

**SCHOOL BASED FACTORS CONTRIBUTING TO
LEARNER ACADEMIC ACHIEVEMENT IN PUBLIC
PRIMARY SCHOOLS IN KARURI ZONE, KIAMBU
COUNTY, KENYA**

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for the Award of the Degree of Master of Education in Economics of
Education**

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DECLARATION

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

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DEDICATION

I wish to dedicate this report to my mum, Florence Njeri Thaa who taught me the value of education and inculcated in me the principle of hard work. Thanks mom for working so hard to see me through school. May the almighty God bless you.

Thanks to my husband Walter Lugano and our children Joel, Jesse and Joshua. You're the best!

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ABBREVIATIONS AND ACRONYMS

OECD	Organisation for Economic Co-Operation and Development
ROK	Republic Of Kenya
MOE	Ministry Of Education
MOEST	Ministry Of Education Science and Technology
UNESCO	United Nations Educational, Scientific and Cultural Organization
GER	Gross Enrolment Rate
PTR	Pupil Teacher Ratio
TPR	Text book Pupil Ratio
SACMEQ	Southern and Eastern Africa consortium for monitoring Educational quality
KCPE	Kenya Certificate of Primary Education
OECD	Organisation for Economic Co-Operation and Development
UIS	UNESCO institute for statistics
LMT	Learning Metrics Task Force
PISA	Programme for International Student Assessment
SID	Society for International Development

ABSTRACT

Poor academic performance in Karuri Zone, Kiambu County is a perennial problem as evidenced by low KCPE scores. Factors contributing to the dismal performance were assessed by looking at school level, classroom level, student based and contextual factors. The integrated model of school effectiveness which is a synthesis between production functions, instructional effectiveness and school effectiveness was reviewed. The study adopted a descriptive survey design with a target population of 12 public primary schools, a student enrolment of 7535, teacher population of 195 and 12 headteachers. Stratified and simple random sampling was used to select 11 teachers from every school to get a total of 132 teachers. Purposive sampling was used to select 30 students in every school to get a total of 367 students. 12 headteachers were sampled. Questionnaires for teachers and students, an interview schedule for headteachers, an observation schedule and a focus group discussion guide were used to collect data. Descriptive statistics technique was used to analyse quantitative data. Qualitative data was organized in to themes, patterns and categories pertinent to the study. Using the Statistical Package for the Social Sciences, (SPSS), a one-way analysis of variance (ANOVA) and the independent samples t- test was conducted as well as the two sample z-test statistics for testing the hypotheses. Several factors at the school level, classroom level and student level were found to influence learner academic achievement. Size and average social economic composition of schools were found to be insignificant. The location of a school in terms of accessibility was found to be significant. The study recommended the student book ratio to be improved to 1:1 for all subjects. Every school to put up a library well equipped with both text and story books. Adequate desks to be provided. A special class to be set up in every school with a special teacher to help those with reading difficulties. Achievement pressure and accountability for performance to be increased on both the headteachers and teachers. Academic clinics to be conducted in every school, every term so that parents can be more involved in their children's education. Ranking of schools at the county and zonal levels to be introduced to increase competition and good performance to be rewarded. Training of teachers on better teaching and discipline methods and also on how to improve their attitudes in class especially towards the poor performers. Lower primary schools to be taught by younger teachers specially trained to handle young learners. The culture of absenteeism to be curbed starting from the headteachers, teachers and students. Effective use of official learning time to be implemented to avoid need for tuition. School feeding targeted for extreme cases of poverty to be introduced in all schools. Speaking the language of instruction in schools to be enhanced starting at an early age. Prompt promotion of P1 teachers to be done as well as prompt upgrading to ensure teachers are well motivated. Health checks and deworming to reduce the rates of absenteeism due to sickness to be carried out.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

It is commonly perceived that education is the most powerful weapon in alleviating poverty, elevating economic growth, producing skilled human resource, creating a healthy and enlightened social environment and creating self-sufficient nations. According to Hanushek and Woessmann (2007), more schooling is associated with higher individual earnings with the rate of return to schooling centred at about 10%. These returns are especially higher for low income countries, for low levels of schooling and for women.

Policy makers in developing countries have greatly increased their funding of education in anticipation of these benefits. Low and lower middle income countries have allocated a higher percentage of GNP to education since 1999, while aid to education has more than doubled in real terms. As a result, the net enrolment ratios have increased significantly, rising at least 20 percentage points from 1999 to 2012 in 17 countries, 11 of which were from sub-Saharan Africa (UNESCO, 2015). School enrolment is however not the final goal of education policy. The ultimate goal is to provide the learners with basic and advanced skills that make them more productive workers and thus increase their earnings when they are adults. Unfortunately there is a large amount of evidence that many and in some countries most children are not learning very much (Glewwe, 2013).

Results of a test administered in India in 2005, to over 300,000 children found that although 90% reported being enrolled in school, 68% could not read a simple paragraph and 54% could not solve a simple two digit math problem (Pratham,2005). A reading test administered in rural Cameroon showed that 80% of the third grade children tested could not read a single word of a first grade text (Walter, 2007). In Tanzania, 32% of children in standard 7 failed to perform numeracy tasks expected at the standard 2 level (Uwezo, 2011).

The focus of educational policy in developing countries and of bilateral and multilateral assistance to these countries should thus be on educational policies that increase student learning. However, there is incomplete evidence on which educational policies are most effective for increasing student learning (Glewwe, 2013). Strategies to improve education performance have typically emphasized provision of inputs; for example, more funding, teachers, textbooks, furniture, and so forth, with the assumption that the more inputs provided the better students learn. There is however scanty evidence on how effective many of these inputs are (Nannyonjo, 2007).

Estimation of education production functions shows that there currently is no clear, systematic relationship between resources and student outcomes with commonly purchased inputs to schools such as class size, teacher experience, and teacher education bearing little systematic relationship to student outcomes, implying that conventional input policies are unlikely to improve achievement (Hanushek, 2007). Most of these studies have however been

undertaken in developed countries whose contextual environment differs greatly from that in developing countries.

Production function studies that have been conducted in developing countries show mixed results. Glewwe, Hanushek, Humpage and Ravina (2011) analysed a total of 79 studies published between 1990 and 2000. The findings indicate that having a fully functioning school – one with better quality roofs, walls or floors, with desks, tables and chairs, and with a school library – appears conducive to student learning. However they found that there is little empirical support for a wide variety of school and teacher characteristics that some observers may view as priorities for school spending. A study conducted by Uwezo (2011) found that school quality in terms of pupil teacher ratios, better infrastructure and lower class size was weakly associated with performance in Kenya, Uganda and Tanzania. This is consistent with Scheerens (1999) who found that as developing countries equip their schools with basic infrastructure, qualified human resource and text books, school level input output factors may begin to show smaller effects on performance.

There is therefore need to search for answers to the question “why money does or does not matter” in increasing learner achievement in developing countries. This can be done by looking for combinations or interactions between resource input levels and school organizational and instructional variables which has led to the integration between production functions, instructional effectiveness and school effectiveness. This is referred to as the integrated school effectiveness research where schools are depicted as nested and hierarchical layers (student,

classroom, school and context layers). Key variables from each of the three paradigms as well as key student background variables are included at the appropriate layer and tested simultaneously to determine their relative importance on student achievement (Scheerens, 2000).

In industrialized countries of Europe and North America, student-level factors such as their background have been found to be extremely important in determining student achievement; classroom level variables such as effective pedagogy and teacher experience exhibit significant association with student achievement while school-level factors such as resource inputs show the least consensus (Teodorovic, 2009). In Zimbabwe, school level material and non-material variables explained more variance in mathematics and English than classroom-level variables such as teachers age, gender and experience whereas school level effective schools variables were found to be insignificant (Nyagura & Riddell, 1993).

Education in Kenya is seen as the primary means of social mobility, national cohesion and socio- economic development. According to the Bill of Rights, basic education is a fundamental human right which implies that citizens can hold the state accountable for ensuring that every child aged 4 to 17 years is in school and receiving quality education (M.O.E & MOEST, 2012). Public spending in education has continued to rise since the introduction of FPE in 2003. In the 2014/2015 budget, the allocation to free primary education was increased by 33% to KSH 13.5 billion (Republic of Kenya, 2014).

As a result of governments increased expenditure at the primary level, the number of pupils increased from 8.56 million in 2008 to 10.2 million in 2013 /2014. PTR at primary level moved from 44:1 in 2007 to 51:1 in 2013/2014 against target of 42:1 while TPR for lower primary improved from one textbook for more than 10 pupils before 2003 to 1:1 in 2014 (Republic of Kenya, 2013).

Despite the success, there has been a decline in the (perceived and perhaps actual) quality of education in government primary schools (Bold, Kimenyi, Mwabu & Sandefur, 2010). A literacy and numeracy test given by Uwezo (2011) found that only 28% of learners in class three successfully completed a class two test. Less than half of the candidates who sat the Kenya Certificate of Primary Education (KCPE) examination in 2014 attained 250 marks out of a possible 500 marks (Ministry of Education, 2015). This clearly shows that there is a learning crisis in the country as indicated by Uwezo (2011).

Kiambu County in Kenya is a well economically endowed county with the percentage of people living below the poverty line at 24% compared with a high of 88% in Turkana County (SID, Headcount index, 2015). However public schools posted a dismal performance in 2013 with the County being ranked position 31/44 with a mean score of 244. Karuri Zone in Kiambu District was ranked the last Zone in 2012, 2013 and 2014 K.C.P.E. results with all of the eleven schools in the zone having a mean score of less than 250. The Zone also had 32 pupils with less than 100 marks which was the highest

number in the district and also featured prominently in the last five schools per subject in the district (MOEST, 2014).

1.2 Statement of the Problem

The billions of shillings and hours spent each year on basic education by governments, parents and donors each year can only be considered well spent when children are learning, numerate and literate. However, according to Uwezo (2011), vast majorities of children in school are not able to perform at the required level, and too many complete primary schooling without basic competencies in reading and arithmetic.

Most studies carried out in Kenya have relied on the education production function to assess the determinants of learner achievement. However, there is little evidence to show that increased budgetary allocations to various inputs such as teacher salaries and school constructions have improved learner academic achievement. With increasing pressures on the budget, there is need to implement strategies focusing on inputs and actions that are most likely to improve student learning. A major impediment to rational decision making in this area is lack of knowledge about what inputs work best and under what circumstances. Short of this, the government may continue spending scarce resources on inputs that may not directly contribute to student learning achievement.

It is therefore imperative to carry out an integrated school effectiveness study to reveal the impact of relevant input characteristics on output and to “break open” the black box in order to show which process or throughput factors work

next to the impact of contextual conditions to determine learner academic achievement in public primary schools with particular reference to the school, class, student and contextual factors.

1.3 Purpose of the Study.

The purpose of the study was to investigate the school based factors contributing to learner academic achievement in public primary schools in Karuri zone, Kiambu County, Kenya.

1.4 Research Objectives

The study was guided by the following specific objectives:

1. To evaluate the relationship between school level factors and learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya.
2. To assess the relationship between class room level factors and learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya.
3. To analyse the relationship between students based factors and learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya.
4. To assess the relationship between contextual factors and learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya.

1.5 Hypotheses of the Study

The following null hypotheses were tested in the study:

Ho1: There is no significant relationship between school level factors and learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya.

Ho2: There is no significant relationship between class room level factors and learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya.

Ho3: There is no significant relationship between student level factors and learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya.

Ho4: There is no significant relationship between contextual factors and learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya.

1.6 Significance of the Study

The study set out to illuminate the school based factors contributing to learner academic achievement in public primary schools in Kiambu County. The government and the policy makers may find the outcome of the study invaluable in the successful implementation of F.P.E. The study may provide insights as to which areas the government needs to invest more so as to increase learner achievement.

The study may also contribute significantly to professionals and educationists by bringing to light the magnitude of the effect of various factors on learning outcomes and may help in the design of school improvement programmes. The

findings will help the school administrators in knowing right mix of various factors which when implemented will increase the learning outcomes of the students.

The parents may also find this study invaluable by revealing various students based factors as well school level factors that may affect the performance of their children and schools and how they can get involved to bring change. The parents may also get enlightened on the importance of their involvement in their children's education.

1.7 Limitations of the Study

Controlling the attitudes of the respondents during the study may not be possible as respondents out of fear of victimization may choose to give socially acceptable responses that would result in the study having inaccurate findings. However the respondents were assured of their privacy and confidentiality so as to increase accuracy of the findings. Some of the respondents also tended to give wrong answers or paint a picture of perfection. The researcher was able to overcome this by having different instruments which enabled confirmation of the information given.

1.8 Delimitations of the Study

The study narrowed its scope to academic achievement and left out the non-cognitive/ non-academic outcomes. The study was confined to specific school based factors and left out other factors in order to obtain manageable data for interpretation and analysis. The study sought data from public primary schools

from Karuri Zone, Kiambu County and left out all other learning institutions in the County.

1.9 Assumptions of the Study

The study assumed that the respondents were aware of the factors that could be contributing to low academic achievement in Karuri Zone, Kiambu County and would be willing to cooperate and give honest, accurate and truthful responses to the items in the research instruments. The researcher also assumed that the Kenya certificate of primary education examination was an acceptable measure of academic performance under a common curriculum in all primary schools.

1.10 Definition of Significant Terms

School effectiveness- the degree to which schools achieve their goals in comparison with other schools that are equalized in terms student intake through manipulation of certain conditions by the school itself or the immediate school context.

Learner achievement –pupil’s attainment at the end of schooling in form of test scores.

Effectiveness- refers to the extent to which the desired level of output is achieved.

Process/ throughput- all the instructional methods, curriculum choices and organizational preconditions that make it possible for learners to acquire knowledge.

Integrated school effectiveness models- Multi-level definitions, in which school level conditions, classroom level conditions and conditions in the larger context of the school are included to determine learner achievement.

School level factors-Refers to school resource inputs and effective schools practices that may influence learner achievement.

Class room level factors-Refers to classroom resources and effective classroom practices that may have an impact on learner achievement.

Student based factors- Refers to student characteristics such as socio economic status and preschool attendance that may influence learner achievement.

Contextual factors- Refers to co-variables such as school type, school location and school average socio-economic status which may influence learner achievement.

1.11 Organization of the Study

The study was divided into five chapters. Chapter one, introduction, entailed the background of the study, statement of the problem, purpose of the study, objectives of the study, study hypotheses, significance of the study, limitations and delimitations of the study, assumptions of the study, definition of significant terms and organization of the study. Chapter two, literature review, included introduction, the levels of learning achievement in developed and developing countries, the level of learning achievement in Kenya, the paradox of increased expenditure and low or stagnant achievement, the education production function, the integrated model of school effectiveness, the school

level, class room level, student level and contextual level factors contributing to learner academic achievement, summary of the literature review and the conceptual framework. Chapter three, research methodology, focused on introduction, research design, target population, sample size and sampling procedures, research instruments, data collection procedures, data analysis techniques and ethical considerations. Chapter four was on data analysis, presentation and interpretation. Chapter five presented a summary of the study, conclusions, recommendations and suggestion for further research.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The purpose of this study is to investigate school based factors contributing to learner academic achievement in Karuri Zone, Kiambu County. This chapter contains a review of related literature that will capture the school based factors contributing to learner achievement in public primary schools. It explores: learning achievement in developed and developing countries, learning achievement in Kenya, the paradox, the education production function, the integrated model of school effectiveness, school level factors and learner academic achievement, class level factors and learner academic achievement, student level factors and learner academic achievement, contextual factors and learner academic achievement, summary of the literature review and the conceptual framework.

2.2 Learning Achievement in Developed and Developing Countries

In today's world, simply getting children into schools is not enough; it is important to ensure that children complete the primary cycle and attain the basic knowledge and skills needed for personal well-being and national development (Boissiere, 2004). However, in many parts of the world, an enormous gap exists between the numbers graduating from schools and those among them who have managed to master a minimum set of cognitive skills (UNESCO, 2005). Less than 50% of fourth graders in Argentina, Colombia and Morocco, can read at the lowest-threshold-level of literacy, on an international test normed for OECD countries. In contrast, 96 percent or more

of fourth graders in Sweden, Latvia, and the Netherlands read at this level (Greaney & Prouty, 2007).

The SACMEQ reading literacy study found that pupils were generally performing poorly when judged by the standards of mastery set down by their respective ministries. More than 40% of pupils surveyed in Malawi, Mozambique, Uganda, Zambia, Zanzibar, Lesotho and South Africa could not read for meaning as they approached the end of their primary schooling—in other words, they could not link and interpret information in pieces of text written in the language they were being taught in (EdQual, 2010).

The Learning Metrics Task Force calls for a global shift in focus and investment from universal access to access plus learning in order to create better learning experiences for children and youth around the world (LMTF, 2013). When average learning levels are higher, individual earnings, the distribution income, and the long-term rate of economic growth will all be higher (Hanushek & Woessmann, 2007).

2.3 Learning Achievement in Kenya

The mission of the Government of Kenya with regards to education is to create an education and training environment that equips learners with desired values, attitudes, knowledge, skills and competencies (MOE & MOEST, 2012). Public examinations such as K.C.P.E are used in Kenya to provide a measure of achievement at the end of a particular cycle of education. However, research shows that there is a decline in pupils' achievement in public primary schools consistent with the examination results (Bold et al; 2010 & Glennerster et al. 2011). According to Uwezo (2011), only 28% of pupils in standard three were

able to successfully complete a standard two English test in Kenya pointing to the existence of a learning crisis in the country. Analysis of SACMEQ 11 and SACMEQ 111 results reveal that between 2000 and 2007, the public school reading test scores in Kenya declined by 0.22 SDs while the test scores for mathematics declined by 0.19 SDs. These declines were entirely driven by rural FPE schools (Atuhura, 2014). According to Oketch and Mutisya (2013), the overall KCPE mean score since 2002 is just below the pass rate of 250 marks out of possible 500, meaning that majority of learners are underperforming in the KCPE examinations. The trend for the mean scores has remained flat over years.

Although children in Kenya, Uganda and Tanzania perform poorly compared to established curriculum levels, a study by Uwezo (2011) found that Kenyan children learn the most, with pupils in Kenya coming out on top in Kiswahili, English and Literacy tests. Standard six pupils in Kenya obtained 546 and 543 scores in the SACMEQ II and SACMEQ III reading tests which is largely above the referential average of 500 (UNESCO, 2014). However there is need to put more effort to ensure that all children in Kenya are numerate and literate.

2.4 The Paradox

Schooling as a social process means that improvements in resources, technology and the quality of student and teaching inputs should in principle be able to enhance its overall quality. However, even a casual look at the history of test scores around the world, reveals a central and, at first sight, baffling paradox. Large increases in average real expenditure per student and other

measures of school resources in primary and secondary schools over the last four or five decades have not remotely been matched by a comparable increase in average test scores. PTRs in the United States fell by almost 40% between 1960 and 2000, the proportion of teachers with at least a master's degree doubled and average teacher experience increased similarly. However, the mathematics and reading performance of 17-year-old students was only slightly higher in 1999 than it had been 30 years earlier (UNESCO, 2005).

Gross secondary school enrolment rate in Argentina has been about 85 percent from 1998 to 2007, and spending per pupil was somewhat higher in 2004-06 than in 1998-2000; yet test scores in 2007 were lower than in 2000. Similar findings, although not as strong, show that increased expenditure has a little effect on student's performance in developing countries (Glewwe, Hanushek, Humpage & Ravina, 2011).

2.5 The education Production Function

The conceptual framework in production functions considers schools as “factories” that produce “learning” using various school and teacher characteristics as “inputs” (UNESCO, 2005). According to Glewwe and Kremer (2006), the production function for learning (a structural relationship) can be depicted as:

$$A = a(S, Q, C, H, I)$$

where A is skills learned (achievement), S is years of schooling, Q is a vector of school and teacher characteristics (inputs that raise school quality), C is a

vector of child characteristics (including “innate ability”), H is a vector of household characteristics, and I is a vector of school inputs under the control of parents, such as children’s daily attendance and purchases of textbooks and other school supplies.

However, the accumulated research surrounding estimation of education production functions simply says there currently is no clear, systematic relationship between resources and student outcomes. Commonly purchased inputs show little relationship to student outcomes (Hanushek, 2008). This concurs with majority of studies undertaken in developed countries that conclude that expenditures, and common school initiatives funded by those expenditures such as lower class sizes or more educated teachers, are not closely related to student outcomes. Consequently they suggest that money alone is not the answer to increasing student outcomes (Glewwe, Hanushek, Humpage & Ravina, 2011).

One explanation of the missing relationship between resources and student achievement in the USA and other industrialized countries is that schools already dispose of a high level of resources, and therefore operate in an area of diminishing marginal productivity. Correspondingly, one should expect the relationship between resources and outcomes to be much clearer for developing countries (Michaelowa & Wechtler, 2006). However mixed results emerge from the studies undertaken in these countries.

