal in urban schools where classes were of higher mixed ability learners. Other learners' characteristics include self image and stereotypes which are based on socialisation of male and female learners to subject preference hence impacting negatively on learners' attitude towards specific subjects in the curriculum. For instance, parents with unfavourable attitude towards Mathematics or who regard Mathematics a subject better

done by male students may influence the female students negatively hence demotivating learners, a factor that could lead to low academic achievement.

The results of testing null hypothesis 8 (Ho8) and multiple regression outcome demonstrated that study time utilisation influenced students' academic achievement as measured by mean KCSE score. Inadequate study time and students' inappropriate study time utilisation unfavourably influenced students' mean KCSE score. This is because most learners indicated that study time was a challenge since most learners had inadequate study time and subsequently they could not study effectively. The study, in addition, showed that lack of organised school transport for learners undermined time available for study at home and school leading to poor utilisation of time for study by learners that resulted into low academic achievement. Learners in the rural schools were most affected through reduced study time for effective academic work while fewer learners in urban schools had a problem with regard to availability of reliable transport to school. Day learners' regular socialisation with parents motivated them to work harder and remain disciplined at school, a situation that needs to be sustained in all schools as good discipline is associated with academic success.

The implications of the above conclusions is that day scholars' academic achievement is likely to be influenced by unfavourable learners' and teachers' attitude towards day schooling, poor entry behaviour (low mean KCPE score),

inadequate teaching and learning resources, poor parental educational background, unfavourable school location (urban versus rural location) and limited study time. Thus, there is need to devise a way of reinforcing favourably institutional and learners' characteristics since they have potential of influencing students' academic achievement negatively. The study, in addition, noted that day schools' characteristics in terms of how adequate laboratory and library services, learner–text book ratio, learner–teacher ratio and availability of lighting was inadequate hence this contributed to unconducive learning environment that could lead to low academic achievement as reflected in a below average students' mean KCSE score in most day schools.

This study concludes that the current institutional characteristics of most rural schools negatively influenced students' academic achievement in Trans Nzoia and West Pokot Counties. This is because they are inadequate or unfavourable to academic success. In this regard, there is need to reinforce favourably teaching and learning resources. The study further concludes that the current learners' characteristics (learners' entry behaviour) of most public day secondary schools negatively influenced students' mean KCSE score. This is because of the low mixed ability mean KCPE score by most learners, a fact which influenced negatively students' academic achievement.

This conclusion has the following implications. The Ministry of Education should be conscious of these characteristics while allocating resources to education. Resources have to be allocated equitably to the three categories of schools and in proportion to the learners' population. Curriculum developers have to take study time factor into consideration when determining the number of subjects to be taught in schools. The Schools' Management Boards should take into account transport for day scholars when planning a school budget. Similarly, educational administrators need to take mean KCPE score (entry behaviour) of learners in consideration when constituting a class to enhance peer learning that influences students' academic achievement; hence the need to review educational policies and admission criteria to secondary education.

#### **5.4.2 Conclusion on institutional characteristics and students' academic achievement**

The results of testing hypothesis 3 (Ho3) on whether the teachers' attitude towards day schooling influences students' academic performance demonstrated that the teachers' favourable attitude positively influenced students' academic achievement ( mean KCSE score). This is because the teachers' attitude influenced how a teacher delivers the curriculum given that a teacher knows the ability of the learners and the extent to which academic background requires special effort to realise academic success.

Testing of null hypothesis 4 (Ho4) and the results of multiple regression on the influence of teaching and learning resources on students' academic achievement showed that academic achievement was influenced by the status of teaching and learning resources. However, the influence was found to be weak. It was therefore concluded that good academic achievement is dependent on both the adequacy of facilities and the extent in which the facilities are appropriately utilized.

Although characteristics that influence unfavourable learners' academic achievement are known, an adequate policy framework has not been proposed or effected by the Ministry of Education in relation to innovation in curriculum schedules. It was established that efforts by teachers to create study time outside a policy framework has only encouraged a timetable for study that was unrealistic since it was outside school time and on weekends hence difficult to be implemented. This study thus calls for creation of study time in the schools' timetable by reviewing and merging subjects as this will enhance students' academic achievement. This study's contribution is therefore informative as day learners' academic achievement continues to be a significant issue for study.

