TEACHER FACTORS INFLUENCING STUDENTS' ACADEMIC ACHIEVEMENT IN SECONDARY SCHOOLS IN NYANDARUA COUNTY, KENYA

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Abstract

This study investigated the relationship between selected teachers' demographic characteristics and classroom instructional practices and students' academic achievement in selected secondary schools in Nyandarua County. One hundred and fifty three teachers selected randomly from eighteen schools in three districts in the County participated in the study. The schools were categorized as above average, average, and below average based on their aggregate performance in Kenya Certificate of Secondary Education (KCSE) in the last three years. In each category, two schools per district were selected. Data were collected using a questionnaire developed by the researchers. Linear regression and One-way ANOVA were used to test the relationship between the selected variables and performance in KCSE at $p<.05$. The study found that teachers' age, gender, professional qualifications and teaching experience were not significantly related to academic achievement. Teachers' job group had significant and positive relationship with students' academic achievement in secondary schools. Teachers' weekly teaching workload, administration of students' classroom assignments, evaluation of students' Continuous Assessment Test (CATs) results, provision of individualized attention to weak students, time of completion of Form Four syllabus and setting performance targets for KCSE significantly affected students' academic achievement.

Key words: Gender, age, professional qualifications, professional experience, instructional practices.

1.1 Introduction

Education is a very important human activity. It helps any society fashion and model individuals to function well in their environment. According to Boit, Njoki and Chang'ach (2012), the purpose of education is to equip the citizenry to reshape their society and eliminate inequality. In particular, secondary education is an important sector in national and individual development. It plays a vital

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role in creating a country's human resource base at a level higher than primary education (Achoka, Odebero, Maiyo & Mualuko, 2007). The vital role played by secondary education may partly explain the Kenyan government decision to introduce free tuition in public secondary schools in order to increase its demand (Ohba, 2009). Provision of quality secondary education is therefore important in generating the opportunities and benefits of social and economic development (Onsumu, Muthaka, Ngware & Kosembei, 2006). One of the indicators of quality of education being provided is cognitive achievement of learners (United Nations Educational, Scientific and Cultural Organization, [UNESCO], 2005). According to Adediwura and Tayo (2007), academic achievement is designated by test and examination scores or marks assigned by the subject teachers. It could also be said to be any expression used to represent students' scholastic standing. Levin, Wasanga and Somerset (2011) reported that the academic achievement of students at secondary school level is not only a pointer of the effectiveness of schools but also a major determinant of the well-being of youths in particular and the nation in general. Yusuf and Adigun (2010); Lydiah and Nasongo (2009) noted that the performance of students in any academic task has always been of special interest to the government, educators, parents and society at large.

Odhiambo (2005) contends that there is a growing demand from the Kenyan government and the public for teacher accountability. Schools are commonly evaluated using students' achievement data (Heck, 2009). Teachers cannot be dissociated from the schools they teach and academic results of schools. It would therefore be logical to use standardized students' assessments results as the basis for judging the performance of teachers. Teachers celebrate and are rewarded when their schools and teaching subjects are highly ranked. In Chile, for instance, teachers are rewarded collectively when they work in schools which are identified as high-performing by the National Performance Evaluation System of Subsidized Schools (Organization for Economic Cooperation and Development, 2005). In Kenya teachers who excel in their teaching subjects are rewarded during open education day held annually in every district (Cherongis, 2010). While appreciating the value of rewarding teachers who produce better results, teachers should also not escape a portion of blame when students perform poorly.

It has been proved that teachers have an important influence on students' academic achievement. They play a crucial role in educational attainment because the teacher is ultimately responsible for translating policy into action and principles based on practice during interaction with the students (Afe, 2001). In their study, Wright, Horn and Sanders (1997) concluded that the most important factor influencing student learning is the teacher. Teachers stand in the interface of the transmission of knowledge, values and skills in the learning process. If the teacher is ineffective, students under the teacher's tutelage will achieve inadequate progress academically. This is regardless of how similar or different the students are in terms of individual potential in academic achievement. According to Rivkin, Hanusheck and Kain (2005), there has never been consensus on the specific teacher factors that influence students' academic achievement. Researchers have examined the influence of teacher characteristics such as gender, educational qualifications and teaching experience on students' academic achievement with varied findings. Akiri and Ugborugbo (2008)