A study of education inputs in Uganda by Nannyonjo (2007) found that provision of school inputs alone explains a small proportion of the variation in pupils’ performance. The study suggested that school inputs and measurable

teacher characteristics (education, experience and age) do not have a strong influence on performance of primary 6 pupils in Uganda, but rather other factors for example the way schools are managed, the mode and level of classroom interaction, teaching strategies, and better use of school inputs may be more strongly related to pupil performance.

Atherton (2009), in a study of education quality in Eastern and Southern Africa using SACMEQ II data, found that pupil teacher ratio and teacher experience are highly significant while school teaching resources and teachers years of education show inconsistent results.

Glewwe, Hanushek, Humpage and Ravina (2011) in their analysis of 79 high quality studies in developing countries found that basic school and teacher characteristics are weakly associated with outcomes. On the other hand, quality roofs, walls or floors, desks, tables and chairs, and school library together with teacher's subject knowledge are associated with higher outcomes.

2.6 Integrated Model of School Effectiveness

Mixed results obtained from the education production function studies have led to the need to search for answers to the question “why money does or does not matter” in increasing learner achievement in developing countries. This can be done by looking for combinations or interactions between resource input levels and school organizational and instructional variables which has led to the integration between production functions, instructional effectiveness and school effectiveness (Scheerens, 2000)

In integrated research, schools are depicted as nested, hierarchical layers (student, classroom, school and context). The central assumption is that higher organizational levels facilitate effectiveness enhancing conditions at the lower levels. A synthesis between production functions, instructional effectiveness and school effectiveness has thus become possible with key variables from each of the three paradigms, as well as key student background variables, being included at the appropriate layer (Purke & Smith, 1983).

Student background factors are placed at the student level, instructional-effectiveness factors are placed at the classroom level, effective-schools factors are placed at the school level, while input -output factors are appropriately divided between the classroom and school levels (e.g., teacher qualifications belong to the classroom level, while per student expenditure belongs to the school level). All the variables are tested simultaneously to appropriately assess the relative net importance of each variable and schooling level on student achievement (Scheerens, 2000).

From the integrated studies undertaken in industrialized countries, student-level factors are extremely important in determining student achievement; Classroom level variables exhibit significant association with student achievement, while school-level factors show the least consensus. From the integrated studies undertaken in developing countries, student background factors are important for student success, equally as school-level factors in poor developing and more than school-level factors in better-off developing countries; classroom-level variables associate considerably with student

achievement, more so in better-off developing countries while school level input-output variables are very important for poor developing countries and less so for the better-off developing countries. There is insufficient evidence on the impact of school-level effective-schools factors, with their likely impact being small (Teodorovic, 2009 & Scheerens, 2004).

2.7 Factors Contributing to Learner Academic Achievement

2.7.1 School level factors and Learner Academic Achievement

Heyneman and Loxley (1982) try to demonstrate that, at least for lower income countries, the impact of school and teacher quality factors on student performance are comparatively greater than family socioeconomic status which was found to have a greater impact in the Coleman report. They advocate that “the poorer the national setting in economic terms, the more powerful school and teacher quality effect appears to be. However, Hanushek and Luque (2003) testing the Heyneman- Loxley effect do not support the notion that school resource impacts vary systematically with country income or development. Little evidence exists to suggest that any significant changes in student outcomes have accompanied the growth in resources devoted to schools.

2.7.1.1 School Resource Inputs and Learner Academic Achievement

A meta-analysis of estimated effects of key resources such as teacher numbers (reflected in class size), school facilities, and financial resources on student performance, based on over 400 estimates of education production functions in the USA and other developed countries, shows no obvious relationship between increases of particular inputs and increases of student achievement (Michaelowa & Wechtler, 2006).

However in separate studies in developing countries, pupil teacher ratio, availability of textbooks, supplementary readers, stationery supplies like exercise books, rulers and pens, teaching guides, desks, instructional media, school library, science laboratories, expenditure per pupil, total school expenditure, child nutrition and feeding, classroom equipment such as desks, blackboard , chalk, teacher manuals, access to water and electricity and quality of school buildings are some of the factors that were found to be significantly related to learners achievement (Fuller & Clarke, 1994; UNESCO, 2001; Yu & Thomas, 2007; Lee et al., 2005 & EdQual, 2010).

Lack of clean, safe and ideally segregated toilets discourage children, especially girls, from attending school regularly which may impact their performance (UNESCO-UIS, 2012).

Michaelowa (2001) found that larger classes result in lower educational achievements, especially in the early years of schooling with evidence for a negative impact beyond a threshold of 60 students per class in Africa. However, Atherton (2009) in an analysis of SACMEQ II data in east and Southern Africa found that pupil-teacher ratio tends to be non-linear in majority of countries, displaying a decreasingly negative quadratic relationship. Nannyonjo (2007) finds that reducing class size to below 55 (at primary 6) may not necessarily improve test scores since some schools with large classes performed significantly better than others with smaller ones in Uganda. The study also found no systematic relationship between per pupil expenditure and performance since at any level of funding; there were schools with both high

and low scores. The study however found that pupil desk ratio was significantly associated with performance.

Glewwe, Hanushek, Humpage and Ravina (2011), in an analysis of 79 high quality studies in developing countries find that the evidence with regards to provision of school meals to improve achievement does not provide strong support for this intervention. They also find the evidence that textbooks and similar materials (work books and exercise books) increase student learning quite weak. The impact of providing electricity or more generally better school facilities was not found to be very strong. On the other hand, black boards, libraries, quality of school walls, roofs and ceilings were found to significantly raise student's scores.

2.7.1.2 Effective School Factors and Learner Academic Achievement

School climate in the OECD countries which included variables such as teacher student relations, disciplinary climate, and achievement pressure was found to explain the most variance between schools (OECD, 2005). Mortimore et al. (1988) in a mixed study of 50 London schools determined that the most important effective school variables were purposeful leadership of the staff by the head teacher, the involvement of the deputy head, the involvement of teachers, consistency among teachers, record keeping, parental involvement, and positive climate. Opendakker and Van Damme (2000) concluded that teaching staff cooperation over teaching methods and pupil counselling had a significant impact on student achievement in mathematics, and an orderly

learning environment had a significant impact on student achievement in Dutch.

Michaelowa (2001); EdQual (2010); Yu and Thomas (2007) and Carasco et al (1996) in separate studies in developing countries found that productive climate culture, achievement pressure for basic subjects, educational leadership, monitoring/evaluation, cooperation, parental involvement, support from the community, staff development, high expectations, an orderly climate and a safe disciplined school environment enhance learning achievement. The effects of head teacher's academic qualification on pupils' academic achievement seemed to be mixed: positive on reading comprehension but not significant on mathematics in SACMEQ countries. This concurs with Glewwe et al. (2011) who found that while principal experience appeared to lead to increased student learning, there was no clear evidence that the same is true of principal education.

In Zimbabwe, no effective school variable of those examined (a head teacher's training, teacher supervision by the head teacher, teacher stability, and school based activities) proved to be significant (Nyagura & Riddell, 1993). In Malawi, the inclusion of community monitoring of teachers helped explain around 5.5% of variance that could be explained by all school and teacher variables (Dowd, 2001). School administration aspects such as staff meetings, checking schemes and lesson plans and class observation by the head teacher were found to influence learner achievement in Kenya (Reche, Bundi, Riungu & Mbugua, 2012).

School inspection for SACMEQ countries was found to be insignificant but for PASEC countries, the effect on performance was found to be positive (Michaelowa & Wechtler, 2006). Bold, Sandfur, Mwabu and Kimenyi (2010) on the other hand find that schools in Kenya tend to improve following an inspection, with districts that have a high percentage of inspections seeing their test scores increase by an average of 3 points compared with districts with a low percentage of inspections.

2.7.2 Classroom Level Factors and Learner Academic Achievement

2.7.2.1 Classroom Resources and Learner Academic Achievement

Teachers are the front-line service providers in education which means that delivery of quality education is critically dependant on having a sufficient supply of appropriately trained and motivated teachers (Wasanga, Noor & Nyaga, 2011). However there remains little consensus among researchers on the characteristics of a good teacher, let alone on the importance of teachers in comparison to other determinants of academic performance (Hanushek,2006).

The academic and professional training of teachers has been found to have a direct and positive bearing on the quality of their performance and consequently on the achievement of students (Glewwe, Hanushek, Humpage & Ravina, 2011). Nannyonjo, (2007); Atherton, (2009) and Yu and Thomas, (2007) however found that pupils with teachers of lower qualifications (secondary education only) performed better than those with secondary education plus three years of teacher training. Further, teachers with higher formal qualifications were apparently not any more effective than those with

lower qualifications (except for degrees) in Uganda. In-service training for teachers which has been previously linked to higher student performance (Glewwe et al. 2011) was found to be significantly negative for mathematics and positively significant for English. This finding concurs with Michaelowa and Wechtler (2006) who find in-service training significantly negative for SACMEQ countries.

The presence of female teachers in the classroom is associated with higher levels of pupil performance as well as increased rates of retention, progression and completion of primary education (UNESCO-UIS, 2012 & Makuwa, 2005). Glewwe et al. (2011) in an analysis of 79 high quality studies however find that there is little support for any systematic difference in teacher effectiveness by gender.

The relationship between teachers experience and learner achievement is not always significant or entirely linear (Murnane and Philips, 1981). Nannyonjo (2007) concurs with this finding in a study covering Uganda which found that pupil performance increases with increase in teacher experience only up to a certain level (six-to-ten years), and thereafter begins to decline. Glewwe et al. (2011) find that teacher experience seems to have a positive effect, but the evidence is not quite as strong. With regards to teachers' age, Nannyonjo (2007) found overall decline in pupils' test scores with increase in a teacher's age. Pupil's test scores are at their peak when teachers are between 21 and 30 years old, and decline thereafter.

Yu and Thomas (2007) found that teachers' absenteeism was found to have a detrimental effect on pupils' academic achievements in reading comprehension and mathematics in SACMEQ countries.

Hanushek (1995) in his review finds no compelling support for the belief that higher salaries would lead to better quality teachers. In a summary of 13 studies, teachers' salary emerged insignificant more times than not and, when it was significant, emerged negative in one-third of cases.

Kimani, Kara and Njagi (2013) found that teachers' age, gender, professional qualifications and teaching experience were not significantly related to academic achievement of secondary school students in Nyandarua County, Kenya. However teachers' job group was found to have a significant and positive relationship.

2.7.2.2 Effective Pedagogy and Learner Academic Achievement

Reynolds et al. (2002) listed the following variables as important in several industrialized countries (USA, UK, Taiwan, and Norway): positive feedback, emphasis of key lesson points, checking for student understanding, frequent high-quality, academic-related questioning, motivating students, and showing high expectations.

Effective class room pedagogy such as amount of instructional time, frequent monitoring of pupil performance, class preparation time, frequency of homework and teacher efficacy have been found to have a positive effect on

learning outcomes in SACMEQ countries (Fuller & Clarke, 1994; Yu and Thomas, 2007; EdQual, 2010 & Oduol, 2006).

Glewwe et al. (2011) found that teachers who better understand the subjects they teach are better at increasing their students' learning. The study found that the impact of teacher knowledge as indicated by teacher test scores was positively related to student learning. Subject-specific training rather than teacher ability is associated with higher student achievement (Goldhaber & Brewer, 1997). This findings concur with Hanushek (1997) who concluded that that low achievement in primary schools is often linked to poor subject mastery by teachers, limited teaching skills and high absenteeism.

Effective teaching time is the most basic resource required for effective learning at school (Michaelowa & Wechtler, 2006). Benavot (2003) and Abagi and Odipo (1997) find that there is a large difference between official and the actual instructional time in the classroom due to teacher absenteeism, illness and the high rate of tardiness with public rural and urban schools in Kenya wasting up to 2.4 and 1.1 hours of pupil learning time per week.

Although Hanushek (1995) suggests that there are no clear and systematic relationships between key inputs and student performance, he suggests that one of the natural policy measures to alleviate the existing inefficiencies is systematic monitoring and evaluation of student performance. This is supported by Heneveld (1994) who proposes a teaching/learning process that includes high learning time, variety in teaching strategies, frequent homework, student assessment and feedback in his conceptual framework of school

effectiveness. Oduol (2006) in analysis of SACMEQ 11 data in Kenya found that teacher practices such as giving and correcting homework had positive and significant effects on student's scores.

Teachers' attitude in class also influences the performance of the pupils. Classroom observations in Kenya indicate that there are cases where teachers' negative attitudes "push" pupils, especially girls, out of school by neglecting, abusing, mis-handling, and sending them out of class during teaching- learning periods (Abagi & Odipo, 1997).

Zhang (2008) found that better teaching behaviours such as class room management, teacher engagement and teaching strategy are positively related to student achievement. EdQual (2010) notes that teaching techniques geared to moving the whole class through a rigid, content-based national curriculum at the same pace negatively affects performance in Africa. The most popular teaching methods such as question and answer was found to engender passive learning and discourage participation by the pupils (Carasco et al., 1996). Teachers' weekly teaching workload, administration of students' classroom assignments, evaluation of students' Continuous Assessment Test (CATs) results, provision of individualized attention to weak students, time of completion of Form Four syllabus and setting performance targets for KCSE was found to significantly affect students' academic achievement in Nyandarua County, Kenya(Kimani, Kara & Njagi, 2013).

Lezotte (2010) revealed that in the effective school, there is a climate of high expectations in which the staff believes and demonstrates that all students can obtain mastery of the school's essential curriculum. Carasco et al. (1996) finds that low expectation of pupils by the staff could be the outcome of the failure of teachers to teach them.

2.7.3 Student Level Factors and Learner Academic Achievement

A wide variety of individual student characteristics are related to student outcomes. These include demographic characteristics, such as ethnicity, age, gender, family characteristics such as socioeconomic status and family structure and academic background such as prior achievement and retention (Rumberger & Palady, 2003). Smith and Barret (2010) and EdQual (2010) found that social influences such as parental level of education, effect of hunger, repetition and absenteeism also had a significant impact on outcomes. Taking extra lessons, preschool education, distance from school, students' self-concept, self-efficacy, attitudes and motivation also have an influence on outcomes (Yu & Thomas, 2007; Ajayi, 2012 & Abagi, 1997).

Nannyonjo (2007) in a study in Uganda found that distance from school was negatively related to performance with pupils living further than 2 kilometres from school performing poorly. Younger pupils also performed significantly better than older learners. Smith and Barrett (2010) found that exposure to the language of instruction outside school enhanced students achievement in SACMEQ countries. The number of meals eaten also influenced achievement with pupils receiving fewer than two meals per day scoring 14 points lower in

literacy than pupils in receipt of two to three meals per day. Possession of one to ten books or between 11 to 50 books in the home was also found to enhance a pupil's score by roughly 4 points in each case compared to a pupil with no home access to books

Gender also affects performance with studies showing boys performing better than girls. Yu & Thomas (2007) in analysis of SACMEQ II data found that girls on average attained significantly higher scores than boys in reading comprehension, but lower scores in mathematics while the higher a pupil's socio-economic status – a composite of data on parents' education levels, possessions at home except for books, and the quality of house in terms of its floor and wall materials and lights, the better their score was.

In industrialized countries, integrated studies show that differences between student scores on achievement tests are more attributable to differences between individual students (between-student variance) than to differences due to attending different classrooms and schools. Similar results also emerge out of the studies in developing countries (Teodorovic, 2009). In Zimbabwe, for example, 48% of the variance in student English test scores was between students, 44% was between schools, and 8% was between classrooms (Nyagura & Riddell, 1993). Kibera and Kibera (2012) identified that pupil characteristics explained only 4.6% of the variation in the learning achievement in public primary schools in Kenya.

2.7.4 Contextual Factors and Learner Academic Achievement

2.7.4.1 Average Social Composition and location of School and Learner Academic Achievement

The average social composition of students in a school and the location of the school (sometimes referred to as contextual effects), influence student achievement. The socio-economic composition of schools explains far more of the differences in student performance between schools than do other school factors that are more easily amenable to policy makers, such as school resources and school policies. School location effects however only exist in a few countries (OECD, 2005 & Coleman et al., 1966).

Atherton (2009) in an analysis of SACMEQ II data found that schools located outside large town/cities perform systematically worse. Schools in rural areas were found to perform worse, even after teacher and school characteristics were controlled. Yu and Thomas (2007) in their analysis of SACMEQ II data found that effects on performance attributable to school location and average socio economic status dropped when school process factors were taken in to account. Smith and Barret (2010), in analysis of SACMEQ II data however find that in five countries (Malawi, Mozambique, Uganda, Kenya and Zambia) remoteness p e r s e did not appear to produce disadvantage for those learners who survive to grade six, but rather children living in more rural areas were more likely to be affected by other factors associated with disadvantage.

Lee, Zuze and Ross (2005) found that school's average social background (i.e. school composition) was significantly and positively linked to school average literacy achievement in 8 out of the 14 countries in Sub Saharan Africa. Attending a school where a large proportion of the year group eat fewer than two meals a day, do not have a chance to speak the language of instruction outside school, do not have electricity in their home, or are frequently absent, impedes a pupil's learning by around half a competence level (EdQual, 2010).

2.7.4.2 Size of School and Learner Academic Achievement

Optimal school size has long been an issue of contention at both the elementary and secondary levels with organizational tendency in education fluctuating between a push for small or large schools. A study in Canada, Ontario found that there was no statistically significant correlation between school size and student achievement. Achievement for grade three and grade six reading and writing was however highest in large-sized schools (Jones & Ezeife, 2011). Yu and Thomas (2007); Lee et al (2005) found that pupils in larger classes tended to have higher scores in both reading comprehension and mathematics, although overall pupils in larger schools performed worse than those with smaller number of pupils.

2.8 Summary of the Literature Review

Learner achievements in many parts of the world, Kenya included are not commensurate with the huge expenditures incurred in the education sector. While the average real expenditures have continued to increase over the years, learner achievement as indicated by test scores have remained the same and in

some instances have fallen. The literature on education production function indicates that there currently is no systematic relationship between resources and learner achievement, indicating that pure resource policies are unlikely to improve learner achievement.

The literature indicates that identifying the specific factors that contribute to improved achievement for policy purposes remains a daunting task. There is however need to deviate from looking at traditional inputs and look at other levels of the school such as student level factors, effective pedagogy and class room resource inputs, contextual factors as well as effective school factors and school resource inputs contributing to learner achievement.

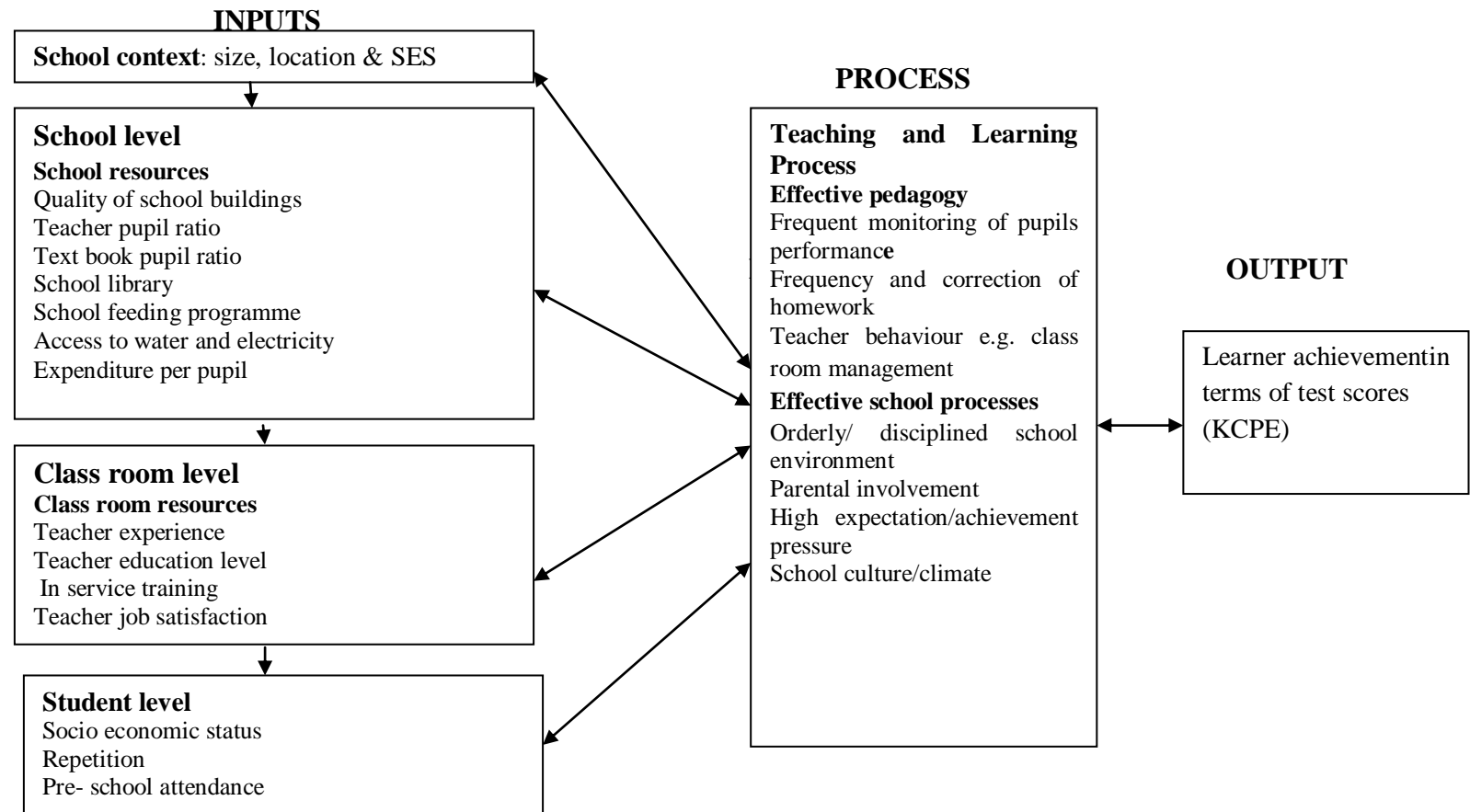
The literature shows that various student level characteristics have an impact on learner achievement. Class room level factors such as the various teacher characteristics as well as the various contextual factors show mixed and conflicting results as to their influence on achievement. Effective pedagogy factors have not been widely researched but the few studies seem to indicate that they are extremely important in determining learner achievement. School level factors including resource inputs as well as effective school factors show mixed results but are more inclined towards positive impact on learner academic achievement especially in poor developing countries.

