

Research Article

Contribution of School Administrators to Physical Facilities in Enhancement of Students' Academic Performance in Secondary Schools in Kenya: An Emperical Study of Secondary School Administrators in Emuhaya and Vihiga Sub Counties

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Abstract: Studies worldwide have revealed that school administrators are key contributors to students' academic performance by enhancing physical facilities within schools. Notwithstanding this assertion in some countries academic performances have been found to be low despite this administrators' contribution. For instance, in Kenya the average performance for the years 2010 to 2014, only 29% candidates scored above a mean score of 6.00 points. In Emuhaya and Vihiga Sub Counties 3535 (26%) and 2104 (15%) candidates respectively scored 6.00 and above points compared to Hamisi and Sabatia Sub-Counties' with 3913 (28%) and 4275 (31%) candidates respectively between years 2009 and 2013. The objective of the study was to establish the contribution of school administrators to physical facilities in the enhancement of students' academic performance. The study was guided by a conceptual framework in which the independent variable was the administrators' contribution in form of physical facilities, and the dependent: variable students' academic performance. The study established that administrators' contribution to physical facilities was moderate (Adjusted $R^2 = 0.303$), and thus enhanced students' academic performance by 30.3%. The study concluded that administrators' contribution to physical facilities was significant and therefore, enhanced students' academic performance. The study recommended that administrators should increase their contribution to physical facilities in order to enhance students' academic performance. The study findings are of significance to school administrators, policy makers and other stakeholders with regard to enhancement of students' academic performance by providing physical facilities.

Keywords: Contribution, School Administrators, Physical Facilities, Enhancement, Students' academic performance, Secondary Schools, Kenya, Emuhaya and Vihiga Sub – Counties.

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INTRODUCTION

Contribution of school administrators to physical facilities is an important aspect in school management and administration. School administrators are responsible for the day-to-day management of schools on behalf of Schools' Boards of Management (BOM). Further, they are the implementers of government educational policies at school levels. They are also the accounting and quality assurance and standards officers of schools under their management. This means that they oversee provision of quality education in schools which have physical facilities for use in curriculum implementation. It is therefore imperative that school administrators go out of their ways to ensure that physical facilities are put up and existing ones renovated in order to enhance students' academic performance. Nevertheless, there are a few

administrators who do not initiate school development projects nor repair existing ones in the belief that it is the responsibility of School Boards of management and parents.

Administration according to Homby (2012) as cited in Omeke and Onah (2012) is perceived as an activity done to plan, organize and successfully run an institution, a process or act of organizing the way something is done. It involves planning activities to fulfill goals of an organization. Similarly, management involves making use of human and non-human resources to achieve organizational goals (Onifade, 2004, as cited in Fasasi, 2004). Management of secondary schools refers to a process of making use of the available physical resources towards the achievement of good results. According to Numkanisorn (2008), school management is the

capacity of a school to maximize functions or the degree to which the schools perform functions when given fixed output. That is why the Commonwealth of Learning and the Southern African Development Community Ministries of Education (2000) agree that efficient and effective management of fiscal and physical resources can enhance instructional progress. All these are attributed to school administrators for purposes of enhancing academic performance. .

Contribution of school administrators was in this study measured in terms of the value added beyond performing their functional role of management, which is not an end in itself. Contribution in this study focused on the efforts the administrators put in place to ensure that authorized expenditure is executed and indicators are physical facilities built in order to enhance students' academic performance. It involved the principals' veto power in deciding, purchasing and ensuring that recommendations of the boards are executed, sourcing for resources such as extra funds, and equipment such as computers from well-wishers and ultimately enhance performance. Studies have shown that quality education is often indicated by levels of students' academic performance or by a school's characteristics such as conditions of the school's buildings and adequacy of teaching learning materials (Fuller, 2006). School administrators' contribution to education is one determinant of quality education since they are designated as internal quality assurance officers in schools (MOEST, 2004). Owing to the challenges that faced the Directorate of Inspection such as inadequate manpower, principals were designated as Quality Assurance and Standards Officers (QASO) in schools being entrusted with the task of instructional supervision in order to enhance performance. The Government has established Quality Assurance and Standards' Departments, provides trained teachers and funds Free Secondary Education (FSE) in all schools to attain quality education (Republic of Kenya (ROK), 2008b). Despite all these measures in place Emuhaya and Vihiga Sub Counties have not been able to realize quality grades. Parents are not obtaining returns to investments.