found that there was a significant relationship between teachers' gender and students' academic achievement. This is contrary to Dee cited in Akiri and Ugborugbo (2008). Yala and Wanjohi (2011) and Adeyemi (2010) found that teachers' experience and educational qualifications were the prime predictors of students' academic achievement. However, Ravkin et al (2005) found that teachers' teaching experience and educational qualifications were not significantly related to students' achievement. Etsy (2005) study in Ghana found that the teacher factors that significantly contributed to low academic achievement were incidences of lateness to school, incidences of absenteeism, and inability to complete the syllabi. Oredein and Oloyede (2007) concluded that teacher management of homework and assignments given to students have an impact on student achievement especially when it is well explained, motivational, corrected and reviewed during class time and used as an occasion for feedback to students.

1.2 Statement of the problem

Public secondary schools in Nyandarua County have been performing poorly in KCSE with majority of the students (77%) scoring below C+ grade. This is the minimum entry grade to universities in Kenya. In the year 2010, only 23% of the students who sat for KCSE qualified for admission for a degree programme. Table 1 shows year 2010 distribution of grades by Counties.

Secondary education is the basic requirement for selection into tertiary institutions and further skills training (MOE, 2005). Poor performance of secondary schools in the County undermines students' chances of joining institutions of higher learning and jeopardizes opportunity for job placement, and in most cases reduces an individual's active participation in national development. Considering that teachers play a major role in the teaching and learning process, there is need to examine teacher related factors that influence academic achievement. This study therefore sought to analyze the relationship between selected teachers' demographic characteristics and classroom instructional practices and academic achievement in public secondary schools in Nyandarua County.

1.3 Objective of the study

The main objective of the study was to investigate the relationship between selected teachers' demographic characteristics and instructional practices and academic achievement in secondary schools in Nyandarua County.

1.4 Hypotheses of the study

The study sought to test the following hypotheses:

1. There is no significant relationship between teachers' demographic characteristics and academic achievement in secondary schools in Nyandarua County.
2. There is no significant relationship between teachers' administration of students' assignments and academic achievement in secondary schools in Nyandarua County.
3. Teachers' weekly teaching workload does not have a significant effect on academic achievement in secondary schools in Nyandarua County.

4. Teachers' provision of individualized attention to weak students does not have a significant effect on academic achievement in secondary in Nyandarua County.
5. Frequency of teachers' evaluation of students' Continuous Assessment Tests (CATs) results does not have a significant effect on academic achievement in secondary in Nyandarua County.
6. The time when teachers complete the syllabus does not have significant effect on academic achievement in secondary schools in Nyandarua County.
7. Teachers setting performance targets in KCSE does not have significant effect on academic achievement in secondary schools in Nyandarua County.

1.5 Conceptual framework

Simkins cited in Adeyemi (2008) argued that the education system is a productive system that has outputs. The outputs are generally defined in terms of students' test scores which denote academic achievement (Worthington, 2001). Simkins expressed that the components of an education system could be represented in an input – process – output model. According to Wobmann (2004), student achievement is produced by several inputs in the educational process. Such inputs include but are not limited to student's family background characteristics, class size, availability of teaching and learning materials, and teacher characteristics. The teacher as an input is the principal factor in education provision and thus affects the quality of education in a significant way. According to Ankomah, Koomson, Busn and Oduro (2005), teacher factors that have an effect on academic achievement include the number of teachers on post, teacher pupil ratio, teacher qualifications and the personal characteristics of the individual teacher. The personal characteristics include academic qualifications, pedagogical training, content training, aptitude, and years of service/experience. A teacher brings these characteristics to class to facilitate the learning process. The extent to which other inputs can improve the quality of education is directly related to the extent to which teachers effectively use the inputs to improve the teaching and learning process. According to Sifuna and Sawamura (2011), the process quality is therefore the quality of the teacher-pupil interaction in the teaching learning process. This study therefore sought to investigate the influence of selected teacher background characteristics and instructional practices on the academic achievement of secondary schools in Nyandarua County. The variables of study are illustrated in figure 1.