This study intended to contribute to the debate on improving learner achievement by investigating on the school based factors contributing to learner academic achievement in Karuri zone, Kiambu County focusing on contextual factors, student based factors, school level as well as classroom level factors.

2.9 Conceptual Frame work

A conceptual framework is a model of relationship where researchers present the relationship between variables in a study and show the relationship graphically or diagrammatically. It gives an idea of the variables to be covered by the study (Best & Kahn, 2011). According to Orodho (2008), a conceptual framework assists the researcher to quickly see the proposed variables. It is important to include all the levels of the school (context, school, classroom and student) which interact with each other to determine learner academic achievement as shown in Figure 2.1.

Figure 2. 1: Conceptual Framework on Factors Contributing to Learner Academic Achievement



Source: Adapted from Scheerens, 2004

The conceptual framework above shows an integrated model of school effectiveness. In integrated research, three research paradigms (production functions, instructional effectiveness and school effectiveness) and student background factors have been integrated in terms of modelling and choice of variables. In integrated research, schools are depicted as nested, hierarchical layers (student, classroom, school, and higher level/context), and key variables from each of the three paradigms, as well as key student background variables, are included at the appropriate layer. Student background factors are placed at the student level, instructional-effectiveness factors are placed at the classroom level, effective-schools factors are placed at the school level, while input-output factors are appropriately divided between the classroom and school levels (e.g., teacher qualifications belong to the classroom level, while per-student expenditure belongs to the school level). The independent variables in this case are the school context, school level resource inputs, classroom level resources and student background factors. These variables interact with effective pedagogy at the classroom level and effective school processes to determine learner academic achievement which is the dependant variable.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter gives a detailed outline of how the study was carried out. It focuses on research methodology under the following subheadings: - research design, target population, sample size, sampling procedures, research instruments, instrument validity, instrument reliability, data collection procedures , data analysis techniques and ethical considerations.

3.2 Research Design

The study adopted a descriptive survey design. Descriptive research seeks to find answers to questions through the analysis of variable relationships i.e. what factors seem to be associated with certain occurrences, outcomes, conditions or types of behaviours (Best & Khan, 2003). Ary and Razarich (1996) defined survey research design as a technique where detailed information concerning social phenomena is collected by posing questions to respondents such that it becomes possible to find explanation of social phenomena in question. The design was used to investigate the school based factors contributing to learner academic achievement in public primary schools in Karuri zone, Kiambu County.

3.3 Target Population

Borg and Gall (1989) defines target population as the number of real hypothetical set of people, events or objects to which a researcher wishes to generalize his findings. The target population constituted of 12 public primary schools in Karuri zone in Kiambu district with a student enrolment of 7535, teacher population of 195 and 12 head teachers as respondents. The researcher targeted the standard eight students as they were better placed to answer the questions which required a higher cognitive ability.

3.4 Sample Size and Sampling Procedures

Sampling is the process of selecting a suitable representative part of a population, for the purpose of determining parameters or characteristics of the whole population. Nachmias and Nachmias (1996) define a sample as any subset of sampling units from a population. According to Krejcie and Morgan (1970) table for the determination of sample size, a sample of 12 head teachers, 367 students and 132 teachers is appropriate. The researcher sampled 11 teachers from every school. The researcher used stratified sampling to categorise the teachers into lower and upper primary so as to get varied opinions and thereafter used simple random sampling to select the teachers. The researcher used purposive sampling to select the top, middle and bottom 10 students in terms of positions in their last exams in each class in order to obtain a sample of 30 students in every class. All the 12 head teachers were involved in the study. In total 511 respondents were selected for the study.

3.5 Research Instruments

The instruments that were used for this study included questionnaires, interview schedules, observation schedules and focus group discussions. A questionnaire has a lot of information, is less expensive and can be used by a large population (Mugenda & Mugenda, 2003). Two sets of questionnaires were used. There was a questionnaire for the teachers (appendix II) comprising of Part A, B and C. Part A captured the teacher's demographic information, part B consisted of both open and close ended questions on school level resources, effective school factors and pedagogical practices in their specific schools. Part C set out to capture information on school level resource inputs, school level effective school factors, class room resources, effective pedagogy and student level factors influencing learner academic achievement in public primary schools. The questionnaire used a likert scale. The response format was Agree/Disagree with five (5) point likert scale. Respondents were asked to respond to each statement by putting a tick (√) after each statement corresponding to the codes: SD=Strongly Agree, A=Agree, UN= Undecided, D=Disagree, SD=Strongly Disagree. The students questionnaire ((appendix III) consisted of Part A and Part B. Part A comprised of demographic information while Part B comprised of school level resources, effective school factors and effective pedagogical practices in their respective schools.

An observation schedule (Appendix IV) was used for direct observation of the presence and condition of various school facilities. It consisted of a structured

guideline using a Likert type rating scale which helped to observe and qualitatively and quantitatively describe the various school facilities which included library, classroom, toilet, computers, piped water, electricity, cupboards, wall charts among others. Direct observation presents data in its natural form, makes the observer an active participant in the study and permits time to think about what is occurring rather than on how to record it (Kombo & Tromp, 2006).

The interview schedule was administered to the head teachers and sought their personal opinion on factors that may be influencing academic achievement of learners in their specific schools. The interviews were organised and conducted in the respective sampled schools and provided accurate responses that supplemented responses in the questionnaires. The interview is often superior to other data-gathering devices since people are usually more willing to talk than to write. Interviews also make it possible for the interviewer to explain more explicitly the investigation's purpose and to clarify in case of misinterpretation of questions (Best & Kahn, 2003).

The focus group discussions were conducted with the students and sought their opinions on personal, school resources, teacher characteristics and classroom practices that influence their achievement in school.

3.6 Instrument Validity

Instrument validity is the quality of a data gathering instrument or procedure that allows it to measure what it is supposed to measure (Best and Khan, 2003). The researcher established content validity by seeking expert judgement from the supervisors with a view to improve on the instruments accuracy, format and content. A pilot study was conducted before the actual study commenced. One school was randomly selected for the purpose of pre- testing the instruments. Piloting is important because it helps to reveal deficiencies in the questionnaire (Mugenda & Mugenda, 2003). Through the pilot study, major problems and instrument deficiencies were identified and improvements made. The pilot study also elicited data from the instrument that was checked to see if it could be meaningfully analysed in relation to the stated hypotheses. It was also used to check the appropriateness of the language used as well as identifying ambiguous items and reconstructing them.

3.7 Instrument Reliability

Reliability is the degree of consistency that the instrument or procedure demonstrates (Best & Khan, 2003). The researcher used the test-retest technique to ascertain instrument reliability. This involved administering the same instrument twice to the same group of respondents, allowing a time lapse of one week. Sampled responses from the test and retest were analysed using frequencies and percentages to produce scores which helped to check whether the two processes gave similar results. The scores from both testing periods

were then correlated using the Pearson Product Moment Correlation Coefficient formula:

$$r_{xy} = \frac{N \sum xy - (\sum x)(\sum y)}{\sqrt{N \sum x^2 - (\sum x)^2} [N \sum Y^2 - (\sum Y^2)]}$$

Where, x is the scores from the first test

Y is the scores on the second test

N is the number of scores within each distribution

The teacher's instrument reliability yielded a coefficient of 0.86 which tends towards 1 and therefore shows that the teacher's questionnaire was considered reliable to collect data for this study. The correlation coefficient for the student questionnaire was 0.82 which tends towards one and therefore reliable for the study.

3.8 Data Collection Procedures

A research permit was obtained from the National Commission for Science, Technology and Innovation (NACOSTI). The researcher then reported to the County Commissioner and the County Director of Education, Kiambu County, to obtain authorization to conduct the study. The researcher also paid a courtesy call to the head teachers. The researcher personally distributed the questionnaires to the respondents which was done during normal school hours. The researcher thereafter collected the questionnaires. This kind of administration enabled the researcher to explain any ambiguities to the respondents. The focus group discussions were conducted with the whole class

which helped to get diverse opinion as well as the weight to be given to particular responses based on the number of students agreeing or disagreeing with a particular factor. In depth interviews were conducted with headteachers and the deputy headteachers where the head teachers were unavailable.

3.9 Data Analysis Techniques

The analysis of data relied on Statistical Packages for the Social Sciences (SPSS). Inspection of the data pieces was first done and then classified and coded according to the pattern of responses that were given by the respondents in the questionnaires and responses recorded during interviews and focus group discussions as well as the records in the observation schedule. The items in Likert scale were scored as SA=Strongly Agree 5 marks, A=Agree 4 marks, UN= Undecided 1 mark, D=Disagree 3 marks, SD=Strongly Disagree 2 marks.

Descriptive statistics technique was used to analyse open-ended items as well as the interviews and focus group discussions. Qualitative data generated from the questions were organized in to themes, patterns and categories pertinent to the study. Results on percentages, averages and variability were presented through tables, graphs and pie- charts.

Using the Statistical Package for the Social Sciences, (SPSS), a one-way analysis of variance (ANOVA) and the independent samples t test was conducted to test the null hypothesis (Ho4) involving the school contextual factors and learner academic achievement where the 2014 KCPE mean scores were used. The two sample z-test statistics for testing hypothesis was used to

test the relationship between school, classroom and student level factors contributing to learner achievement in null hypotheses, Ho1, Ho2 and Ho3. Measures of dispersion and distribution characteristics were employed to support the decisions arrived at.

3.10 Ethical Considerations

The researcher observed ethical considerations throughout the study especially during proposal writing to ensure that the study remained original in content and design. The researcher sought written permission from the relevant authorities, first from the National Commission for Science, Technology and Innovation (NACOSTI), then from the County Commissioner and the County Director of Education, Kiambu County. Consent to carry out the study was sought from the headteachers. During the actual data collection, the researcher informed all the participants of their freedom of choice in the participation of the study. The respondents were assured of confidentiality and that any information gathered from them would be used for the purpose of the study only. The respondents were guided in filling the questionnaire after ascertaining their consent.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter deals with data analysis and interpretation of findings from the study on school based factors contributing to learner academic achievement in Karuri Zone, Kiambu County, Kenya. It analyses the instruments return rate, the demographic information of the respondents as well as findings related to the four study objectives. The study sought to determine the effect of school level factors, class level factors, student based factors and contextual factors on learner academic achievement. Data was collected using questionnaires for students and teachers, observation schedules, focus group discussions with the students and interviews with the head teachers. The collected data was compiled into frequencies and percentages and then presented in tables and graphs.

4.2 Instrument Return Rate

The target population for this study constituted of 12 public primary schools, with a student enrolment of 7535, 195 teachers and 12 head teachers. Samples used in this study comprised of 12 headteachers, 367 students and 132 teachers.

The researcher interviewed public primary school's head teachers, distributed the questionnaires to the sampled students and teachers and conducted focus group discussions with the sampled students. The researcher also conducted

observations in all the schools to determine the availability and the condition of the various school facilities. A total of 108 and 348 teachers and student questionnaires were returned representing a response rate of 81.8 % and 94.8% respectively.

The researcher was also able to conduct interviews with all the 12 headteachers representing a response rate of 100%. Focus group discussions and observations were carried out in all of the 12 schools representing 100% return rate. The average response rate was 94.5% which the researcher found to be a satisfactory representation of the target population.

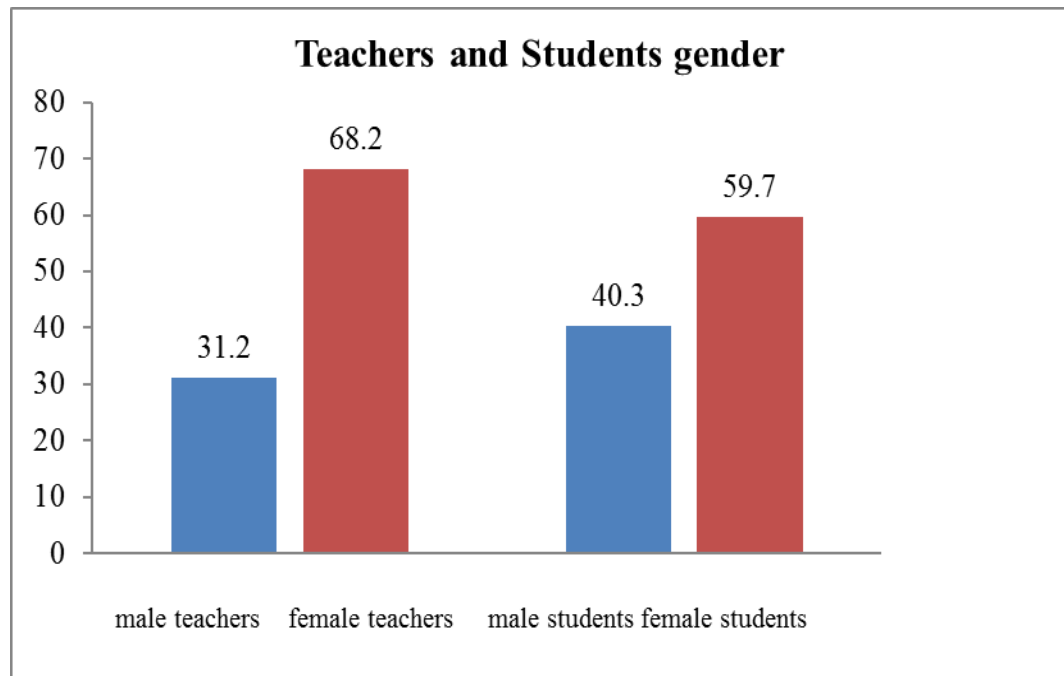
4.3 Demographic Characteristics of the Respondents

Personal information of the teachers and students was sought to give an insight on the respondents' characteristics which included age, gender, teacher's level of academic education and working experience, level of education of parents as well as the family structure of the students.

4.3.1 Gender of the Respondents and Learner Academic Performance

The study sought to find the gender of the respondents since performance in examinations in Kenya varies between male and female students. Enrolment rates in Kiambu County also tend to be higher for the girls compared to the boys. Teacher's gender was also considered since the sex of primary teachers has been found to influence performance, particularly of girls with statistics showing that pupils taught by female teachers perform better than those taught by male teachers (UNESCO, 2005). The findings are as shown in Figure 4.1.

Figure 4.1: Respondents Gender and Learner Academic Achievement



According to Figure 4.1, both female teachers and students represented a greater percentage while the male teachers and students were less. There was great gender disparity among the teachers with female teachers at 68.2% which was more than double the number of male teachers in the zone. This figure could be due to the fact that having more female teachers than male teachers is a common phenomenon in primary schools in towns and rural areas whereas the opposite is true in remote and hard ship areas. However, the effect of teacher's gender on performance appeared to be low going by the poor performance of both male and female students in the Zone. This finding concurs with that of Glewwe et al. (2011) who found little support for any systematic difference in teacher effectiveness by gender. Less male teachers in

the schools means that the boy child lacks role models to emulate which could affect their performance.

Female students were also relatively greater than male students. Gender disparity among the students has been listed as one of the challenges facing the education sector in pockets of poverty in rural areas (Republic of Kenya, 2013). This could be due to boys dropping out as a result of either poverty or poor performance due to truancy and lack of role models within the school set up or in the community.

4.3.2 Age of the Respondents and Learner Academic Performance

The age of the students and teachers was also considered. The age of the students would help determine if there were any over/under age learners which may be affecting performance. The teacher's age group was also important so as to find the distribution of teachers by age in the zone and the influence it has on performance. The findings are presented in Tables 4.1 and 4.2.

Table 4.1: Student's Age and Learner Academic Achievement

Age	Frequency	Percentage %
13	132	37.9
14	151	43.4
15	52	14.9
16	13	3.7
Total	348	100.00

According to Table 4.1 above, majority of the pupils were between the ages of 13 and 14 years. However 18.6% of the students were over age since standard eight pupils should be aged 14 years. This could be due to repetition or starting school late due to poverty. Yu and Thomas (2007) found that being overage negatively affects performance.

Table 4.2: Teachers Age and Learner Academic Achievement

Age Group	Frequency	Percentage %
20-25	5	4.6
26-30	3	2.8
31-35	17	15.7
36-40	25	23.1
41-45	19	17.6
46-65	39	36.1
Total	110	100.00

Findings in Table 4.2 indicate that majority of the teachers were in the age bracket of 46-65. Teachers aged below 35 years were only 23.1%, while 53% of the teachers were aged 40 years and above. The higher percentage of older teachers could be explained by the fact that transfers to other counties were not frequent. The retirement age of the teachers was also pushed to 65 years hence lengthening their stay in schools. It is important to note that older teachers imply higher levels of experience which is supposed to have a positive impact on the outcome of learners. However the age of the teachers has been found to influence performance negatively with students' test scores declining as teachers get older (Nannyonjo, 2007).

4.3.3 Respondents Education Level and Learner Academic Achievement

The study sought to find the education level of the teachers which is considered a major determinant of their output. The findings are represented in Table 4.3.

Table 4.3: Teachers Level of Education and Learner Academic Achievement

Response	Frequency	Percentage %
P1	44	40.7
Diploma	37	34.3
B.ED	19	17.6
A Level/ATS	8	7.4
Masters	0	0.0
Total	108	100.00

The findings indicate that majority of the teachers (75%) had either a P1 or a diploma qualification which shows that they were qualified to teach at the primary level. None of the teachers had a master's degree while very few had a B/ED degree. The results clearly indicate that all teachers were well equipped for the job in terms of the level of training which should have translated into better results from the learners. However, the low academic performance despite the levels of training concurs with Atherton (2009) and Nannyonjo (2007) who found no effect of teachers' education levels on learner academic achievement. Glewwe et al. (2011) also found little evidence of the impact of teachers' level of education on student test scores. Other factors in the Zone could also have contributed to the low teacher quality effect on the students.

4.3.4 Respondents Working Experience and Learner Academic

Achievement

The study sought to find out the working experience of the teachers which has been found to positively influence the learning outcomes of the learners. Table 4.4 presents the findings:

Table 4.4: Teachers Working Experience and Learner Academic

Achievement

Response	Frequency	Percentage%
Below 5 years	11	10.2
6-10 years	24	22.2
11-15 years	15	13.9
16-20 years	15	13.9
20 years and above	43	39.8
Total	108	100.00

The findings indicate that majority of the teachers had an experience of 20 years and above. The table also indicate that the experience of the teachers was well distributed. As expected, the pattern of working experience was similar to the pattern of teacher's age. The zone had a majority of teachers who were highly experienced and at the age bracket of 45-60 years. Teacher quality is usually defined in terms of years of experience and level of training. It is therefore surprising that the teacher quality effect in the zone is very low for majority of learners. This finding concurs with Koniewski (2014) and Nannyonjo (2007) who found that teachers at the start of their careers with less than three years' experience were less effective than those with more

experience. Better results were achieved by pupils of teachers with more than five years' experience while teaching effectiveness decreased as teachers approached retirement.

4.3.5 Family Structure and Learner Academic Performance

The study considered the family structure from which the students came from. Stable families where the father and mother are together have a positive influence on outcomes. The findings are presented in Table 4.5.

Table 4.5: Family structure of the students and Learner Academic Achievement

Response	Frequency	Percentage %
Mother alone	61	17.6
Father alone	11	3.2
Mother and father	273	78.7
Orphan	2	0.6
Total	347	100.00

The findings above indicate that 20.8% of the students came from single parent families while majority of the students were from stable families. The researcher obtained from the head teachers that single parent family structure was a major hindrance for academic success since the students were sometimes affected emotionally and psychologically by family break ups. Most of the students from single families also lacked basic necessities which negatively affected their performance.