Secondary schools need to meet the national goals of education such as provision of quality education (Ekundayo, 2010a). Based on this, Townsend (1994) in Ajayi and Ekundayo (2011) posits that the criterion for measuring quality should incorporate more than achievement in written examination, but also with presence of physical facilities. In support, Uline, Miller and Moran (1998) posit that when quality is reduced to a single variable it is students' achievement in average tests score levels obtained through provided physical facilities (Booker, 2008). Quality as measured by the state of infrastructure namely construction of classrooms, head teachers' housing, laboratories among other factors, has not been realized (Ampiah, Kwaaah,

Yiboe & Ababia, 2013). School infrastructure influences quality of education hence students' performance. In Ghana, the working and living environment of teachers and students is below expectation (Akeyempong, 2013). In many counties in this country schools lack basic amenities such as piped water, electricity, staffrooms and toilets. Housing is a major issue for nearly all teachers, with only 30% of them being housed by 2003. In Kenya, the Ministry of Education (MOE) identified critical shortage of permanent classrooms, existing school infrastructure in poor conditions, poor maintenance, poor water system and sanitation which in a way affect learner performance (Ahawo, Simatwa & Ayieko, 2015). In their study on stakeholders' contribution to infrastructure development in enhancement of girls' academic achievement in Kenya, Ahawo *et al.*, (2015) found out that parents, principals and BOM contributed to school infrastructure. Therefore, this study attempted to establish school administrators' actual expenditure on physical facilities, since they are the custodians of funds received in schools, and how this enhances students' academic performance.

At present, secondary schools' principals are absolute Chief Executive Officers (C.E.Os) who have to manage people, have to be instructional leaders, manage multi-million dollar budgets and manage school facilities (Arne, 2009). According to Motsamai, Jacobs and de West (2011), the mismanagement of funds by principals often leads to shortage of critical resources in schools such as money not being available for purchasing of the necessary books, equipment for games and so forth, resulting into unsatisfactory performance of teachers and students. This also leaves less funding towards construction of physical facilities. This is further evidenced through students' strikes due to less or poor quality foods, lack of maintenance of building and facilities because finances are not there. In his study on improving school financing, the use and usefulness of school grants in Kenya, Kiplang'at (2011), established that most school head teachers did not know that funds meant for repair, maintenance and improvement of existing infrastructure were not to be used for building new ones, despite the MOE providing regular financial courses for head teachers. This study sought to establish the contribution of the principals to physical facilities' construction in order to enhance students' academic performance

According to a new government analysis the current system is geared towards passing examination and does not enhance holistic development of learners (Maina, 2014), nor construction or improvement of existing structures. Besides, there is evidence of stalled P.T.A projects amid low pace of school physical development despite increased enrollment, Constituency Development Funding (C.D.F) and infrastructure fund from the MOE. Further, preliminary

surveys within the County have shown that physical facilities have not been in good shape. Buildings are too old to be renovated. Deterioration in the condition of improperly maintained buildings is very obvious (Lackney & Picus, 2011). Students are crowded in the classrooms and dormitories are furnished with triple deckers such that they do not stand a chance in event of a fire outbreak (Wanyonyi, 2012). Laboratories and halls have missing windowpanes and the furniture in terrible state in need of repair. Playgrounds are limited in some schools. Some classrooms have been converted into libraries, laboratories, home science and computer rooms. Many schools did not have separate laboratories for science rooms.

According to Pigozi (2005), quality measures whether students are learning the right things so as to lead to a decent life in a fast growing world. The quality of education a school gives is manifested in students' academic results. Further, quality can also be viewed as structural and process quality (Vandell & Wolfe, 2000, as cited in La Paro, 2013). Indicators of structural quality include classroom materials, curriculum taught, teacher- education and teacher child ratio. Before registration of any school in Kenya, the basic physical structure that must be available is a classroom. An extra classroom can even be improvised for a science laboratory or a workshop. Process quality focuses on aspects such as human interactions within the classroom between teachers and the child, and peer to peer. In this regard Williams (2003) says education quality occurs when students are learning to create value for those they serve and those who serve them, with all these taking

place within the physical facilities provided in schools. The outcome of years of students' learning is then measured in terms of the mean score.

