INFLUENCE OF TEACHER INPUT ON PUPILS' ACADEMIC ACHIEVEMENT IN PUBLIC PRIMARY SCHO0LS IN KAKAMEGA MUNICIPALITY KENYA

BY

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ABSTRACT

Teachers play a key role in pupils' academic achievement in any education system. Academic achievement is measured by pupils' performance in KCPE. Nationally, in 2012 out of 839,759 who sat for KCPE 467,353 scored below 250 marks. In Kakamega Municipality from 2007 – 2012, the KCPE results have indicated a downward trend, with a declining mark of 3.4786. The literature reviewed suggests that teacher related inputs are the main determinant factors in academic achievement of learners. However, most research work have used teacher variables together with other school variables to get their influence on academic achievement of learners. This study sought to establish if teacher input have influence on academic performance of pupils. The purpose of the study was therefore to establish the influence of teacher input on academic achievement of pupils in primary schools in Kakamega Municipality. The objectives of the study were to: determine the influence of teacher qualification on academic achievement; determine the influene of teacher experience on academic achievement; establish the influence of teachers' workload on academic achievement; establish the influence of teacher pupil ratio on academic achievement and the influence of teacher attitude on academic achievement of pupils in public primary schools in Kakamega Municipality. The study was based on Education Production Function by Psachouroupolos and Woodhall (1985) theory. It helped in determining how teacher input influenced the pupils' performance in KCPE. The study employed descriptive survey research, ex-post facto and correlational research designs. The study population consisted of 403 teachers and 25 headteachers from 25 primary schools. Purposive sampling technique was used to select 197 teachers who presented pupils for examination in 2010-2012. Saturated sampling technique was used to select 23 head teachers from schools which were not part of the pilot study and the Area Education Officer. Questionnaires and interview schedule were used to collect data from teachers and A.E.O. Face and content validity of the instruments were ascertained by experts in the Department of Educational Management and Foundations, Maseno University. Reliability of the instruments was established by a pilot study in 2 schools which were not part of study sample. Pearson r was computed and gave coefficients of 0.75 and 0.80 for teachers and headteachers at a p value of 0.05 respectively. Qualitative data was transcribed, categorized into themes and sub themes as they emerged, coded and analyzed. Quantitative data from questionnaires were tallied using descriptive statistics in the form of means, percentages and frequency counts and inferential statistics in form of pearson's r and regression.The study established that all independent variables had a significant regression co-efficient with a linear model that fits the data. The correlation between the dependent variable and independent variable (R) was 0.753. R Square was 0.5672 meaning that the independent variable explained 56.72%, unexplained factors contributed to 43.28%. In conclusion, academic achievement was influenced by teacher inputs. The study recommended that cost effective interventions to address the quality of teaching such as employing more teachers, balanced staffing of teachers, evaluating programs for teacher incentives should be addressed by stakeholders. The findings of this study provide information that is significant to stakeholders on influence of teacher input on academic achievement of pupils and unearth some root causes of low performance in KCPE.

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Education has long been regarded by neo-colonial economists as an agent of economic growth and development. The concept that investment in education promotes economic growth dates back to the times of Adam Smith and early classical economists who emphasized that developing countries need to invest more in education and to ensure that systems of education are efficiently managed; that little funds allocated to the sector have maximum impact and recovery measures are adopted (Republic of Kenya, 1996, 1997); (UNESCO, 1996); (World Bank, 1988) and (Abagi, (1997). As a result, both national and international communities have placed greater emphasis on the provision and quality of primary education. The commitment to achieve Education for All by 2015 during Dakar Conference in 2000 and Jomtein in 1990 is a milestone, (UNESCO, 1996). However, there is need to establish if there is quality and sufficient manpower required for improved pupils' academic achievement. In view of that, the 2005 Education for All (EFA) report, (UNESCO, 2006), made a statement that captures the importance of teachers in attaining the EFA goals that:

> What goes on in the classroom and the impact of the teacher and teaching has been identified in numerous studies as a crucial variable for improving quality. Furthermore, the way teachers are taught has been a neglected face in assessing the effectiveness of teachers and education more generally.

An emphasis was further made by Educational International (EI), through a report by Global Monitoring Report (GMR) that the most determinant of educational quality is the teacher. Teachers therefore need both pre-service and in- service training and continuous professional development and support to help them build their capacity as teachers, UNESCO, (2009). The report aptly noted that the government has to train

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and recruit, teachers on a vast scale to achieve the EFA goals. It was estimated that the world will need 18 million additional primary school teachers, while in Asia; the estimate was 8 million by 2015. This has been the most pressing need in Sub Saharan Africa where estimated 3.8 million additional teachers must be recruited and trained by 2015 (UNESCO, 2009). In Kenya, a study by Uwezo, (2010), revealed that there was teacher shortage of 66,000 However, the report never correlated its findings to establish if teacher input has any relationship with academic performance of pupils. From that knowledge this study sought to establish whether teacher pupil ratio has an influence on academic achievement of pupils.

The Global Monitoring Report (GMR) also acknowledges the fact that delivery of good quality education is contingent of what happens in the classroom and teachers are in the frontline of service. Educational International also agrees and strongly argues that the most determinant of educational quality is the teacher (UNESCO, 2009). Therefore an improved educational quality requires an improvement of teacher quality. Hanusheck (2000) and Wolf (1994) found that teachers' level of schooling, mastery of subject matter and expectation of students' performance are associated with increasing academic achievement. However, these studies were done in developed countries where the education system differs from the scenario in which the current study has been done. It was from this observation that a study to establish if teacher qualification has any relationship with pupils' academic achievement in public schools was required.

Furthermore, a survey by South Africa Consortim for Monitoring Education Quality (SACMEQ) in connection to UNESCO (2006) asserted that learning quality in Kenya's public primary schools had steadily dropped since introduction of FPE as

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compared to other countries like Botswana, Tanzania, South Africa and Swaziland that had increased between 2000-2010. The point in question is why there is unsteady and a declining trend in national examinations in some regions, why some schools are dropping as their counterparts are not. Basically, it requires an analysis of variables that could be causing this drop. It was therefore important to establish if teacher variables like workload and Pupil Teacher Ratio (PTR) could be associated with the observed drop, since the assumption has been that there is high pupil/teacher ratio (PTR) hence increased workload due to the influx of pupils in schools after the introduction of FPE, creating a massive enrolment in schools (MOE, 2005).

The existing literature indicates that previous attempts to achieve Universal Primary Education (UPE) in Sub Saharan Africa faced problems in its supply driven policies, unclear mechanism and reduced quality of education. Nishimura, M., Yamamo, T.S and Sasaoka, Y(2007) observed that the current UPE policy lacks analytical studies on its impact and challenges beyond school enrolment. They argue that a decline of internal efficiency has already become evident in most developing countries under the system of abolition of fee, including Kenya. However, it is evident that, when Uganda established the FPE in 1997, the country increased the training and recruitment of teachers while in Tanzania, the case is quite instructive because the government had to construct additional new classrooms to cater for the new enrollment (Sifuna, 2007). Nevertheless, Kenya's FPE program that eliminated school fee in all 15,000 public primary schools nationwide at the start of 2003 school year has been applauded as being successful in widening participation and in offering a chance of a better future to millions of children. A study by Oketch (2010) on teacher quality, noted that there was success of Free Primary Education (FPE), nonetheless it came with concerns over

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deteriorating quality of learning in schools which has been associated with a rise in interest in anything private in terms of education all over the country.

Free Primary Education program led to an increase in the enrolment of students from 5.9 million in 2002 to 8.3 million students in 2010, incorporating an additional 2.3 million Kenyans into the school system. The number of candidates who took exit examination, KCPE, increased from 587,961 in 2003 to 746,080 in 2010 an increase of 45.76%. The increase in Pupil Teacher Ratio (PTR) has put huge strains on the quality of education. While the program was successful in achieving access, academic results show that the program had adverse effects on the KCPE performance in public schools due to steady rise in enrolment (MOEST, 2008). Furthermore, Uwezo Survey (2010), found that Western Province had a pupil/teacher ratio of 70: 1. It was therefore important to establish if increasing pupil/teacher ratio could be associated with academic achievement of pupils in rimary schools.

It has been noted through research that the influx of students as a result of FPE, created a massive teacher shortage. While the number of students increased, there is evidence that the staffing levels has not quite kept up with the increased enrolment. The government of Kenya has reported a teacher shortage of 66,000 teachers, an average of 4 teachers per school (Uwezo survey, 2010). As a result, teachers are overwhelmed and overworked with classes which were manageable at 35 or 40, expanding to a pupil /teacher ratio of over 70:1 learners. MOE (2005) reported that, the then Western Province had the third highest PTR of 52.6% after Coast and North Eastern provinces. The large and heterogeneous classes possibly driven by the influx of poorly prepared first generation learners has slightly led to a decline in tests scores in some regions. Due to escalated enrolment, teachers conduct classes in a lecture

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format, which does not hold the attention of the young primary students and less homework is assigned due to the heavy enrolment in classes. Pupil/teacher ratio (PTR) and the recruitment of teachers are key elements in quality education but quality teacher initial training and in-service training and motivation are crucial (Abagi, 1997). Quality education is determined by good academic outcome in any education system. It therefore requires a study to establish the influence of teacher/ pupil ratio on academic achievement of pupils.

This could be consistent with the low level of academic performance found in Uwezo Survey (2010), which suggested that the quality learning has been compromised in primary schools. Due to the deteriorating quality of education in public schools, students from richer households increasingly enroll in private schools. This stratification becomes all more important given the continued, perceived dominance of private schools in KCPE (MOE 2010).

Abagi (1997) noted that the quality of teachers must be improved to meet the demands of quality education. He also observed that education is a mass production and labour intensive enterprise, as the number of students increase so does the need for more teachers arise. Effective teaching has become a pre requisite in attaining quality education. Bogonko (1992) attributes poor performance in schools to under staffing problems in various subjects in both public and private schools. His argument was that, teachers impart knowledge more efficiently and good facilities cannot produce good academic results without instructions from the teachers. In a study done by Olel, (2000), it was observed that good facilities require trained instructors to make good use of them. Teachers facilitate the learning process, so their quality and retention in schools is key to the effectiveness of education. The study correlated

educational resources and their unit cost to establish their optimal utilization. The study never correlated teacher resource in terms of teacher qualification, although she noted that good facilities require trained instructors.This is the knowledge gap this study intended to fill by investigating the quality of teacher as an educational resource in terms of their qualifications in relation to academic achievement of learners. Quality teaching is as a result of teacher qualification which enables them to have good mastery of the content and delivery methods among other classroom practices.

According to a report from Global Monitoring (GMR), many countries face a crisis of teacher morale that is mostly related to poor salaries, working conditions and limited opportunities for professional development. The SACMEQ survey (2010), also revealed that high levels of initial parental support and incentive provision prior to the introduction of FPE are associated with persistently higher KCPE scores between 2001 and 2005. More importantly, the survey noted that schools in communities that provided bonus payment to teachers do persistently better than communities that did not engage in the activity.

The survey further reveals that there is more association between class size and examination performance. The correlation was not strong enough to explain the variation in academic achievement (Hungi & Thuku, 2010). The increasing deterioration of public school academic quality could be as a result of increased teacher workload, teacher experience, qualification, high PTR and teacher attitude. However this requires an empirical analysis to prove the significant relationship.

In Kenya, the quality of input in the educational system is measured by the academic achievement in a standardized examination. According to Jagero (2013), success in educational institution is measured by the performance of learners in an external

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examination. The examination is used to measure the level of candidates' achievement. For policy makers, it is used to evaluate the curriculum improvement. For teachers, students and pupils, it is used for promotion to the next level of learning. For policy makers, it is used to evaluate teachers' level of curriculum implementation. Academic achievement in primary schools is defined by KCPE scores. Academic performance within the education system is affected by several factors such as school factors, socio-economic background of the learner, learning environment and physical facilities. However, the contribution of teacher characteristics towards performance has been singled out as an outstanding factor on learners' academic achievement.

In Kenya, KCPE is used to select form one students to various cadres of secondary schools on the premise that their performance in KCPE will affect their performance in KCSE. As a result, a candidate who scores below 300 marks is unlikely to get any of the very competitive schools of high academic expectation such as national or county schools. A scrutiny of KCPE results revealed that, nationally 50% of the pupils failed the examinations. Statistics from KNEC show that in 2013 KCPE results of 839,759 candidates, 467,353 pupils scored less than 250 marks.(KNEC 2010)

In the first Kenya Certificate of Primary Examination (KCPE) examination sat by the first batch that took advantage of free learning program, in Kakamega Municipality, Western Province, more schools scored between 250- 300 ,which was an average academic academic performance.(Refer to table 1.1 on page 8).

Table 1:1: Indicative Performance Gaps in Primary Schools in Kakamega Municipality between 2006 – 2010.

|				Mean Scores			
Years	N	Below 200	200-250	250-300	300-350	350-400	Above 400
2006	24	1 (4.2%)	7(29.2%)	13(54 %)	3(12%)	0 (0%)	0(0%)
2007	24	2 (8.3%)	9 (41.7%)	12(50%)	1(4.2%)	0(0%)	0(0%)
2008	25	2(8%)	9 (36.%)	12(48%)	2(8%)	0(0%)	0(0%)
2009	25	1(4%)	9 (36%)	12(48%)	3(12%)	0 (0%)	0 (0%)
2010	25	3(12%)	10(40%)	11(44%)	2(8%)	0 (0%)	0 (0%)

Key: N= Number of school

Source: District Quality and Assurance Office, Kakamega Central District, 2011

From Table 1.1 it is evident that in Kakamega Municipality, about 50% of the schools scored between 250- 300. These marks are considered low since a candidate who scores below 300 marks may not be able to get chance in some of the very competitive schools during form one selection. Though there have been increased efforts to improve education quality through the provision of school instruction materials through FPE, a number of schools still scored below average marks.

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Consequently, the trend in performance in KCPE for the primary schools from the year 2007 to the year 2012 was also analyzed and clearly revealed a decline in performance. In the year 2007, they scored a mean score of 272.86, in 2008, the mean score was 271.92, in 2009, the mean score was 270.31, in 2010, the mean score was 264.24, in 2010, the mean score was 250.25 and in the year 2012 the mean score was 254.25. Between the years 2007 to 2012 the KCPE performance in Kakamega Municipality had a decline in scores.