4.3.6 Teachers Perceptions on Factors Influencing Learner Academic Achievement.

The teachers were asked to indicate what needed to be done in order to increase the learner academic achievement in their respective schools. Majority of the teachers (71%) were of the opinion that improving the provision of resources would increase the academic achievement of the learners. Employing more teachers, buying more books and introducing feeding programs were some of the responses. Effective school factors such as improving the learning environment and parental involvement ranked second at 22%. The student level factors ranked third at 9% and included boosting the language skills, motivating the learners, curbing absenteeism and more time for remedial.

It is important to note that very few teachers placed the responsibility of improving achievement of the learners on themselves as indicated by 6% given to effective pedagogical factors. Very few teachers indicated that better improvisation of teaching aids and learning materials as well as varying the teaching methods would improve the academic achievement of their learners.

4.3.7 Learners Perceptions on Factors Influencing Learner Academic Achievement.

The learners were asked to indicate what could be done by their teachers and schools in order to increase their achievement. Majority of the students' (63%) were of the opinion that school resource inputs would help improve their achievement. They indicated that increasing text books and story books, providing them with lunch, more teachers, and having a library in their schools

would enhance their achievement. Student level factors such as avoiding laziness, lateness, absenteeism and speaking in English ranked second at 20%. Effective school factors which included motivating the learners, improving discipline and order, putting pressure on the students and not sending them home for fees ranked third at 9.2%. Amongst the class level factors which ranked fourth at 7.8% included stopping corporal punishment, more time for revision with their teachers, finishing the syllabus on time and better teaching from their teachers.

4.4 Answering of Research Objectives and Testing the Hypotheses

4.4.1 School level factors and learner academic achievement

School level factors comprised of school resource inputs and effective school factors. School resource inputs included class size, pupil teacher ratio, school library and other resources that were provided by the school. Effective school factors included parental involvement, safe disciplined school environment, cooperation between the various stakeholders and other effective factors that were unique to particular schools. The teachers and students were asked to respond to various questions relating to school resources and the analysis of the answers is given below.

4.4.2 School Resource Inputs and Learner Academic Achievement

4.4.2.1 Teachers work load and learner academic achievement

The number of hours that teachers put in per week was considered so as to give an indication of whether the teachers were being over worked and if the teachers were adequate in the various schools. The findings are presented in Table 4.6.

Table 4.6: Lessons Taught in a Week and Learner Academic Achievement

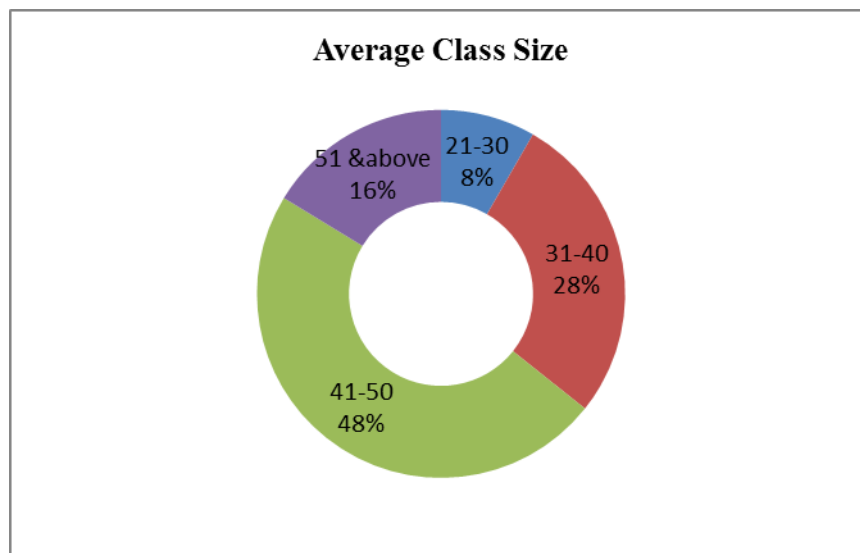
Response	Frequency	Percentage %
40 lessons/week	22	20.4
35-39 lessons/week	47	43.5
30-34 lessons/week	34	31.5
25-29 lessons/week	5	4.6
Total	108	100.00

The findings in the table above indicate that majority of the teachers taught between 30-39 lessons per week. However 22% of the teachers taught 40 lessons per week which was very high. This indicates that majority of the teachers were overworked which could have had a negative effect on their performance. This is because the teachers had no time to prepare well for the lessons. Many lessons per day could also have made them tired thus compromising on delivery of the content.

4.4.2.2 Class Size and Learner Academic Achievement

Class size refers to the actual number of pupils taught by a teacher at a particular time. The teachers were asked to indicate the average number of students per class in their schools. The results are indicated in the Figure 4.2.

Figure 4.2: Average Class size and Learner Academic Achievement



The findings indicate that the majority class size was between 41-50 students. This is in contravention to the benchmark set by the Ministry of Education of a pupil teacher ratio of 1:40 based on one teacher per class. Most classes were overcrowded, with the classroom space being too small for the pupils. This finding concurs with that of UNESCO (2001) which found that schools in central province had the highest number of pupils (52.3%) that were in overcrowded classrooms. The fact that class size may be affecting academic performance in Karuri Zone is supported by Michaelowa (2001) who found

that larger classes result in lower educational achievements especially in the early years of schooling. However Nannyonjo (2007); Atherton (2009) and Glewwe et al. (2011) found that on the contrary, class size was unrelated to performance with schools that had large classes out performing those schools that had smaller classes.

4.4.2.3 Availability of Teaching Learning Resources and Learner Academic Achievement

The teachers were asked to indicate their level of satisfaction with the availability of teaching learning resources in their schools. Majority of teachers (72%) indicated they were moderately satisfied, 16% indicated that their satisfaction with the availability of teaching learning resources was low while 12% indicated that they were highly satisfied. The learners were also asked to indicate whether they had sufficient resources. Students in class eight who indicated not having mathematical sets were 30% while a good number had insufficient exercise books. Teachers also complained that most pupils bought the 32 pages exercise books when the school ran out of exercise books provided under the FPE which were mostly inadequate. This indicated the inability of students to supplement what the schools provided under the FPE programme. These findings generally indicate that the teaching learning resources were not adequate which may have hindered the teaching learning process. This finding concurs with EdQual (2010) who found that lack of basic resources was a real barrier to the learning process.

4.4.2.4 Text Book Pupil ratio and learner Academic achievement

The pupils were asked to indicate how many pupils shared one textbook in their respective schools. The results are as shown in the Table 4.7.

Table 4.7: Average Textbook Pupil Ratio and Learner Academic Achievement

Response	Frequency	Percentage %
2:1	204	58.6
3:1	118	33.9
4:1	26	7.47
Total	348	100.00

The results indicate that the textbook pupil ratio was below the recommended ratio of 1:1. None of the students had their own textbook for any subject. This greatly affected their ability to do their homework and also study at home since only one student could carry the book home.

4.4.2.5 Child Nutrition and Feeding and Learner Academic Achievement

The students were asked to indicate how they got their lunch while in school. The responses are indicated in the Table 4.8.

Table 4.8: Child Nutrition and Feeding and Learner Academic Achievement

Response	Frequency	Percentage %
Carry packed lunch	233	67
School provides lunch	14	4
Stays hungry	79	22.7
Goes home for lunch	5	1.4
Parents bring lunch	17	4.9
Total	348	100.00

The findings indicate that majority of the students carried packed lunch. During the cold seasons which are a common occurrence in the area, the food got too cold and was therefore not good enough for the students. The researcher also obtained from observation and interviews with the head teacher that most of the students did not carry lunch. This meant that they were not able to concentrate well in class especially in the afternoon. Only two schools had been able to get sponsors for a feeding programme in their schools. However the program was only able to provide food for very few students. Majority of the students complained that they were not considered for the program. The researcher also noted that none of the schools had school canteens and so the students were not able to get a mid-morning snack.

4.4.2.6 Teacher Pupil Ratio and Learner Academic Achievement

Teacher pupil ratio is the wealth of the school in terms of provision of teachers. The ratio is determined by getting the total number of pupils and dividing it by the total number of full time teachers posted at the school. The benchmark for the ministry of education is 1:40. Majority of the schools in Karuri Zone (83.3%) seemed to have adequately satisfied the benchmark with the ratio dropping as low as 1:31 in some schools. Only three schools (16.7%) had a ratio that was above 1:40. Teacher pupil ratio was lower than class size in Karuri Zone with an average class size of above 40 students.

The researcher also sought to find out the availability, adequacy and condition of various school resources by conducting an observation in the schools. The results are indicated in the Table 4.9.

Table 4.9: Availability, Adequacy and Condition of School Resources and Learner Academic Achievement

Resource	Response	Frequency	Percentage %
Library	not available	7	70
	poor	2	20
	good	1	10
	Total	10	100
Computer	not available	9	90
	not adequate	1	10
	adequate	0	0
	Total	10	100
Toilet	Poor	5	50
	very poor	0	0
	good	5	50
	Total	10	100
Piped water	not available	0	0
	not adequate	4	40
	adequate	6	60
	Total	10	100
Class rooms	Poor	3	30
	Good	5	50
	Excellent	2	20
	Total	10	100
Electricity	not available	2	20
	not adequate	2	20
	adequate	6	60
	Total	10	100
Telephone	not available	10	100
	not adequate	0	0
	adequate	0	0
	Total	10	100
Desks	not adequate	10	100
	Adequate	0	0
	very adequate	0	0
	Total	10	100
Cupboards	not available	3	30
	not adequate	5	50
	adequate	2	20
	Total	10	100
Teachers table	not adequate	2	20
	adequate	8	80
	not available	0	0
Total		10	100

From the table above, it is interesting to note that majority of the schools had no library or computers. This is a major concern since none of the students had their own textbook in all subjects. There was also no telephone in all the schools. All schools did not have adequate desks and in most schools, 4 students had to squeeze in a desk meant for two pupils. There were no cupboards in the classrooms and those in the staffroom were not adequate. 30% of the classes were in poor condition with floors, windows and desks in poor condition. It's also important to note that toilets in half of the schools were dirty and not conducive for the learners.

Water and electricity were not adequate in 4 schools. Learners in these schools had to go for the water from the river so as to wash their classrooms during lunch hour. This may have caused them to get tired causing them not concentrate in the afternoon lessons. Early and late morning tuition in schools was conducted in partially dark classes in some schools since they did not have electricity. The scarcity of basic resources may have contributed negatively to the academic achievement of the learners.

The study also sought from the teachers their opinion on some school resources influencing learner academic achievement. The teachers were required to indicate either strongly agree (SA), agree (A), undecided (UN), disagree (D) or strongly disagree (SD) with the statements. The responses are presented in the Table 4.10.

Table 4.10: School Resources Influencing Learner Academic Achievement

Statement	SA	A	UN	D	SD
Pupil teacher ratio affects Learner achievement	64(59.3%)	32(29.6%)	8(7.4%)	3(2.8%)	1(0.9%)
Text book pupil ratio influence Learner achievement	75(69.4%)	28(25.9%)	1(0.9%)	2(1.9%)	2(1.9%)
Stationery supplies like exercise Books,rulers and pens influence Learner achievement	45(41.7%)	49(45.4%)	9(8.3%)	4(3.7%)	1(0.9%)
Quality of school buildings influence Learner achievement	20(18.5%)	47(43.5%)	8(7.4%)	25(23.1%)	8(7.4%)
Presence of a school library influence Learner achievement	31(28.7%)	54(50%)	8(7.4%)	11(10.2%)	4(3.7%)
School feeding programme influence Learner achievement	46(42.6%)	49(45.4%)	6(5.6%)	5(4.6%)	2(1.9%)
Access to water and electricity in a School Influence learner achievement	35(32.4%)	53(49.1%)	8(7.4%)	10(9.3%)	2(1.9%)
Toilet pupil ratio affects learner Achievement	26(24.1%)	44(40.7%)	12(11.1%)	22(20.4%)	4(3.7%)
Separate toilets for the different gender influence Learner achievement	29(26.9%)	49(45.4%)	14(13%)	15(13.9%)	1(0.9%)
quality of class room equipment e.g desks, influence learner achievement	38(35.2%)	56(51.9%)	5(4.6%)	8(7.4%)	1(0.9%)
application of information technology influence learner achievement	35(32.4%)	48(44.4%)	16(14.8%)	4(3.7%)	5(4.6%)
amount of subsidy per student from the government influence achievement	31(28.7%)	52(48.1%)	14(13%)	7(6.5%)	4(3.7%)

From the table it would appear that majority of the teachers strongly agreed that text book pupil ratio influenced learner achievement. This concurs with studies by Heyneman and Loxley (1983) and UNESCO (2004) that found a consistently positive effect of textbooks and other instructional materials on

student achievement. However a program operated by Internationale Christelijke Stichting (ICS), a Dutch non-governmental organization (NGO) that offered textbooks and uniforms to seven rural primary schools in Busia Kenya, found that no significant differences in test scores was observed between the control and experimental group of schools (Ridker,1997). This finding add to doubts about the likelihood that the provision of a modest number of textbooks can, by itself, raise test scores over a brief period of time. Students in Karuri Zone shared text books on a 2:1 and 3:1 ratio. This may have contributed to the low achievement. Majority of the teachers also strongly agreed that pupil teacher ratio affected learner achievement. This concurs with a study conducted by Michaelowa (2001) who found a negative impact of class size of above 60 students. A study in Uganda however found no explicit relationship between class size and test scores. The study concluded that when effective teaching strategies suited to large or small sized classrooms were adopted, test scores could be improved (Nannyonjo, 2007). The majority class size in Karuri Zone was 41-50 students which was an appropriate size and may therefore not have had a big impact on performance. Teachers also agreed that stationery supplies enhanced learner achievement but placed a moderate significance on it. Pupils in Karuri Zone did not have adequate exercise books and mathematical sets which could have contributed to the low performance. School feeding programs, according to the teachers had an impact on learner achievement. This finding deviates from that by Glewwe et al. (2011) who did not find strong support for the intervention. However with 22.7% of students indicating they stayed hungry during lunch time, this could have contributed to

low achievement. Presence of electricity and water did not elicit a strong response from the teachers. With over 80% and 60% of the schools in Karuri Zone having electricity and adequate water respectively, this may not have been the cause of the poor performance. Teachers failed to strongly agree that quality of school buildings, quality of classroom equipment, and presence of a school library influence learner achievement. This finding deviates to some extent with the finding that having a fully functioning school – one with better quality roofs, walls or floors, with desks, tables and chairs, and with a school library was conducive to student learning in 79 high quality studies analysed in developing countries (Michaelowa et al., 2011). Schools in Karuri Zone had inadequate desks and over 70% did not have libraries which could have contributed to low performance. Teachers agreed although not strongly, that pupil toilet ratio and separate toilets for different gender influenced academic achievement. Toilets which are ‘unfriendly’ to girls have been found to affect their regular attendance to school. The toilets in the schools in Karuri Zone could be ranked as average meaning that this did not strongly impact on performance. With regards to the influence of information technology on learner achievement, teachers failed to strongly agree on its importance. This finding concurs with Glewwe et al. (2011) who found the impact of computers and related electronic media on learner achievement to have mixed results with no clear correlation. Teachers placed a moderate significance on amount of subsidy per student influencing achievement. This concurs with Nannyonjo (2007) who found that per pupil expenditure was weakly correlated with student scores in Uganda. At any level of per pupil expenditure the study found

that there were schools with low test scores as well as schools with high test scores.

4.5 Effective School Factors and Learner Academic Achievement

The study sought from the teachers some of the effective school factors that could have had an impact on academic achievement. The teachers were asked to indicate their level of satisfaction with the level of motivation by the administration, the extent of parental involvement, the quality of school management, cooperation between the headteachers and teachers and the discipline of the students.

4.5.1 Motivation of the Teachers by the Administration and Learner Academic Achievement

The teachers were asked to respond on their level of satisfaction with motivation of teachers by the administration. The results are shown in Table 4.11.

Table 4.11: Level of Motivation of Teachers and Learner Academic Achievement

Response	Frequency	Percentage %
Low	50	46.3
Moderate	47	43.5
High	11	10.2
Total	108	100.00

Majority of the teachers indicated that the level of motivation was low in their schools. Most teachers indicated that the administration was selfish and that their efforts were not recognized. However 43.5 % indicated that they were moderately motivated. The administration congratulated them by hosting them for a lunch after the students did well in the final exams. Teachers who are not well motivated to teach may not work as hard and thus low motivation could have contributed to the low performance in Karuri Zone.

4.5.2 Parental Involvement and Learner Academic Achievement

The study sought to know the extent to which the teachers were satisfied with the level of parental involvement in their respective schools. The findings are shown in Table 4.12.

Table 4.12: Level of Parental Involvement and Learner Academic Achievement

Response	Frequency	Percentage %
Low	57	52.8
Moderate	45	41.7
High	6	5.6
Total	108	100.00

The findings indicate that there was low parental involvement according to the teachers. The researcher also noted from interviews with the head teachers that 20% of the schools met once per year, 60% met once per term while 20% indicated meeting the parents frequently as and when required. Parental

involvement can also be judged by how promptly they pay the required school levies and their contribution to their children's needs in school. The researcher obtained from the head teachers that most parents only paid the school fees when their children were sent home for the same. When called for the various meetings, a good majority failed to show up. Poor parental involvement in the Zone could thus have contributed to the poor performance of the learners since their level of support to the schools and learners remained low.

4.5.3 Quality of School Management and Learner Academic Achievement

The study also sought to find out the quality of school management from the teachers. The results are indicated in Table 4.13.

Table 4.13: Quality of School Management and Learner Academic Achievement

Response	Frequency	Percentage %
Low	13	12
Moderate	64	59.3
High	31	28.7
Total	108	100.00

The findings indicate that majority of the teachers were moderately satisfied with the quality of management in their schools. The researcher also noted through the visits in schools that most of the head teachers were absent from their schools. The deputy headteachers seemed overworked having to play the administrative role, teach as well as be in charge of discipline and monitor the

teachers. The interviews meant for the Headteachers had to be carried out with the deputy head teacher in 8 schools although the researcher visited the schools more than once. EdQual (2010) notes that headteachers have a crucial role in setting the school culture and failure to do so negatively affects learner achievement. When the headteacher is mostly absent, the teachers and the students follow suit.

4.5.4 Cooperation between the Head teacher and the Teachers and Learner Academic Achievement

The study sought to find out the level of cooperation in the schools by requiring the teachers to indicate their level of satisfaction with the cooperation between the teachers and headteacher. The results are as shown in Table 4.14.

Table 4.14: Level of Cooperation and Learner Academic Achievement

Response	Frequency	Percentage %
Low	4	3.7
Moderate	51	47.2
High	53	49.1
Total	108	100.00

The findings indicate that half of the schools had low or moderate level of cooperation while the other half of the schools had a high level of cooperation between the head teachers and teachers. The most improved schools in the zone cited the reason for the improvement as a result of high cooperation between the teachers and the headteachers as well as team work and a high

level of commitment. The researcher observed a very close relationship between the head teacher and the teachers of the top school in the zone which could easily explain the reason for the good performance.

4.5.5 Students discipline and Learner Academic Achievement

Attending a school that has a safe and disciplined environment positively impacts on student's scores (EdQual, 2010). The study sought to determine the level of discipline of the students by asking the teachers to indicate their level of satisfaction with discipline in their schools. The results are given in Table 4.15.

Table 4.15: Level of Students Discipline and Learner Academic Achievement

Response	Frequency	Percentage %
Low	7	6.5
Moderate	73	67.6
High	28	25.9
Total	108	100.00

The findings indicate that the level of discipline in the schools was moderate as indicated by the greater majority of the teachers. Discipline of the students is essential for good performance. The researcher through interviews with the deputy head teachers who were in charge of discipline noted that very few of them indicated their schools had high levels of discipline. This shows that more needed to be done in this area if performance was to be improved.

4.5.6 School Culture and Learner Academic Achievement

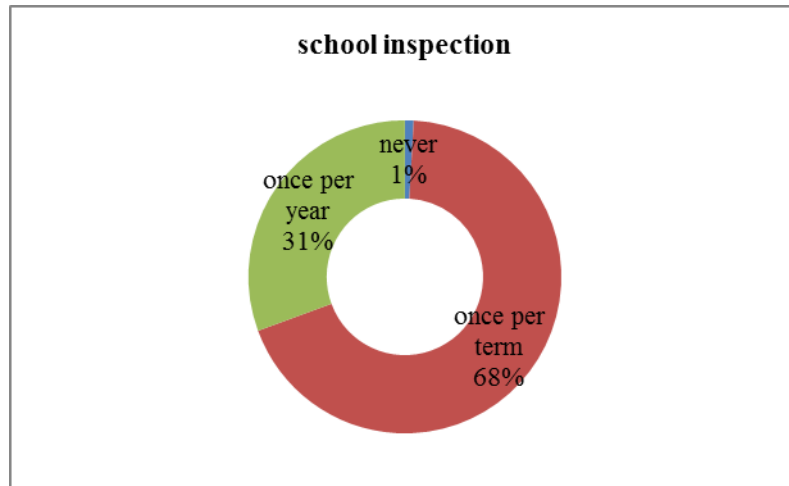
The overall character of a school, defined to a large extent by the leadership of the headteacher and other senior staff, can be described as the school culture. It includes the use that is made of what resources are available - the classrooms, grounds, and instructional materials.