Figure 1: Conceptual framework for the study

Input	Process	Output
- Teacher background characteristics **- Classroom instructional practices**	**Teaching and learning**	**Academic achievement**
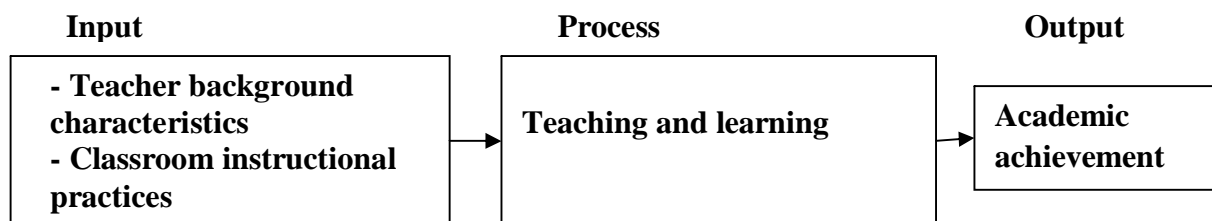
1.6 Methodology

The study adopted Ex post facto research design. Eighteen schools from three districts in the County were selected using multi – stage stratified random sampling method to reflect the various categories of schools in the County. The County has national, county and district schools. The schools were stratified based on their average Kenya Certificate of Secondary Education (KCSE) performance in the last three years. Simple random sampling was used to identify the schools to participate in the study. One hundred and fifty three (153) teachers participated in the study. Data were collected using a validated questionnaire. The questionnaire had 15 items on teachers' background characteristics and classroom instructional practices and the dependent measure of schools' mean grade in KCSE. The background characteristics considered in the study were teachers' age, gender, professional qualifications, professional experience and job group. The teachers' classroom instructional variables considered in the study were weekly teaching workload, administration of students' assignments, provision of individualized attention to weak students, frequency of teacher evaluation of students' Continuous Assessment Tests (CATs) results, time when the teacher completes the syllabus, and teachers setting performance targets in KCSE. The dependent measure was the average score of a school in KCSE in the years 2009, 2010 and 2011. The average scores were calculated by converting KCSE letter grades into a twelve-point numeric scale: Grade A converts to 12 points; Grade A- to 11 points; B+ to 10 points; and so on down to Grade E, which converts to 1 point. A school was allocated points based on the average performance in the three years. Linear regression was used to test the relationship between teachers' background characteristics, teacher administration of students' assignments and KCSE performance in the schools. One-way ANOVA was used to test the effects of teachers' weekly teaching workload, provision of individualized attention to weak students, frequency of teacher evaluation of Students' Continuous Assessment Tests (CATs) results, time when the teacher completes the syllabus, and teachers setting performance targets in KCSE. The relationships were tested at 0.05 level of significance.

2 Results

The study sought information on teacher demographic characteristics in order to help in classifying them and further use the data to establish the relationship between the demographic characteristics and students' academic achievement. The data obtained from the teachers and summarized in table 2 revealed that most of the teachers (64.1%) in the County were males. Majority of the teachers (60.1%) were aged 39 years and below. A sizeable portion of the teachers (59.5%) had a Bachelor of Education degree. Slightly above half of the teachers (52.3%) had teaching experience of 10 years or less. Majority of the teachers (66.0%) were either in job group L or M.

2.1 Hypothesis one

There is no significant relationship between teachers' demographic characteristics and academic achievement in secondary schools in Nyandarua County.

Linear regression was used to test the relationship between teachers' background characteristics and academic achievement. The results of the analysis summarized in table 3 show an R-value of 0.350 with an adjusted R^2 of 0.086 which shows that only 8.6% of the variance in academic achievement in the schools is accounted for by the teachers' background characteristics. The F-value (3.396) which is significant at 0.007 ($p<0.05$) shows that the joint effect of teachers' gender, age bracket, highest professional qualification, professional experience and job group on academic achievement in the schools is significant. Teachers' job group was found to have a positive and significant relative effect on academic achievement ($\beta=$ .500; t= 2.376; $p<0.019$). Teachers' gender ($\beta=$ .175; t= .572; $p<0.569$), age bracket ($\beta=$ -.232; t= -.797; $p<0.427$), highest professional qualification ($\beta=$ .093; t= .690; $p<0.491$) and professional experience ($\beta=$ -.462; t= -1.454; $p<0.148$) were statistically insignificant since $p>.05$. Based on the data, the study rejected the null hypothesis and concludes that there is a linear relationship between teachers' background characteristics and academic achievement in secondary schools in Nyandarua County with teachers' job group having a significant and positive relationship with academic achievement.