Since the concept of study time utilisation in the framework of reducing subjects taught in order to create time for supervision of study is long overdue, there is need to reinforce innovation in curriculum study time allocation and

management. These findings will therefore contribute to theory and practice on curriculum innovation and change and hence students' academic achievement. Although provision of transport for learners and teachers is a strategy for study time creation, it has not been done; hence study time available and subsequently realistic study time management, need to effectively and adequately be disseminated to relevant stakeholders in education to influence relevant policy review.

#### **5.5.0 Recommendations for Policy and Further Research**

##### **5.5.1 Recommendation for policy and practice**

- i. Based on the findings that learners' and teachers' have favourable attitudes towards day schooling which influence positively learners' academic achievement, the Teachers Service Commission should focus on how best teachers can improve and maintain their favourable attitude towards day scholars' academic achievement by ensuring teachers are retrained and adequately remunerated to enhance their morale and subsequently achievement motivation. In this regard, there is need to strengthen the policies on retraining and remuneration of teachers as a means of enhancing achievement motivation for teachers and learners.
- ii. The Ministry of Education should call for policy review and change on form one selection criteria to ensure the process leads to an enhanced mixed ability class. This may be done by adopting random selection of learners for placement in day secondary schools using quota system

from categories of high, average and low mean KCPE score. The policy should be implemented by all head teachers and secondary school Boards of Management. This endeavour will evidently create a perfect peer learning situation that will enhance learners' achievement motivation as they interact with their role models. An arrangement where higher ability learners are selected by interested researchers to serve as role models and to enhance peer teaching using a few schools is likely to reveal the importance of higher mixed ability class. The results of this arrangement, if successful, would later be extended to more schools. Exhibitions where day scholars are exposed to society as being successful role models in academics should be encouraged besides use of workshops, contests and seminars where day scholars participate with their boarding counterparts to enhance their self drive and achievement motivation.

- iii. The Ministry of Education, should review and provide adequate quality teaching and learning resources by allocating more funds to Free Day Secondary Education. This action would ensure an appropriate learner-text book ratio, adequate library and laboratory facilities are improved and hence reducing inequality in the provision of the teaching/learning resources in all the schools. Reviewing adequacy of teaching and learning resources should be a continuous process since school enrolment keeps improving as the resources require replacement, maintenance and improvement.



Learner-teacher ratio should be further improved by the Teachers Service Commission given that the findings show inadequate teacher – learner ratio in urban schools. This recommendation requires urgent and continuous action by the Teachers Service Commission since this will reinforce positively institutional characteristics and subsequently learners’ academic achievement.

- iv. Parents - Teachers Associations on the other hand, should improve students’ study time management by providing day scholars transport to and from school as this could lead to creation of more study time for day scholars in rural as well as urban schools. Similarly, the Ministry of Education could review and adjust the number of subjects taught in form one and two in order to create time for study in all schools as an intervention for enhancing time available for private study at school as this could enhance students’ academic achievement.

### **5.5.2 Suggestions for further study**

- i) Given that this study established that day scholars’ study time management is of great concern due to inadequate provision of effective supervision of study by teachers and parents, a study could be done to establish factors influencing teacher and parental involvement in supervision of learners’ study. This proposal is based on the revelation that a school study timetable was hardly used effectively due to long distance from school.

ii) On the recommendation that (entry behaviour) should be strengthened since it enhances peer learning, a study could be carried out in other parts of the country to establish whether enhanced mixed ability classrooms have a favourable influence on learning and subsequently academic achievement.

iii) A comparative study could be done to establish the influence of institutional and learners' characteristics on students' academic achievement in private day secondary schools.

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## **APPENDICES**

### **Appendix I**

#### **Introductory Letter**

Department of Educational Administration and Planning

University of Nairobi.

P.O. Box 92,

Kikuyu-Kenya.

12<sup>th</sup> March, 2012.

The Principals,

Trans-Nzoia and West Pokot Counties Public Day Secondary Schools

Dear Sir/Madam,

#### **RE: REQUEST TO PARTICIPATE IN ACADEMIC RESEARCH**

I am undertaking a study titled ‘Influence of Institutional and learners’ characteristics on students’ academic achievement in public day secondary schools in Trans-Nzoia and West Pokot Counties.

Please respond to the questions in the questionnaire as honestly as possible.

You are assured the information you provide will be used for the purpose of this study only and your identity will be treated confidentially.

Thank you in advance.