The culture of a school is an important determinant of performance. The researcher noted from interviews with the head teachers that their schools had a history of poor academic culture. 30% of the schools reported that the previous head teachers heading the schools failed to instil an appropriate culture among the students and teachers leading to very low performance. The head teachers heading the schools at the moment of the interview had to deal with negative attitudes and non-teaching among the teachers. Absenteeism amongst the headteachers, teachers and students was also a common culture affecting performance.

4.5.7 School inspection and Learner Academic Achievement

The teachers were asked to indicate how often the inspectors visited their schools and the roles played by the inspectors. The results are shown in Figure 4.3.

Figure 4.3: Frequency of School Inspection and Learner Academic Achievement



The results indicate that majority of the schools were inspected once per term. The teachers were also asked to state the major roles played by the school inspectors. The teachers who indicated that the inspector's role was normally advisory/guidance were 62%. Teachers who indicated the inspectors' role as general inspection of the schools were 32%, 4% felt the inspectors played no role while 3% said the inspectors looked for faults. School inspections are effective in improving educational quality. According to a study by Bold et al. (2010) schools tended to improve following an inspection. The schools in Karuri Zone were inspected regularly but this did not seem to translate into better scores for the students in KCPE examinations thus raising questions about the effectiveness of the inspections.

4.5.8 Achievement pressure and Learner Academic Achievement

The study sought to determine the level of achievement pressure. The teachers were asked to indicate the level of pressure put on them to achieve better results from the parents and from the headteacher. The results are as shown in Table 4.16.

Table 4.16: Level of Achievement Pressure and Learner Academic Achievement

Response	Frequency	Percentage %
Low	6	5.6
Moderate	72	66.7
High	30	27.8
Total	108	100.00

The findings indicate that pressure to achieve higher results was moderate. When the headteachers and teachers are not pressurized to achieve better results and made accountable for the same, they tend to relax. OECD (2005) found that achievement pressure explained the most variance in performance between schools in the OECD countries.

The researcher also sought from the teachers their views on some of the effective school factors that could be influencing learner achievement. The teachers were required to indicate either strongly agree (SA), agree (A), undecided (UN), disagree (D) or strongly disagree (SD) with the statements. Their responses are presented in the Table 4.17.

Table 4. 17: Effective School Factors influencing Learner Academic**Achievement**

Statement	SA	A	UN	D	SD
Quality of school management Influence learner achievement	53(49.1%)	43(39.8%)	7(6.5%)	4(3.7%)	1(0.9%)
Pressure to achieve higher results from Parents and teachers influence learner Achievement	41(38.3%)	48(44.9%)	5(3.7%)	11(10.3%)	3(2.8%)
Active participation by parents in school Activities influence learner achievement	67(62%)	37(34.3%)	2(1.9%)	1(0.9%)	1(0.9%)
Regular inspection by the ministry Influence learner achievement	16(14.8%)	57(52.8%)	12(11.1%)	18(16.7%)	5(4.6%)
Support from the community influence Learner achievement	39(36.1%)	53(49.1%)	6(5.6%)	8(7.4%)	2(1.9%)
An orderly school climate influences Learner achievement	47(43.5%)	47(43.5%)	8(7.4%)	5(4.6%)	1(0.9%)
A safe disciplined school environment Influences learner achievement	71(65.7%)	28(25.9%)	5(4.6%)	4(3.7%)	0(0%)
The headteachers academic qualification Influence learner achievement	27(25%)	39(36%)	13(12%)	19(17.6%)	10(9.3%)
Frequent staff meeting have an effect On learner achievement	32(29.6%)	52(48.1%)	6(5.6%)	14(13%)	4(29.6%)
Class observation by the headteachers Influence learner achievement	25(23.1%)	41(40.7%)	7(6.5%)	19(17.6%)	13(12%)
Cooperation between the teachers And the headteachers influence Learner achievement	67(62.6%)	32(29.9%)	2(1.9%)	3(2.8%)	4(2.8%)

According to the table, majority of the teachers strongly agreed that active participation by parents in school activities, quality of school management, a safe disciplined school environment and cooperation between the teachers and the headteacher influenced academic achievement of the learners. This finding

concur with Mortimore et al. (1988) who found that the most important effective school factors were purposeful leadership of the staff by the head teacher and parental involvement in a study covering 50 London schools. Schools in Karuri Zone had a low parental involvement, a moderate level of quality management, moderate levels of discipline and half of the schools had moderate or low cooperation. This could have been contributing to the low academic performance in the area. With regards to the impact of an orderly school climate on learner achievement, majority of the teachers agreed that it was an important factor. This finding concurs with Opdenakker and Van Damme (2000) who concluded that teaching staff cooperation over teaching methods, pupil counselling and an orderly learning environment had a significant impact on student achievement in Dutch. Teachers agreed that achievement pressure as factor influencing learner achievement was important. This finding concurs with OECD (2005) who found that variables such as teacher student relations, disciplinary climate, and achievement pressure explained the most variance between schools in the OECD countries. The achievement pressure in Karuri Zone was moderate which could have negatively impacted the students' scores. With regards to the effect of school inspection on performance, only 16% of the teachers strongly agreed that it did have an impact. This finding to some extent concurs with Michaelowa and Wechtler (2006) who found school inspections for SACMEQ countries to be insignificant. However Bold, Sandfur, Mwabu and Kimenyi (2010) on the other hand found that schools in Kenya tended to improve following an inspection, with districts having a high percentage of inspections seeing their

test scores increase by an average of 3 points compared with districts with a low percentage of inspections. Schools in Karuri Zone were regularly inspected but this had little impact on performance. According to the teachers, the headteachers academic qualification was not very important. This finding concurs with Glewwe et al. (2011) who found that while principal experience appeared to lead to increased student learning, there was no clear evidence that the same was true of principal education. Frequent staff meetings and class observation by the head teacher were given moderate significance by the teachers. All schools in Karuri Zone indicated having staff meetings regularly which means this was not a major factor affecting performance in the zone.

H01: There is no significant relationship between school level factors and learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya.

This hypothesis set out to determine the relationship between school level factors made up of school resource inputs and effective school factors on learner academic achievement. Based on the responses obtained from the teachers in Table 4.10 and Table 4.17, scores were allocated for each response in the likert scale with strongly agree being allocated 5 scores, agree 4 scores, undecided 1 score, disagree 3 scores and strongly disagree 1 score. The scores obtained from each response were used to calculate the mean score, standard deviation, skewness and kurtosis as shown in Tables 4.18 and 4.19.

Table 4.18: Summary of the Mean, Standard deviation, Skewness and Kurtosis

Factor	N	Min Score	Max Score	Mean	Pop Mean	Std.dev	Skewness	Kurtosis	Z
School level Resources	108	24	60	44.73	41.52	9.46	1.968	7.0679	3.52

For the school level resource inputs, a subscale mean of 44.73 was obtained which is above the average score. This indicated presence of knowledge about school level resources and student achievement. The score was narrowly dispersed across the sample as indicated by the standard deviation of 9.4640. The distribution of the scores was positively skewed as shown by 1.968 with a higher number of scores being above the mean value of the sample used. The curve is leptokurtic as indicated by the kurtosis of 7.0667 which is a peaked distribution of score. The Z value computed from the responses at the level of significance of 0.05 and a critical Z value of ± 1.96 was +3.52 which is beyond +1.96 which means that the null hypothesis is rejected.

Table 4.19: Summary of the Mean, Standard deviation, Skewness and Kurtosis

Factor	N	Min Score	Max Score	Mean	Pop Mean	Std.dev	Skewness	Kurtosis	Z
Effective school factors	108	23	55	44.64	39	4.54	9.38	12.15	12.90

For the effective school level factors, the subscale mean of 44.64 was obtained which indicates that the sample of teachers was homogenous in relation to knowledge on effective school factors that determine learner achievement.

The scores were not significantly dispersed across the sample as indicated by the standard deviation of 4.549. The distribution of the scores was positively skewed at 9.3 with a higher number of scores being below the mean and leptokurtic as indicated by a kurtosis value of 12.15 which is a peaked curve.

At a significant level of 0.05, the Z value computed from the responses was 12.90 which is beyond ± 1.96 . This means that the null hypothesis is rejected.

The alternative hypothesis is therefore accepted which states that there is a significant relationship between school level factors and learner academic achievement.

Integrated studies in developing countries have shown mixed effects of school-level factors on student achievement. The role of school-level input-output variables varies across countries, while school-level effective-schools variables have not been sufficiently explored in developing countries. The finding of this study concurs with Nyagura & Riddell (1993) and Teodorovic (2009) who found school level resource inputs to be extremely significant in Zimbabwe and in poor developing countries. The school level effective school factors that were examined in Zimbabwe proved to be insignificant. Although the methodology utilized in this study is different from that of Nyagura & Riddell, (1993) which found effective school factors to be insignificant, this study finds

that effective school level factors are extremely important in determining learner achievement.

4.6 Class Level Factors and Learner Academic Achievement

4.6.1 Class room Resources and Learner Academic Achievement

4.6.1.1 Teacher’s salary and Learner Academic Achievement

The study sought to find out from the teachers their level of satisfaction with the salaries they received which is one of the important indicators of job satisfaction. The results are indicated in Table 4.20.

Table 4.20: Level of Teachers Salary and Learner Academic Achievement

Response	Frequency	Percentage %
Low	69	63.9
Moderate	36	33.3
High	3	2.8
Total	108	100.00

The findings indicate that majority of the teachers found their salaries to be very low which could have been negatively affecting their motivation to teach thus resulting to low performance. This finding concurs with Kimani, Kara and Njagi (2013) who found teachers job group which is an indication of their salary level to be related to students’ performance in secondary schools. Teachers also expressed concern over the slow rate of upgrading them to new

job groups after completing further studies. The researcher also noted that P1 teachers stayed in one job group for long periods before promotion which could have been a major contributor of low motivation.

4.6.1.2 In- service Teacher Training and Learner Academic Achievement

The study sought to find out how many in service courses the teachers had attended and the impact it had on the academic performance of the pupils. The results are indicated in the Table 4.21.

Table 4.21: Frequency of in-service Teacher Training and Learner Academic Achievement

Response	Frequency	Percentage %
Many	47	43.5
1-5	36	33.3
None	25	23.1
Total	108	100.00

The findings indicate that majority of the teachers had attended in-service courses. However the fact that this does not translate to better performance of the students either point to the fact that in-service courses are not effective or the teachers do not apply the knowledge acquired in class. This finding concurs with Michaelowa and Wechtler (2006) and Nannyonjo (2007) who found in-service training significantly negative for SACMEQ countries.

4.6.1.3 Teachers Gender and Learner Academic Achievement

Teacher's gender has been found to influence achievement (UNESCO, 2012). The students were asked to respond who they preferred the most to teach them between male and female teachers. Male teachers were preferred by 25.9% of the students, 39.7% indicated female teachers while 34.5 % indicated they preferred both male and female teachers. Those that preferred female teachers said it was because of their motherly nature and the ability to counsel them. Those that preferred male teachers indicated that they are less abusive and teach better. This finding indicates that both gender were preferred by the students. However it is important to note that female teachers were double the number of male teachers which could have negatively impacted the performance of the students, especially the boys who lacked role models at the school level.

4.6.1.4 Teachers Absenteeism and Learner Academic Achievement

Absenteeism among the teachers reduces the quality of education and results to a waste of resources. The students were asked to respond how often their teachers were absent from school. The results are indicated in Table 4.22.

Table 4.22: Teachers Absenteeism and Learner Academic Achievement

Response	Frequency	Percentage %
Absent sometimes	260	74.7
Absent many times	21	6.0
Never absent	67	19.3
Total	348	100.00

The results indicate that majority of teachers were absent from class at one time or another. This could be due to lax professional standards, poor incentive structures and failure of the head teachers to lead by example since most of them were usually absent. This could have contributed to the low performance in the Zone. This finding concurs with Yu and Thomas (2007) who found that teachers' absenteeism had detrimental effect on pupils' academic achievements in reading comprehension and mathematics in SACMEQ countries.

4.6.1.5 Teacher Lateness and Learner Academic Achievement

The study sought to find out from the students whether their teachers came late for class. Students who indicated that their teachers came late were 36.5% while 63.5% of the students said their teachers never came late for class. This indicates that efficient utilization of official teaching time was low in some schools which could have been contributing to the low performance. This finding concurs with Abagi and Odipo (1997) who found that there was a large difference between official and the actual instructional time in the classroom due to teacher absenteeism, illness and the high rate of tardiness with public

rural and urban schools in Kenya wasting up to 2.4 and 1.1 hours of pupil learning time per week.

The researcher sought from the teachers how some of their characteristics influenced the academic achievement of their learners. The teachers were required to indicate either strongly agree (SA), agree (A), undecided (UN), disagree (D) or strongly disagree (SD) with the statements. The responses are presented in the Table 4.23.

Table 4.23: Teacher Characteristics influencing Learner Academic Achievement

Statement	SA	A	UN	D	SD
Teachers academic level has an Impact on learner achievement	29(26.9%)	50(46.3%)	7(6.5%)	14(13%)	8(7.4%)
Teachers experience has an Impact on learners achievement	48(44.4%)	40(37%)	4 (3.7%)	10(9.3%)	6(5.6%)
Teachers gender impacts learner Achievement	9(8.3%)	34(31.5%)	9(8.3%)	37(34.5%)	19(17.6%)
In-service teacher training Influences learner achievement	29(26.9%)	57(52.8%)	9(8.3%)	7(6.5%)	6(5.6%)
Teachers job satisfaction Impacts learner achievement	60(55.6%)	38(35.2%)	6(5.6%)	4(3.7%)	0(0%)
Teachers work load impacts On learner achievement	59(54.6%)	37(34.3%)	9(8.3%)	3(2.8%)	0(0%)
Teacher absenteeism lowers Learner achievement	59(54.6%)	37(34.3%)	8(7.4%)	4(3.7%)	0(0%)
Teacher lateness to class Lowers learner achievement	57(52.8%)	41(38%)	6(5.6%)	4 (3.7%)	0(0%)
Motivation of teachers by Administration influence impacts Learner achievement	57(51.8%)	32(29.1%)	12(10.9%)	4(3.6%)	3(2.7%)

Teacher's academic level did not seem to strongly influence learner academic achievement according to the majority of teachers. However the teachers agreed that the education level did have an impact. This concurs with Nannyonjo (2007) who found a significant positive influence on Mathematics and English test scores for teachers with university education in Uganda. However, Atherton (2009) and Yu and Thomas (2007) found that pupils with teachers of lower qualifications (secondary education only) performed better than those with secondary education plus three years of teacher training. The education level of the teachers in Karuri Zone did not seem to contribute significantly to learner achievement going by the KCPE scores. With regards to effect of teacher experience on learner achievement, majority of the teachers strongly agreed that it did have an impact. However, Karuri Zone has highly experienced teachers, which did not seem to significantly improve academic achievement. This finding concurs with Glewwe et al. (2011) who found a weak beneficial effect of teachers experience on learner achievement. Nannyonjo (2007) in a study on education inputs in Uganda found that pupil performance increased with increase in teacher experience only up to a certain level (six to ten years), and thereafter began to decline. Majority of the teachers (37%) disagreed that teacher's gender had an impact on learner achievement. This finding contradicts an earlier finding by UNESCO-UIS (2012) who found that presence of female teachers in the classroom was associated with higher levels of pupil performance. Karuri Zone had as many female teachers as the male teachers which did not seem to be significantly influencing learner achievement. Teachers strongly agreed that teachers' job satisfaction and

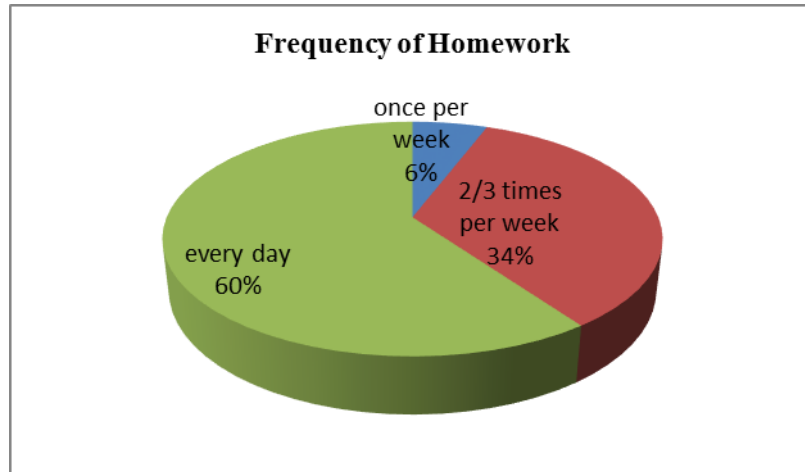
teachers' workload affected the performance of the learners. This finding concurs with that of Kimani, Kara & Njagi (2013) who found teachers job group and workload to be related to performance in secondary schools in Nyandarua County. Teachers' absenteeism as well as lateness to class affected learner achievement according to the majority of teachers. Both of these factors existed in the schools in the Zone as reported by the pupils which could have been a major contributor of low achievement in the area. This finding concurs with that of Yu and Thomas (2007) in their analysis of SACMEQ II data who found teachers absenteeism to be detrimental to learning. Majority of teachers strongly agreed that motivation of teachers influenced academic achievement. However the researcher found that only one school which was the top performing school in the Zone motivated its teachers regularly on achievement of set targets in termly exams. Teachers in other schools indicated that the administration only motivated them once in a year while some were not motivated at all.

4.7 Effective Pedagogy and Learner Academic Achievement

4.7.1 Frequency and Checking of Homework and Learner Academic Achievement

Homework provides an essential feed back to the teacher regarding the assimilation of a particular topic and provides the learner with an opportunity to practice what he/she is taught. The study sought to find from the teachers how often they gave homework to the students. The results are shown in the Figure 4.4.

Figure 4.4: Frequency of Homework and Learner Academic Achievement



The results indicate that majority of the learners were given homework every day. The students were asked how often the teachers checked their homework. Students who indicated that the teachers always checked their homework were 65.2%, 33% indicated the teachers sometimes checked their homework while 1.7% indicated the teachers never checked their homework. Giving and checking of homework has been found to improve learners' achievement (Yu & Thomas, 2007). However the fact that majority of students did not have their own text book for purposes of doing their homework and the practice of not regularly checking the homework by some teachers could have affected performance.

4.7.2 Teaching Methods and Learner Academic Achievement

The study sought to find out from the teachers the teaching methods mostly used in the classroom. Learner centred method was reportedly used by 28% of the teachers, 24% used question and answer, 12% used demonstration, 6% used

lecture method, 2.7% used grouping method, 3.7% used experimentation, while a small percentage indicated a variety of teaching methods such as thematic, chalk and talk, spiral teaching, instructional method. Teachers that did not indicate the teaching methods they used in class were 10%. The results indicate that teachers used a wide variety of methods with some indicating methods that were not learner centred. According to UNESCO (2005) undesirable teaching practices persist in Sub-Saharan Africa which can be described as following a rigid, chalk-and-talk, teacher centred/dominated, lecture-driven pedagogy or rote learning. Such pedagogy places students in a passive role, limiting their activity to memorizing facts and reciting them to the teacher.

4.7.3 Lesson preparation and Learner Academic Achievement

The researcher sought to find out from the teachers the time they took to prepare for a lesson. Teachers who indicated taking 3-5 minutes were 57%, 15% indicated 10 minutes while 2% indicated hours after work. Teachers who did not respond to the question were 22%. The results indicate that teachers used minimum time in preparation. This could have been due to the many lessons that they had to teach throughout the day or laziness among the teachers. Less time dedicated to preparation means that the delivery of the content will be compromised thus affecting performance.

4.7.4 Frequency of Tests and Learner Academic Achievement

The teachers were asked to indicate the frequency with which they administered tests to the students. Teachers who reported administering tests 2 or 3 times per term were 41.7%, 36.1 % administered tests 2 or 3 times in a

month, 22.2% administered tests once or more per week. The results confirm the examination oriented system in Kenya which has well known draw backs. Some teachers complained that frequent exams cut into the teaching time as well as overwork them since they had to mark to meet the set deadlines. Students in class eight in some schools reported doing many exams which were not analysed and they did not do corrections for the same. This means that while tests have been shown to previously contribute to achievement (Heneveld, 1994); too many exams which cut into teaching time and which are not revised may have the opposite effect.

4.7.5 Teacher Learner Interactions and Learner Academic Achievement

The study sought to find out the interactions between the learner and the teachers in the classroom. The students were asked to describe the relationship with their teachers. The results are indicated in Table 4.24.