2.2 Hypothesis two

There is no significant relationship between teachers' administration of students' assignments and academic achievement in secondary schools in Nyandarua County.

Three variables related to teachers' administration of students' assignments were investigated. The variables include how often teachers gave students assignments, whether students completed the assignments on time, and whether teachers marked and returned the students' assignments on time. Linear regression was used to test the effect of the variables on the academic achievement. The results of the analysis summarized in table 4 show an R-value of 0.347 with an adjusted R^2 of .098 which shows that only 9.8% of variance in academic achievement is accounted for by teachers' administration of students' achievement. The F-value (5.323) which is significant at 0.05 ($p<0.05$) shows that the joint effect of teachers' administration of students' assignment on academic achievement is significant. Teachers ensuring that students complete classroom assignments on time had the strongest impact ($\beta=$ .640; t= 2.533; $p<0.013$). This was followed by how often teachers issued assignments to students ($\beta=$ .504; t= 2.404; $p<0.018$) and whether teachers marked and returned the assignments on time ($\beta=$ .570; t= 1.991; $p<0.049$). The study therefore rejected the null hypothesis and concluded that there is a significant relationship between teachers' administration of students' assignment and academic achievement in secondary schools in Nyandarua County.

2.3 Hypothesis three

Teachers' weekly teaching workload does not have a significant effect on academic achievement in secondary schools in Nyandarua County.

One-way ANOVA was used to test the effect of teachers' weekly teaching workload on academic achievement. The results of the analysis summarized in table 5 show that significant differences

were observed in schools' mean score depending on teachers' weekly teaching workload (F [1,122] = 4.578, *p*= 0.034). Schools where teachers had a weekly teaching workload of 25 lessons or less registered significantly higher mean scores (M=5.83, 95% CI [5.34, 6.32]) than schools where teachers had 26 lessons or more (M=5.21, 95% CI [4.89, 5.55]). The study therefore rejected the null hypothesis and concluded that teachers' weekly teaching workload has significant effect on academic achievement in secondary schools in Nyandarua County.

2.4 Hypothesis four
Teachers' provision of individualized attention to weak students does not have a significant effect on academic achievement in secondary in Nyandarua County.

One-way ANOVA was used to test the effect of teachers' provision of individualized attention to weak students on academic achievement. The results of the analysis summarized in table 6 revealed that significant differences were observed in schools' mean score depending on whether teachers provided individualized learner attention to weak students (F [2,120] = 4.731, *p* = 0.011). Schools where teachers provided individualized learner attention to weak students registered significantly higher mean scores (M=5.80, 95% CI [5.44, 6.17]) than those schools where teachers sometimes provided individualized learner attention (M=4.92, 95% CI [4.40, 5.45]) and those schools where teachers did not provide any individualized learner attention to weak students (M=4.82, 95% CI [4.04, 5.60]). The null hypothesis was therefore rejected and the study concluded that teachers' provision of individualized attention to weak students has a significant effect on academic achievement in secondary schools in Nyandarua County.

2.5 Hypothesis five
Frequency of teachers' evaluation of students' Continuous Assessment Tests (CATs) results does not have a significant effect on academic achievement in secondary in Nyandarua County.

One-way ANOVA was used to test the effect of teachers' evaluation of students' CATs results on academic achievement. The results of the analysis summarized in table 7 revealed that teacher evaluation of students' CATs results was statistically significant in academic achievement (F [2,121] = 7.909, *p* = 0.001) at *p*<.05. Schools where teachers evaluated students' CATs results at least once per month had higher mean scores (M=6.38, 95% CI [5.72, 7.03]) than schools where teachers evaluated students' CATs results twice per term (M=5.16, 95% CI [4.76, 5.56]) and once per term (M=5.14, 95% CI [4.71, 5.57]). The null hypothesis was therefore rejected and the study concluded that frequency of teacher evaluation of students' CATs results has a significant effect on academic achievement in secondary schools in Nyandarua County.