KCPE Mean Score Trend in Kakamega Munipality 2007-2012

$y = -3.478x + 278.4$
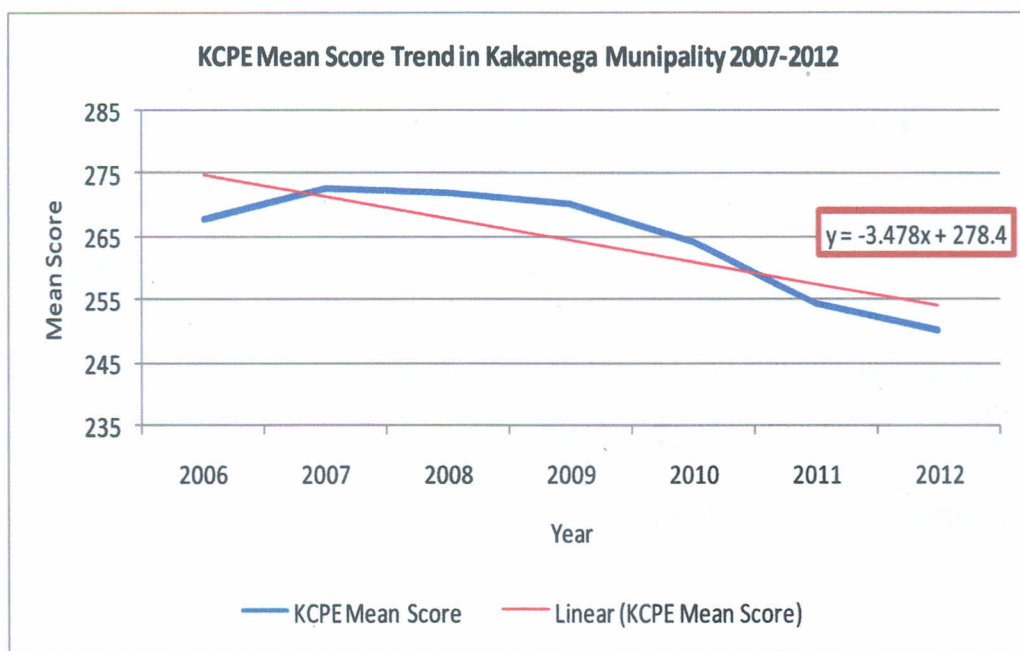
The downward trend in performance was not evident in other major municipalities in Kenya as shown on Table 1.2. These municipalities were selected to represent different regions in Kenya.

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Table 1.2: KCPE Performance Trend in some Municipality Schools in Kenya from 2009 -2013

Munipality	2009	2010	2011	2012	2013
Kisumu	274	276	278	278	280
Kitale	277	267	272	272	272
Eldoret	258	264	268	268	266
Kakamega	**271**	**270**	**264**	**254**	**250**
Nyeri	269	266	269	271	269

Source: KNEC- KCPE Results from 2009- 2013

Arising from this background, the current research focused on the influence of teacher input on academic achievement of pupils in Kakamega Municipality Primary Schools, since teachers form the most important factor in effective delivery and determining the outcome in any education system.

1.2 Statement of the Problem

Kenya National Examination Council while releasing KCPE results in 2013, revealed that 50% of the candidates failed examinations. Statistics from KNEC showed that, of the 839, 759 candidates 467,353 pupils scored less than 250 marks, raising questions from stakeholders over the low performance. From the background knowledge of the importance of teachers' quality, teacher shortage, which has resulted into teachers being overworked, indication of high PTR due to enrollment prompted this study to

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establish if the above mentioned inherent attributes influence academic achievement of pupils.

Over the past five years, an analysis of KCPE results revealed that there has been a downward trend in KCPE in Kakamega Municipality. Data from DQASO, Kakamega Central District shows that between 2009 and 2013, primary schools in Municipality have consistently dropped by negative -3.478. A pointer to the gravity of this problem is discernible from the fact that other municipalities representing different regions in the country have an upward trend in KCPE results as shown on Table 1.1 on page 10. The declining trend in KCPE performance persists despite the fact that schools in the municipality have adequate learning resource materials and other physical infrastructures like water, electricity and adequate classrooms. The reason for this performance cannot be easily discerned without empirical study. While there are issues of administration and access that are worthy of discussion, effective teacher input in terms of the percentage of qualified teachers and their experience, classroom management which is influenced by teacher work load, pupil/teacher ratio (PTR) and the attitude of teachers in relation to performance was analyzed to establish their influence on performance of learners.

1.3 Purpose of the Study

The purpose of the study was to establish the influence of teacher input on learners' academic achievement in primary schools. It aimed at investigating how teacher input in terms of the workload, Pupil /teacher tatio, teacher qualification, experience and attitude could either hinder or enhance performance.

The specific objectives of the study were to:

i) Determine the extent to which teacher qualification influences pupil academic achievement in primary schools in Kakamega Municipality.

ii) Determine the extent to which teacher experience influences achievement of pupils in primary schools in Kakamega Municipality.

iii) Establish the impact of teachers' workload on academic achievement of pupils in primary schools in Kakamega Municipality.

iv) Establish the effect of teacher to pupil ratio on academic achievement of pupils in primary schools in Kakamega Municipality.

v) Determine the extent to which the attitude of teachers influences academic achievement of pupils in primary schools in Kakamega Municipality.

1.4 Hypotheses of the Study

The study was guided by the following hypothesis

i) Ho_1: There is no significant relationship between teacher qualification and academic achievement of pupils in Kakamega Municipality public primary Schools.

ii) Ho_2: There is no significant relationship between teacher experience and academic achievement of pupils in Kakamega Municipality public primary Schools.

iii) Ho_3: There is no significant relationship between workload and academic achievement of pupils in Kakamega Municipality public primary Schools.

vi) Ho_4: There is no significant relationship between pupil teacher ratio and academic achievement in pupils in Kakamega Municipality public primary schools.

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v)   Ho5: There is no significant relationship between teacher attitude and academic achievement of pupils in Kakamega Municipality public primary Schools.

1.5 Significance of the Study

i) The study will provide information that is significant to stakeholders on effects of teacher input on academic achievement and implement recommendation aimed at improving the quality in the provision of education.

ii) It will unearth some of the root causes of low performance in KCPE.

1.6 Assumption of the Study

i) All institutions in a given context are able to transform educational input into academic output at the same rate. If this is not the case, then inefficiencies are present in the educational process.

ii) The sampled schools are of the same grade to increase reliability and reduce bias.

iii) The learning resource materials and other physical infrastructure are adequate in most of the schools.

1.7 Theoretical Framework

The study was based on the Education Production Function Theory. The original study that prompted the interest in the idea of education production was that of Coleman (1966). Hanusheck, Murnane introduced the structure of production to refer to students learning outcome. Pscharoupolos and Woodhall (1985) also described mapping out of from quantities of inputs to qualities of outputs as generated by a production process (Psacharoupolos & Woodhall, 1985). In education, input-output relationship in Economic Theory of Education is sometimes called Education

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Production Function. An educational institution can maximize its outcome, in this case, academic achievement in KCPE given its production function, for example production process of the desirable outcome hence is the function of teachers' qualification, workload, experience and PTR.

Education therefore is a production function using human and physical resources in the production of an educated person. Due to the fact that the resources can be used alternately, the economic concept of production theory can be applied to education operation and planning. Education Production Theory assumes that differences in quality of school inputs are responsible for differences in educational outcomes. Inputs are considered to be teachers' qualification; experience, workload, attitude and Pupill Teacher Ratio, where as the output is the learner academic achievement in KCPE.

Since internal efficiency of education concerns the relationships between the inputs and outputs of education, the production functions can be used to measure the internal efficiency of education system. The quality system is measured by examination of given standards.

Education Production Theory in this case would be illustrated by the following model:

A $\quad = F (E, Q, P, W, T,)$ Where;

A $\quad -$ Academic Achievement

F $\quad -$ Function

E $\quad -$ Teacher Experience

Q $\quad -$ Teacher qualifications

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P   - Pupil /Teacher Ratio

W   - Teacher Workload

T   - Teacher attitude

In this study, an educational institution can maximize its outcome in this case KCPE academic achievement in KCPE given its production function. For example, production process of the desirable outcome will be the function of teachers' qualification, workload, experience, and teacher attitude.

1.8 Scope of the Study

The study was limited to collecting data provided by the questionnaires and interview schedule. However secondary data from school records and extensive field notes was used to minimize any inaccuracy in the information given. The study was confined to Kakamega Municipality because it has the highest number of teachers in the district yet the academic achievement was not as good as other municipalities. Students achievement was only limited to their performance in KCPE. Not all the school resources were included in the study except teachers and their allocation of duties, since teachers form the basis of all the activities carried out in the school system, other inputs such as learning materials, socio-economic background and infrastructures were considered as constant.

1.9 Definition of terms

Academic achievement: Performance or success in a standardized national examination in this case KCPE from 2011 to 2012 and efficient management of educational resources.

Average class size: The average number of pupils per class. It is obtained by dividing the total number of pupils in the school and the total number of classrooms in the school

Education quality: An education system with high level of achievement

Efficiency: The ratio of input and output measured in the production frequency of tests, home assignments academic achievement in KCPE.

Output: The learners' achievement in a standardized examination

Pupil/ Teacher ratio: The total number of pupils per school divided by the total number of teachers in that school.

Teacher Input These are teacher related technical coefficients such as teacher qualification, experience, workload, pupil/teacher ratio and teacher attitude that are used to measure the output (KCPE).

Teacher professional

qualification: Highest level of professional training achievement such as Diploma in Education, BED, Approved Teacher Status (ATS) P1, MED.

Teacher quality: Qualified teachers with experience in the teaching profession.

Teacher Workload: The number of lesson taught by every teacher in a week,

Pupil: Learners in primary school classes taught by the teachers.

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Teacher Attitude: A tendency of teachers to react in a particular way that

Would have effect on their work performance, often

negatively or positively.

Teacher experience   The length of time a teacher has been in teaching

profession in terms of the number of years.

2.1 Introduction

The related literature reviewed in this section includes studies by different researchers on educational resources in schools, ideas expressed by re-known authors in books, electronics journals and periodicals on how teachers' input like qualification, experience, class size/ teachers' workload and teachers' attitude towards performance influence learners academic achievement. Academic achievement in a test score defines the internal efficiency of an educational system. Education economist define internal efficiency as comprising amount of learning achieved during school age attendance, compared to the resources provided, the percentage of entering students, who successfully complete the course is often used as a measure of efficiency (Wolf, 1994). Efficiency in relation to education is aimed at achieving a desired level of output at a minimum cost.

2.2 Teacher Professional Qualification on Pupils' Academic Achievement.

Despite conventional wisdom that inputs make little difference in students' learning, a growing body of research suggests that schools can make a difference and substantial portion of that difference is attributable to teachers.

Studies of teachers' effectiveness at classroom level using the Tennessee Value Added Assessment System (TVAAS) and similar database in Dallas Texas have revealed that differential teacher quality is a strong determinant of differences in students learning. A Study by Sanders et al (1996) further revealed that students who are assigned to several ineffective teachers in a row have significantly lower achievement and gains as compared to several highly effective teachers in sequence

(Sanders and Rivers, 1996). Heinemann and Loxley (1983) in his study indicate that teachers' education and certification have a positive association with students score on academic achievement tests.

According to the World Bank (1981), internal efficiency is an aspect of education that could be influenced by qualifications of the teacher and the teaching style. The belief that investment in teacher training will improve the quality of schooling by increasing the level of pupil achievement led the World Bank to emphasize on teacher training facilities in lending for education projects. Due to the emphasis put on trained teachers and their contribution to internal efficiency on educational system, this study opted to investigate if teacher professional qualification could be an influence on academic achievement of pupils in public and private primary schools in Kakamega Municipality.

Haddad, (1978), in a study of thirty two developing countries found evidence that teacher qualification are important and concluded that contrary to the arguments presented elsewhere, trained teachers do make a difference. Comber and Keeves (1973) did an analytical research and suggested that if the level of teacher trained in Chile and India were increased, the average test scores of students would improve. They concluded that investment in teacher training programme would help improve the quality of output in terms of students' cognitive scores. Psacharoupoulos *et al* (1985) asserted that the quality of education have to do with the way inputs are transformed into output which in economic parlance called the production function. Hanusheck (2000) also performed one of the most significant studies on teacher qualification. He surveyed 113 studies on impact of teachers' qualification on their students' academic achievement. 85% of the studies found a positive correlation

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between the educational performance of the students and the teacher educational background since the way learners are transformed into desirable outputs depends on the teacher quality and the teaching processes.

The student's interest to learn, motivation, their academic excellence and psychological status greatly influence the quality of education (Coombs, 1985). Out of the many factors which affect quality of output, teacher input has been singed out by many researches and report a determinant factor in academic achievement in any education system. At this juncture, it is worthy to note that a number of factors like socio economic,family influence, physical facilities and environmental/ location of an institution, have been ascribed to poor academic performance of pupils, whatever the factors are; the ultimate quality of education is determined by the teacher as he transmits the value of education to pupils more efficiently . Aghenta (1998) in his study on challenges of teacher recruitment and retention in Nigeria emphasized that whatever the teacher does and how he/she does it are important in the determination of quality education and hence improves the academic achievement of learners.

The recent studies have highlighted the importance of other inputs particularly in situation where pupils lack resources. Anderson (1991) underscored the fact that quality of education provided to learners in an institution highly depends on the quality of instruction that the teachers provide. According to Wolf (1994), teachers' level of schooling, professional status which leads to teacher mastery of subject matter, teacher attitude and expectation of student's performance are associated most with increasing achievement. This in essence implies that, the teacher professional qualification is quite an important input to academic outcome of pupils.

Similarly, the Kenya government recognized that a relevantly qualified and highly motivated teaching force is a pre requisite for the promotion of high achievement among students (Republic of Kenya, 1998). Earlier, Republic of Kenya (1964) an educational commission also identified a major objective of education development through skilled man power. Furthermore, Kinyanjui (1974) pointed out in his study that the caliber of teachers in any school system forms an important input variable, which can have an input on school outcome. The teacher is required to carry an extra responsibility of the school hence he has to provide what the home background does not offer. The three key issues of teacher effectiveness which are identified in the World Bank Policy Paper; include knowledge of the subject matter, pedagogical skills and teacher motivation of which salary is only one part (World Bank ,1990).