Yours faithfully,

Patrick Simiyu

## Appendix II

### Questionnaire for Learners

Dear respondent,

This questionnaire is in three parts 1, 2 and 3.

Kindly respond to the following items by placing a tick (√) on multiple-choice items and by writing a response to open ended questions.

#### PART 1

##### A) Background information

1. When did you join this school? \_\_\_\_\_
2. Please indicate your gender      Male [ ]                  Female [ ]
3. What is your date of birth? \_\_\_\_\_
  - i) Parental socio-economic status \_\_\_\_\_
4. a) What work does your father do? \_\_\_\_\_
  - b) Indicate education level of your father
    - (i) University                  [ ]
    - (ii) Tertiary                    [ ]
    - (iii) Secondary                [ ]
    - (iv) Primary                    [ ]
    - (v) Any other (specify) \_\_\_\_\_



c ) What work does your mother do? \_\_\_\_\_

d) Indicate education level of your mother

(i) University

(ii) Tertiary

(iii) Secondary

(iv) Primary

(v) Any other (specify) \_\_\_\_\_

5. Who pays your fees? \_\_\_\_\_

6. Indicate where your school is located \_\_\_\_\_

a. Urban  b. Rural

7. a) How far is your school from where you live in kilometers?

\_\_\_\_\_

(i) 1-3 kms

(ii) 4-6 kms

(iii) Any other (Specify) \_\_\_\_\_

(b) How often do you get to school late?

(i) 1-2 times a week

(ii) 3-4 times a week

(ii) Any other (Specify) \_\_\_\_\_

(c) What means of transport do you use to get to school?

(i) Walk

(ii) Public means

(iii) School vehicle

(iv) Any other (Specify) \_\_\_\_\_

8. Is lunch provided for all the learners in school? Yes  No

9. a) Does your school have electricity? Yes  No

b) If Yes, for what is it mainly used?

(i) Study for learners

(ii) Office school work

(iii) Any other (Specify) \_\_\_\_\_

If No to a) above, indicate alternative source of power you have in the school.

(i) Generator

(ii) Solar

(iii) Pressure lamp

(iv) Any other (Specify) \_\_\_\_\_

c) Indicate the marks you obtained in KCPE \_\_\_\_\_

(i) 250-300

(ii) 301-350

(iii) 351-400

(iv) Any other (Specify) \_\_\_\_\_

**B) Information on institutional and learners' characteristics on learners' KCSE performance.**

10. a) Given a choice, would you rather transfer to a boarding school or remain in a day school? (i) Remain  (ii) Transfer

b) Give a reason for your response in 11 (a) above \_\_\_\_\_

11. How do you rate the effectiveness of your teachers in preparing learners for KCSE in the subjects given below?

**Use the score scale below to rate the teacher in the subject taught by using a tick (√) against the rating of the quality of teaching.**

<b>Level of effectiveness</b>	<b>scores</b>			
Very effective	4			
Effective	3			
Average	2			
Ineffective	1			

<b>Subject</b>	<b>Scores</b>			
	<b>Very effective (4)</b>	<b>Effective (3)</b>	<b>Average (2)</b>	<b>Ineffective (1)</b>
English				
Kiswahili				
Maths				
Biology				
Chemistry				
Physics				
History				
Geography				
C.R.E				
Business Studies				
Agriculture				

12. (a) Why did you join a day secondary school?

- i) By choice
- ii) Could not find a place in a boarding school
- iii) It is affordable
- iv) Any other reason (specify) \_\_\_\_\_

b) What is the Form Four learner -teacher ratio per subject?\_\_\_\_\_

13. Indicate using a tick (✓) for the provision of the following services and another tick (✓) for the level of adequacy of the services.

Type of Service	Whether Available	Level of Adequacy of material /equipment or service
a) Library	Yes [ ] No [ ]	a) Adequate [ ] b) Inadequate [ ]
b) Laboratory	Yes [ ] No [ ]	a)Very adequate [ ] b) Adequate [ ] c) Fairly adequate [ ] d) Inadequate [ ]
c) Text books per learner	Yes [ ] No [ ]	a)Very adequate [ ] b) Adequate [ ] c) Fairly adequate [ ] d) Inadequate [ ]
d) Supervised study	Yes [ ] No [ ]	a) Adequate [ ] b) Inadequate [ ]
e) Career Guidance	Yes [ ] No [ ]	a)Very adequate [ ] b) Adequate [ ] c) Fairly adequate [ ] d) Inadequate [ ]
f) Guidance and Counselling	Yes [ ] No [ ]	a)Very adequate [ ] b) Adequate [ ] c) Fairly adequate [ ] d) Inadequate [ ]

**C) Parental socio-economic status on learners’ KCSE performance.**

14. (a) Do you study at home?