Table 4.24: Relationship of Students with their Teachers and Learner Academic Achievement

Response	Frequency	Percentage %
Like all teachers	160	46.1
Like some teachers	166	47.8
Fear the teachers	21	6.1
Total	347	100.00

The findings indicate that while a good number of students liked all their teachers, the majority only liked some teachers. A small percentage tended to

fear their teachers. When asked the reason for the response, the students indicated that some teachers were abusive and beat them a lot. The students also reported favouritism in class where the teacher only concentrated on the bright students. Where teachers form negative expectations of certain pupils, they are likely to give them less attention and expose them to less challenging tasks. This kind of stereotyping can have highly negative consequences for some pupils (UNESCO, 2005). Students in some schools complained of bad attitudes of teachers towards them which demotivated them. Teachers' attitudes towards their work and pupils, their classroom management and their interaction with pupils have a great impact on the academic achievement and the retention in school of their pupils, particularly girls (Abagi and Odipo, 1997).

In most schools, the students were arranged on the basis of performance which made them feel biased. The first row consisted of the bright students; the second consisted of average students, while the third row consisted of poor students. The poor students thus felt segregated as the teacher normally concentrated with the first row.

The students were also asked to respond on how they were disciplined in class when they did something wrong or when they did not perform well. Students who reported being beaten were 28%, 33.9% responded they were punished while 40% responded they were beaten and punished. The researcher observed that teachers walked to class with books on one hand and a cane on the other. This could be a major cause of fear among the weak students who reported

being beaten when they failed to correctly answer a question or when they failed their exams. Poor teacher pupil interactions may therefore have contributed negatively to the performance of the learners in Karuri Zone.

4.7.6 Syllabus Coverage and Learner Academic Achievement

The students were asked to indicate whether they were able to cover all the topics for the previous class before going to the next class. Students who indicated covering the syllabus were 48.3 % while 51.7% indicated they did not cover the syllabus on time with their teachers. The students complained of a wide syllabus especially for social studies. Non coverage of the syllabus could therefore have contributed to the low academic performance of the learners in Karuri Zone.

4.7.7 Teacher subject knowledge and Learner Academic Achievement

An effective teacher has a greater impact on the learning process than any other single factor controlled by the school system. Altinok (2013) found teacher knowledge to be highly correlated to student outcomes in a number of SACMEQ countries. The study sought to find out whether the teachers equally enjoyed teaching all subjects by asking them to rank the subjects in the order of how much they enjoyed teaching them. This was used as a proxy to assess the teacher knowledge since a teacher normally enjoys teaching a subject that he/she is well conversant with. Teachers that ranked the subjects from best to worst were 65%, meaning they didn't enjoy teaching all subjects equally. Teachers that did not rank the subjects they taught were 35%. They indicated

they loved teaching all subjects equally. The researcher obtained from the head teachers that every teacher picked the subjects that he/she was conversant with at upper primary. However, after sharing out the lessons, some subjects or classes remained without teachers and they were therefore forced to take subjects that they were not well conversant with. In lower primary, the teachers taught all subjects. Low knowledge levels of the teachers in some subjects could therefore have contributed to low achievement.

The researcher also obtained responses from the teachers regarding some pedagogical practices and their impact on learner achievement. The teachers were required to indicate either strongly agree (SA), agree (A), undecided (UN), disagree (D) or strongly disagree with the statement. The answers are indicated in the Table 4.25.

Table 4.25: Effective Pedagogical Practices influencing Learner Academic Achievement

Statement	SA	A	UN	D	SD
Poor subject mastery by the teachers Leads to lower learner achievement	56(51.9%)	45(41.7%)	1(0.9%)	3(2.8%)	3(2.8%)
Time spent preparing for a class has an Impact on learner achievement	38(35.1%)	56(51.9%)	6(5.6%)	5(4.6%)	3(2.8%)
Amount of actual instructional time Per lesson impacts learner achievement	36(33.3%)	59(54.6%)	5(4.6%)	7(6.5%)	1(0.9%)
Frequency of homework has an impact On learner achievement	48(44.4%)	53(49.1%)	4(3.7%)	3(2.8%)	0(0%)
Correcting of pupils homework Positively improves achievement	65(60.2%)	39(36.1%)	3(2.8%)	1(0.9%)	0(0%)
Frequency of pupil tests influences Learner achievement	48(44.4%)	49(45.4%)	4(3.7%)	6(5.6%)	1(0.9%)
Better teaching strategies improves Learner achievement	71(65.7%)	35(32.4%)	1(0.9%)	1(0.9%)	0(0%)
Better classroom management by Teachers improves achievement	63(58.3%)	43(39.8%)	2(1.9%)	0(0%)	0(0%)
Teachers level of expectation from their Students influence their level of Achievement	36(33.3%)	62(57.4%)	4(3.7%)	4(3.7%)	2(1.9%)
Teachers attitudes in class have an impact On learner achievement	63(58.3%)	38(35.2%)	4(3.7%)	1(0.9%)	2(1.9%)

The findings indicate that majority of the teachers strongly agreed that poor subject mastery by the teachers, better teaching strategies, better classroom management and teacher attitudes in class influenced learner achievement. However, earlier discussions indicated that there was poor subject mastery and poor teaching techniques among the teachers. Poor attitudes among the teachers was also present in the schools. These factors may thus have

contributed to low performance in Karuri Zone. Time spent preparing for class and actual instructional time did not elicit a strong response from the teachers. This tends to deviate from the finding by Michaelowa & Wechtler (2006) who found that effective teaching time is the most basic resource required for effective learning at school. The fact that there was ineffective use of teaching time and little time spent in class preparation may thus have contributed to poor performance. Teachers also strongly agreed that giving and correcting homework positively impacted learner achievement. This is consistent with the findings of Hanushek (1995) and Heneveld (1994) who proposed systematic monitoring, evaluation, frequent homework and feedback as ways of increasing learner achievement. Learners in Karuri Zone were given homework frequently which means that it was not a cause for poor performance. However checking homework and giving feedback was not regularly done as reported by the students. Teachers failed to strongly agree that their level of expectation from their students influenced their achievement. This tends to deviate to some extent from the findings of Lezotte (2010) who revealed that in the effective school, there is a climate of high expectations in which the staff believes and demonstrates that all students can obtain mastery of the school's essential curriculum.

H02: There is no significant relationship between classroom level factors and learner academic achievement in Karuri Zone, Kiambu County, Kenya.

This hypothesis set out to determine the relationship between classroom level factors made up of classroom resources and effective pedagogy on learner academic achievement. Based on the responses obtained from the teachers in Tables 4.23 and 4.24, scores were allocated for each response in the likert scale with strongly agree being allocated 5 scores, agree 4 scores, undecided 1 score, disagree 3 scores and strongly disagree 1 score. The scores obtained from each response were used to calculate the mean score, standard deviation, skewness and kurtosis as shown in Tables 4.26 and 4.27.

Table 4.26: Summary of the Mean, Standard deviation, Skewness and Kurtosis

Factor	N	Min Score	Max Score	Mean	Pop Mean	Std.dev	Skewness	Kurtosis	Z
Class level Resources	108	20	50	43.44	35.55	3.550	5.556	13.055	23.233

For the class room resources, a subscale mean of 43.44 was obtained which was above the average mean score of the scores made. Therefore the respondents had knowledge about the factor and how it influenced performance of learners. The scores were narrowly dispersed as indicated by the standard deviation of 3.556. The distribution of the scores was highly positively skewed

as indicated by the skewness of 5.556. The number of scores was highly peaked with a kurtosis of 13.055.

The Z value calculated from the scores at a level of significance of 0.05 and a critical Z value of ± 1.96 was 23.33. The null hypothesis is rejected since this value is beyond the value of critical Z.

Table 4.27: Summary of the Mean, Standard deviation, Skewness and Kurtosis

Factor	N	Min Score	Max Score	Mean	Pop Mean	Std.dev	Skewness	Kurtosis	Z
Effective pedagogy	108	15	45	36.24	30.61	7.518	0.0646	0.1097	7.786

For effective pedagogy, a subscale mean of 36.24 was obtained. This value was higher than the average score obtained. This indicates that the respondents were knowledgeable on effective pedagogical practices and their influence on academic achievement of learners.

The scores were narrowly distributed as indicated by the standard deviation of the scores of 7.518. The distribution of the scores was positively skewed and highly dispersed as indicated by a kurtosis value of 0.1097. This shows that the values were platykurtic but positive.

The Z value obtained was 7.786 at a significant level of 0.05. The value was positive but was beyond the critical value of ± 1.96 which indicates that the null hypothesis is rejected and the alternative accepted. The conclusion is that

there is a significant relationship between class room level factors and learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya.

This finding concurs with Scheerens (1999) who concluded that classroom-level factors could be considerable, but are not consistent in regards to the magnitude of the effects, subjects, or countries. School-level input-output factors may begin to show smaller effects, and classroom-level variables larger effects, as developing nations equip their schools with basic infrastructure, textbooks, and qualified human resources

The findings also concur with Teodorovic (2009) who found that classroom level variables exhibited significant association with learner academic achievement in industrialized countries while they associated considerably with student achievement, more so in better-off developing countries. Glewwe et al. (1995) also showed that in Jamaica the effects of classroom-level variables were more important than the effects of all school-level factors.

4.8 Student Based Factors and Learner Academic Achievement

4.8.1 Number of Books at Home and Learner Academic Achievement

The study sought to find out the number of books the students had at home for their own personal study which can be regarded as a reading resource. The results are indicated in Table 4.28.

Table 4.28: Number of Books at Home and Learner Academic Achievement

Response	Frequency	Percentage %
No books	43	12.4
1-5 books	189	54.3
5-10 books	67	19.3
10-15 books	24	6.9
More than 15 books	25	7.2
Total	348	100.00

The results indicate that majority of the students had 1-5 books at home. It is interesting to note that a whopping 12% of the students did not own any books at home and therefore could not do any private studies at home thus contributing to the low achievement. This can be attributed to the high poverty levels in the area as well as low parental education levels. This finding concurs with Smith and Barrett (2010), who found that possession of books at home, enhanced a pupil's score with those having none scoring the least in SACMEQ II tests.

4.8.2 Language Spoken at Home and Learner Academic Achievement

The study sought to find out from the students if they had an opportunity of speaking the language of instruction used in school at home. The students were therefore required to state which language they spoke at home. The results are shown in Table 4.29.

Table 4.29: Language Spoken at Home and Learner Academic

Achievement

Response	Frequency	Percentage %
Mother tongue	238	68.4
Kiswahili	76	21.8
English	8	2.3
Kiswahili& English	26	7.5
Total	348	100.00

The results indicate that majority of the students spoke mother tongue at home and therefore did not have an opportunity to speak the language of instruction at home. The researcher also noted that only two schools which also happened to be the best in the Zone insisted on their students to speak English in school. This could have contributed to the low performance as well as the poor language skills as noted by the study from the responses on the students' questionnaires. This finding concurs with EdQual (2010) and Smith and Barret (2010) who found that not having the opportunity to use the language of instruction outside school negatively impact a student's score. The transition the students must make from using the home language to using the language of instruction and the lack of learning resources and teacher support to bridge this important linguistic gap is a problem not often addressed by educators.

4.8.3 Pre-school Education and Learner Academic Achievement

The study sought to find out if the students had attended nursery school and for how long. The students who indicated that they had attended nursery school were 98.6% while 1.4 % had not attended nursery school. The response as to the number of years that they had attended nursery school is represented in Table 4.30.

Table 4.30: No. of Years of Pre-school and Learner Academic Achievement

Response	Frequency	Percentage %
Less than one year	2	0.6
One year	59	17.1
2 years	209	60.6
3 years	75	21.7
Total	345	100.00

The results indicate that majority of the students had attended nursery school for two years which was supposed to translate into better academic performance for this children. However, since majority of the students performed poorly, there could have been other factors contributing to low achievement other than pre-school such as poor attention to learners in lower primary.

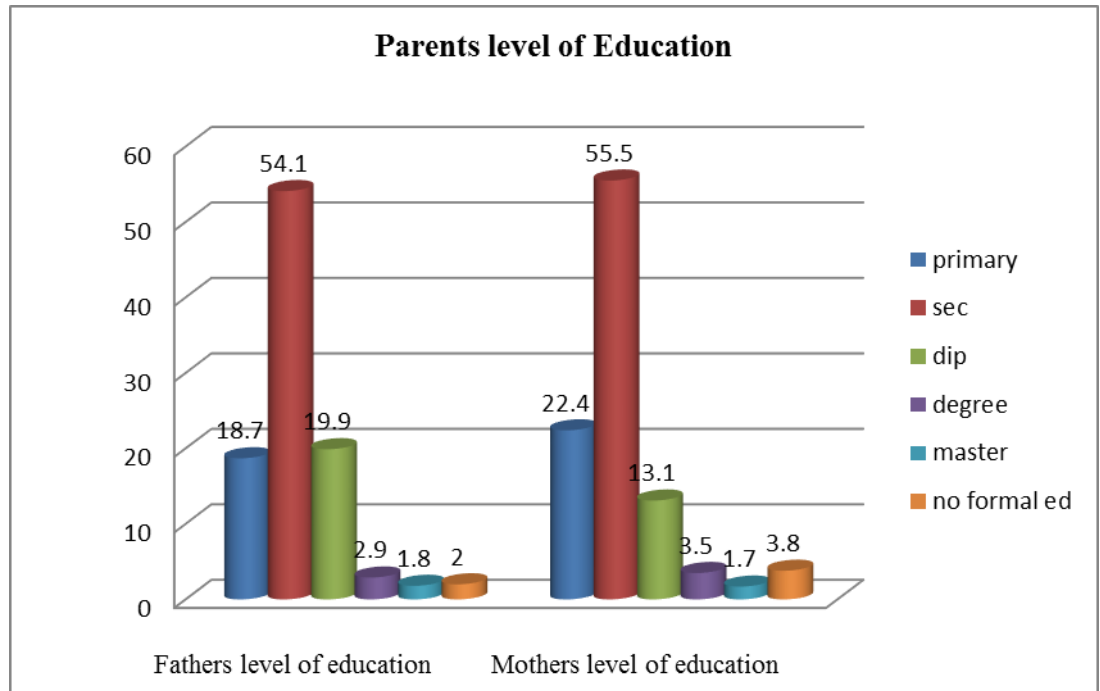
4.8.4 Help with homework and Learner Academic Achievement

Parent's attitudes have been related to performance since they can provide emotional support by showing an interest in school work (Smith and Barrett, 2010). The researcher wanted to find out the extent of parental involvement in their children's education as well as the extent of support by asking them to indicate whether they got help with their home work at home. The children who indicated getting help at home were 67.8% while 32.2% did not get any help at home with their homework. This can be explained by the fact that most parents had minimal levels of education. From the discussions with students and the teachers, it was clear that the best performing schools in the zone had parents who were highly involved in their children's education.

4.8.5 Parents Level of Education and Learner Academic Performance

Paternal and maternal degree of education has a large bearing on creating a positive home learning environment, and hence parent's education has been found to influence performance (Smith and Barrett, 2010). The students were asked to indicate the level of education of their parents and the findings were as represented in Figure 4.5.

Figure 4.5: Parents Level of Education and Learner Academic Achievement



The results indicate that majority of the parents had either a primary or secondary education. It is interesting to note that mothers were more represented at the secondary and degree level of education. A low level of education is a common phenomenon in the rural areas where there are no job opportunities and majority of the people are farmers or jobless. Children from such households can only do well if the schools are well resourced in terms of teachers and textbooks. The low level of education especially for the fathers could thus have been negatively affecting the performance of the learners since most uneducated parents are less involved and may not highly value their children's education. This finding concurs with Atherton (2009) who found that a father's education was more important in countries with a low GDP

especially in the rural areas with low levels of father's education being linked to poor performance and vice versa.

4.8.6 Students Absenteeism and Learner Academic Performance

The study sought to find out how many days the students had been absent within the term and the reason for their absence. The students who indicated that they had been absent were 48% with majority having been absent for 2 to 3 days. Out of those who reported being absent, 21 % indicated the reason for their absence as a result of being sent home for school fees and tuition money. Those who reported being sick were 69% while 10% reported they had been away for funerals. The high level of absenteeism could thus have been a major contributor to the poor academic performance of students in the Zone. This finding concurs with Smith and Barrett (2010) who found a negative effect of absenteeism on students' scores in SACMEQ II tests.

4.8.7 Students Repetition and Learner Academic Achievement

Repetition has major resource implications and causes internal inefficiency and should be able to be justified on economic or educational grounds (UNESCO, 2001).The study sought to find out the rate of repetition among the students. The students were asked to indicate the number of times they had repeated a grade since standard one. The percentage of students in standard eight who indicated having repeated a grade in their primary cycle was 34%. Out of those who indicated having repeated, 73% had repeated once while 27% had repeated two or three times. The reduction of the rates could be due to the

policy of automatic progression by the government. However the rates were still considerable and were driven mainly by poor performance so that learners could be able to get good marks for secondary school. Repetition of students in Karuri Zone could thus have been contributing to the poor performance. This effect of repetition on academic performance of students concurs with Smith and Barrett (2010) who found that those students who had repeated once, twice, three or more times in their school career were likely to score, on average, 15 to 18 points lower in their reading test than a pupil who had never repeated.

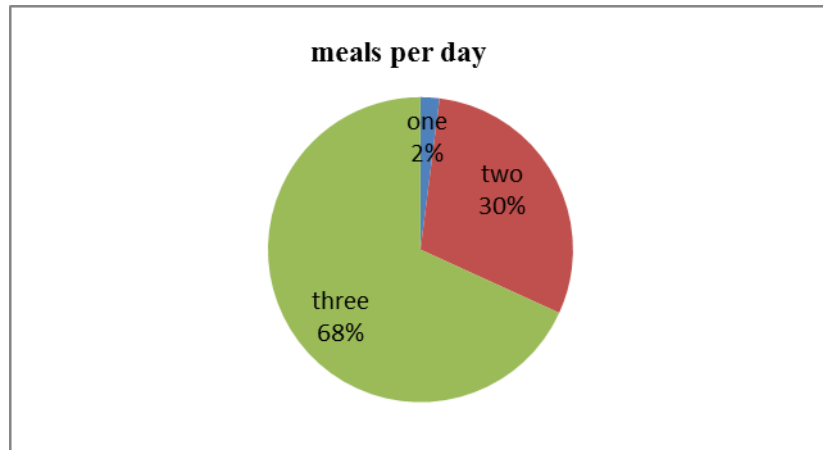
4.8.8 Students Motivation and Learner Academic Performance

The study sought to find out from the learners whether they got prizes for good performance from their schools. The percentage of students who indicated that they did not get prizes was 17.5 % while 82.5 % indicated the school rewarded the top performers in their schools. Motivating the top performers did not seem to have an incremental effect on the performance of the other students since the overall performance remains low.

4.8.9 Number of Meals and Learner Academic Performance

The study sought to find out if the students had adequate meals. The students were therefore asked how many meals they ate per day. The responses are indicated in Figure 4.6.

Figure 4.6: No of Meals per Day and Learner Academic Performance



The results indicate that majority of the students ate three meals per day. However a significant number of students had two or less meals per day. The headteacher also confirmed that quite a significant number of pupils did not carry lunch. The rules of the schools also prohibited students going home for lunch or their parents bringing them lunch. Some schools had introduced porridge and lunch programmes where students were required to pay only a small amount of money. However the head teachers indicated that very few students paid. This could have been due to poverty or ignorance among the parents. Those who carried packed lunch had to eat it cold and the weather which is mostly cold made the food unpalatable. This could have been affecting their performance in school. This finding concurs with EdQual (2010) in their study across sixteen countries in East and Southern Africa who found that eating fewer than two meals a day negatively affects one's score.

4.8.10 Extra tuition and Learner Academic Achievement

The researcher sought to find out whether the learners got extra tuition apart from the regular learning hours and where they went for the extra tuition. The percentage of students who indicated that they attended tuition was 96.3% while 3.7% of the students did not go for tuition. Out of those who attend tuition, 81.3% indicated they went for the extra tuition at school while 18.7% attended tuition in their homes. The students in all the schools indicated that they paid K.SH 200 per month for the same. Since the government banned holiday tuition, the schools had introduced tuition early in the morning and late in the evening after classes. Non- payment of tuition money was punishable either by caning or being sent home until the money was paid. Discussions with students revealed that teachers continued with syllabus coverage during tuition meaning that the students' didn't benefit much. Some students also indicated that no attention was paid to the weak learners who continued to lag behind as the bright students dominated the learning process. This finding concurs with Abagi (1997) who concluded that while coaching is certainly expensive, its effectiveness in promoting pupils' performance in national examinations is a subject of much debate.

4.8.11 Learner Attitudes and Academic Achievement

The study sought to find out the attitudes of the learners towards education. The researcher was able to determine from focus group discussions with the students that some of them had a negative or poor attitude towards education. This was manifested by the high rates of absenteeism, lateness and laziness in

most schools. Students seemed disinterested in learning. Some headteachers pointed to lack of role models especially for the boys in the villages where they come from. Poverty also contributes to a poor attitude since the students know they will not be able to proceed to secondary schools because of lack of school fees. This may therefore have contributed to the low achievement in the Zone. This finding concurs with Yu and Thomas (2007) who found that student's attitudes were positively associated with high academic achievement with the negative attitudes having a detrimental effect on performance.