Traditionally, educational planners and researchers have believed that professionally trained teachers are more efficient and effective than untrained ones (Republic of Kenya, 2005). That explains why the government is spending a higher percentage of over 40 percent in its financial year educational expenditure in teacher education (Republic of Kenya, 2005). However, if these trained teachers are more effective and efficient and primary schools have well trained teachers, one would definitely question why the same teachers in these schools are producing dismal academic results. The current study therefore sought to establish if a teachers training level could positively or negatively influence the academic achievement of pupils in primary schools.

Atwoli (2011) argued that, if public schools were well equipped and staffed with well trained teachers, and teachers were highly motivated by commensurate pay and

good working environment, their pupils would not lag behind those in private schools.

Education Theory and Philosophy also suggest that, teachers who are skilled in active child-centered methods of teaching produce better learning results especially when it comes to the capacity of student to apply knowledge as opposed to just memorizing facts and names of concepts (Abadzi, 2000). However, not many rigorous studies have been carried out in developing countries to confirm the positive effects of methods of teaching. Qualified teachers are expected to employ better teaching methodology and produce better academic results. Abadzi (2000), noted that child-centered methods of teaching produce better academic results, however, he never specifically studied teacher qualification as a variable that could generate those better methods of teaching.The present study opted to study if a trained teacher has an influence on academic achievement of pupils in primary schools.

A variety of research also shows that text books and learning materials have highest incidence of impact for improving primary school outcomes in many developing countries. However, the Glewwe, Kremmer and Moulin (2007), randomized study in Kenya proved some caveats. They found out that learning materials must be appropriately designed, not to be hard for typically rural primary school pupils and teachers must be trained in conjunction with the learning materials. In another study, Glewwe *et al* (2007) in an evaluation of text books and test scores in Kenya found that text books increase scores for only students with high academic achievement but many children are left behind without proper instruction from teachers. Most of the literature and a closer investigation also reveal that good performance does not just happen; it is as a result of good teaching and overall effective headship. Teachers

therefore constitute the core of the education system and their importance in student performance has to be established by this study. It is also assumed that learners in this era of Free Primary Education have sufficient learning materials. This study by Glewwe et al (2007) ,had textbooks as independent variables and test scores as dependent variables, the study found that many pupils are left behind with a emphasis on textbooks as the only input in learning. The study did not include teacher qualification which also has effect on academic achievement of learners in primary schools a gap this study intend to fill.

A study by Eshiwani (1988), found significance on the role of teacher qualification in determining academic performance of pupils in Kajiado District. The study used KCPE mock results as a dependent variable and school inputs as independent variables. This study found a significant correlation between school inputs and KCPE mock results. The dependent variable KCPE mock scores used in the study was not a standardized test and the setting and the marking could be manipulated. Therefore, the present study used KCPE examination results as a standardized test to establish the impact of teacher qualification on pupils' academic achievement in primary schools.

In Kenya, studies by Ahawo (2010); Sifuna (1998); Miyawa (2013); Ongele (2007) and Ojwang' (2002), on effect of teacher qualification on academic achievement have mainly been limited to secondary schools and tertiary institutions and particularly in science based teaching subjects. While these studies cite teacher qualification as an important influence on academic performance in secondary schools, they could not be relied upon to explain its influence in the context of primary schools. Aghenta (1998) studied the challenges of teacher recruitment and retention on academic achievement,

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while the present study will establish the influence of teacher qualification. These are knowledge gaps this study attempted to fill by establishing the influence of teacher qualification on academic achievement of pupils in primary schools.

2.3 Teacher Years of Teaching Experience on Pupils' Academic Achievement.

Most Research work suggests that experience can act as a teacher and sharpener for better understanding of a subject (Richet, 1994). Studies by Psacharoupolos and Wood hall (1985), Hastings and Croll (1996); Thias and Carnoy (1972), suggested that teacher experience is more important in primary and lower secondary education as opposed to higher levels.

How long a teachers' performance continue to improve is a point of contention among many researchers. Rice (2003); Rivers and Sanders (2002); Hanusheck et al (2005); Glotfelter (2007); (2006), in their research show that teachers become more skilled with experience, however that experience matters most during first few years of a teachers career. Gordon et al (2006) found large gains in teacher effectiveness between the first and the second year of teaching, much smaller gains between second and third year and no substantial improvement after the third year in the classroom. Similarly, a study done way back by Murnane (1981), also found that teacher effectiveness improves rapidly over the first three years of teaching and reaches its highest point between the third and fifth year but found no substantial improvement after the fifth year in classroom. While Haron, (1977) study in Malaysia noted that the length of a teachers' experience was associated with performance, but only amongst highly qualified staff. This argument is similar to Fergusson and Ladd (1996) whose studies found no experience effects for elementary teachers. However, Globe and Porter (1977), concludes that prolonged practice of a profession does not, of itself

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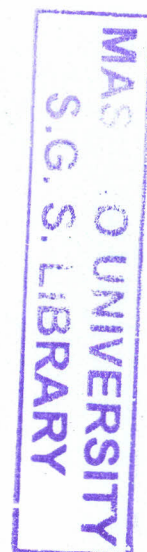
guarantee any improvement of competence. According to Caillods (1989), teachers with more teaching experience tend to develop stronger instructional and class room management skills. They reduce the amount of time spent on administrative matters in the classroom, are quick in helping learners grasp the content and develop a tempo of teaching which fosters more time on learners tasks. A common hypothesis with respect to the relationship between teachers' experience and students' achievement is that, teachers' students taught by more experienced teachers achieve higher academic results because their teachers have mastered the content and acquired classroom skills and different types of classroom problems (Gibbons et al, 1997). Since these studies had a lot of contentions, moreover they were done way back and mostly in developed countries,

Research done in Kenya by Agwanda (2002), Ahawo (2010) revealed that there was relationship between teaching experience and effective teaching of mathematics, that the lower the number of experienced teachers in a school, the lower the level of pupils performance, and vice versa. Given these previous findings, this study attempted to establish the relationship between teaching experience and learners' achievement since most of these studies were based on subject areas and they were also done in secondary schools. Basing on different sentiments that had contentions such as studies by Rice (2003), Glotfelter (2007), Gordon (2006), Ahawo (2010), whose studies found a relationship between teacher experience pupils academic performance and Fergusson & Ladd (1996), Murnane (1981), whose studies found no effect on learners learning in classroom and teacher experience at a certain point. This study therefore attempted to establish the situation in Kakamega Municipality if teacher experience has an influence on academic achievement of learners in primary schools .

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2.4 Teacher workload on Pupils' Academic Achievement.

The teachers' workload can be measured in terms of the number of lessons taught by every teacher or the teacher contact hours in a week or the class size in terms of the actual and recommended workload. In Kenya, public schools have lower workload than in other African countries. For instance, the Mozambique case is 25 lessons and 2.5 hours per week. A study by Siniscalo on comparison of Kenya with Asia and European countries showed that the actual and recommended teaching load of Kenyan teachers is lower (Siniscalo, 2002). The lower workload contradicts the teacher shortage experienced in some schools due to structural imbalance in the demand and supply of school teachers. World Bank (2005) Suggested that existing teachers could be utilized more efficiently by having teachers teach multiple subjects and sharing teachers across schools. The Ministry of Education stipulates that average teacher pupil contact hours per week be 28 hours comprising 48 periods each of 35 minutes long for standards 4-8 and 20 hours comprising 40 periods each 35 minutes long for standard 1-3 (Abagi, 1997). When teaching contact hours are met, it indicates how efficiently the curriculum is being implemented and also implies how cost effective teachers' salaries are.

Orodho (2002) asserts that there is a developing trend for secondary school students to have extra lessons in subjects outside the official school hours. It is not known whether this trend which is also commonly practised in primary schools can have a positive influence on academic achievement of learners unless a study is done.

According to Abagi (1997), most of public primary schools in rural areas and urban slums also lose teaching time during the first week of school opening, while in private and urban schools opening day is a normal teaching day. He also observed that, in most public schools the 1st week is wasted on various activities such as staff

meetings, developing Time-table, clearing and cleaning the compound by pupils, absenteeism by teachers and pupils. In most private schools, teachers usually remain behind or open one week earlier than pupils to prepare for the new term. By the time schools open, all the necessary arrangements including Time table and Duty roster are in place and teaching starts immediately.

Table 2.1: Time Wasted by Category of Schools in Hours in Kenyan Primary Schools.

Type of school	Time wasted per week	Time wasted per term	Time wasted per year
Rural public	2.4	33.6	100.8
Urban public	1.1	15.4	46.2
Private	0.35	4.9	14.7

Source: Primary Survey (Abagi 1997)

Abagi (1997), in his study took samples from public (rural and urban) and primary schools in 21 districts in Kenya to examine if teacher pupil contact hours have effect on learners performance. According to his study, time wasted by public urban schools is very minimal, there is also an assumption that time wasted is compensated by the extra teaching hours in primary schools, however, he narrowed the variable to teacher contact time and analyzed to find time wasted by different schools while the present study investigated the workload of teacher in terms number of lessons and extra lessons taught per week and correlated it with academic achievement. The present study sought to analyze that study. The study by Siniscalo (2000), that Kenya teachers have lower workload, was a contradiction to study done later by Uwezo

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(2010), which revealed there was teacher shortage in Kenya, as a result teachers were overwhelmed with a lot of work. It was due to this contradiction that this research sought to establish if teacher workload has influence on academic achievement of learners in Kakamega Municipality. This is the knowledge gap this study attempted to fill.

2.5 Pupil /Teacher Ratio (PTR) on Pupils' Academic Achievement.

The issue of class size or teacher pupil ratio (PTR) is related to the quantitative aspect of how many teachers are there for a given population size. A smaller class means more teachers need to be hired. Reducing class size is the most frequent suggestion made for improving quality of education but it is a costly strategy. The number of pupils is one of the factors that determines methods used in classrooms by teachers. In other words, the high numbers inevitably influence the teaching style.

According to Gloterfelter et al (2007) classes with a PTR of 16:1 to 23:1, teachers were more effective because marking took little time and corrections were immediate. Walker (1997) and Bennet (1996) also observed that there may be highly effective instructional programs that could not be successfully implemented in large classes. It may be difficult in dealing with individuals and so teachers tend to resort to strategies such as lecture and demonstration. Blatchord et al (2003) noted that children in large classes are more likely to be off tasks particularly in terms of not attending to the teacher or not attending to their work when on their own. However, Mortimore (1994) argued that reducing PTR has little effect on teachers' methods and styles, in other words that teachers do not change their methods of teaching when faced with smaller classes. While Smith and Glass (1980) examined the questions of the class

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size and its relation to the institutional practices and found that class size affects the quality of the classroom environment.

In this regard, the World Bank (2004) reviewed the class size debate and concluded that although there are uncertainty of research results over the issue, with the results from researchers varying across time, contest and content ,still the overall conclusion was that a policy of promoting relatively small classes (below 40 students per teacher) is not cost effective in developing countries compared to providing more text books, increasing the total hours of class instruction or restructuring overcrowded curricular. The optimal number of student per class is a very important issue. Eshiwani (1984) found out that where the number exceeded the recommended forty by twenty percent, there was a negative effect on student achievement. In another study, it was found that recommended number of learners may influence the individual teacher in planning for his teaching, giving and marking examinations, exercises especially in languages (Olendo, 2008). However while teachers and parents usually prefer smaller classes for more individualized learning attention, the educational authorities favor large classes for cost effective purposes considering benefits of economies of scale. Studies by Olendo, (2008); Obondo, (2012) found significance on between Pupil teacher ratios and pupils' academic achievement in languages,moreover, Obondo, (2012), narrowed down her study to influence of enrollment on composition writing in public primary schools. She used KCPE Mock results to obtain pupils academic scores, which she correlated with students' enrollment. Furthermore; in her study, the KCPE mock results had a lower significance than the real KCPE results. The KCPE mock is not a standardized test, hence could be easily manipulated in the course of marking and preparing score sheets. This study therefore sought to investigate if pupils academic achievement in

KCPE which is astandadized test could be influenced by Pupill teacher ratio and workload of teachers,

Many policy oriented intervention and research studies consider a 40.1 ratio reasonable in developing countries. World Bank-Financed Primary Education Projects are usually designed with an average of teacher pupil ratio of 1:40. (World Bank, 2005). According the Ministry of Education (MOE), there is an increase of PTR at both national and provincial levels, with the national PTR increasing from 34.1 in 2002, to 44.1 in 2007 and 45.1 in 2008. The North Eastern Province recorded the lowest PTR of 39:1. Western province a PTR of 53:1 with the highest percentile PTR of 63:1 after North Eastern with a highest percentile of 85:1 (MOE,2009). The reality of teachers trying to teach over 100 pupils has become common in public schools and has raised concern over academic standards and therefore questions the effectiveness on the other hand. Public primary schools did not keep pace with the rapid increase in pupils' inputs. Sifuna (2003) noted that FPE in public schools has stretched teaching and learning facilities. According to The Minister of Education, Prof. Ongeri, in his speech while launching form one selection remarked that, the Ministry has faced some challenges in the achievement of quality education, including overcrowded classes, shortage of teachers, inadequate infrastructure and diminished parental support on sheer assumption that education is free (Daily Nation 6th January, 2011).

Given the rise in PTR, it was not known whether the influx of pupils leading to high enrollment was the cause of the disparity in performance. For this cause the study was to investigate if PTR has any influence on academic performance of learners.

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Earlier on, UNICEF (2005) estimated the number of teachers required at Thirty one thousands. Despite the obvious evidence of inadequate personnel audit mechanisms, undisputed point is that there is a huge shortage of teachers in the education system especially in primary schools. The teacher shortage is even more severe in remote rural schools (Republic of Kenya, 2006). The irony however is that, while the schools struggles with shortage of teachers, the country have a large pool of unemployed teachers. Since 1998, the government has imposed a freeze on hiring of teachers. Instead, the government embarked in hiring interns and currently, teachers are hired in very minimal numbers which cannot ease the shortage of teachers.