2.6 Hypothesis six
The time when teachers complete the syllabus does not have significant effect on academic achievement in secondary schools in Nyandarua County.

One-way ANOVA was used to test the effect of time when the teachers completed the form four syllabus on the academic achievement. The results of the analysis summarized in table 8 revealed that the time when teachers complete the Form Four syllabus significantly influenced academic achievement (F [2,119] = 4.552, $p = 0.012$) at $p<.05$. Schools where teachers completed the syllabus three months before KCSE examinations registered higher mean scores (M=5.83, 95% CI [5.50, 6.16]) followed by schools where teachers completed the syllabus one month before KCSE (M=5.04, 95% CI [3.89, 6.19]) while those schools where teachers completed the syllabus just in time for KCSE had the lowest mean grades (M=4.19, 95% CI [4.36, 5.46]). The null hypothesis was therefore rejected and the study concluded that the time when teachers completed the Form Four syllabus has a significant effect on academic achievement in secondary schools in Nyandarua County.

2.7 Hypothesis seven

Teachers setting performance targets in KCSE does not have significant effect on academic achievement in secondary schools in Nyandarua County.

One-way ANOVA was used to test the effect of teachers' setting performance targets in KCSE on academic achievement. The results of the analysis summarized in table 9 show that setting performance targets for KCSE significantly affected academic achievement (F [1,122] = 3.951, $p = 0.049$) at $p<.05$. Schools where teachers reportedly set performance targets in KCSE had higher mean scores (M=5.56, 95% CI [5.27, 5.85]) than schools where teachers did not set targets (M=4.53, 95% CI [3.38, 5.68]). The null hypothesis was therefore rejected and the study concluded that teachers setting performance targets for KCSE has a significant effect on academic achievement in secondary schools in Nyandarua County.

3 Discussions

This study analyzed the effects of selected teacher background characteristics and classroom instructional practices on academic achievement in secondary schools in Nyandarua County. The study found that teachers' gender did not significantly affect academic achievement. The finding concurs with Akiri (2008) who concluded that there was no significant relationship between teachers' gender and academic achievement. Contrary to Adeyemi (2010); Yala and Wanjohi (2011) findings that teachers' experience and professional qualifications were the prime predictors of students' academic achievement, the study found that teachers' educational level and teaching experience were not statistically significant in explaining students' academic achievement. The findings therefore suggest that additional professional qualifications beyond first degree do not necessarily lead to improved competence of teaching at secondary school level. It is therefore not surprising that Ravkin et al (2005) had concluded that there was no evidence that a master's degree raises teacher effectiveness at secondary school level.

The study found that a teacher's job group significantly affected students' academic achievement. Schools with a substantial number of teachers employed by BOG registered lower mean grades compared to schools with teachers employed by the Teachers' Service Commission (TSC). This may be explained by the fact that BOG teachers have no security of tenure and may be teaching in schools as they seek other jobs thereby affecting their commitment towards teaching. The implication of this finding is that there is need for the government to employ teachers on a permanent basis in order to improve the quality of education being offered. It was also noted that teachers in job group L registered lower mean scores compared to job group K, M and N. A significant number of teachers were also in job group L. Promotion to job group M from L is through a competitive process involving vetting and rigorous interviews. Teachers in job group L may therefore be registering lower productivity due to lack of career growth.

Teachers' workload had a significant effect on academic achievement. Schools where teacher had 25 lessons or less registered higher mean scores compared to schools where teachers had 26 lessons or more. The finding agrees with Nwwikina and Nwanekezi cited in Osagie and Okafor (2012) who concluded that teachers' workload was one of the factors that inhibited students' academic achievement. The findings point to the negative impact of increased workload for teachers on the teaching – learning process. Assignments have been cited as a critical ingredient in the teaching and learning process as they serve as a diagnostic tool for teaching and learning process (Oredein and Oloyede, 2007). The study found that the number of assignments that a teacher gave students, teachers ensuring that students completed the assignments and timely marking of the assignments significantly affected academic achievement. The findings therefore suggest on the need for teachers to regularly give students assignments and be firm on them to complete the assignments. Moreover, school administrators must regularly supervise teachers work and ensure that students' assignments are marked.