The study also sought from the teachers some of the student based factors affecting learner achievement where they were required to indicate either strongly agree (SA), agree(A), undecided (UN), disagree (D) or strongly disagree with the statement. The results are presented in the Table 4.31.

Table 4.31: Student Based Factors Influencing Learner Academic Achievement

Statement	SA	A	UN	D	SD
Socio economic status of a student Influence achievement	47(42.7%)	43(39.1%)	4(3.6%)	9(8.2%)	5(4.5%)
Single parent family structure Influence learner achievement	30(27.8%)	53(49.1%)	5(4.6%)	17(15.7%)	3(2.8%)
Pre-school attendance influence Learner achievement	54(50%)	45(41.7%)	5(4.6%)	4(3.7%)	0 (0%)
A history of repetition lowers Learner achievement	26(24.1%)	42(38.9%)	14(13%)	18(16.7%)	8(7.4%)
Student absenteeism affects Learner achievement	65(60.2%)	34(31.5%)	5(4.6%)	3(2.8%)	1(0.9%)
Extra tuition improves learner Achievement	51(47.2%)	50(46.3%)	3(2.8%)	3(2.8%)	1(0.9%)
Distance of the learners home from School influence achievement	33(30.6%)	55(50.9%)	6(5.6%)	11(10.2%)	3(2.8%)
Students attitudes towards learning Influence achievement	63(58.3%)	38(35.2%)	4(3.7%)	3(0.9%)	0(0%)
Parents help with homework Improves learner achievement	46(42.6%)	46(42.65%)	10(9.3%)	3(2.8%)	3(2.8%)
Lateness to class impacts learner Achievement	43(39.8%)	56(51.9%)	2(1.9%)	6(5.6%)	1 (0.9%)

The results indicate that majority of the teachers strongly agreed that pre-school attendance, student absenteeism and student attitudes towards learning influenced learner academic achievement. This is an indication that some of the student level factors that may have been contributing to the low performance in Karuri Zone were poor attitudes towards learning and absenteeism. However pre-school attendance may not have been an important factor since majority of the students indicated they had attended pre-school. With regards to the effect

of socio economic status of students on performance, majority of the teachers (43%) agreed that it had an impact. The low socio economic status of students in the zone could have been affecting performance since they were unable to afford the basic necessities. This finding concurs with Smith and Barrett (2010) who found that low socio-economic status of a student affected performance in school. Teachers' response as to the effect of single parent family structure which is prevalent in the area on academic performance indicates that students could have indeed be affected in their studies. This may have been due to emotional and psychological effects of family breakups or the inability of one parent to cater for their needs well. The effect of repetition on performance of students does not elicit a strong response. Teachers may have been of the opinion that repetition improves performance which is contrary to the findings that repetition does indeed lower academic performance. Extra tuition according to the teachers affected learners' achievement which is also contrary to findings (Abagi, 1997). However, Glewwe et al. (2011) found that tuition targeted to the weak students positively impacts performance. Teachers also agreed that parental help with homework which is a proxy for parental involvement is important for student achievement. Distance and lateness to class elicited almost similar results with teachers agreeing that they did have an impact on achievement. However apart from two schools that were isolated, majority of the schools were near homes which meant that lateness could be easily curbed.

H03: There is no significant relationship between student level factors and learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya.

The hypothesis set out to determine whether there was a significant relationship between student-based factors and learner academic achievement. Based on the responses obtained from the teachers in Table 4.31 scores were allocated for each response in the likert scale with strongly agree being allocated 5 scores, agree 4 scores, undecided 1 score, disagree 3 scores and strongly disagree 1 score. The scores obtained from each response were used to calculate the mean score, standard deviation, skewness and kurtosis as shown in Table 4.32.

Table 4.32: Summary of the Mean, Standard deviation, Skewness and Kurtosis

Factor	N	Min Score	Max Score	Mean	Pop Mean	Std.dev	Skewness	Kurtosis	Z
Student level factors	108	19	50	41.4	32.71	2.763	14.844	12.286	32.881

A subscale mean of 41.45 was obtained from the scores which was higher than the mean of the scores obtained. This indicates that the respondents were aware of the relationship and could associate it with learner achievement levels. The dispersion of scores in the sample was narrowly spread as indicated by the standard deviation. The skewness was positive and highly skewed at 14.844 and a higher number of scores being below the mean. The shape of the curve

was leptokurtic as indicated by a kurtosis of 12.246. At a significant level of 0.05, the calculated Z value was +32.89 which was beyond ± 1.96 . The null hypothesis is thus rejected and the alternative accepted which is that there is a significant relationship between student level factors and learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya.

This finding concurs with integrated studies undertaken in developing countries which showed that student level factors were extremely important in determining learner academic achievement. The variance between students in these studies was found to be larger than between-classroom and between-school variances (Teodorovic, 2009).

4.9 Contextual factors and Learner Academic Achievement

H04: There is no significant relationship between contextual factors and learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya

This hypothesis set out to determine if there was a significant relationship between contextual factors (size, average socio economic status, location) on learner academic achievement. The discussions below indicate the treatment of the hypothesis.

4.9.1 Average Socio Economic status of a School and Learner Academic Achievement

Yu and Thomas (2007) found that the average of pupils' socio-economic status at school level had statistically significant and positive effects on pupils' academic achievements in reading comprehension and mathematics.

In most schools in Karuri Zone, the socioeconomic status of the students could be divided into three levels: those who were relatively well off, the poor, and the extremely poor. The poor and the extremely poor were a majority in most schools. Their performance was mostly poor as they were unable to afford the necessary school resources like exercise books, did not carry lunch and were mostly absent because of being sent home for school fees. The researcher obtained the socio economic status of students from interviews with the headteachers as well as observation and responses from the students as to the number of meals and the level of education of their parents. The researcher was able to observe students in torn uniforms, students not in full school uniform and those who had no lunch. The number of books at home was also an indication of their socio economic status as most indicated they had no books or had very few books at home. A one way ANOVA produced the results shown in the Table 4.33.

Table 4.33: ANOVA for Average Socio Economic Status of a School and Learner Academic Achievement

Mean score 1					
	Sum of Squares	df	Mean Square	F	Sig
Between groups	1.717	2	.858	1.486	.277
Within groups	5.200	9	.578		
Total	6.917	11			

Table 4.34: Descriptives for Average Socio Economic status of a School and Learner Academic Achievement

Mean score 1								
	N	Mean	Std.dev	Std.Error	95% confidence Interval for mean		Min	Max
					Lower Bound	Upper Bound		
Poor	5	1.60	.548	.245	.92	2.28	1	2
Very poor	3	1.00	.000	.000	1.00	1.00	1	1
Average	4	2.00	1.155	.577	.16	3.84	1	3
Total	12	1.58	.793	.229	1.08	2.09	1	3

The results indicate that $P=.277 > .05$ so the null hypothesis is not rejected. The results from Table 4.34 indicate that there was no significant difference in the KCPE mean scores of the three group of schools (poor, very poor, average) which are 1.60, 1.00 and 2.00 at 95% CI respectively. The conclusion is that there is no significant relationship between contextual factors (average socio economic status of the school) and learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya. These could be due

to the fact that the socio economic status of the students in Karuri Zone was fairly equal. There was no school that could be described as having a purely high socio economic status student population.

4.9.2 School size and learner academic performance.

There is little agreement over what constitutes the most effective school size and the impact it has on learner academic achievement. The schools in Karuri Zone, Kiambu County had a student population ranging from as low as 331 students to as high as 1000 students. The researcher was therefore interested to find whether there was any relationship between the size of a school and the learner academic achievement by using a one-way analysis of variance. The results are indicated in the Tables 4.35 and 4.36.

Table 4.35: Descriptive for Size of School and Learner Academic Achievement

Mean score1								
	N	Mean	Std.dev	Std.Error	95%confidence interval for mean		Min	Max
					Lower Bound	upper Bound		
300-400	2	1.50	.707	.500	-4.85	7.85	1	3
401-500	4	1.50	.577	.289	.58	2.42	1	3
501-600	2	2	1.414	1.000	-10.71	14.71	1	3
Above 800	4	1.50	1.00	.500	-0.9	3.09	1	3
Total	12	1.58	.793	.229	1.08	2.09	1	3

Table 4.36: ANOVA for Size of School and learner Academic Achievement

Mean square	Sum of square	df	Mean Square	F
Between groups	.417	3	.139	.913
Within groups	6.500	8	.812	
Total	6.917	11	.172	

The results indicate that $P = .918 > .05$ so the null hypothesis is not rejected. The conclusion is that there is no significant relationship between contextual factors (size of the school) and learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya. From Table 4.35, there was no significant difference in the KCPE mean scores of the four groups namely: 300-400, 401-500, 501- 600 and above 800 students. The mean scores are 1.50, 1.50, 2.00 and 1.50 at 95% CI respectively. This is consistent with Jones and Ezeife (2011) who found no statistically significant relationship between school size and learner academic performance in Ontario, Canada.

4.9.3 Location of School and learner academic performance

Pupils in urban areas tend to perform better than their counterparts in rural areas because urban areas have a higher percentage of high SES families (UNESCO, 2000). Since Karuri Zone is a rural region, the researcher allocated the schools into two categories namely: isolated and not isolated. Isolated schools were deemed to be those in tea plantations where the population was very low and learners had to travel long a long distance to reach the school.

The researcher used the independent samples T test to determine if location influenced performance. The mean scores of the schools in KCPE were used as the dependant variable and location as the grouping or independent variable. The results are shown in the Tables 4.37 and 4.38.

Table 4.37: Descriptives for school location and Learner Academic Achievement

Mean score 1				
Location	N	Mean	Std.Dev	Std.Error
Isolated	2	1	.000	.000
Not isolated	10	1.7	.823	.260

Table 4.38: Independent Samples Test for School Location and Learner Academic Achievement

	F	Sig	t	df	sig(2 tailed)	mean Difference	Std.Error Difference	95% Confidence Interval of the difference	
	Levenes Test for Equality of Variance							Lower	Upper
Mean Score1	6.806	.026							
Equal Variances Assumed			1.157	10	.274	-.700	.605	-2.048	.648
Equal variances not assumed			2.689	9.00	.025	-.700	.26	-1.289	-.111

To test whether there was a difference between the variances, the levene test was used. If the Levene Test is $<.05$, unequal variances are assumed. In this

case, .026 is less than .05 so equal variances are not assumed which means that the bottom test in Table 4.38 was used. The level of significance at this level is .025. Since the P value (sig. (2 tailed)) is <.05, the null hypothesis is rejected and the conclusion is that there is a significant relationship between contextual factors(location) and learner academic achievement in public primary schools in Karuri Zone, Kiambu county, Kenya. Table 4.37 shows that the KCPE mean scores of the two groups of schools namely: isolated and not isolated, is 1 and 1.7 respectively which is a small but significant difference. Schools that were located in isolated places performed poorly than schools that were easily accessible. This could be due to the fact that both teachers and students had to travel a significant distance to reach the schools and also had to leave early since the area was not safe.

This finding contradicts that of Smith and Barret (2010) that found that in Uganda, Kenya and Zambia, school location was not statistically significant. There was however significant differences in learner achievement between schools in rural areas and large cities according to Yu and Thomas (2007). However such differences attributable to location of schools dropped to a significant effect when school process variables were taken into account.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the findings of the study, conclusions and the recommendations arrived at. It also gives suggestions for further studies.

5.2 Summary of the Study

The purpose of the study was to investigate factors contributing to learner academic achievement in public primary schools in Karuri zone, Kiambu County, Kenya. The objectives of the study were: to evaluate the effect of school level factors on learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya; to assess the effect of class level factors on learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya; to analyse the effect of student based factors on learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya; to assess the effect of contextual factors on learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya. The study was based on the education production function theory as well as the integrated model of school effectiveness. The study adopted a descriptive survey design. Questionnaires for teachers and students, interview schedules for the head teachers, focus group discussions for the pupils as well as observation schedules were used to collect data on variables contributing to academic achievement. Test retest method was used to test the

reliability of the tools. The study had a target population of 7535, 195 teachers and 12 head teachers. Samples used in this study comprised of 12 head teachers, 367 students and 132 teachers. A total 108 teachers and 348 students returned the questionnaires and therefore the data was based on the 108 teachers and 348 students. Data analysis was based on the research questions designed at the beginning of the research. This was done by use of frequencies and percentages and data presented in form of tables, graphs and pie charts. Responses in the questionnaire were tabulated, coded, processed and analysed using Statistical Package for Social Science (SPSS) programme. The responses on open-ended questions and interview were reported by descriptive narrative. The raw data in the questionnaire was coded and scored appropriately. The means, standard deviations, skewness and kurtosis were computed for all scores and the z-test at 0.05 level of significance were used to test the relationship between factors contributing to learner academic achievement in public primary schools for hypothesis Ho1, Ho2 and Ho3. A one way analysis of variance (ANOVA) and the independent samples T test was used for Ho4. The following are the major findings of the study.

The first objective was to evaluate the effect of school level factors on learner academic achievement in Karuri Zone, Kiambu County, Kenya. The school level factors were grouped under the school resource inputs and the effective school factors. Under the school resource factors, the study established that all the schools had inadequate resources which could be hampering academic excellence in the zone. Majority of the schools had no libraries. The few libraries that were available were just small rooms with very few books and no

chairs or desks for the students. In one school that had a library, the students had to sit or lie on the floor. The text books were also inadequate with none of the students having their own textbook. In some schools, the ratio was 1:4 which was quite high. The student who had registered for the text book was the only one allowed to go with it at home for security and accountability reasons. This meant that the other students did not have access to the books thus compromising their ability to do their homework. The students were also not able to totally supplement the free exercise books supplied under the FPE programme. The desks were inadequate in all schools with most schools having three to four students being squeezed in a desk meant for two pupils. The study revealed that only one school had a feeding programme and only gave lunch to 4% of the students who were considered to be very poor. However 22.7% of the students indicated that they did not have anything to eat for lunch, which meant that majority of those who were deserving were left out of the feeding programme. The study also revealed that half of the toilets were dirty which may not have been conducive for the pupils especially girls.

Under the effective school factors the findings indicate that some factors could indeed be contributing to the low academic achievement. Both the teachers and the head teachers indicated a low parental involvement in the schools. Only one school in the zone conducted education clinics where the parents together with their children met with the teachers to discuss their progress. Only 28% of the teachers indicated that there was high quality management in their schools. Majority of the headteachers were also not leading from the top and were

mostly absent from the schools leaving the bulk of the work with the deputy headteacher who seemed to be overwhelmed. It was interesting to note that female headteachers were always present in the schools as opposed to their male counterparts. Achievement pressure on the teachers and headteachers was moderate as indicated by the teachers. Cooperation between the headteachers and teachers in the schools was also moderate as indicated by the majority of the teachers. The discipline levels were also moderate. Most schools had a poor academic culture with some students and teachers blaming poor performance on laziness, absenteeism and poor attitudes among the students. Progressive record keeping for individual students was also poor which could be attributed to the manual processes since most schools did not have computers.

The second objective was to assess the effect of class level factors on learner academic achievement in public primary schools in Karuri Zone, Kiambu County. Class level factors were subdivided into class room resources and effective pedagogy. Class room resources comprised of teachers characteristics such as gender, education level, experience, in-service training and motivation. According to the study findings, teachers had the required qualification as indicated by their level of education. The teachers were also highly experienced with majority having an experience of 20 years and above. The paradox is that there seemed to be minimum teacher quality effect since most teachers were highly experienced and also possessed the required training but student achievement remained low. There seemed to be other factors which may have been working against a positive relationship between teacher quality

and student achievement. Majority of the teachers were aged between 46-65 years which could be affecting their productivity. Most of these teachers also taught the lower primary classes and could be contributing to the poor foundation of their students. Majority of the teachers were female and this could have contributed to the poor performance of the boy child because of lack of role models both in the society and at the school level. The level of motivation among the teachers was very low with majority indicating a low level satisfaction with their salaries. The slow rate of promotion and upgrading of teachers was also another cause of low motivation among the teachers.

Under effective pedagogy, the findings indicate that the methodologies used by the teachers were highly skewed and some of them were not learner centred. The teachers also used the least time to prepare for the classes. This could have been due to the high number of lessons with majority of the teachers teaching above 35 lessons per week. Absenteeism among the teachers was present as indicated by the majority of the students. Students also indicated that the teachers also came late to class thus wasting precious learning time. The findings indicate that teachers gave homework frequently but some of them did not mark or check the homework. Majority of the students also indicated that they did not cover the syllabus in time. Teacher pupil interactions according to the study was poor in most schools. Students in some schools reported being beaten severely and abused by some teachers. They also reported bias in class where the teachers favoured the bright students. Majority of the teachers did not enjoy teaching all the subjects equally which meant that they were not

equally knowledgeable in all the subjects which could have been affecting their output.

The third objective was to analyse the effect of student based factors on learner academic achievement in public primary schools in Karuri Zone, Kiambu County. The study found that some of the student based factors such as low socio economic status as indicated by the number of meals per day and parental level of education could be contributing to poor academic performance. The students also had difficulties speaking the language of instruction which is English because they did not practice it at home or at school. The students lacked adequate books at home for their own personal study with 12% of the students indicating they did not own a single book at home. Since the schools also lacked sufficient books, this could have been a major hindrance to their performance. Absenteeism among the students was also high. The major reasons given by the students for absenteeism was being sent home for school fees and sickness. The repetition rate stood at 34% which could have contributed to poor performance since over age students tend to perform poorly. The study also found that most poor performers had a negative and poor attitude towards education and were lazy. Extra tuition was conducted in all schools early in the morning and late in the evening and was mandatory for all the students. However the study found from discussions with the students that only a few of the bright students benefited. There was no personal attention paid to the poor performers and so they were not able to catch up with what the teacher was teaching. Although the study revealed that almost all

students had attended pre-school, there was a variation in the number of years attended ranging from 1 to 3 years.

5.3 Conclusions of the Study

Pure resource policies that adopt the existing structure of school operations are unlikely to lead to the necessary improvements in learning. The efficacy of input based policies depends decisively on the effective use of resources - rather than simply on their availability. Improving outcomes will thus require a focus on institutions and efficient spending which will necessitate factoring in all the levels i.e. school, class, student and contextual levels which form the basis of integrated school effectiveness research. When the resources are adequate in all schools, the focus needs to shift from basic school and teacher characteristics to changing the incentives in schools.

Based on the study findings, the study came up with the following conclusions:

School level factors which comprise of school resources and effective school factors have an impact on learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya. School resources that are inadequate include textbooks, exercise books, desks, school feeding programs and libraries. The classes are adequate but small in size which result in overcrowding. Effective school factors such as low parental involvement, poor leadership, lack of accountability and low achievement pressure on the headteachers and teachers also have an impact on learner achievement.

Class level factors subdivided into classroom resources and effective pedagogy also have an impact on learner achievement. Poor motivation of teachers by the administration as well as the slow rate of promotion and upgrading by the ministry, high number of elderly teachers, absenteeism and lateness among the teachers, failure to cover the syllabus in time, poor teaching methods, negative attitudes and inadequate attention to poor performers negatively affects the performance of students in Karuri Zone, Kiambu County.

Student based factors such as poverty, poor attitudes, absenteeism, lack of support at home and language weakness influence learner achievement in public primary schools in Karuri Zone, Kiambu County.

Contextual factors such as location of school influence academic achievement of learners in Karuri Zone, with isolated schools performing poorly than schools that are easily accessible.

5.4 Recommendations of the Study

In light of the above findings, the researcher recommends that:

School resource inputs

1. The text book student ratio to be improved to 1:1 ratio. This will ensure every student has his /her own text book for purposes of doing his homework and studying at home.
2. Every school to put up a library well equipped with both text books and story books which the students can be allowed to borrow. Every class should have a library lesson where they are able to access the library and read so as to

improve their language skills. Borrowing of books is also necessary since most learners do not have books at home.

3. Adequate desks to be provided to avoid squeezing so that every child will be able to write comfortably.

4. School feeding programmes to be introduced in every school and targeted for the poorest students. The county government together with other well-wishers such as religious bodies, businessmen, politicians should come together to ensure that these learners are able to get lunch in school. The learners can also be provided with a midmorning snack since some come to school without having taken breakfast at home.

5. As a long term project, the Ministry of Education should look into expanding the existing classes which can hold a bigger number of pupils comfortably.

Effective school factors

6. Since the level of achievement pressure is low in most public schools, the head teachers need to be made accountable for the performance of their schools. Demotion of the headteachers in schools which show no improvement over a period of three years should be carried out.

7. Academic clinics to be conducted in all schools on a termly basis. This is where parents accompany their children to school and meet their teachers to discuss their performance, issues that may be affecting them and forge a way forward. Parents should be trained on the importance of being involved in their

children's studies. The teachers must ensure that parents sign homework books as a way of ensuring they keep up with their children's work at school.

8. National, local and school leaders need to communicate clearly and in unison to parents about the costs they are expected to meet, even when primary education is free. This is to ensure that that parents work hard to meet the needs of their children in school and not have the common idea that their children belong to the government. Parents should be taught that playing their role is crucial to their children's success.