Yes [ ] No [ ]

b) If Yes, how is it conducted? .....

c) How do you make sure that you study effectively at home in the evening and during the weekends?.....

d) If No, give reasons for this.....

e) Do you have reference books for each subject?

Yes  No

f) If Yes, in (e) above explain how you use them

(i) Do exercises

(ii) Make notes

(iii) Any other (Specify) \_\_\_\_\_

g) If No, how do you study without them?.....

15. Do your parents organise remedial teaching at home to improve your performance?

Yes  No

(b) If Yes, how is it done?

(i) Given exercises

(ii) Taught some subjects and revise past papers

(iii) Any other (Specify) \_\_\_\_\_

(c) If No, give reasons why it is not arranged.....

16. (a) Indicate the grades you expect to get in the KCSE subjects against each subject and give a reason why you expect that grade.

<b>Subject</b>	<b>Expected grade</b>	<b>Reason for expecting the particular grade</b>
English		
Kiswahili		
Maths		
Biology		
Chemistry		
Physics		
History		
Geography		
C.R.E		
Business		
Studies		
Agriculture		

17. (a) How do you rate home environment for effective study?

(i) Very good [ ]                      (ii) Good [ ]                      (iii) Average [ ]

(iv) Any other (specify)

b) What problems do you face in doing studies at home?

.....

18. What would you consider to be the advantage of studying in a day secondary school? \_\_\_\_\_
19. What suggestions would you give to help improve KCSE performance in day secondary schools in Kenya in the following areas?
- (i) Learners' study time management/utilisation \_\_\_\_\_
  - (ii) Official means of transport to schools \_\_\_\_\_
  - (iii) Parental involvement in remedial teaching at home \_\_\_\_\_
  - (iv) Parental supervision of home studies \_\_\_\_\_  
\_\_\_\_\_
  - (v) Learners' attitude towards day schooling \_\_\_\_\_  
\_\_\_\_\_
  - (vi) Teaching and learning resources at school \_\_\_\_\_
  - (vii) Recommendation of K.C.P.E entry scores to public day schools  
\_\_\_\_\_
  - (viii) Teachers' attitude towards day schooling  
\_\_\_\_\_
  - (ix) What needs improvement in your school in relation to K.C.S.E syllabus coverage? \_\_\_\_\_

**PART 2:**

**Learners' attitude towards day secondary schools in relation to KCSE performance.**

For each statement kindly respond by using a tick (√) to indicate whether you Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), or Strongly Disagree (SD) with the statement:-

Statement	Response				
	SA	A	U	D	SD
1. My day secondary school environment is conducive for academic achievement.					
2. KCSE performance does not depend on learners' KCPE achievement.					
3. Day secondary schools provide quality education.					
4. Day secondary school teachers have less work to do in preparing learners for KCSE.					
5. Day schools are cost effective.					
6. Day schools are a waste of valuable school time.					
7. Academic achievement of learners in day secondary schools depends on learners' commitment besides KCPE achievement.					
8. Academic achievement of day secondary learners does not depend on learners' commitment.					
9. A day school system allows teachers adequate time to provide academic guidance to learners during study.					
10. Day secondary schools do not provide adequate study time for learners under guidance of teachers.					

Thank you.



## Appendix III

### Questionnaire for Teachers

Dear respondent,

The purpose of this questionnaire is to establish the following:

The questionnaire is in three parts 1, 2 and 3.

Part 'I' seeks demographic information of the respondent.

Part 'II' seeks information about institutional and learners' characteristics on KCSE achievement.

Part 'III' seeks information pertaining to attitude towards day schooling in relation to K.C.S.E performance among other study variables.

Please tick (√) the choice you have made for structured items in the space provided. Write the answer to the open ended items in the space given after each item.