Teacher evaluation of CATs for students was also statistically significant in academic achievement. The finding concurs with Black and Williams cited in Kapambwe (2010) who concluded that use of formative assessment had a powerful impact on students' academic achievement. Continuous Assessment Tests (CATs) are a powerful diagnostic tool that enables students to understand the areas in which they are having difficulty and to concentrate their efforts in those areas. CATs also allow teachers to monitor the impact of their lessons on students' understanding. Using the results of CATs, teachers can modify their pedagogical strategies to include the construction of remedial activities for students who are not working at the expected grade level and the creation of enrichment activities for students who are working at or above the expected grade level. Timely completion of Form Four syllabus significantly affected academic achievement. Schools where teachers completed the syllabus three months before the examinations had higher grades compared to schools where teachers completed the syllabus in time for or a month to KCSE. The finding concurs with Etsy (2005) who found that teacher inability to complete the syllabi significantly contributed to low academic achievement among students. Teachers setting performance targets for KCSE also significantly affected academic achievement. The finding concurs with Alderman

(2008) who contended that setting performance goals has a positive impact on teacher motivation and performance. The set targets provide a tool for teachers to evaluate where their students are and where they want them to go in terms of academic achievement.

4 Conclusions

The study concluded that teachers' age, gender, professional qualifications and professional experience did not have significant effect on academic achievement in secondary schools in Nyandarua County. However, teachers' job group and workload significantly affected academic achievement. The study also concluded that the frequency of issuing assignments, teachers ensuring that students completed assignments and timely marking of the assignments significantly affected academic achievement. Further, teachers evaluating students' CATs results and providing individualized learner attention to weak students have an impact on academic achievement. Timely completion of Form Four syllabus and setting performance targets for KCSE performance were also statistically significant in predicting academic achievement. Teacher background characteristics and classroom instructional practices therefore do make a difference in students' academic achievement.

5 Recommendations

The study recommends that there is need for TSC to look into the issue of teacher promotion from one job group to another. Stagnation of teachers in one job group is a recipe for dissatisfaction among teachers leading to poor service delivery and subsequently, low academic achievement in schools. The government, through the Ministry of Education, should urgently employ more teachers in order to ease teachers' weekly workload. School administrators should develop and implement explicit students' CATs policy. Specifically, emphasis should be laid on monthly CATs, with time allocated for revision. Routine spot checks of students' assignment books by heads of departments would ensure that teachers issued, marked and returned students' assignments.

References

Achoka, J. S. K., Odebero, S., Maiyo, J. K. & Mualuko, N. J. (2007). Access to Basic Education in Kenya: Inherent Concerns. *Educational Research and Review*, 2 (10): 275-284.

Adediwura, A. A. & Tayo, T. (2007). Perceptions of Teacher Knowledge, Attitude and Teaching Skills as Predictor of Academic Performance in Nigerian Secondary Schools. *Educational Research and Review,* 2(7): 165-171.

Adeyemi, B. (2010). Teacher Related Factors as Correlates of Pupils Achievement in Social Studies in South West Nigeria. *Electronic journal of Research in Educational psychology*, 8(1): 313-332.

Adeyemi, T. O. (2008). The Influence of Class-Size on the Quality of Output in Secondary Schools in Ekiti State, Nigeria. *American-Eurasian Journal of Scientific Research* 3 (1): 7-14.

Akiri, A. A. & Ugborugbo, N. M. (2008). An Examination of Genders Influence on Teachers productivity in Secondary Schools. *J. Soc. Sci,* 17(3): 185-191.

Alderman, M. K. (2008). *Motivation for Achievement: Possibilities for Teaching and Learning.* New York, NY: Routledge.

Ankomah, Y., Koomson, J., Bosu, R., & Oduro, G. K. (2005). *Implementing Quality Education in Low Income Countries.* Institute for Educational Planning & Administration (IEPA) University of Cape Coast Ghana.

Asikhia, O. A. (2010). Students and Teachers' Perception of the Causes of Poor Academic Performance in Ogun State Secondary Schools in Nigeria: Implications for Counseling for National Development. *European Journal of Social Science,* 13 (2): 229-242.

Boit, M., Njok,i A. & Chang'ach, J. K. (2012). The Influence of Examinations on the Stated Curriculum Goals. *American International Journal of Contemporary Research*, 2(2): 179 – 182.