9. Achievement targets to be set for every teacher in every class for each subject depending on the academic level of the students. Teachers should be made solely responsible to ensure that majority of the students reach the target. This is to avoid laziness and non-teaching among the teachers and identify the non performing teachers early enough to avoid detrimental effect on the students later on. Continuous assessment of the teachers by the head teachers is necessary so as to find out which teachers are having difficulties teaching particular subjects.

10. Ranking of schools at the county and zonal level to be introduced. This is because these schools are operating on a level playing ground. The county government should also step in by rewarding the best performing students, teachers and schools so as to increase the level of competition which will definitely enhance performance. The ministry should also consider introducing a motivation kitty in the FPE grant to help motivate those teachers that are able to achieve the set targets in their respective schools. Grants and scholarships

for secondary school from the county governments can also help to increase the motivation of the learners.

11. Schools to be equipped with computers for the teachers to be able to keep progressive records for individual students at each level. This will ensure that any decline in performance can be noted as the student's progress and corrective action taken early enough. This will also enable the teachers to determine which students are to attend the special lessons.

Classroom resources

12. The employer of teachers (TSC) need to look into prompt promotion of teachers especially the P1 teachers as well as prompt upgrading of teachers. Teachers go for further studies to simply improve their salaries as it is the only sure way of getting a promotion. Some of the subjects the teachers learn in the B.ED program are not taught in primary schools meaning that the teachers who choose to remain in primary school do not apply their acquired skills. Majority of teachers who are unable to afford the costs of higher education are stuck and have to simply watch as their colleagues get pay hikes as a result of their newly acquired degrees. This causes them to be highly demoralised. Majority of the head teachers interviewed agreed that the P1 teachers are equally and sometimes better teachers than the degree holders at the primary level. However their pay remains poor as teacher pay scales in Kenya reward higher levels of education.

13. Teachers employer (TSC) must take the necessary steps to ensure that the employment process is more rigorous. This will ensure that only the best teachers are employed thus improving quality at no extra cost. Academic credentials and number of years since graduation should cease to be the only requirements for employment.

14. Absenteeism among the teachers to be curtailed by incentive and control measures.

15. The government should consider reviewing the retirement age of teachers downwards to 60 years since productivity decreases as one gets older which could be negatively affecting the performance of students.

16. Teachers should be balanced in terms of gender in the various schools. This is to ensure that the boy child has role models to emulate in school which could go a long way in enhancing their performance and retention in school.

Effective pedagogy

17. Every school to put up a special class with a special teacher to handle non-readers and those having difficulty understanding the language of instruction at every level. The ministry of education should look into hiring pedagogical support staff to help weak learners catch up with their peers which would not only enhance achievement but also reduce the repetition rates. Assessment of learners at every level should be carried out to determine those with learning difficulties. The use of teaching techniques geared to moving the whole class through a rigid, content-based national curriculum at the same pace contributes

to low achievement since some students miss content due to lack of fluency in the language of instruction. Lack of fluency in the language of instruction is as a result of predominant use of mother tongue.

18. Teachers to be trained on better teaching methods or pedagogical skills to ensure that they apply learner centred methods in class and are able to handle large classes comfortably. Pre- service training should effectively focus on practical skills needed in class. Team teaching among the teachers should be enhanced with those teachers that are most conversant with certain topics helping others out. Group teaching where the students teach their fellow students on topics they did not understand should also be introduced as students learn better from their peers. Teachers should also be trained on the most appropriate discipline methods to avoid cases of excessive caning of students. Their attitudes in class and the nonverbal cues they send to those students who are not as bright should also be dealt with. Cases of teachers using abusive language against the students should be reduced by having a mail box where the students can report their complaints.

19. The lower primary classes are the most important since this is when the foundation is laid. A good foundation will ensure success in the successive grades. The practice of taking the weakest and oldest teachers to lower primary classes should be stopped. The ministry should instead ensure that the young, most talented, vibrant and energetic teachers who are specially trained to handle the young learners handle the lower primary classes in every school.

20. Speaking the languages of instruction to be enhanced with the lower primary teachers inculcating that habit early enough so that the students get used to it. It's much harder to force the older students to speak a language that they are not used to.

21. Official teaching time to be utilized properly by reducing time wastage. Teachers come to class late and are often absent leading to loss of precious learning hours. Parents are then forced to pay for extra coaching time making education very expensive for the poor.

Student based factors

22. Absenteeism among the students to be curtailed with tough measures put in place by individual schools. Parents should accompany learners who are absent to explain the reasons. The schools should stop sending learners home for tuition or activity fees and any other levies. The schools should deal with the non-payment of fees with the parents in their termly meetings.

23. Tuition outside of regular learning hours where the learners are forced to pay should be banned. Extra coaching should only be for the poor performers so that they can catch up with the rest. The justification for extra tuition is based on the premise that the primary school curriculum is wide. However, poor utilization of official teaching time results to non-coverage of the curriculum thus necessitating the need for extra tuition.

24. Students need to be counselled so as to understand the importance of education and improve their attitudes towards learning. The schools can track

former successful students as well as role models in the society and invite them to motivate the learners. Teachers should also take up the role of guiding and counselling the learners. The male teachers should see themselves as role models for the boy child and vice versa.

25. Health checks and medical treatment such as deworming to be carried out so as to improve the health of the children which can reduce the high reported rates of absenteeism due to sickness among the students.

Contextual factors

26. Since the size of the school does not affect the performance of the students, the ministry should take the necessary steps to stop the mushrooming of small sized schools which result in a lot of wasted resources. Proper mapping is necessary to justify the setting up of new schools. Merging of small schools located closely together can also be a viable option where resources are scarce.

27. Since some schools are located in isolated places, the Ministry of Education can invest in transport for the teachers as well as for the students who have to walk long distances to arrive in school. The ministry should also look into transforming these schools to be boarding schools in the long term.

5.5 Suggestions for Further Research

The following are the suggestions for further research:

1) A study utilizing hierarchical linear modelling should be carried out to ascertain the effect of school, class and student level factors as well as contextual factors on academic achievement. Under this method all the

variables are tested simultaneously to appropriately assess the relative net importance of each variable and schooling level on student achievement.

2) The study can be carried out in private and public schools simultaneously for comparison purposes.

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APPENDICES

APPENDIX 1

LETTER OF INTRODUCTION TO THE RESPONDENTS

University of Nairobi

P.O Box 30197

NAIROBI

15th July 2015

To the Headteacher,

.....Primary School

Dear Sir/Madam,

RE: REQUEST FOR CONSENT TO COLLECT DATA FROM YOUR SCHOOL

I am a postgraduate student pursuing a Master of Education degree in Educational Administration and Planning. I am currently researching on *factors contributing to learner academic achievement in public primary schools in Karuri Zone, Kiambu County, Kenya*

Your school has been selected to participate in this study. I would like to request for permission to collect data from your school. I would like to assure you that your identity will be treated with utmost confidentiality and your responses will be strictly for the purpose of this study.

Yours faithfully,

Nyambura R. Elizabeth

APPENDIX 11

QUESTIONNAIRE FOR TEACHERS

The purpose of this questionnaire is to collect data on factors contributing to learner academic achievement in public primary schools in Karuri Zone, Kiambu County. Kindly answer the questions to the best of your knowledge. Please tick [√] or provide brief explanations in the spaces provided.

SECTION A

1. What is your gender? Male Female
2. What is your age group? 20-25 25-35 35-40
40-45 45-60
3. What is your level of academic education? PI Diploma
B.Ed M.Ed Others.....
4. How long have you been teaching? Below five years 5 to 10 years
10 to 15 years 15 to 20 years above 20 years

SECTION B

5. How many in-service courses have you attended during your teaching career apart from your initial teaching course?
- b) How did the in service course help you?
.....
6. How many lessons do you teach in a week?
7. Which subjects do you teach?.....
8. Kindly arrange the subjects in the order of how much you enjoy teaching them from the best to the worst.....
9. What teaching methods do you apply most in class.....?
10. How often do you give homework to your students?

Once per week Two to three times per week every day

11. How often do you give tests to your students? Two/three times per term

Two/three times per month once or more per week

12 .How long do you take to prepare for a class.....?

13. a) How would you describe the academic abilities of your students?

Very poor Poor average above average excellent

b. Kindly give reasons for the above answer

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

14. What in your opinion needs to be done to increase learner achievement in your school?

.....
.....

15. What is the average number of students per class in your school? Below 20

20 to 30 30 to 40 40 to 50 50 and above

16. How often do inspectors visit your school?

Once per year never once per term

17. What major roles do the inspectors play in your school?

.....

18. How would you describe the pressure to achieve better results from the head teacher and the parents? Low moderate high

19. How frequently do you hold staff meetings and departmental meetings in your school per term?

Staff meetings..... Departmental meetings.....

20a). Are teachers motivated by the administration when students perform well in your school? Yes No

b) Please give reason for the above answers.....

21. Please indicate your level of satisfaction with the following in your school

		High	Moderate	Low
1.	Availability of teaching learning resources			
2.	Quality of school buildings			
3.	Salary			
4	Motivation of the teachers by the administration			
5.	Parental involvement in school			
6.	Quality of school management			
7.	Cooperation between the head teacher and the teachers			
8.	Discipline of students			
9.	Work load of the teachers			
10.	Regular attendance of learners to school			
11	Attitudes of the learners towards learning			
12.	Academic performance of your school			

SECTION C

22. Listed in the table below are some factors contributing to learner achievement. Please give the most appropriate answer by ticking in the spaces provided.

Key: SA-Strongly Agree A-Agree UN- Undecided D-Disagree
 SD-Strongly Disagree

STATEMENT		SA	A	UN	D	SD
Contextual Factors						
1.	Social composition of students in a school influence learner achievement. e.g. poverty levels among the students					
2.	The location of a school influence learner achievement e.g. urban, rural ,town					
3.	The size of a school influence learner achievement					

	e.g. large schools (800+) perform poorly while small schools perform well					
SCHOOL LEVEL FACTORS						
SCHOOL RESOURCES		SA	A	UN	D	SD
1.	Pupil teacher ratio affects learner achievement i.e large/small no of students per teacher					
2.	text book pupil ratio influence learner achievement					
3.	Stationery supplies like exercise books, rulers and pens influence learner achievement					
4.	Quality of school buildings influence learner achievement					
5.	Presence of a school library influence learner achievement					
6.	School feeding programme influence learner achievement					
7.	Access to water and electricity in a school influence learner achievement					
8.	Toilet pupil ratio affects learner achievement					
9.	Separate toilets for the different gender influence learner achievement					
10.	Quality of classroom equipment e.g desks, chairs, blackboard influence learner achievement					
11.	Application of information technology influence learner achievement e.g computers					
12.4	Amount of subsidy per student from the government influence achievement					
EFFECTIVE SCHOOL FACTORS		SA	A	UN	D	SD
1.	Quality of school management influence learner achievement					
2.	Pressure to achieve higher results from parents and teachers influence learner achievement					
3.	Active participation by parents in school activities influence learner achievement					
4.	Regular inspection by the ministry influence learner achievement					
5.	Support from the community influence learner achievement					
6.	An orderly school climate influences learner achievement					
7.	A safe disciplined school environment influences learner achievement					
8.	The head teachers academic qualification influence learner achievement					
9.	Frequent staff meetings have an effect on learner achievement					
10.	Class observation by the headteacher influence learner achievement					
11.	Cooperation between the teachers and the head teacher influence learner achievement					

STUDENT LEVEL FACTORS		SA	A	UN	D	SD
1.	Socioeconomic status of a student influence achievement(poor, rich)					
2.	Single parent family structure influence learner achievement					
3.	Pre-school attendance influence learner achievement					
4.	A history of repetition lowers learner achievement					
5.	Student absenteeism affects learner achievement					
6.	Extra tuition improves learner achievement					
7.	Distance of the learners home from school influence achievement					
8.	Students attitudes towards learning influence learner achievement					
9.	Parents help with homework improves learner achievement					
10.	Lateness to class impacts learner achievement					
CLASSROOM LEVEL FACTORS						
CLASSROOM RESOURCES		SA	A	UN	D	SD
1.	Teachers academic level has an impact on learner achievement					
2.	Teachers experience has an impact on learner achievement					
3.	Teachers gender impacts learner achievement					
4.	In-service teacher training influences learner achievement					
5.	Teachers job satisfaction impacts learner achievement					
6.	Teachers workload impacts on learner achievement					
7.	Teacher absenteeism lowers learner achievement					
8.	Teacher lateness to class lowers learner achievement					
9.	Motivation of teachers by the administration impacts learner achievement					
EFFECTIVE PEDAGOGY		SA	A	UN	D	SD
1.	Poor subject mastery by the teachers leads to lower learner achievement					
2.	Time spent preparing for a class has an impact on learner achievement					
3.	Amount of actual instructional time per lesson impacts learner achievement					
4.	Frequency of homework has an impact to learner achievement					
5.	Correcting of pupils homework positively improves achievement					
6.	Frequency of pupil tests influences learner achievement					
7.	Better teaching strategies improves learner achievement					

8.	Better class room management by teachers improves learner achievement					
9.	Teachers level of expectation from their students influence their level of achievement					
10.	Teachers attitudes in class have an impact on learner achievement					

APPENDIX III

QUESTIONNAIRE FOR STUDENTS

The purpose of this questionnaire is to collect data on factors contributing to learner's academic achievement in public primary schools in Karuri Zone, Kiambu County. Please tick (√) or provide brief explanations in the spaces provided

SECTION A

1. What is your gender? Female Male

2. What is your age.....?

3. What level of education did your parents attain?

Father: Primary Level Secondary Level Diploma

Bachelor's Degree Master's Degree No formal education

Mother: Primary Level secondary level diploma

Bachelor's degree master's degree no formal education

4. Please describe your family structure

Mother alone father alone mother and father

Orphan

5. How many books do you have at home for your own personal study?

No books 1-5 books 5-10 books

10-15 books more than 15 books

6. Which language do you speak at home? Mother tongue Kiswahili
 English Kiswahili and English
6. How many meals do you take per day? One Two three
7. Did you attend nursery school? Yes NO
8. IF Yes, for how long? Less than one year One year
 Two years Three years
9. Do you get help with your homework at home? Yes No
10. How many days were you been absent last term.....?
11. Please explain the reason for your absence.....
12. Please indicate the number of times you have repeated a grade since standard one?.....
13. Do you get extra tuition apart from the regular learning hours?.....
14. If yes, where do you go for the extra tuition? At school At home

SECTION B

School level factors

15. How many are you in your class?.....
- 16 a) Do you have your own text book for all subjects? Yes No
- b) If NO, how many pupils share one text book?.....

16. Please indicate how many of these resources you have.

Exercise books.....

Mathematical set.....

Pen.....

Pencil.....

17. How do you get your lunch?

I carry Packed lunch the school provides lunch I stay hungry

I go home for lunch my parents bring me lunch

18. Is there pressure to achieve higher marks from your teachers? NO YES

19. Do you get prizes for good performance from your school? No Yes

20. What in your opinion can be done by your school and teachers to increase your performance in school?.....
.....

Class level factors

21. How often do you receive homework? Once per week

Two/ three times per week every day

22. How often does your teacher check your homework and do corrections with you?

The teacher never checks my homework

The teacher always checks my home work

The teacher sometimes checks my homework

23. Do your teachers come late to class? Yes No

24. How often are your teachers absent?

My teachers are sometimes absent my teachers are absent many times

My teachers are never absent

25. Describe your relationship with your teachers.

I like all my teachers I like some of my teachers I fear my teachers

26. How does the teacher discipline you when you do something wrong?

I am beaten I am sent home I am sent out of class I am punished

27. a). Which of your teachers do you like the most to teach you?

Male teachers' female teachers'

b). give reasons for your answer.....

28.a)Are you able to cover all the topics for the previous class before going to the next class? Yes No

b. give reasons for your answer

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

APPENDIX IV

Focus Group Discussion Guide for Pupils

1) How do the following teacher characteristics influence your achievement in class?

- 1) Teachers age
- 2) Teachers gender
- 3) Teacher absenteeism
- 4) Teacher lateness

2) How do the following classroom practices by the teacher influence your achievement in class?

- 1) Frequency of homework
- 2) Correcting of homework by the teacher
- 3) Frequency of tests
- 4) Discipline by the teacher
- 5) Teacher/pupil interaction in class
- 6) High expectations by the teacher

3) How do the following student characteristics impact on student achievement in your class?

- 1) Socio economic status of the student
- 2) Single parent family structure
- 3) Pre-school attendance
- 4) Student absenteeism
- 5) Extra tuition

- 6) Attitudes of the student towards learning
- 7) lateness/absenteeism to class
- 4) How do the following school resources influence your achievement?
 - 1) The number of pupils in a class
 - 2) The number of pupils sharing one textbook
 - 3) Quality of classrooms and toilets
 - 4) School library
 - 5) School feeding programme
- 5) How do the following influence the achievement of your school?
 - 1) Your head teacher's leadership
 - 2) Pressure to achieve higher results from your parents and head teacher
 - 3) Discipline
 - 4) Rules and regulations in your school
 - 5) Active participation of your parents in school
 - 6) Class observation by the head teacher

APPENDIX V

HEADTEACHERS INTERVIEW SCHEDULE

- 1a) How can you describe the social composition of your school
- b) Do you feel that the social composition of your school influences its performance, and in what ways?
- 2.) How adequate are the various school resources such as classes, teachers, textbooks, exercise books, desks, chalks, water, electricity, toilets and other resources in your school?
 - b) Please explain how the adequacy/inadequacy of these resources affects learner achievement in your school?
 - c) Which resources, if made available in your school would improve learner achievement?
 - d) Does your school have a feeding programme? If not, do you think the programme would impact learner achievement if introduced?
- 3) How adequate is the governments subsidy and how do you cope with the shortfall?
4. a). Please describe in brief the following aspects of your school climate
 - 1) Disciplinary climate 2) Teacher pupil interactions
 - 3) How committed and motivated the school teachers are.

b). what is your perception of student and teacher related factors affecting the school climate.

5. Which school policies do you have in place with regards to promoting outcomes?

6. Describe the contribution of the various stakeholders in improving learner outcomes

7. Which teacher characteristics affect learner achievement in your school?

8. Which learner characteristics influence achievement in your school?

9. What are the greatest hindrance/greatest cause of success/failure in your school?

APPENDIX VI

OBSERVATION SCHEDULE

OBSERVATION		RATING				
SCHOOL RESOURCES						
1	School library	Not available	v.poor	poor	good	Excellent
2	Classroom condition/repair status	Not adequate	v.poor	poor	good	Excellent
3	Computer availability& adequacy	Not available	Not adequate	adequate		
4	Toilets condition& adequacy	Not adequate	v.poor	poor	good	Excellent
5	radio availability& adequacy	Not available	Not adequate	Adequate		
6	Piped water availability& adequacy	Not available	Not adequate	Adequate		
7	Electricity availability& adequacy	Not available	Not adequate	Adequate		
8	Telephone availability& adequacy	Not available	Not adequate	Adequate		
9	Desks	Not adequate	Adequate			
10	Cupboards	Not available	Not adequate	Adequate		
11	Teacher table	Not available	Not adequate	Adequate		


APPENDIX VII

RESEARCH PERMIT


THIS IS TO CERTIFY THAT:
MS. REDEMPA ELIZABETH NYAMBURA
of NAIROBI UNIVERSITY, 0-200
kiambu, has been permitted to conduct
research in Kiambu County

on the topic: FACTORS CONTRIBUTING
TO LEARNER ACADEMIC ACHIEVEMENT IN
KARURI ZONE, KIAMBU COUNTY KENYA

for the period ending:
6th November, 2015



Applicant's
Signature


Permit No : NACOSTI/P/15/3346/6110
Date Of Issue : 23rd June, 2015
Fee Received : Ksh 1,000


Director General
National Commission for Science,
Technology & Innovation

CONDITIONS

- 1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.**
- 2. Government Officers will not be interviewed without prior appointment.**
- 3. No questionnaire will be used unless it has been approved.**
- 4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.**
- 5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.**
- 6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.**


REPUBLIC OF KENYA


NACOSTI
National Commission for Science,
Technology and Innovation

RESEARCH CLEARANCE
PERMIT

Serial No. A 5492

CONDITIONS: see back page

APPENDIX VIII

AUTHORIZATION LETTER FROM THE NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No.

Date: **23rd June, 2015**

NACOSTI/P/15/3346/6110

Redempta Elizabeth Nyambura
University of Nairobi
P.O Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "*Factors contributing to learner academic achievement in Karuri Zone, Kiambu County Kenya*," I am pleased to inform you that you have been authorized to undertake research in **Kiambu County** for a period ending **6th November, 2015**.

You are advised to report to **the County Commissioner and the County Director of Education, Kiambu County** 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.


SAID HUSSEIN
FOR: DIRECTOR-GENERAL/CEO

Copy to

The County Commissioner
Kiambu County.

The County Director of Education
Kiambu County.

National Commission for Science, Technology and Innovation is ISO 9001:2008 Certified