Since enrolment has continued to rise phenomenally from 5.9 million in 2002 to 8 million in 2007, there is need for enough supply of teachers to schools. The enrolment of the private school pupils was 924,000 by 2008 (MOE, 2008). The increase in enrollment could imply that, many of the parents have trasfered their chidren to private schools due to the compromised quality of education in the public schools. For the escalating figures in enrolment, one can conveniently argue that enormous resources in terms of man power, time, fiscal and material resources are utilized at both primary and secondary schools. It is important to realize that man power is the most important resource in any organization. Harbinson (1973) asserted that human resources not capital, not income, not material resources constitute the basis for wealth of nature. Capital and natural resources are passive factors of production, human beings are active agents who accumulate capital, exploit natural resources build social, economic and political organization and carry forward national development. The teacher consequently, plays an indispensable role in the process of teaching and learning of pupils. He/she is the change agent that harnesses other resources of production function.

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A study by Abagi (1997), noted that since the introduction of FPE in public schools, student assessment especially in continuous assessment have either stopped or slowed down. Heavy workload makes it impossible for teachers to administer, grade their work and provide feedback on performance. Furthermore, there is no dispute that classroom management and effective teaching becomes difficult when a teacher has to handle a very large number of learners. It is not known whether teachers in Kakamega Municipality have workload that would influence academic achievement of pupils either positively or negatively.

Most of these studies like Bennet (1996); Blatchord et al (2003); Mortimore (1994) were done in developed countries while this study was carried out in a developing country, specifically in Kenya. Abagi (1997) carried out his study in rural and urban Primary Schools, in 21 Districts in Kenya, but excluded Kakamega, but this study was mainly focused within Kakamega Municipality Primary Schools to ascertain if the workload has influence on pupils' academic achievement.

2.6 Teacher Attitude towards their Performance and Pupils Academic Achievement.

Attitude could be defined as a consistent tendency to react in a particular way often positively or negatively. Attitude possesses both cognitive and emotional component. Therefore, teachers' morale towards work needs to be boosted so that they can have a positive attitude towards their work and the students they teach.

According to Eggen and Kauchak (2001), positive teacher attitude are fundamental to effective teaching. He identified a number of teacher attitude that can facilitate a caring and supportive classroom environment. These include ethusiasism, caring, firm democratic practices to promote students responsibility, use time for lessons

effectively, have established efficient routines and interact with students and provide motivation for them.

However they did not capture other important aspects of teacher attitude that can facilitate or improve academic achievement of learners like teacher motivation and incentives appraisals, low teacher salaries which this study intended to establish after analysis of some items in the questionnaire. Eggen & Kauchak never correlated techer attitude to academic achievement of pupils. This study chose to investigate the aspects of teacher attitude such as low teacher salaries and incentives, use of supervision tool, self empowerment on academic performance of pupils in primary schools.

There are also individual cases where excessively low teacher salaries and incentives can have a negative effect on performance. If teachers find it difficult to maintain their standard of living as has been documented in some cases, the results can be absenteeism and low morale on their performance while they pursue second jobs leading to declining student performance (Filmer and Lieberman, 2002). Most researchers have argued that the positive teacher attitude contributes to the formation of positive pupils' attitude which in turn contributes to improved academic achievement (Ochenge, 2008); (Davies &Hoy, 2000) and (Adedeji, 2008).

According to Oketch (1997), in his study on effectiveness as a factor of teachers' attitude towards student academic achievement, there is a positive correlation between self- concept, attitude and effective teaching. This correlation revealed that effective teaching brought a closer relationship between teachers self concepts and their attitude towards teaching and when teaching effectiveness varied, there was low

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self concepts and negative attitude towards teaching. Teachers also need to be encouraged so that they can have a positive attitude towards their work and students they teach. According to Ahawo (2010), teachers holding constructivist view of their subjects are expected to adopt teacher - student interaction by allowing learners to explore and investigate while teachers reside in their classrooms as facilitators. This is a common practice in most private schools which if emulated in public primary schools would improve academic achievement in Kenya. While a study by Harbinson and Hanusheck, (1992) examined effects of school and teacher input on performance of primary school children in rural areas, this study will be carried out mostly within the urban areas of Kakamega Township. Ahawo, (2010) and Eshitemi (1985) studies on effect of teacher attitude on performances have been carried on specific subject areas and mostly in Secondary Schools. Oketch, (1997, 2010) studied only attitudinal factors affecting the teaching and learning of students in secondary, while there are several factors that would come into play in determining academic achievement of pupils. This study used a combination of variables of teacher input to establish their influence learners' achievement in a standardized test in this case; KCPE. A study by Eshiwani, (1983) used the performance of mock result as a dependent variable to establish the effects of teacher attitude on learners' performance of Mathematics in both primary and secondary schools in Western Kenya. Researchers' like Ochenge, (2008), Sullivan, (1989), Relich et al, (1994), did their studies on teachers' attitude on teaching Mathematics in pre service education and primary schools. Teachers in training may not have developed an attitude which could influence their work. This study found it more revealing to study the attitudes of teachers who are already practicing in the field towards their work and establish if it has an influence on academic achievement of learners.

A study by Abagi and Okwach (1997), revealed that teachers attitude towards their work and pupils, their classroom management and interaction with pupils have great impact on the academic achievement of learners. However, it was done in 21 Districts in Kenya excluding Kakamega District while present research was there carried out in Kakamega municipality to find out if teacher input influence academic achievement of learners.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section outlines the procedure and methods that was used to obtain data needed for the study under: research design, area of study, population, sample and sampling procedure, instruments for data collection, and methods of data analysis.

3.2 Research Design

The study was conducted through a combination of descriptive survey research design, ex post facto and correlational research designs. The study adopted descriptive survey research design to carry out a study on influence of teacher input on academic achievement of pupils. Descriptive survey research design entails a technique whereby information is collected by getting responses from people in a wide geographical area through questions and interview schedule (Borg and Gall, 2007). Kathuri (1993) noted that survey research design was preffered because it enabled the researcher to collect data from a wider area at minimal costs. Kathuri (1993) also remarked that this survey research design was concerned with relationships of variables and processes taking place in the location of study. Therefore, the survey research design was suitable for this study since it was concerned with relationship and it also aimed at covering only respondents required for data collection. In this study, survey research design was preferred as it aimed at covering respondents only required for data collection.

Ex post facto research design was employed to enable the researcher to collect data which could not be manipulated because their manifestations had already occurred. Mugenda and Mugenda (2003) stated that the main aim of ex post facto research

deaign is to determine causes or reasons for the current status of the phenomenon being studied. In this case, KCPE had already been done and was used to show the reasons for the phenomena under study.Therefore the data collected included KCPE results rom the DQASO's Office.

A correlational research design was also used in the study to analyze the degree of the relationship between teacher input and academic achievement of learners. According to Mugenda and Mugenda (2003), correlation research design is used in examining how variables are related and in determining the strengths and direction of the association between two variables.

3.3 Area of Study

The study was carried out in Kakamega Municipality in Kakamega Central District, Kakamega County. The total population of the area was 97,849 as in 2008 and was expected to rise to 119,187 by the end of 2012.The land covers 49.9 Sq Km and lies between longitudes 34^0, 40`E and $35^0$ 55`E and Latitudes 0^0, 10`N and $1^0$ 20`N of the equator. It borders Lurambi Division to the North, Ikolomani Division to the South, Navakholo Division to the North West, Ileho Division to the South East and Butere-Mumias District to the North East. A map showing the location of Kakamega Municipality is attached in Appendix G. It is also the headquarters of Kakamega County, hosting government departments, auxiliary industries and educational institutions. Masinde-Muliro University of Science and Technology (MMUST) is hosted here and has greatly contributed to the steady growth of the town. Within the Municipality, there are other educational institutions like Sigalagala Polytechnic,Town Campus, Kenya Institute of Management (KIM), Mt. Kenya University (MKU), Jomo Kenyatta University of Agriculture and Technology
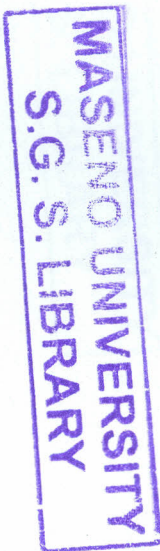
(JKUAT), Nairobi University Extra Mural Center (UoN) and Kenyatta University Open Learning Center, among others. Kakamega Municipality also houses important amenities like Western Provincial Hospital and several private hospitals including Nala, Highway, Central and Lumino Nursing Homes. Major activities in this area include Crop farming (tea and sugarcane), subsistence farming (maize, beans, potatoes, vegetables among others) and small scale dairy farming. There are small and large scale traders especially within the urban area of Kakamega Township.

The Absolute Poverty Index within the urban area is 46.8% and 53.5% in the rural areas, contributing to 1.9 % of the national Poverty Index (Republic of Kenya, 2008).

3.4 Study Population

Target population refers to all members of a real or a hypothetical set of people, events and objects to which a researcher wishes to generalise the results of the study (Borg and Gall, 1996). The target population in this study consisted of 25 headteachers from public schools. 403 TSC employed teachers in public primary schools.

Kakamega Municipality has a total of 25 public primary schools which are registered for KCPE. The Study population consisted of 403 both trained TSC employed to teach in primary schools and Area Education Officer (AEO), Kakamega Municipality.

3.5 Sample and Sampling Procedure

The sample frame gives the category of respondents used in the study, the sample size and the corresponding percentages.Using Fishers Model,(Mugenda and Mugenda, 2003) out of 403 teachers, the sample size was 197 as shown on Table 3.1

Table 3.1: Sample Frame

Category of Respondents	Population (n)	Sample Size Frequency	%
Headteachers	23	23	100
Teachers	403	197	36.4
AEO	1	1	100

Out of 25 Headteachers 2 were used in the pilot study. Hence, saturated sampling technique was used to select head teachers of the schools. Purposive sampling technique was used to select teachers to give the required number for the study. Schools with more than one stream were given more number of respondents than single streamed schools. Purposive sampling technique was used to sample teachers who handle examination classes. This was done to ensure all the taught and examined subjects were covered in the study.

3.6 Instrument for Data Collection

A variety of research instruments assists researchers in getting a holistic view of research situations. The instruments helped to clarify and eliminate any discrepancy in responses. The instruments enabled the collection of data within ashort time and at a minimum cost. The study used questionnaires and unstructured interview schedule to obtain data from a sample of the target population. The questionnaire were administered to teachers, head teachers to obtain quantitative data from open ended and closed ended questions.

According to Borg and Gall (1996), questionnaires are appropriate for survey design since they collect information that is not directly observable. The questionnaires

contained both closed and open- ended questions.The closed ended questions were structured to facilitate tabular analysis. The questionnaires were administered to headteachers and teachers.

3.6.1 Head Teachers Questionnaire (HTQ)

The Head Teacher's Questionnaire (HTQ) had two sections, demographic data and another section had closed and open ended statements related to teacher input and its influence on academic performance of pupils. The headteachers' questionnaire sought information about the school examination performance, teachers' qualification, experience. Teacher attitude and its influence on pupils academic achievement. The HTQ is attached as Appendix A.

3.6.2 Teachers' Questionnaire (TQ)

The teachers' questionnaire was used to collect data on questions or statements related to teacher input and its influence on academic achievement of learners in Kakamega Municipality. It sought information on qualification, workload experience, pupil/teacher ratio, attitude and academic mean scores for particular teachers.The Teachers' Questionnaire (TQ) also had two sections, demographic information and a section with open and closed ended statements relating teachers input. Values were attached to the responses, tabulated findings computed in SPSS version 12. Likert Scale was used to measure teachers' attitude in relation to their work and learners performance where (SA= Srongly Agree, A= Agree, UD= Undecided. D= Disagree and SD= Strongly Disagree). The TQ is attached in Appendix B

3.6.3 Interview Schedule for the AEO (ISAEO)

Interview schedule was used to probe the Area Education Officer on information about in fluence of teacher input on academic achievement of learners. Kerlinger (1973), explains that interviews are suitable for obtaining qualitative data and in-depth data since they give an opportunity to obtain observation from respondents. Face to face interview was conducted with the AEO for Kakamega Municipality. A few guiding questions was used to conduct an in-depth interview. The ISAEO is attached as Appendix C.

3.6.4 Documentary Analysis

This involves the systematic assessment of documented communication for the purpose of identifying characteristics of a message. In this study, a documentary analysis was used to obtain information on academic performance of pupils and school enrollment data to help work out the PTR. Data was collected for pupils examination results in previous years' KNEC examinations from DQASSOs office and analyzed. The secondary data collected was valuable in corroborating the information collected from survey.

3.7. Reliability of Instruments

Reliability is a measure of the degree to which a research instrument yields constant results after repeated trial (Argy et. al, 2006). It is the consistency of measuring instrument by giving identical results during repeated tests during a study. Kathuri & Pals. (1993), observed that an instrument is reliable when a researcher administers a questionnaire to a respondent for the second time and it gives same results. In this study, reliability was established by administering all questionnaires in a pilot study, in two schools from which the population was drawn but were not part of the study.

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The pilot testing involved testing the suitability of the instrument from content to language perspective to ensure it yielded the desired response in the actual results. The results of the tests were used to refine the instruments and to correct terminologies that were difficult to the respondents and ambiguous statements since Mugende and Mugenda, (1999) stated that pilot testing should ensure that research items are stated clearly and have the same meaning to all respondents. A test retest was done and Pearson r computed to establish the reliability of the instruments, whereby a value 0.75 m for teachers and 0.8 for teachers was computed. This meant that a the instruments were reliable since reliability coefficientof 0.5 is acceptable (Kathuri & Pals 1999).

The documentary analysis was done to enable the researcher to corroborate survey findings. The documents were instrumental in obtaining examination results data on academic performance in schools.

3.8 Validity of Instruments.

Validity is the accuracy and meaning fullness of inferences which are based on research results. The degree to which results obtained from the analysis of the data represents the phenomenon under study (Mugenda & Mugenda, 2003). Face validity of the instruments was established by researchers and my supervisors in the Department of Educational Management and Foundations, Maseno University who helped in refining the questions in the questionnaires to accurately measure what they intended to measure,

3.9 Data Collection Procedure.

The Director of School of Graduate Studies (SGS), Maseno University gave consent for data collection. Thereafter, the researcher reported to the District Education Office (D.E.O), Kakamega Central District. Arrangements were made for the actual data collection from schools and the AEO. The researcher personally administered the questionnaires to the respondents in particular schools on a particular day of visit and left them to allow time for the respondents to fill. The completed questionnaires were collected from the respondents for data analysis. Secondary data were collected from official documents from the (MOE) and government records.