Based on national examinations, performance in Emuhaya and Vihiga Sub Counties has been below the minimum university entry requirement of quality grades. From year 2009 to 2013, out of 43705 candidates who sat for Kenya Certificate Secondary Examination (K.C.S.E), 13847 obtained mean grades C+ and above, with Emuhaya and Vihiga Sub-Counties contributing 3535 (26%) and 2104 (15%) candidates, while Hamisi and Sabatia Sub- Counties contributed 3913(28%) and 4275(31%) candidates respectively (Table 1). This means that the quality of education was low and not good enough. Nationally, the percentages of candidates who scored mean grade C+ and above in K.C.S.E during years 2010, 2011, 2012, 2013 and 2014 were 27%, 29%, 29%, 28% and 31% respectively (ROK, 2015b). Since the inception of 8.4.4 system of education in Kenya, candidates who score between grades A and C+ are normally considered for placement in public universities. The country's minimum grade for accessing university education remains a C+ (Buhere, 2016).Whereas it is the responsibility of parents and communities to provide for physical facilities, payment of teachers' salaries and learning materials, the contribution of school administrators to students' academic performance in so far as authorizing expenditure on and ensuring that physical facilities are developed and maintained has not been studied, a gap this study sought to fill.

Table 1. Candidates who attained mean grades C+ and above, Vihiga County, 2009 - 2013

Years Sub Cty	2009		2010		2011		2012		2013		TOTALS	
	Nos.	%	Nos.	%								
Vihiga	321	15	378	15	443	15	433	16	529	16	2104	15
Emuhaya	537	25	645	26	754	26	840	27	759	23	3535	26
Hamisi	632	30	743	30	829	28	847	26	862	27	3913	28
Sabatia	652	30	702	28	900	31	957	38	1084	33	4275	31
TOTALS	2142	100	2468	100	2926	100	3077	100	3234	100	13827	100

Source: Vihiga County Director of Education Office (2014)

Due to financial constraints facing Kenya's education system as a result of a reduction in budgetary allocation, it would be necessary to establish the contribution of the school administrators to students' academic performance through authorized expenditure of funds on physical facilities in the enhancement of students' academic performance.

Research Objective

The research objective was to establish the contribution of School Administrators to physical facilities in enhancement of students' academic performance in secondary schools in Emuhaya and Vihiga Sub – counties, Kenya.

Synthesis of literature on the Contribution of School Administrators to Physical Facilities in the Enhancement of Students' Academic Performance

School administrators are charged with the mandate of contributing to students' quality grades through infrastructure development by committing and ensuring funds are expended on putting up physical facilities in order to increase space. Studies have shown that quality education is often indicated by levels of schools' characteristics such as conditions of the school's buildings and adequacy of teaching learning materials (Fuller, 2006). School infrastructure influences quality of education hence students' performance. In Ghana, the working and living environment of teachers and students is below

expectation (Akeyempong, 2013). Schools in many counties lack basic amenities such as piped water, electricity, staffrooms and toilets. Housing is a major issue for nearly all teachers, with only 30% of them being housed by year 2003.

In Kenya, the MOE identified critical shortage of permanent classrooms, existing school infrastructure in poor conditions, poor maintenance, poor water system and sanitation which in a way affect learner performance hence, quality education (Ahawo, *et al.*, 2015). In their study on stakeholders' contribution to infrastructure development in enhancement of girls' academic achievement in Siaya County, Kenya, Ahawo *et al.*, (2015) found out that parents, principals and BOM contributed to school infrastructure. The principals' mean of 3.13 ratings were higher than the teachers' of 2.93. Principals are the custodians of contribution made by stakeholders to the schools. Therefore, the present study attempted to establish school administrators' actual expenditure on physical facilities in enhancement of students' academic performance. The Ahawo *et al.*, (2015) study focused on stakeholders' contribution to infrastructure development, and used 20 parents, 3 politicians, 4 church secretaries, 20 principals, six SCQASOs and 40 teachers as respondents. The study recommended that the Kenyan Government through the MOE, to insist on infrastructural facilities by stakeholders before a new school is registered, and that all stakeholders be encouraged to increase their contribution to infrastructure development so as to meet the threshold in enhancement of academic performance. However, the present study linked administrators' contribution to physical facilities to the enhancement of students' academic performance and derived responses from 58 principals, 58 deputy principals, 58 DOS, 58 chairpersons BOMs and two SCQASOs.