#### Part 1

##### A. Background Information

1. What is your gender? a) Male [ ]                      b) Female [ ]
2. Indicate your age.                      Years....
3. Indicate your highest academic qualification here
  - (i) Masters                      [ ]
  - (ii) Degree                      [ ]

(iii) Any other (Specify) \_\_\_\_\_

4. (a) Are you a professionally trained teacher? Yes  No

(b) Indicate your employer. TSC  BOG

Any other (specify) \_\_\_\_\_

(c) Which subject(s) do you teach in Form Four? .....

5. Are you a trained KCSE examiner?

Yes  No

a) If Yes, for how long have you served? \_\_\_\_\_

b) If No, explain briefly why you have not trained as an examiner.

\_\_\_\_\_

c) Indicate the number of in-service courses in your subject area which you have attended since you started teaching

\_\_\_\_\_

(i) 1-3 times

(ii) 4-6 times

(iii) 7-9 times

(iv) Any other (Specify) \_\_\_\_\_

6. a) How far in kilometers is your school from where you live?.....

b) Indicate the means of transport you use to get to school.

(i) By Public Service Vehicle

(ii) Use own transport

(iv) Walk to school

(v) Any other (specify) \_\_\_\_\_

7. For how long have you taught in a day secondary school? Years.....

Months.....

8. Do you coach Form Four learners in the subjects you teach?

Yes  No

9. a) Is there study time for learners at school?

Yes  No

b) If yes, when is it taken? Give the time when it is offered per week

.....

(c) If yes, how is it supervised? .....

(d) Indicate the number of learners in Form Four per gender.

Male  Female

10. State where your school is situated

(a) Urban  (b) Rural

**B. Influence of institutional and learners' characteristics on academic achievement**

11. (i) Do you have remedial teaching in examinable subjects?

Yes  No

(ii) If Yes, when is it offered?..... (iii) If No, why is it not offered?.....

12. How do you rate the learners' attitude towards a day school education system?

(a) Very Positive  (b) Positive

(c) Negative [ ] (d) Any other, indicate here.....

13. Indicate the learners' attitude to your subject.

(a) Very Positive [ ] (b) Positive [ ]

(c) Negative [ ] (d) Very negative [ ]

14. a) What is the Form Four learner-teacher ratio?.....

(b) How do you rate the learner-textbook ratio?.....

(c) How do you rate the learners' discipline?  
.....

15. How do you rate the adequacy of the following facilities:

a) Library? .....

b) Laboratory? .....

16. How do you rate the performance of day secondary schools in your KCSE subject?

(a) Very Adequate [ ] (b) Adequate [ ]

(c) Average [ ] (d) Any other (specify).....

17. What suggestions would you give to help improve learners' academic achievement in KCSE examinations in day secondary schools?.....

18. How do you rate the number of teachers per subject in your school?

(a) Very Adequate [ ] (b) Adequate [ ]

(c) Average [ ] (d) Any other (specify).....

19. (a) Indicate the month in the year when the syllabus is completed for K.C.S.E candidates.....

(b) How do you rate the learners' study time management in your school?

(i) Very good [ ]

(ii) Good [ ]

(iii) Satisfactory [ ]

(iv) Poor [ ]

(c) Based on school location tick (✓) the most appropriate strategy of improving day learners' time available in relation to study time management.

(i) Availing daily means of transport organised by parents for day scholars [ ]

(ii) Availing daily means of transport organised by the school Board of Governors for day scholars [ ]

(iii) Any other (Specify) \_\_\_\_\_

20. (a) What challenges do you face as a teacher in a day secondary school in relation to effective preparation of learners for KCSE?

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**PART 2 : Attitude of teachers towards day schools and KCSE performance**

For each statement kindly respond by using a tick (✓) to indicate whether you Strongly Agree (SA), Agree (A) Undecided (U), Disagree (D) or Strongly Disagree (SD) with the statement:-

Statement	Response				
	SA	A	U	D	SD
1. Day secondary education system offers a learner an opportunity for all round education					
2. Day schools are not conducive for academic achievement					
3. Day secondary schools provide quality education.					
4. Day schools offer learners less time to prepare for KCSE.					
5. Learners feel at ease in day secondary schools.					
6. Day schooling is not conducive without organised school transport					
7. Day school learners have sufficient time to receive guidance and counselling from parents on daily basis.					
8. Day schools are meant for learners who did not score high marks at KCPE					
9. A day school system allows parents adequate time to take care of the needs of their children.					
10. Day secondary schools do not provide learners with adequate study time guided by teachers.					