3.10 Methods of Data Analysis

Various statistical techniques were used to analyze analysed items in the quetionnaires. Inferential statistics in form of linear regression analysis technique was used to show the interactive effect of the independent variable upon dependent variable. Pearson correlation was also used to explore the strength and extent of relationship between independent and dependent variables (Gall *et*.al, 1996).

Different tables, charts and bargraphs were used to present background data on teacher workload and qualification. Data collected was analyzed according to the nature of response. Closed ended questions were transfered into a summary sheet by tabulating them. The responses were then tallied to get frequencies which were converted to the percentage of the total number of respondents. The KCPE meanscore for particular subject teachers were analyzed, averages worked out from 2010 – 2012. Then employing SPSS version 12.0, correlation and linear regression was computed to show the significance and the effects of each independent variable on dependent variable at a set alpha level of 0.05. After determining the effect of each independent

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variable on the dependent variable, pupils' academic achievement, linear regression was used to determine the amount of variation explained by the dependent variable. The regression model included five independent variables and one dependent variable to yield information about their relationships and contribution to overall co- efficient of determination (R) or variance.

The assumption was that:

$$Y = B_0 + b_1x_1 + b_2x_2 + b_3x_3 + b_4x_4 + b_5x_5 + E \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots Bnxn$$

Y= Pupil Academic Achievement (dependent variable).

$Y = X_1, X_2, X_3, X_4, X_5.$

Where X_1 = Teacher qualification

X_2 = Teacher experience

X_3 = Teacher workload

X_4 = Pupil Teacher Ratio

X_5 = Teacher Attitude

Qualitative data from indepth interview was transcribed and categorized into themes and sub themes, coded and analyzed on an on going process. Descriptive statistics was analyzed using scores from a likert scale. The Likert Scale which had both negative and positive questions was ued to gauge the teacher attitude, using score values with each of the five points on the Likert scale being given a score value as follows: Strongly Agree (SA) – 5, Agree (A) – 4, Undecided (U) – 3, Disagree (D) – 2, and Strongly Disagree (SD) – 1 for all positively stated statements. For negatively stated statements, the score values were reversed as follows, Strongly Disagree (SD) – 5, Disagree (D) – 4, Undecided (U) – 3, Agree (A) – 2, and Strongly Agree (SA) – 1. Arithmetic mean was done for every element on the Likert scale. Thereafter, an average of the arithmetic means of the four elements on the Likert scale was done. In

the interpretation of the scores, a value between 2.5 and 3.4 meant undecided; on the other hand, a value between 3.5 and 5.0 meant a positive attitude while a value less than 2.5 meant a negative attitude.

The scores for each response were summed up and the mean computed to give a random variable called teacher attitude. This was correlated with with the average academic achivement.The entire statistic was done through the help of statistical package for social science (SPSS) version 12.0

CHAPTER FOUR

RESULTS AND DISCUSSIONS

4.1 Introduction

This chapter presents the results and discussions of the study. The study had five objectives namely to determine the extent to which teacher qualification influences pupil academic achievement, to determine the extent to which teacher experience influences academic achievement of pupils, to establish the influence of teachers' workload on academic achievement of pupils, to establish the influence of teacher /pupil ratio on academic achievement of pupils and to determine the extent to which the attitude of teachers influences academic achievement of pupils in public primary schools.

4.2 Demographic Characteristics of the Respondents

This section presents the demographic characteristics of teachers and headteachers. The demographic characteristics that were captured were the teachers' professional qualification, and the number of years of experience in service.

4.2.1 Demographic Characteristics of Headteachers

This section presents the demographic characteristics of the head teachers whose views were captured by the study. The demographic characteristics that were captured were: the professional qualification and teaching experience as shown in Figures 4.1 and 4.2 on pages 47 and 48 respectively

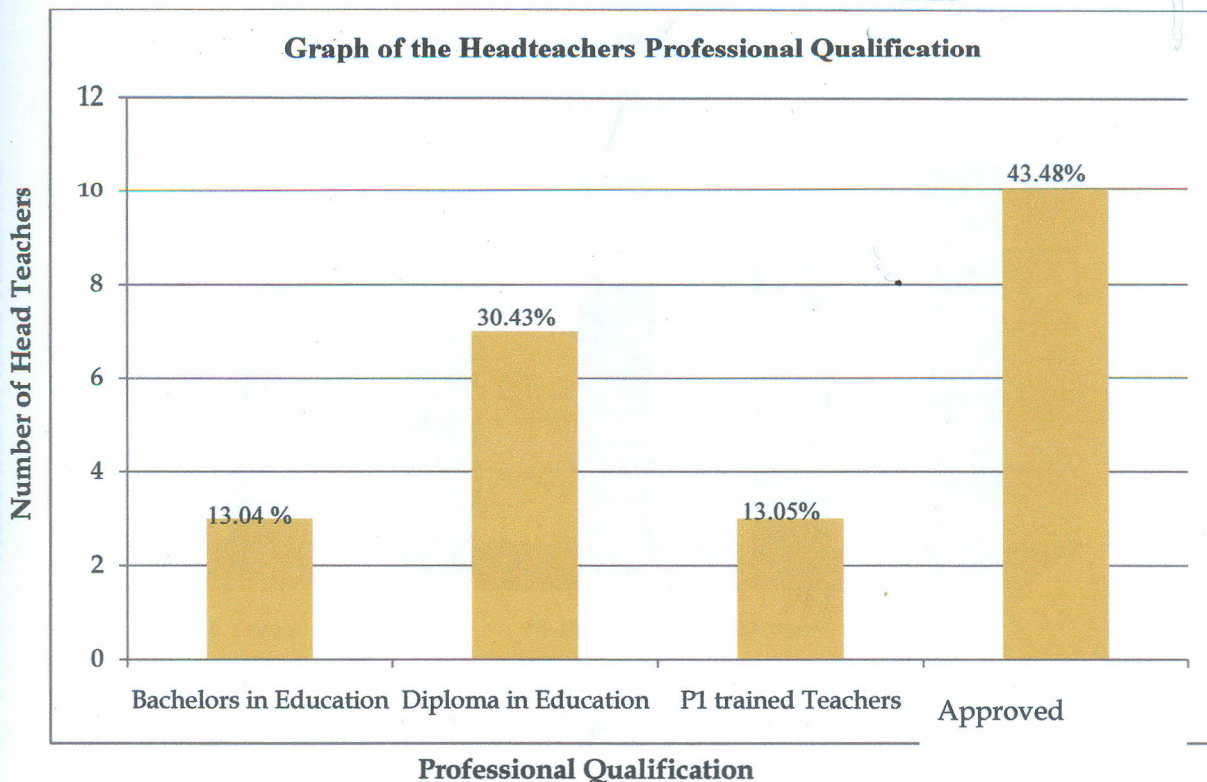**Graph of the Headteachers Professional Qualification**

Figure 4.1: Professional Qualification of the Head Teachers

From Figure 4.1, among the 23 head teachers sampled from the public schools, a total of 3 (13.04%) had Bachelor of Education, 10 (43.48%) were approved teachers (ATS; Teachers that were originally P1 trained teachers but have undergone promotions through their experience and/or the proficiency test over the years leading to them rising through the scheme of service), 7 (30.43%) had Diploma in Education and 3 (13.05%) were P1 trained teachers. These results show that there were a high proportion of head teachers from public school being approved teachers. This indicates that most of the headteachers are well quallified and should be able to manage the schools well enough to achieve good results .It is a fact that school administrators and teachers need skills that can only be attained through formal training.
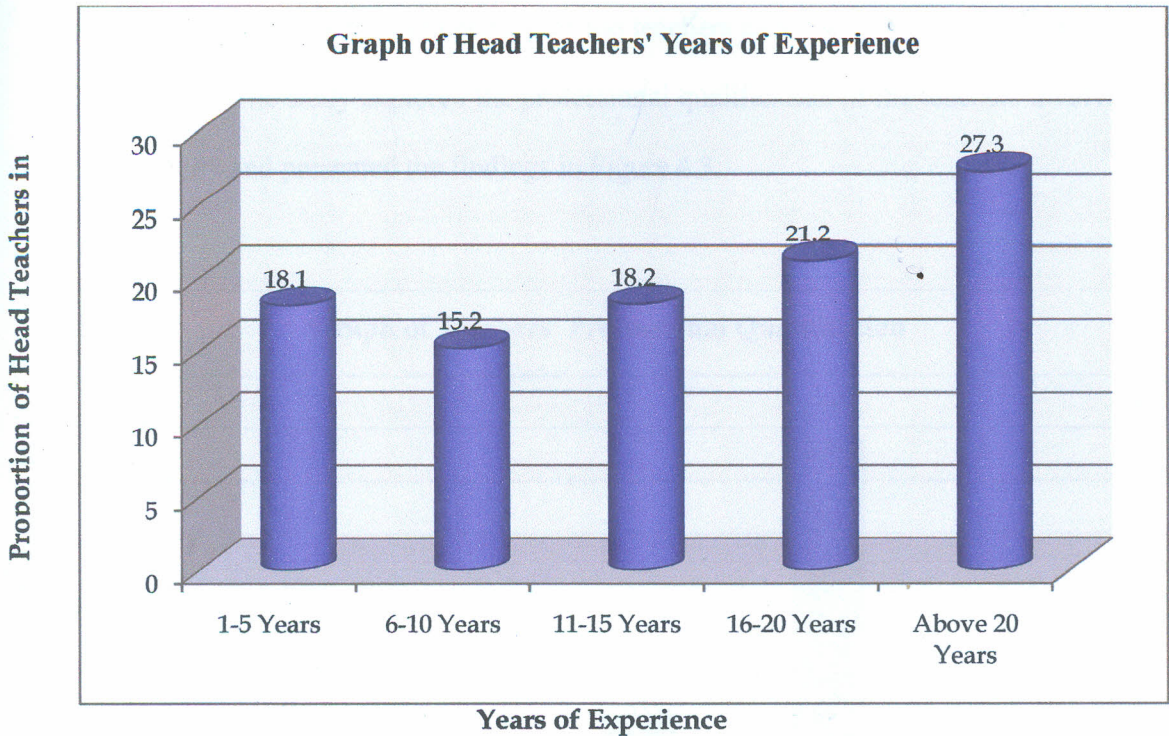
Graph of Head Teachers' Years of Experience

Figure 4.2: Head Teachers Years of Experience in Administration

From Figure 4.2,18.1% head teachers from the public schools had between 1 -5 years of experience in administration,15.2% had between 6 -10 years, 18.2% had 11-15 years, 21.2% had between 16-20 years,and 27.3% had above 20 years of experience in administration.

From the results, it is worthy to note that a higher percentage of the headteachers from public schools had above 20 years of experience in administration.The longer in administration could mean that they have acquired better methods of leadership and can give useful insight that would promote good academic standards (Caillods, 1989).

4.2.2 Demographic Characteristics of Teachers

This section presents the demographic characteristics of the teachers involved in the study. The demographic characteristics that were captured included professional

qualification and teaching experience of the teachers as shown on Figure 4.3 and 4.4 on page 50. The study explored the professional qualification of the teachers involved in the study and presented the findings in Figure 4.3.

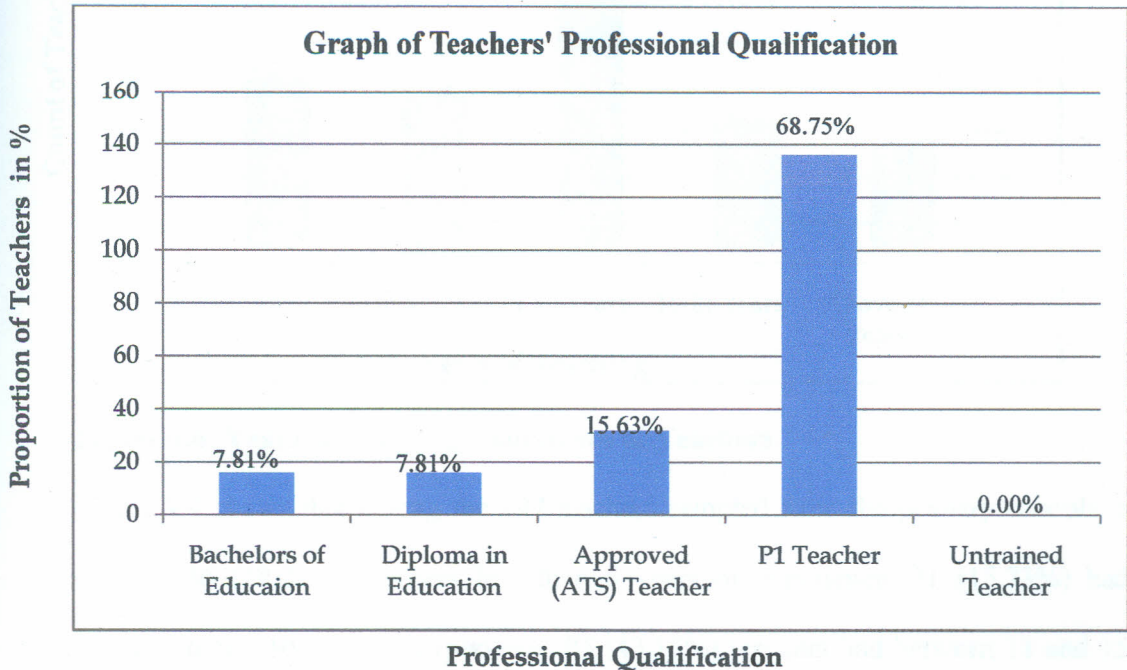## Graph of Teachers' Professional Qualification

Figure 4.3: Professional Qualification of Respondents

The results in Figure 4.3 shows that from the public schools, a total of 15 (7.81%) had Bachelor of Education, 32 (15.63%) were approved (ATS) teachers, 15 (78.1) were Diploma holders, while 135 (68.75%) teachers had P1 qualifications, and there were no untrained teachers (0.00%). It is also important to note that most of the teachers in the municipality have attained the basic training requirement a teacher needs to teach learners in primary schools. Training of teachers is important in enabling them to acquire teaching skills thereby implement various classroom activities that would improve academic outcome of learners.