School administrators' contribution to education is one determinant of quality education. They are designated as internal quality assurance officers in schools (MOEST, 2004). Quality as measured by the state of infrastructure namely construction of classrooms, head teachers' housing, laboratories among other factors, has not been realized (Ampiah, *et al.*, 2013, ROK, 2008b). Despite the Government's provision of funds such as CDF, Laboratory Equipment Fund, School Infrastructure development Fund, the contribution of the school administrators to infrastructure has not been established through research. It has been established that schools that experience shortage of education facilities perform dismally in exams in Kisumu County (Olendo, 2008). Facilities construction is not a major vehicle for quality enhancement, but of critical importance is in the utilization of such facilities (Ahawo, 2010). Good physical facilities effectively contribute to 9% to good

results, while adequate text books and tuition equipment give 15% (Musungu, 2007).

While studying the involvement of head teachers in provision of physical facilities that promote academic achievement in Vihiga County, Musungu (2007) concluded that facilities such as offices, libraries, assembly halls, dining halls help improve performance. Like the present study, the research design for her study was descriptive survey. The study population was 84 head teachers, 26979 students, 1280 teachers. The secondary schools that met the conditions of the study were those that had presented candidates for Kenya National Examination Council (KNEC) examinations. This present study used schools that participated in KNEC examinations between years 2009 & 2013, with 58 principals, 58 deputy principals, 58 DOS, 58 chairpersons of BOM, 4640 students and two SCQASOs as the study population. A survey design was ideal for this study because it provided a quantitative or numerical description of trends, attitudes and opinions of a population by studying a sample of that population (Creswell, 2003). In addition, Musungu (2007) study narrowed itself to the input of the head teachers leaving out the contribution of the deputy principal and the DOS, an area that was broadened through this study. Further, the present study in addition to questionnaires used interview schedule with the deputy principals, DOS and SCQASOs to obtain in-depth data not possible with a questionnaire.

While studying the effectiveness of BOGs in curriculum implementation in secondary schools in Keiyo district in Kenya, Chelimo (2010) found out that members of BOGs supported the school to acquire physical resources and that those with higher training being able to effectively assist the school in completing curriculum. The researcher had sought to establish if management of the institution amongst other factors contributed in any way to poor performance. Her sample population was 15 heads of secondary schools, 15 HODS, 70 teachers and 65 BOG members. Data were collected using questionnaires for BOG members and teachers whereas HODs and school heads were interviewed. Data were coded using SPSS, then analyzed using descriptive statistics, frequency distribution and chi-square. She recommended that BOGs should source for funds from CDF, harambees, and PTA for physical resource development in the schools in order to foster effective learning. The focus of Chelimo (2010) study was on members of the boards' acquisition of physical facilities in order to foster learning. This study focused on the contribution of school administrators to physical facilities through quantified expenditure and how this influenced students' academic performance. This study differed in that it used a sample population of 58 secondary school principals, 58 DOS, 58 Chairmen BOMS, 354 students of form four of year 2016 in 58 secondary schools in

Emuhaya and Vihiga Sub – Counties. In addition to questionnaire and interviews, Focus Group Discussion (FDG) with students provided additional data hence, achieving triangulation (Kothari, 2003). While Chelimo (2010) study examined the effectiveness of BOGs in curriculum implementation, this study examined the contribution of school administrators to physical facilities in so far as authorizing expenditure and maintenance funds on them is concerned, and used principals, deputy principals and DOS as respondents.