Thank you

## **Appendix IV**

### **Head Teachers' Interview Schedule**

I would like to request you to give me information on institutional and learners' characteristics in day schools on KCSE achievement.

The purpose of this interview is to establish the following:

The attitude of learners towards day schooling in relation to KCSE performance.

The effect of learners' KCPE background on secondary schools' academic achievement.

The attitude of teachers towards day schooling in relation to learners' academic achievement.

To examine the adequacy of teaching and learning resources in public day secondary schools in relation to learners' academic achievement.

To establish parental involvement in provision of study material to learners in respect to KCSE performance.

To determine whether there is a difference in KCSE performance among learners from urban and rural locations.

To establish whether there is a significant relationship between boys and girls in KCSE performance in day schools.

To determine whether learners' time utilisation has significant influence on their academic achievement.

**PART A: Head Teachers' Profile**

- 1) How long have you served as a head teacher?
- 2) How many years did you teach before being appointed to this position?
- 3) Do you teach Form Four class?
- 4) What kind of leadership training did you undertake after your appointment as a head teacher?
- 5) What is your highest qualification?

**PART B: Institutional and Learners' Characteristics on Academic Achievement**

- 6) What do you consider to be the learners' attitude towards day secondary schooling?.....
- 7) How does learners' attitude towards day schooling influence their academic achievement? .....
- 8) How do you determine the number and qualification of learners who join your school?.....
- 9) To what extent has Subsidised Secondary Education Fund and Constituency Development Fund (CDF) influenced your learning environment?.....
- 10) When, in the year, do your teachers complete the syllabus for Form Four learners? .....
- 11) How is guidance and counselling managed in your school?  
.....



12) To what extent is parental facilitation of learners' remedial teaching necessary for KCSE candidates?

.....

13) What problems do day scholars face in relation to preparation for KCSE?.....

14) Does your staff enjoy teaching in a day school?

Yes [ ]

No [ ]

15) a) What challenges do you face as head teacher in preparing learners for K.C.S.E?.....

b) Has school ever considered providing transport to facilitate teachers and learners' transport? .....

c) How will an arrangement of transport for learners and teachers influence teachers' and learners' study time management?

.....

16) What is the ratio of Form Four learners to teachers?

.....

17) How would you describe the adequacy of financial sources in your school?.....

18) What is your enrolment status for Form Four in the last five years?

.....

19) How will you describe Form Four learners' discipline?

.....

20) How many graduate teachers do you have per subject?

Subject	Graduate teachers	Non graduate teachers
English		
Kiswahili		
Mathematics		
Biology		
Physics		
Chemistry		
Geography		
History		
CRE /IRE		
Business Studies		
Agriculture		
Computer Studies		

21) What challenges do your teachers face in preparing KCSE candidates in a day secondary school environment?

.....

22) Given the location of your school, what would you consider the main challenge for candidates' effective preparation for KCSE in a day school environment?

.....

23) In your opinion, what school factors influence learners' KCSE performance  
in your school? .....

Thank you for your co-operation.

## Appendix V

### Documentary Analysis Guide

Facilitate the researcher with records to obtain data on fees payment status, CATs performance, KCSE performance trends, distance of learners from home to school, school organised daily and weekend study timetable and school transport arrangement in day schools.

<b>Document Type</b>	<b>Observed</b>	
1. Form Four fees payment status register in 2012	Number paid all fees- Number not paid-	
2. Learners' mean CATs marks register for Form Four class	High (15-30%)	Low (Below 15%)
3. Records of University intake (with C+ and above in K.C.S.E) in the last five years?	Year	K.C.S.E mean score
	2007 :	_____
	2008 :	_____
	2009 :	_____
	2010 :	_____
	2011 :	_____
4. Records of Form Four learners' use of library in 2012.	Regular users (3-5 times) Irregular users ( 1-2 times)	
5. Guidance and counselling records for Form Four learners, 2012.	Regular use of guidance and counselling..... Irregular use of guidance and counselling.....	
6. Form Four learners' distance to school from home	1 - 2km 3 - 5km over 5km	
7. School transport for day scholars?	Available	Not available