Additionally, the study explored the years of experience of the teachers and presented the findings as shown in Figure 4.4 on page 51.
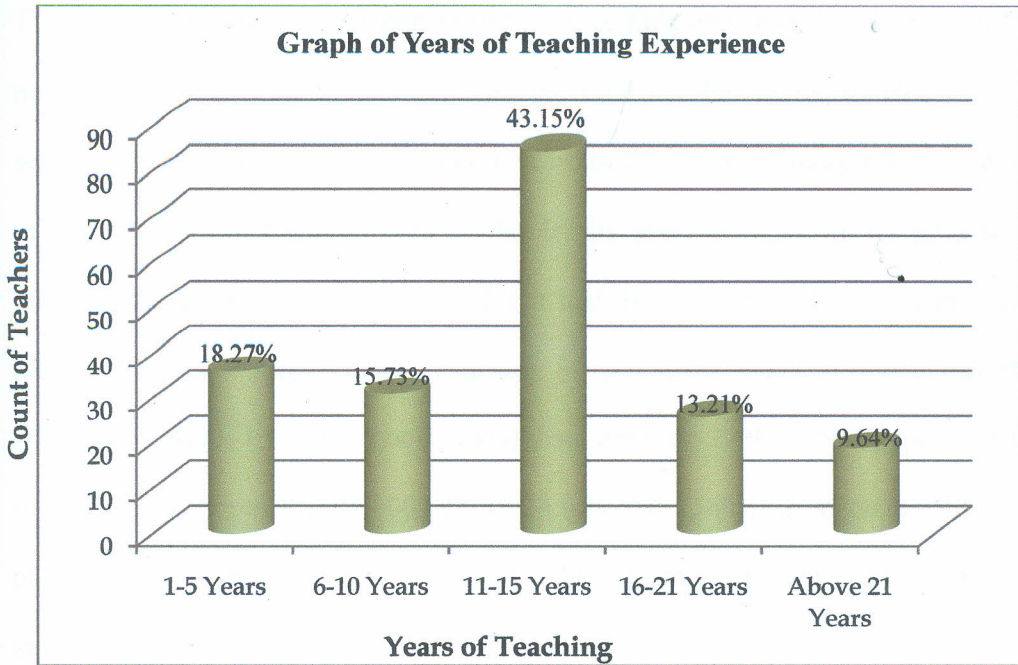
Graph of Years of Teaching Experience

Figure 4.4: Years of Teaching Experience of Teachers

Figure 4.4 shows that among the 197 teachers sampled from the primary schools, a total of 36 (18.27%) teachers less than 5 years of experience, 31 (15.73%) had between 6 and 10 years of experience, 85 (43.15%) teachers had between 11 and 15 years of experience, 26 (13.21%) had between 16 and 21 years of experience and lastly 19 (9.64%) had above 21 years of experience.

These results show that most teachers who handle candidate classes in the primary schools had many years of experience in teaching. Such teachers have good mastery of subject content and are therefore expected to lift up the academic standards in their respective schools (Richet, 1994). According to Olel (2000), teachers with over three years teaching experience are regarded as experinced teachers. Therefore, it means that most of the schools in this area of study had experienced teachers.

The study also examined the pupil teacher ratio. This was done by dividing the total number of teachers in the schools with the total number of pupils enrolled in the schools. Pupil Teacher Ratio revealed that in the 23 public primary schools involved in the study. From these 23 public schools, the average pupil/teacher ratio was 60 learners per teacher, 60:1. The school that had the highest pupil/teacher ratio had a ratio of 70:1. The school enrollment data for primary schools indicated that above 2000 pupils were 1 (4%) schools, 1(4%) had between 2000 – 1500 pupils, 3 (12 %) schools had between 1500 – 1000 pupils, 14 schools (56%) had between 1000 – 500 pupils, 5(20 %) between 500-250 pupils. The enrollment record as per year 2012 is attached in appendix F.

4.3 Teacher Professional Qualification on Pupil Academic Achievement

The study sought to establish the influence of teacher professional qualification on academic achievement of pupils in primary schools. To establish whether there is a relationship or not, the study was guided by the Null Hypothesis (HO_1) that, there is no significant relationship between teacher qualification and academic performance of learners. To address this hypothesis, a correlation was done and p value was used to establish the significance and to test the hypothesis. The results are as shown on Tables 4.1 on page 53.

Table 4.1: Correlation Analysis between Teacher Qualification and Academic Achievement in Public Schools

		Teacher achieved Mean score		Professional qualification
Teacher achieved	Pearson Correlation 1		.342	
Mean score	Sig. (2-tailed)			.000
	N	197	.197	
Professional	Pearson Correlation	.342	1	
qualification	Sig. (2-tailed)	.000	401	
	N	197	197	

In Table 4.1, a correlation was done for the sampled schools; there was a positive and statistically significant correlation between teachers' professional qualification and the mean score of the classes they taught. The correlation between level of professional qualification and mean score was 0.342, with a p – value of 0.000. Since the p – value was less than 0.05 significance level, it means that indeed there was a significant positive correlation between professional qualifications academic achievement of pupils. That implies when a teacher has high professional qualification, there is an increase in the academic performance of the classes they teach. From the results, it is evident that the higher percentage of more professionally qualified teachers, the better the academic achievement of pupils. This implies that most teachers in primary schools are able to make positive contributions towards higher academic achievement of pupils. Professionally trained teachers are able to

develop effective communication skills, professional attitude and values that equip a teacher with the knowledge and ability to identify and develop the educational needs of a child as stated in Sessional Paper No 1 of 2005 (Republic of Kenya, 2005). Correlation findings support the background data which found that a higher percentage of teachers teaching in Kakamega Municipality had the basic training of P1 teacher required in the service.

The coefficient of determination for the sampled schools was also done to establish the contribution teacher professional qualification on pupils' academic achievement and findings presented as shown in Table 4.2.

Table 4.2: Coefficient of Determination of the Influence of Teacher Qualification on Academic Achievement of Pupils in Public Schools

Model	R	R Square	Adjusted Square	RStd. Error of the Estimate
1	.342[a]	.117	.294	10.557

From Table 4.2, the coefficient of determination for the relationship between teachers' qualification and the academic performance of their classes was 0.117. This meant that teachers' qualification influenced 11.7% of the performance of pupils in their classes. The other 88.3% could be influenced by other factors like text books, parental involvement, and pupils' attitude among others which have not been included in the study.

The p-value was also used to test hypothesis one (HO_1) which stated that there is no significant relationship between teachers' professional qualification and academic achievement of pupils'. According to the result on Table 4.1 on page 53 the p-value for professional qualifications was 0.00 for all the sampled schools. Since the p-value

was less than 0.05 level of significance, it can be argued that there was strong evidence against the null hypothesis. Therefore it was rejected hence the alternative hypothesis was retained to state: there was a significant relationship between the teachers' professional qualifications and academic achievement of learners in primary schools in Kakamega Municipality.

An interview by the AEO stated that to some extent teacher quality influence performance since professionally qualified teachers have better teaching methods. He observed that;

> Several P1 teachers have further education and a good percentage of them have B.Ed and a few with M.Ed. However, the more qualified teachers are demoralized due to low remunerations and often have an attitude of searching for better jobs. The percentage of teachers with basic teaching qualification has decreased in the schools since the government froze the hiring of teachers.

This is in agreement with a study done by Abagi (2007), who noted that most private schools hire graduate teachers and offers them good remunerations so long as they can perform. The findings of this study is consistent with studies done by Ongele (2007), Ahawo (2010) and Ojwang (1995), whose studies also found a positive significant correlation between teacher professional qualifications and learners' academic achievement.

4.4 Teacher Years of Work Experience on Academic Achievement of Pupils.

The study sought to establish the relationship between teacher experience and academic achievement of pupils in primary schools in Kakamega Municipality. This was done by carrying out a correlation on teaching experience and academic achievement of pupils in response to hypothesis 2 (Ho$_2$) which stated that: 'there is no significant relationship between teacher experience and academic achievement of

pupils in primary schools in Kakamega Municipality. Pearson r was used to show the relationship and the significance as shown on Table 4.3 on page 55.

Table 4.3: Correlation of Teaching Experience and Academic Performance of Pupils in Public Primary Schools.

		Teacher achieved Mean score.	Teaching experience
Teacher achieved mean score.	Pearson Correlation		*.142
	Sig. (2-tailed)		.131
	N	197	197
Teaching experience	Pearson Correlation.142		1
	Sig. (2-tailed)	.131	
	N		
		197	197

The correlation between the years of teaching experience for all the teachers sampled and means score of pupils was 0.142, with a p – value of 0.131. Since the p – value was greater than 0.05, it means that at 95% level of confidence there was a positive correlation, and statistically significant relationship between years of experience of a teacher and the mean score of the pupils they taught.

The scenario in most cases is that, the lower the level of experienced teachers in a school, the lower the level of performance and vice versa. Experience of a teacher is a sharpening tool for mastery and understanding of the concepts to be taught by a teacher. This is because teachers become more skilled with experience. This explains why teachers' effectiveness increases dramatically each year during the first ten years

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of service. This is supported by a study by Gloterfelter et al (2006) ;(2007) which supports that teachers become more skilled when they teach the same content for a longer period of time.

However, how long a teacher's performance continues to improve is appoint of contention among many researchers. However, this study is consistent with the findings of many researchers in the developing countries. Hanusheck et al(2005); Rivers and Sanders(2002); Murnane (1981); Gordon (2006), contend that teachers become more skilled with experience but that experience matters most in the first few years of teaching.

It is worthwhile to note that, the findings in this study are contrary to the studies that have been done before in Kenya. Most studies like, Agwanda (2002), Ahawo (2010), Ong'ele (2007) found a positive significant relationship between teaching experience and efficient teaching. However, in this study experience of teachers in primary schools was statistically not significant to academic achievement of pupils. This study concurs with Ojwang (1995) which also applied a correlation method in his study and got quite a low correlation of teachers' experience and pupils' performance in private schools; however the study was never extended to public schools which have most experienced teachers.

The study also examined the contribution of teaching experience to academic achievement of pupils by computing a coefficient of determination, having pupils' academic achievement as dependent variable and the teachers' years of experience as independent variable.

Table 4.4: Coefficient of Determination of the Influence of Teacher Experience Influence Pupils Performance in Public Primary Schools.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.142[a]	.02	.01	7.67

From Table 4.4, the coefficient of determination between teachers experience and the academic performance of pupils was 0.02 for teachers sampled from primary schools. This means that teacher experience influenced up to 2% of the performance of pupils in their classes. The influence of teaching experience is too low meaning that the many years of experience of teachers from primary schools contributes very little to the academic achievement of pupils in primary schools. The remaining 98% represents the other factors whose varibles have not been addressed by this research.

To determine the significance of the relationship between teachers' experience and pupil's academic achievement, hypothesis two was addressed by testing Hypothesis 2 (HO_2) which stated: 'there is no significant relationship between teachers' experience and academic achievement of learners. The results presented on Table 4.4 on page 57 showed that the p-value was 0.131 in primary schools. Since the p-value was greater than 0.05 alpha levels, it means there is evidence for the null Hypothesis. Hence there is no significant relationship between teacher experience and academic performance in primary schools.

In an interview, the AEO's remarks disagreed with the findings as he stated;

> Long serving teachers have mastered the contents and skills of the subjects they teach. The performance of experienced teachers has been lowered due to the large classes they handle, which in turn affects their teaching approach and efficiency. It is not a fact that teachers with less than five years teaching experience could not achieve higher scores in examination.

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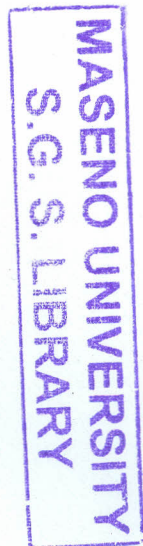
4.5 Teachers Workload on Academic Achievement of Pupils in Public Primary schools

The study explored the influence of teacher's workload on academic achievement of pupils. The study started by giving the respondents a question asking them the average number of lessons that they taught per week. Figure 4.5 on page 59 shows the results of the findings.
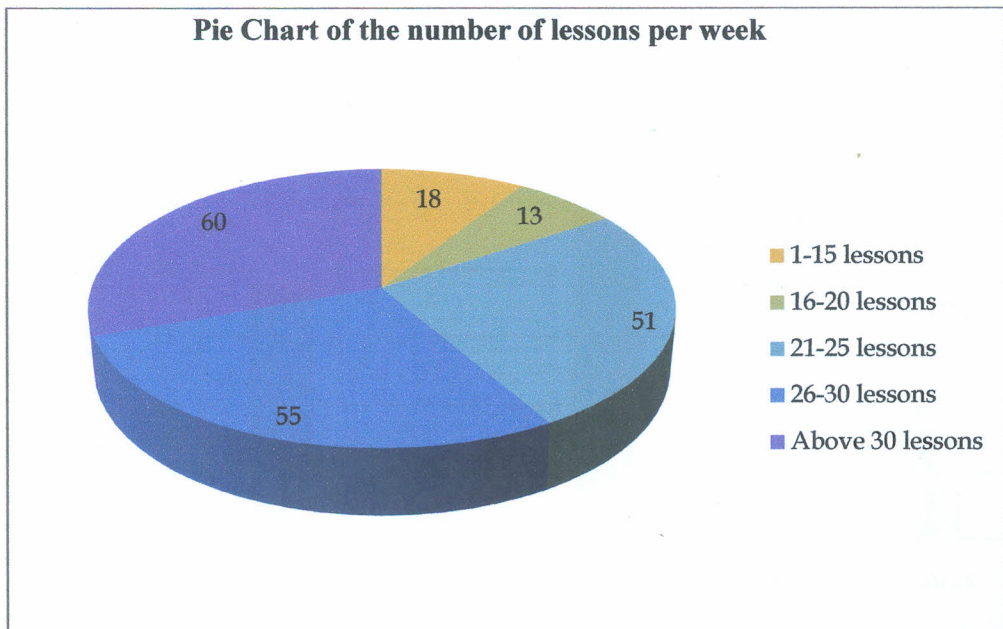
Pie Chart of the number of lessons per week

- 1-15 lessons
- 16-20 lessons
- 21-25 lessons
- 26-30 lessons
- Above 30 lessons

18, 13, 60, 51, 55

Figure 4.5: Number of Lessons Taught per Week

From Figure 4.5, among the 197 teachers sampled from the primary schools, 18 (9.14) had between 1-15 lessons per week, 13 (6.60%) had between 16 and 20 lessons per week, 51 (25.89%) teachers had between 21 and 25 lessons per week, 55 (27.92%) had between 26 and 30 years and lastly 60 (30.46%) teachers had above 30 lessons per week. Over 30% of the teachers are teaching over 30 lessons per week and given the high pupil/ teacher ratio, the workload may have an effect on the pupils' academic performance.