In a study on the relationship between mean performance in K.C.S.E. and educational resource inputs in public secondary schools in Nyando District, Olendo (2008), noted that head teachers experienced challenges in promoting mean performance in K.C.S.E. Poor fees payment, inadequate teachers, students' indiscipline and poor syllabus coverage were a few of the challenges established. According to Ampiah.*et al.*, (2013), delay or irregular flow of capitation grants in Ghana is one of the challenges faced by schools. Perception that basic education is free, making parents relax in providing basic needs for their children in school was also observed. Yet, administrators need finance in order to procure building materials to either construct or improve on existing physical facilities so as to provide space for learning. In Latin America, a report by Willins (2000) as cited in Khan and Iqbal (2012) found out that children whose schools lacked classrooms and materials, and had an inadequate library were significantly more likely to show lower test scores and higher grade repetition than those whose schools were well equipped. Therefore, he concluded that the quality of school facilities seems to have an indirect effect on learning. It is noted that schools with adequate facilities perform better in national exams especially in core subjects such as mathematics (Onderi & Makori, 2013), creating a need for a study on school administrators' contribution to physical facilities by way of setting up these structures. Performance in national examinations is not only a yardstick for measuring success in schools but also for evaluating curriculum both at local and national levels. A study commissioned by UNESCO on physical facilities in South African Consortium for Monitoring Educational Quality (SACMEQ) linked physical facilities to increased educational opportunities and achievement (Beynon, 1997). The study found out that the current situation of physical facilities in 13 Less Developed Countries (LDCs) such as Bangladesh, Benin, Tanzania, Togo, Uganda, Zambia, gives cause for alarm. In many of these countries, 40% or more of pupils attend schools needing major repairs or complete building according to school heads. Therefore, there is need to study the contribution of School Administrators to physical facilities by way of authorization of expenditure.

Further, Khan and Iqbal (2012) in their study in Khyber Pukhtunkhwa Province in Pakistan on the role of physical facilities in teaching learning process with a focus on the impact of lack of physical facilities on effective teaching learning process used a study population of 20 government girls' secondary schools. A sample size of 15 randomly selected schools were surveyed, with data being qualitatively and quantitatively treated. Like in this study, a check list was used to know the current status of physical facilities in all schools. Close ended questionnaire were administered to 15 principals who were the only respondents in the study. The present study derived responses from 58 principals, 58 deputy principals, 58 DOS and 58 chairpersons BOM, 4640 students of form 4, plus 2 SCQASOs. Unlike the previous study, the present study used questionnaires with both closed and open ended questions. Open ended questions allowed divergent opinion since they did not limit responses. Over and above these Focus Group Discussions (FGD) and interview schedules were used to collect information that would not have been possible with a questionnaire. Data collection through interviews, observation and document analysis achieved triangulation (Kothari, 2003). A target population of 20 schools and a sample size of 15 schools created 75% representation. Compared to this present study where a population and sample size of 58 and 52 respectively were used, Khan and Iqbal (2012) study population was inadequate. Similarly, information obtained in this study was varied and well sourced, given that a sample population of 354 students was also included, unlike the above study which sourced from 20 schools in one Province. The study concluded that there was a strong need for creating an excellent and suitable learning environment where all sorts of physical facilities were available for both the teachers and the taught. The study recommended that to improve teaching learning process, the general cleaning and good maintenance of physical facilities is required. It is not known if school administrators contribute to improvement and maintenance of physical facilities. No study has been carried out on school administrators' contribution to physical facilities in the area of authorized expenditure, hence this study. Besides, the present study used a check list and safety guidelines from the MOE to check on compliance (ROK, 2008a).

A recent report evaluating school facilities in Milwaukee in year 2000 completed by the Council of Educational Facility Planners International, documented that facility conditions may have a stronger effect on students' performance than the combined influence of family background, socio – economic status, school attendance and behavior (Khan & Iqbal, 2012). Subsequently, Ihuoma (2008) insists that there is a direct relationship between the quality of school facilities provided and the quality of the product of the school. The quality of the education that children

receive bears direct relevance to the availability or lack of physical facilities and overall atmosphere in which learning takes place. Therefore, this study sought to establish the contribution of school administrators to physical facilities with a focus on total cash amount spent on either construction or renovation of physical facilities between years 2013 and 2016.