Chapman, J. D. (2003). "School Based Decision Making and Management: Implication for School Personnel." In J. D. Chapman (ed.). *School Based Decision Making and Management*. London: The Falmer Press.

Chisikwa, P. I. & Indoshi, F. C. (2010). Perspectives on Influence of Government Policies on Appointment of Head teachers in Mixed Secondary Schools in Vihiga District, Kenya. *International Journal of Educational Research and Technology,* 1 (2): 60 -67.

Etsy, K. (2005). *Causes of Low Academic Performance of Primary School Pupils in Theshamia Sub-Metro of Shama Ahanta East Metropolitan Assembly of Ghana.* Regional Conference of Education in West Africa, Dakar Senegal, 1st -2nd Novemeber 2005

Heck, R. H. (2009). Teacher Effectiveness and Student Achievement. Investigating a Multilevel Cross-Classified Model. *Journal of Education Administration,* 7(22): 227-249.

Kapambwe, W. M. (2010). The Implementation of School Based Continuous Assessment in Zambia. *Education Research and Reviews,* 5(3): 99-107.

Lewin, K. M., Wasanga, P., Wanderi, E. & Somerset, A. (2011). Participation and Performance in Education in Sub-Saharan Africa with Special Reference to Kenya: Improving Policy and Practice. Create pathways to Access. *Research Monograph No. 74*: University of Sussex.

Lydiah, L. M. & Nasongo, J. W. (2009). Role of the Headteacher in Academic Achievement in Secondary Schools in Vihiga District, Kenya. *Current Research Journal of Social Sciences,* 1(3): 84-92.

Ministry of Education (2005). Sessional Paper No.1 of 2005: A Policy Framework for Education Training and Research. Government printer, Nairobi.

Odhiambo, G. (2005). Elusive search for Quality Education. The Case of Quality Assurance and Teacher Accountability. *International Journal of Education Management,* 22(5): 417-431.

Onsomu, E., Muthaka, D., Ngware, M. & Kosimbei, G. (2006). Financing of Secondary Education in Kenya: Costs and Options. *KIPPRA Discussion Paper No. 55*. Nairobi: Kenya Institute for Public Policy Research and Analysis.

Oredein, A. O. & Oloyede, D. O. (2007). Supervision and Quality of Teaching Personnel Effects on Student Academic performance. *Educational Research and Review,* 2 (3): 032-035.

Osagie, R. O. & Okafor, C. J. (2010). Relationship between Human Resources Management Variables and Students' Academic Performance in Secondary Schools in Egor Local Government Area, Edo State, Nigeria. *European Journal of Educational Studies* 4(1): 147 – 153.

Rivkin, S. G., Hanushek, E. A, & Kain, J. F. (2005). *Teachers, schools, and academic achievement.* [Online] Available: http://www.utdallas.edu/research/tsp/pulications.htm. (May 12, 2012).

Thuranira, T. S. (2010). *Perspectives of the Teaching profession in Kenya.* Unpublished PHD Thesis, University of Maryland, College Park.

Worthington, A. (2001). An Empirical Survey of Frontier Efficiency Measurement Techniques in Education. *Education Economics,* 9(3): 245-268.

Wößmann, L. (2004). Institutions for Better Education. *CESifo DICE Report 4.*

Wright, S. P., Horn, S. P. & Sanders, W. C. (1997). Teacher and Classroom Context Effects on Student Achievement: Implications for Teacher Evaluation. *Journal of Personnel Evaluation in education,* 11, 57-67.

Yala, P. O. & Wanjohi, W. C. (2011). Performance Determinants of KCSE in Mathematics in Secondary Schools in Nyamira Division, Kenya. *Asian Social Science,* 7(20): 107-112.

Yusuf, M. A. & Adigun, J. T. (2010). The Influence of School Sex, Location and Type on Students' Academic Performance. *Int J Edu Sci*, 2(2): 81-85.