The study also sought to explore the opinion of the teachers on whether or not they believed extra teaching lessons in the school improved the academic performance of the learners. A question was therefore presented to the respondents asking them whether they were for the opinion that extra teaching time improved pupil academic performance. Figure 4.6 on page 50 shows the results.
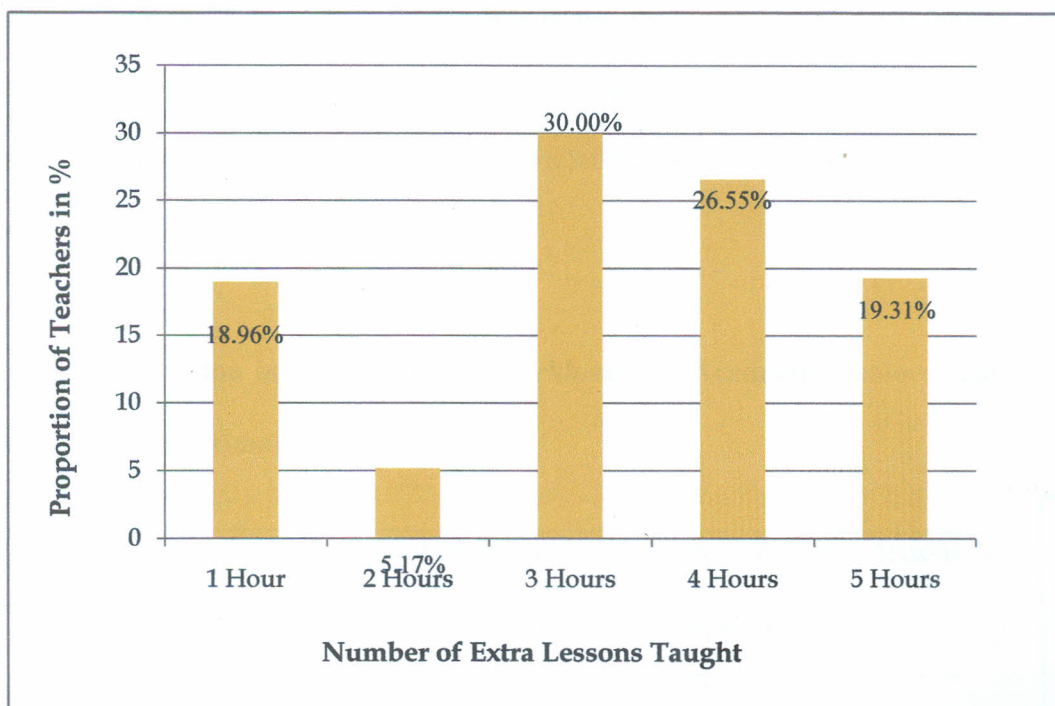

Figure 4.6: Number of Extra Lessons Taught per Week

From Figure 4.6, more teachers in the primary schools taught for more than 3 hours per week using extra lessons. A total of 37 (18.96%) taught for 1 hour, 10 (5.17) taught for 2 hours a week, 59 (30%) taught for 3 hours a week, 52 (26.55) taught for 4 hours a week and lastly, 38 (19.31%) taught for 5 hours per week. This means teachers in the municipality cover more extra lesson hours. The extra lessons could enable them cope up with the workload in those schools.

The study also examined the extent to which workload influenced performance in the primary schools. The study carried out a correlation analysis between workload and academic achievement of pupils in primary schools to establish whether there was a relationship between the variables. The workload for the teachers was indicated by the total number of lessons taught per week by a teacher while the achievement of pupils was indicated by the mean score of the pupils in the classes taught by the teachers. The p value was computed to show the statistical significance of teacher workload and academic achievement of pupils and the correlation was done as shown on Table 4.5 on page 61.

Table 4.5: Correlation between Teacher Workload and Academic Achievement of pupils in Public Primary Schools.

		Teacher achieved Mean score.	Number of lessons taught per week
Teacher achieved Mean score	Pearson Correlation	1	-.214
	Sig. (2-tailed)		.022
Number of lessons taught per week	N	197	197
	Pearson Correlation	-.214	1
	Sig. (2-tailed)	.022	
	N	197	197

From Table 4.5, the correlation of workload and academic achievement of pupils was -0.214, indicating a negative correlation. The p value was 0.022 < .05. This means that the correlation was statistically not significant between the workload and the

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academic achievement of pupils in primary schools. This means that the teacher work load influence negatively the pupils' academic performance. The findings suggest that, with the work load teachers have they are unable to conduct remedial lessons to slow learners, give individualized attention to weak learners, administer regular Continuous Assessment and examinations, give assignments and mark regularly, Response from questionnaires show that some teachers have manageable classes which enables them do the above teaching activities with ease, especially during extra working hours.

The significance of the relationship between teacher workload and academic achievement of learners was addressed by hypothesis three which stated that, there is no significant relationship between teachers' workload and academic achievement of pupils' public schools. The results from Table 4.6 suggested that the p-value for the teachers' workload and academic achievement of pupils in primary schools was 0.022 less than 0.05 significance level. Therefore there is a strong evidence to reject the null hypothesis, hence state: There is significant relationship between teachers workload and pupils academic achievement

In order to establish the contribution of teacher workload, the study did a coefficient of determination between teacher workload and academic achievement of pupils and presented the findings as shown in Table 4.6.
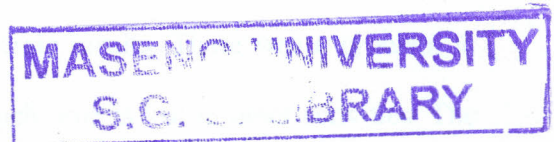
Table 4.6: The Coefficient of Determination of the Teachers workloadand Academic Performance of Pupils in Public Schools.

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	-.214	.046	.039	7.457

From Table 4.6, the coefficient of determination between teacher workload and pupils performance was 0.046. Pupils' achievement can be determined by the workload that the teachers have in terms of the number of lessons they teach. Teacher workload in this study had a negative correlation hence the coefficient of determination revealed that workload reduced pupils academic achievement by 4.6%. This could be due to the fact that most teachers are relatively over burdened with large classes.

From the findings, primary teachers' workload had a negative correlation and influenced up to 4.6 % of the performance. An interview with the AEO stated:

> "Workload has a greater influence on the performance of learners because heavy workload on teachers can lower the performance of learners. Since the enrollment increased in public schools after the introduction of Free Primary Education, teachers are overwhelmed with the workload which makes it difficult for them to complete their syllabus in good time and do thorough revision. The extra teaching hours in public schools are used to cover the syllabus and not to do remedial teaching and revision as the case is in private schools. Some of the teaching hours are lost in the co- curricular activities, long staff meetings, regular and impromptu brief staff meetings, and sluggishness and laxity in lesson attendance and teacher absenteeism. This leads to accumulated workload for the teachers and learners.

This observation agrees with Abagi (1997), whose study revealed that public schools could not administer periodic continuous assessment tests and regular examinations which could enable pupils achieve good academic results. There was a problem in time management in public schools and not much time is lost in other activities. The study also found that heavy workload makes it impossible for public schools to perform well in examinations

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4.6 Pupil/Teacher Ratio on Academic Achievement of Pupils in Public Primary Schools.

The study sought to establish the influence of pupil/teacher ratio on academic achievement of learners. The null hypothesis was set to test whether there was a relationship between the pupil/teacher ratio and the academic performance of learners. The study therefore began by doing a correlation to establish the nature and strength of the relationship between pupil teacher ratio and the performance on Table 4.7 on page 65 shows the results of the correlation analysis;

Table 4.7: Correlation between Pupil /Teacher Ratio and Performance of Public Primary School Pupils in Academics

		Teacher achieved Mean score	Average number of pupils taught per class
Teacher Achieved Mean score	Pearson Correlation	1	-0.021
	Sig. (2-tailed)		.795
	N	197	197
Average number of pupils taught per class	Pearson Correlation	-0.021	1
	Sig. (2-tailed)	.795	
	N	197	197

From Table 4.7, the correlation was -0.021, indicating a weak, negative and not significant relationship between pupil/teacher ratio and academic achievement of

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pupils from schools. The relationship was statistically not significant at, p- value of 0.795 which is greater than 0.05 the significance level. From the findings, pupil/teacher ratio negatively influences the performance of pupils in public schools. As the pupil teacher ratio increase, the performance of learners is lowered. The recommended pupil/teacher ratio by the Ministry of Education (MOE) is 40:1 (Republic of Kenya 2005). However, the average PTR in the Municipality public schools is 60:1, with some examination classes enrolling up to 70 candidates per stream and over 300 candidates in a school.

The number of children a teacher handles have an effect on other classroom processes and activities which themselves bear more directly on learning. In smaller classes of 1:40 and below, in most cases teachers would become less tired, more productive and develop more positive interactions and effective communication with students and would be more motivated to teach.

There are some highly effective instructional programs that could not be successfully implemented in large classes. This study found that in large classes of 50:1 to 60:1 pupil/teacher ratio, it is difficult to deal with individuals and so teachers resort to strategies such as lecture and demonstration. Although Mortimore et al(1994) argued that reducing PTR has little effect on teaching styles, in other words teachers do not change their methods of teaching when faced with smaller classes. In this study, the findings are contrary since high PTR have been proved through correlations to have negative effects on teaching and learning approach. This finding is in agreement with the findings of Rice and Walker (1997); Bennet (1996), who designed a study to assess whether pupil/teacher ratio affects the students learning practices and

processes, hence academic achievement. He collected data through questionnaires from 325 schools and found that PTR affects the quality of teaching The results of this study agrees with the World Bank (2004) review that, a policy of promoting smaller classes is not cost effective but has a positive effect on students academic achievement. The findings are also consistent with studies by Eshiwani (1984), Abagi (1997), whose studies found out a negative effect on students achievement where the number exceeded the recommended forty students per class by twenty percent.

Similarly the extent to which academic achievement of learners was influenced by pupil/teacher ratio was sought by computing a coefficient of determination having performance of pupils as a dependent variable and pupil/teacher ratio as the independent variable as shown on Table 4.8:

Table 4.8: Coefficient of Determination of the Influence of Pupil/ Teacher Ratio on Pupils Performance in Public Schools

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.021	.0004	.00031	9.557

From table 4.8, the coefficient of determination between pupil teacher ratio and the academic performance of pupils was 0.0004. This implied that the pupil /teacher ratio influenced negatively up to 0.04 % of the academic achievement of pupils.

According to the results presented on Table 4.7, the p- value was 0.795 which is greater than 0.05 significance level. This suggests that there is enough evidence for null hypothesis which suggest that 'there is no significant relationship between PTR and pupils academic achievement. When the AEO Municipality was interviewed about influence of pupil teacher ratio, on academic performance of pupils, he said,

Most of the Municipality schools are affected by high pupil/teacher ratio due to lack of teachers and enough classrooms to accommodate the learners. Many schools suffer teacher attrition without replacements. Most of the teachers are posted to the Municipality as result of their medical condition and therefore have low production in terms of academics. As a result, the overcrowded classes affect the teaching approach as most teachers prefer using lecture method of teaching which has little impact on young primary school learners. The high PTR also affects the regular marking of assignments and feedback or corrections given to the pupils especially in public schools. This leads to a common practice in schools where pupils mark their own exercises as the teacher gives corrections on the blackboard due to high enrolment.

4.7 Teacher Attitude on Academic Achievement of Pupils in Primary Schools.

The study also examined influence of attitude of teachers on academic achievement of pupils. The study sought to know the attitude of the sampled teachers using likert scales as presented in Table 4.9. The table shows the averages for headteachers and teachers.

Table 4.9: Attitude of the Teachers on Academic Achievement of Pupils

Statement	Headteachers	Teachers
My work gives me a feeling of accomplishment and given an option in the labour market I will remain a teacher	2.194	2.151
Teachers do not work together (team teaching) to attain the targeted mean score,this leads to low mean score.	2.996	2.9645
Increment in teachers salaries, allowances/incentives and motivation improves pupils academic achievement	4.240	4.327
Too large and heterogenous classess negatively affect teachers ability to perform	4.643	3.938
There is not provision of conducive atmosphere in teaching and learning hence low academic performance in this school	3.61	3.936
Teachers feeling of competency empowerment and self esteem help them reach the peak of their perfoarmance	3.167	3.188
Teachers job performance is not self driven, work is done under pressure	3.354	3.375
There is too much supervision which leads to lwo performance	2.941	3.774

It was established that most teachers did not feel their work gave them feeling of personal accomplishment. They even added that if given an option in the labour market, they would not remain as teachers. This was so because, while responding to a question presented to the teachers in a likert scale on whether their work gave them a feeling of personal accomplishment and given an option in the labour market, they would remain teachers. The mean score for the response of the head teachers in the public schools was 2.194 while that of the teachers was 2.151. These results show that both the head teachers and teachers had a negative attitude towards their jobs giving them feeling of personal accomplishment. Teachers from primary schools have a negative attitude towards their work and many seek for better opportunities.

The Area Education Officer commented that,

> Most teachers are not given the necessary support by the communities from which they serve. This demoralized teachers and make them hate their work. It could also be due to poor remuneration which caused teachers to bargain for salary increment time and again.

The teachers were not decided as to whether teachers work together to attain targeted academic mean scores. The mean rating of the teacher sampled from the public schools was 2.996. These results show that the teachers on average were not decided on the statement above. The head teachers' response also showed that they were not decided, with a mean rating of 2.563; on their opinion on team working in schools to achieve targeted mean scores. The low ratings showed that teachers' work independently in their subject areas, with very limited or no consultation in areas where a teacher may be faced with difficulties. This is in agreement with a study done by Abagi (2007) which found that subjects like English and Kiswahili are assigned to two teachers in private schools, while in public schools a subject is assigned to a single teacher.

The study examined the attitude of teachers towards the fact that increments in teachers salaries, allowances and motivation improves teacher performance there by improving pupils' academic achievement. The mean score of teachers sampled from public schools was 4.327 and 4.240 for the headteachers. Since the mean ratings were values greater than 3.5, it means that the respondents had a positive attitude towards increments in teachers' salaries improved pupils academic achievement. The results are a clear indicator that with an improved renumeration, teachers' morale will be uplifted and this would result into an improved academic achievement. An increment of salaries, allowances and motivation is one among the many factors that would facilitate the input of teachers towards producing results. These would be through motivation such as improved remunerations and allowances. The increased remunerations would make teachers be more enthusiastic, manage time for their lessons effectively and have efficient routines and undivided attention towards their work. This is inconsistent with the views of Eggen and Kauchak, (2001) which identified a number of teachers' attitude that would facilitate a caring and supportive classroom environment. These included motivation through improved renumerations and allowances.