Conceptual Framework

A conceptual framework that guided this study is according to Frankeal and Wallen (2001), a mental or visual picture that a researcher develops to show relationships between and among concepts or variables (Figure 1). In the wake of emphasis on schools' performance in national examinations, a lot of focus has been directed towards the mean grade, leaving other areas of management unattended. Yet aspects of management among other things involve relating resources to the objectives (Paisley, 1993, as cited in Commonwealth of Learning & the Southern African Development Community of Education, 2000). The study attempted to examine how administrators-independent variables (Hunt & Ellis, 2004) contribute to students' academic performance. Independent variables are characteristics that probably 'cause' or influence or affect outcome (Creswell, 2003), whereas

dependent variables are those that depend on the independent, are the outcomes or results of the influence of the independent variable. Students' academic performance is dependent on school administrators' contribution to physical facilities. The independent variable was computed against outcomes such as K.C.S.E. mean scores. Contribution to physical facilities was measured by authorization of and cash expenditure on construction and renovation of school buildings. Similarly, the presence of physical facilities such as laboratories, sanitary facilities, libraries, and administrators' contribution in ensuring that they are constructed was examined. Intervening variables according to Cresswell (2003) are those variables that stand in between the independent and dependent variables, mediating the effect of the former on the latter.

Administrators' contribution to physical facilities as supported by Khan and Iqbal (2012), Ihuoma (2008), Doane (2008), and Ahawo, *et al.*, (2015) enhances students' academic performance. This study went further to establish the actual contribution of the administrators through regression analysis as signified by the expenditure on constructed physical facilities and renovation of existing ones.

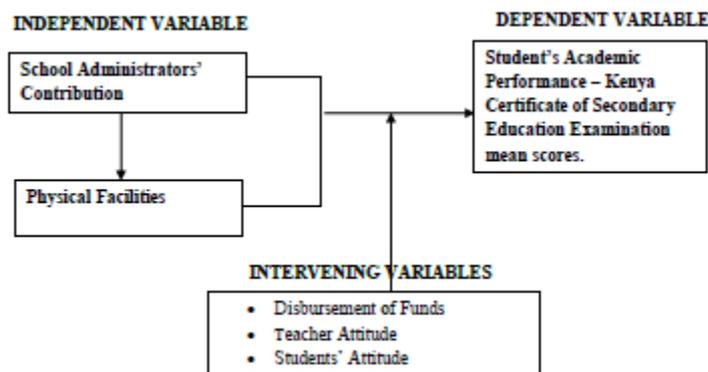


Figure 1: School Administrators' Contribution to Students' Academic Performance in secondary schools in Emuhaya and Vihiga Sub-Countries.

Source: Researcher, 2014 (Based on Literature Review)

MATERIALS AND METHODS

The research designs that were adopted in this study were descriptive survey and correlation. The study population was 4874 and consisted of 58 Principals, 58 Deputy Principals, 58 Heads of Department, 4640 Students, 58 Chairpersons of the Boards of Management and 2 Sub County Quality Assurance and Standards Officers. Fisher's formula was used to determine sample size of 354 students. Saturated sampling was used to obtain data from Principals, Deputy Principals, Heads of Departments, Chairpersons of Boards of Management, and Quality Assurance and Standards Officers. Questionnaires, Observation Checklists, Document Analysis Guides, and Interview Schedules were used to collect data. Face

and content validity of research instruments were determined by experts in Educational Administration. Reliability of questionnaire was determined by piloting in 6 schools and a co-efficient of 0.7 at p- value of 0.05 was set. Quantitative data was analyzed using frequent counts, means, percentages and regression analysis. Quantitative data was analyzed for content in emergent themes and sub themes.

RESULTS

Demographic Characteristics of Respondents

Demographic characteristics of school administrators in Emuhaya and Vihiga Sub Counties as reported by principals (n=52) were as follows:

Table 2. Demographic Characteristics of Secondary School Administrators

Characteristics	Frequency (f)	Percentage (%)
Gender:		
Female	22	42
Male	30	58
Total	52	100
Age in Years:		
31 – 40	01	02
41 - 50	23	45
Above 50	28	53
Total	52	100
Teaching Experience in Years		
6 – 10	01	02
11 – 20	10	20
20 – 30	33	63
Over 30	08	15
Total	52	100
Number of Lessons taught per week		
Less than 6	05	10
6 – 12	15	27
Over 12	32	63
Total	52	100
Experience as Administrator in Years		
Less than 1	01	02
1 – 2	05	10
3 – 4	07	14
5 - 9	22	43
10 - 15	17	31
Total	52	100
Highest Level of Education:		
Master's Degree	13	25
Bachelor's Degree	38	73
Diploma	01	02
Total	52	100
Management Courses Attended		
KEMI / KESI	48	92
Non Attendance	04	08
Total	52	100