Thank you

## **Appendix VI**

### **National Objectives of Secondary Education**

**Secondary Education should provide the learner with opportunities to:**

1. Acquire necessary knowledge, skills and attitudes for the development of the self and the nation.
2. Promote love for and loyalty to the nation.
3. Promote harmonious co-existence among the peoples of Kenya.
4. Develop mentally, socially, morally, physically and spiritually.
5. Enhance understanding and respect for own and other people's cultures and their place in contemporary society.
6. Enhance understanding and appreciation of inter-relationships among nations.
7. Promote positive environmental and health practices.
8. Build a firm foundation for further education and training.
9. Develop ability for enquiry, critical thinking and rational judgment.
10. Develop into a responsible and socially well adjusted person.
11. Promote acceptance of and respect for all persons.
12. Enhance enjoyment in learning.
13. Identify individual talents and develop them.
14. Build a foundation for technological and industrial development.
15. Develop into a self –disciplined individual who appreciates work and manages time properly.

**Source: Kenya Institute of Education Syllabus, 2002.**

## Appendix VII

### KCSE Candidature and Performance by Gender

Subject	Candidate		Mean Score	All
	Male	Female	%	%
English	241,873		37.68	37.88
		195,485	38.13	
Kiswahili	241,717		35.40	35.81
		195,496	36.32	
Mathematics	241,233		31.38	28.66
		195,093	25.30	
Biology	205,926		27.86	26.21
		183,595	24.36	
Physics	87,329		38.48	37.87
		32,295	36.22	
Chemistry	237,293		29.54	27.93
		193,426	25.95	
History and Government	166,354		43.86	40.94
		129,310	37.19	
Geography	71,610		48.82	46.58
		46,101	43.09	
CRE	149,663		43.68	44.03
		166,812	44.34	
Agriculture	101,217		37.24	34.97
		77,903	32.03	
Business Studies	104,262		46.13	44.30
		83,205	51.00	

Source : KNEC results, 2012

**Appendix VIII**  
**KCSE Grading System**

<b>Grades</b>	<b>Percentage Score</b>	<b>Remarks</b>
A	Over 79	
A-	75-79	
B+	70-74	
B	65-69	
B-	60-64	
C+	55-59	
C	45-54	
C-	40-44	
D+	35-39	
D	30-34	
D-	25-29	
E	Below 25	

**Source : KNEC, 2012**

**Appendix IX**  
**Research Permit**

REPUBLIC OF KENYA



**NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY**

Telephone: 254-020-2213471, 2241349  
254-020-310571, 2213123, 2219420  
Fax: 254-020-318245, 318249  
When replying please quote  
secretary@ncst.go.ke

P.O. Box 30623-00100  
NAIROBI-KENYA  
Website: www.ncst.go.ke  
12<sup>th</sup> March 2012

NCST/RCD/14/012/170

Our Ref: \_\_\_\_\_ Date: \_\_\_\_\_

Patrick C. Simiyu  
University of Nairobi  
P.O.Box 30197  
Nairobi.

**RE: RESEARCH AUTHORIZATION**

Following your application for authority to carry out research on *“School and home based determinants of students’ Kenya Certificate of Secondary Education performance in public day schools in Trans Nzoia and West Pokot Counties, Kenya.”* I am pleased to inform you that you have been authorized to undertake research in **Trans Nzoia and West Pokot Districts** for a period ending **31<sup>st</sup> December 2012**.

You are advised to report to **The District Commissioners and the District Education Officers, Trans Nzoia and West Pokot Districts** before embarking on the research project.

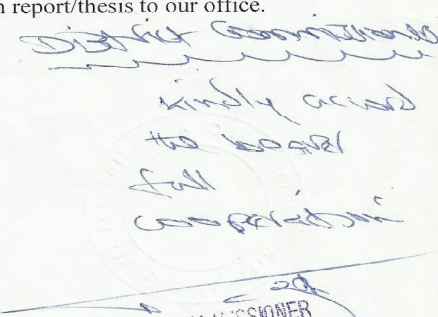
On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

  
**DR. M. K. RUGUTT, PhD, HSC.**  
**DEPUTY COUNCIL SECRETARY**

Copy to:

The District Commissioners  
The District Education Officers  
Trans Nzoia District (County)  
West Pokot District. (County)

*Handwritten notes:*  
District Commissioners  
kindly accord  
to board  
full  
cooperation

  
**REGIONAL COMMISSIONER**  
**NORTH RIFT VALLEY**  
**P.O. Box 11, KITALE**  
26/3/12

“The National Council for Science and Technology is Committed to the Promotion of Science and Technology for National Development.”