Teachers from public schools had a negative attitude towards the structure and size of their classes. The means ratings for the statement asking them if too large and heterogeneous classes affected teachers performance hence low academic achievement was 3.938 for teachers and 4.643 for headteachers. It is evident that the large classes lowers the performance of teachers in the sense that, they are not able to give individualized attention to slow learners., mark assignments and give feedback

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promptly. Teachers therefore had the opinion that given a thinned class, the academic achievement would improve.

The respondents were presented with a question asking them if there was no provision of conducive atmosphere in teaching and learning hence low academic performance. The mean rating for headteachers was 3.61 while teachers had 3.936. Both the headteachers and the teachers were not decided whether they are working under a conducive atmosphere or not.

The study further examined whether the respondents felt competent, empowered and had self esteem that helped them work with enthusiasm. The opinion of teachers had a mean rating of 3.188 for teachers while that of the headteachers was 3.167. These results that they were not decided whether they had a feeling of competency, empowerment and self esteem. The AEO noted that:

> Teachers are not given the necessary support by their communities they serve.that this has in some cases demoralized teachers and caused them to hate their work.

The study examined the attitude of teachers towards their self drive at work. The teachers were presented with a question asking them whether they agreed that their work was not self driven. The mean ratings for teachers were 3.375 while had a mean of 3.354, showing that they were undecided whether they have self drive. In schools where administrators practice instructional and high handed supervision to a greator extent, teachers self drive will diminish as they will always wait for instructions to do work hence they may not work beyond those instructions.

The study explored the teachers' attitude towards the role of supervision in teacher performance hence academic achievement of pupils. The respondents were presented with a question asking them if there was too much surpervision leading to low performance. The mean ratings were 3.774 for teachers and 2.941 for headteachers in public primary schools. This means that the head teachers, being the supervissors disagreed with the atatement about the fact that there was too much surpervision in teachers' performance while teachers felt that supervision was too much. It therefore means that teachers had a negative attitude on the role of supervision in their schools while the headteachers had a positive attitude. Supervision in schools has received limited attention and this is a factor that has contributed to the academic gap in schools. In schools where effective based supervision exists, there is likelihood that teacher competence is elevated which relates to students academic achievement. The public school teachers view their head teachers' supervisory activities as a kind of pressure put upon their work.

These results are at the heart of the research premise since the variability in head teacher supervisory practices influence the school academic achievement gaps. This is consistent with a study by Diopola and Hay (2008) who asserted that the primary objective of supervision is to improve instruction which leads to students' academic achievement.

> The AEO also ascertained that, team working in most schools is very common. Most of the issues concerning academics are discussed during common meals which are offered to the teachers by the management of those particular schools. However, the competition of mean scores in schools with more than one stream discourages team work.

The study further sought to explore the relationship between teachers' attitude and performance of pupils. For each respondent, the scores of the responses of each of the

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statements presented in table 4.9 were summed up to give a random variable called teachers attitude. This was correlated with the average academic achievement of the pupils they taught and presented in Table 4.10 on page 73.

Table 4.10: Correlation between Attitude of Teachers and Achievement of Pupils' in public Primary Schools

| | | Teacher achieved | |
		Mean score	Teachers attitude
Teacher achieved Mean Score	Pearson Correlation	1	.259
	Sig. (2-tailed)		.005
	N	197	197
Teachers attitude	Pearson Correlation	.259	1
	Sig. (2-tailed)	.005	
	N	197	197

From Table 4.10, the correlation between the attitude of the teachers and the performance of the pupils in their classes was 0.259, $p < 0.005$. This means that there was a significant and positive correlation between attitude of teachers and the academic achievement of pupils in the teachers' classes in the schools.

The significance of the relationship between teacher attitude and academic achievement of learners was addressed by hypothesis five which stated: there is no significant relationship between teachers attitude and academic achievement of pupils in public schools. The results from Table 4.10 suggested that the p-value for the teacher attitude and academic achievement of pupils in public schools was 0.005 less than 0.05 significance level. Therefore there is a strong evidence to reject the null hypothesis, hence state that, there is significant relationship between teachers workload and pupils academic achievement

The study did a coefficient of determination between teacher attitude and performance of students in the schools and presented in table 4.11 on page 73.

Table 4.11: Coefficient of Determination between Teachers Attitude and Performance of Pupils in Public Schools

R Square	Adjusted Square	RStd. Error of the Estimate	Adjusted Square	RStd. Error of the Estimate
.067	.048	6.128	.098	2. 618

The coefficient of determination relating the attitude of the teachers to the performance of the learners taught by those teachers was 0.067. This implied that a good percentage of upto 6.7% of academic achievement of learners in the schools was influenced by the attitude of their teachers.

From simple logic, if a teacher is self-driven, it is possible that they like their work and especially the subjects they teach and will in turn make a good progress of the subject hence improve the academic achievement of that particular subject.

The results from this study were in consistent with several studies in attitude and academic achievement such as Diapola and Hay (2008); Ochenge (2008); Eggen and Kauchak (2001), who found significance between the teacher attitude and academic performance of learners. Diapola and Hay (2008), asserted that the primary objective of supervision is to improve instruction which leads to students academic achievement.

In an interview, the Area Education Officer remarked,

> The attitude of teachers towards their work is low. He attributed this to the low morale among public school teachers due to unsuitable working conditions which included remuneration, autocratic kind of leadership, cultural and religious practices and lack of parental support. The attitude if teachers from public schools is good since they prefer team working There are also school routine or programs that are strictly adhered to. These include testing and language policies which makes work easier for the teachers. The common meals offered in most school are a unifying factor and crucial academic issues are discussed in those forums.

The study also examined the coefficient of multiple determination and presented the findings as shown in Table 4.12;

Table 4.12: The Coefficient of Multiple Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.753	.5672	.5628	14.8393

The multiple R is a correlation between the dependent variable (Performance) and the independent variables. The correlation between the dependent variable and

independent variable was as high as 0.753. The R Square (R^2), which is an indicator of how well the model fits the data, is 0.5672. R Square is the proportion of the variance in the dependent variable associated with variance in the independent variables. In other words, the independent variables explain 56.72% of the variance in the dependent variable. The combination of the independent variables predicted 56.72% of the dependent variable with other factors predicting 43.28 % of the dependent variable.

4.8 Regression Analysis

Regression analysis was used in this study to produce a regression model summary where R explains the correlation between the observed and predicted values. The dependent variable has values ranging from -1 to 1. The sign of R indicates the direction of the relationships, whether positive or negative. The absolute R value indicates the strength, with larger values indicating stronger relationships. The proportion of the variation in the dependent variable explained by the regression model is represented by R squared. The values of R squared range from 0 to 1. Small values indicate that the model does not fit the data well. A model with a large sum of squares in comparison to the residual sum of square indicates that the model accounts for most of the variation in the dependent variable.

The variables used for the regression model for the public schools were as defined below.

Y = average performance of the learners taught by the sampled teachers

X_1 = teacher qualification

X_2 = teacher experience

X_3 = teachers workload

X_4 = pupil/teacher ratio

X^5 = teacher attitude

Table 4.12 on page 76 shows the regression coefficient analysis for the influence between achievement in academic by the pupils as the dependent variable and teacher qualification, teacher experience, teacher workload, pupil teacher ratio and teacher attitude as the independent variables.

Table 4.13: Regression Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std.Error	Beta		
1	(Constant)	-47.412	12.906		-3.674	.000
	X^{21}	.971	.144	.619	6.722	.000
	X^{22}	5.738	.832	1.486	6.896	.000
	X^{23}	.797	.928	.243	.858	.001
	X^{24}	.718	.939	.171	.765	.045
	X^{25}	7.254	1.044	1.669	6.948	.000

Table 4.12, shows the regression model, the Beta column indicates the values of the standardized regression coefficients. Beta represents the effect that a standard deviation difference in the independent variable would have on the dependent variable in standard deviation (the standardized scores of the dependent variable). The results presented in Table 4.12 suggest that all the independent variables had significant

regression coefficients. The linear regression model adapted from Table 4.12 is epecified as follows:

$$Y = -47.412 + 0.971 X_1 + 5.738 X_2 + 0.797 X_{3+} 0.718 X_4 + 7.254 X_5$$

The regression model was used to show whether the five variables, teacher qualification, workload, experience, pupil/teacher ratio and attitude could predict the dependent variable, pupil academic achievement. The co efficients of the estimated regression model in regression analysis were represented by the standardized co efficient. The relative importance of each variable in the model was determined by the positive values. The model was highly significant and all the variables were important in the model since they had a p value of less than 0.05 indicatng that at 5% level of significance they were relevant to the model.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter contains a summary of the research findings, conclusions of the issues that the study focused on and recommendations for policy makers and suggestion of topics for future researchers and educational practitioners.

5.2 Summary of Research Findings

The study had five objectives namely: to determine the extent to which teacher qualification influences pupil academic achievement, to determine the extent to which teacher experience influences achievement of pupils, to establish the impact of teachers' workload on academic achievement of pupils, to find the influence of teacher/pupil ratio on academic achievement of pupils and to determine the extent to which the attitude of teachers influences academic achievement of pupils.

5.2.1 Teacher Qualification on Academic Achievement of Pupils

An analysis of the first objective of the study revealed that there was a significant positive correlation between performance of pupils and the professional qualification of the teachers in primary schools in Kakamega Municipality. In Kakamega Municipality, the correlation between level of professional qualification and mean score of pupils was 0.343, p value of $0.000 < 0.05$.

It was found that teacher qualification in the public schools influences to up to 11.7% of performance in academics of pupils. This means other factors also contribute to academic achievement other than professional qualification of teachers.

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5.2.2 The Extent to which Teacher Experience Influences Achievement of Pupils

The second objective of the study examined the extent to which teacher experience influenced pupils' academic achievements. The correlation between pupils performance and years of teaching experience was found to be 0.142, p value of 0.243 > 0.05, it meant that the correlation was not significance between the years of experience of the teachers in the primary schools and the performance of the pupils. The extent to which teacher experience influenced pupils' achievements in the primary schools was 29%. In other words, teachers experience influenced up to 2% of pupils performance in the lesson they taught in the public schools.

5.2.3 Teacher Workload on Academic Achievement of Pupils.

An analysis of the third objective established that the correlation between performance and the workload was -0.171, p value of 0.132 < 0.05. This meant that there was a significant negative correlation between performance and workload of pupils in the primary schools.

It was found that in the primary schools, performance of a student was influenced by up to 4.6% of the workload of the teachers.

5.2.4 Pupil/Teacher Ratio on Academic Achievement of Pupils

An analysis of the fourth objective established that the correlation between the average number of pupils taught in a class and the average performance of the pupils taught by that teacher in the public schools was -0.021, p value of 0.795 > 0.05. This meant that there was a negative and not significant correlation between the average number of pupils taught in a class and the average performance of the pupils taught by

that teacher. This meant that an increase in PTR lowered the academic achievement of pupils.

In the primary schools, 0.04% of academic performance of the learners was influenced by the pupil/teacher ratio in the public schools.

5.2.5 Attitude of Teachers on Academic Achievement of Pupils.

An analysis of the fifth objective established that the correlation between the attitude of teachers in the primary schools and the academic achievement of the pupils was 0.259, p value of $0.005 < 0.05$. Since the p – value was a value less than 0.05; it meant that there was a positive significant correlation between the attitude of teachers and the performance of the pupils in their class, p value of $0.000 < 0.05$. This meant that there was a significant positive correlation between attitude of teachers and the performance of pupils in the teachers' classes.

The study found that in the primary schools, up to 6.7% of the academic achievement of pupils was determined by the attitude of the teachers.

5.3 Conclusion

The study set out to establish the influence of teacher input on academic achievement of learners in primary schools in Kakamega Municipality.

5.3.1 The study found out those scores in KCPE by pupils is influenced by different teacher variables. Teachers' workload and PTR had a negative relationship with pupils' academic achievement in primary schools. This was attributed to high PTR which to some extent limited teacher- pupil interaction in classroom situation.

5.3.2 Teacher input like teacher qualification, teacher attitude revealed a positive relationship on pupils' performance. Thus qualified teachers and teachers with positive attitude have better methods of passing content to learners.

5.3.3 Teacher experience had no significance on pupils' academic achievement of pupils. This implies the number of years a teacher has had no influence on academic achievement of learners.

5.4.4 The five variables used in the regression model explained 56.72 % of academic performance of learners in public primary schools.

5.4 Recommendations

1.0 Professional qualification of teachers

1.1 The government should support teachers to further their professional training and deploy them to appropriate institutions of learning.

2.0 Teacher workload

2.1 The government should employ more teachers to ease the teacher workload.

3.0 Pupil/teacher ratio (PTR)

3.1 The stakeholders should ensure enough classrooms are constructed to ease the large class sizes.

3.2 The government should ensure the number of pupils are adhered to and enough teachers are provided for the extra classes created..

4.0 Teachers attitude

4.1 Efforts should be made to improve the status of the teaching profession in order to attract more people and to motivate and retain those who are already in service.

4.2 The government should consider introducing performance related pay to enhance teacher motivation.

Suggestion for Further Study

i) Future research should look at the other school and non school factors other than teacher input that influence pupil academic performance.

ii) Since the study established factors that affect 56.28% of performance of public schools, the study proposes that future researchers establish other factors that affect 43.72% of the performance of public schools

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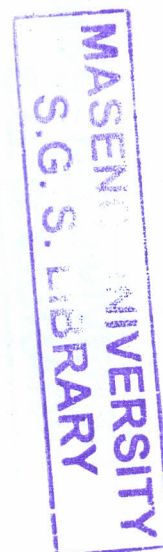
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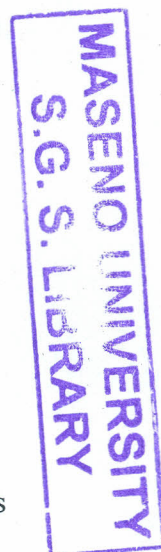
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