Table 1: KCSE 2010 distribution of grades by Counties

County	A - B+		B - C+		C - D+		D - E		Total	
	N	%	N	%	N	%	N	%	N	%
Nyeri	961	7.3	3008	23.0	4878	37.3	4243	32.4	**13090**	**100.0**
Kirinyaga	432	6.1	1617	22.7	2983	41.8	2099	29.4	**7131**	**100.0**
Nyandarua	494	6.9	1156	16.0	3050	42.3	2511	34.8	**7211**	**100.0**
Murang'a	884	5.3	3396	20.2	6826	40.6	5714	33.9	**16820**	**100.0**
Kiambu	695	3.7	3371	18.0	7466	40.0	7168	38.3	**18700**	**100.0**

Source: PDE Office Central Province, (2010). N – Number of students

Table 2: Background characteristics of the teachers

Variable	Labels	Frequency	Percent
Gender	Male	98	64.1
	Female	55	35.9
	Total	*153*	*100.0*
Age	Below 30 years	37	24.2
	31-39 years	55	35.9
	40-49 years	53	34.6
	50 years and above	8	5.2
	Total	*153*	*100.0*
Highest educational qualification	Masters of education	15	9.8
	Bachelor of education	91	59.5
	BA/BSc with PGDE	20	13.1

	BA/BSc general	6	3.9
	Diploma in Education	21	13.7
	Total	*153*	*100.0*
Professional experience	1-5 years	48	31.4
	6-10 years	32	20.9
	11-15 years	24	15.7
	16-20 years	27	17.6
	Over 20 years	22	14.4
	Total	*153*	*100.0*
Job group	Unclassified	30	19.6
	K	17	11.1
	L	52	34.0
	M	49	32.0
	N	4	2.6
	P	1	.7
	Total	*153*	*100.0*

Table 3: Joint and relative effects of teachers' background characteristics on academic achievement

Variables	B	Sta. Error	Beta	t	Sig.
(Constant)	4.361	.645		6.758	.000
Gender	.175	.306	.050	.572	.569
Age bracket	-.232	.291	-.116	-.797	.427
Highest professional qualification	.093	.135	.067	.690	.491
Professional experience	-.462	.318	-.233	-1.454	.148
Job Group	.760	.197	.520	3.849	.000

(R=0.350; Adjusted R^2=0.086 F=3.396; Sig. 0.007)

Table 4: Joint and relative effects of teachers' administration of students' assignments on academic achievement

Variables	B	Sta. Error	Beta	t	Sig.
(Constant)	7.927	.620		12.779	.000
Frequency of students' assignments	.504	.209	.213	2.404	.018
Whether students complete the assignments	.640	.253	.226	2.533	.013
Whether the teacher marks and returns the assignments on time	.570	.286	.174	1.991	.049

(R=0.347; Adjusted R^2=0.098; F=5.323; Sig. 0.002)

Table 5: ANOVA-Teachers' weekly workload and academic achievement

Number of lessons	n	Mean	Std. Deviation	Std. Error	F	Sig.
25 lessons or less	51	5.8322	1.77935	.24441	4.578	0.034
26 lessons or more	71	5.2198	1.40740	.16703		
Total	**124**	**5.4815**	**1.59947**	**.14364**		

Table 6: ANOVA-Teachers' provision of individualized learner attention and academic achievement

Provision of individualized attention	n	Mean	Std. Deviation	Std. Error	F	Sig.
No	9	4.8223	1.01471	.33824	4.731	0.011
Yes	79	5.8036	1.62121	.18240		
Sometimes	35	4.9236	1.51875	.25672		

Table 7: ANOVA-Teachers' frequency of evaluation of students' CATs results and academic achievement

Frequency of evaluation	n	Mean	Std. Deviation	Std. Error	F	Sig.
Once a term	40	5.1411	1.34365	.21245	7.909	0.001
Twice a term	51	5.1667	1.41393	.19799		
Once a month	33	6.3808	1.83645	.31968		

Table 8: ANOVA-Time when teachers complete the Four Syllabus and academic achievement

Time	n	Mean	Std. Deviation	Std. Error	F	Sig.
3 months before KCSE	78	5.8301	1.47514	.16703	4.552	0.012
Just in time for KCSE	14	5.0432	1.99139	.53222		
1 month before	30	4.9162	1.47932	.27009		

Table 9: ANOVA-Setting target for KCSE performance and academic achievement

Setting target	n	Mean	Std. Deviation	Std. Error	F	Sig.
No	10	4.5289	1.60320	.50698	3.951	0.049
Yes	114	5.5651	1.57881	.14787		