Source: Field Data, 2016

From Table 2 it can be observed that 30 (58%) of school administrators were male whereas 22 (42%) were female, with 28 (53 %) being aged above 50 years. This implies that the gender parity had not been realized in secondary school administration, with 28 (53%) retiring in the next 10 years. However, 23 (45%) of the administrators were aged between 41 – 50 years with only 1 (2%) aged below 40 years. Further, 33 (63%) administrators had teaching experience of between 21 – 30 years, implying that they had been in the teaching profession for some time to understand how schools run. Similarly, 10 (20%) administrators had a teaching experience of between 11 – 20 years, while 8 (16%) have a teaching experience of over 30 years meaning that they had matured in the profession. Concerning

one's experience as an administrator, 22 (43%) reported that they had between 5 to 9 years of experience in leadership, while 17 (31%) had between 10 - 15 years. Only 7 (14%) had an experience of between 2 – 4 years. Job experience is defined as length of experience in a given occupation (MacDaniel, Schmidt & Hunter, 1988). Studies have shown correlation between job experience and job performance to be positive. In the context of Rice (2010), experience matters. The impact of experience is strongest during the first few years of principals' leadership during which everyone wants to commit more funds on school activities, after that marginal returns diminish. As concerns the number of lessons taught per week, 32 (63%) of the administrators reported that they taught over 12 lessons per week. This

is in keeping with TSC policy on curriculum instruction that ensures that school administrators are in touch with what goes on in the classroom. Further, 15 (28%) of the administrators indicated that they taught between 6 – 12 lessons a week, whereas 5 (10%) taught less than 6 lessons a week. In terms of the highest level of education attained, 38 (73%) of administrators had a bachelors' degree while 13 (26%) and 1 (2%) had masters' degree and a diploma respectively. In so far as attendance of management courses was concerned, 48 (92%) school administrators had attended management courses. This implies that majority of school administrators are endowed with management skills gained from these training.

Table 2 is important to this study in that it gives credibility of respondents used. Characteristics such as age show maturity levels of administrators. Contribution rises with age to optimum levels and then starts to decline as age progresses. Gender shows that information was obtained from both male and female. Gender of respondents indicates that leadership in schools is held by both male and females implying that both sexes are contributing to students' academic performance. Contribution by female administrators is mainly channeled to girls' schools, whereas contribution made by male administrators is mainly channeled to both mixed and boys' schools. However, women remain strongly underrepresented in senior school headship (Fuller, 2017). Although there are changes in the number of women holding senior leadership positions in secondary schools, a man teacher has a greater chance of being a head than a woman (Coleman, 2005). Women are favored as heads in all girls' schools. Becoming a woman head of a co-ed or boys' schools was comparatively difficulty. With most of the school administrators being above 41 years, it is expected that they are mature and credible enough to give trusted responses that can be relied on. Those below 41 years still have expectations to perform better in life. With 68% of the administrators having a teaching experience of over 20 years, they understand what school physical facilities are needed to enhance learner performance. Therefore, with this knowledge they are bound to source for funds towards this noble course

It is the policy that the principal must teach a number of lessons. As noted over 90% of administrators teach between 6 – 12 lessons a week. This enables them understand the kind of physical facilities needed for proper curriculum implementation and not just the comfort of their offices. Head teachers should have

manageable teaching loads so as to deal with paperwork in the offices (Sherrington, 2013). Workloads for principals can have detrimental effects on the quality of teaching, the support they can offer to colleagues, and their health. Overloaded principals would be incapable of effectively carrying out their core work of administration (Ingvarson, Kleinhenz, Beavis, Barwick, Carthy & Wilkison, 2005). Experience is what you gain when you are in the field (Nandwah, 2011). Having been in the school system long enough both as teachers and leaders, administrators are capable of evaluating themselves better in terms of supervising staff under them. This experience enables them to understand the essence of providing the necessary adequate teaching learning resources, and ultimately providing adequate space to house these essential materials. Work experience is related to job performance (Quinones, Ford & Teachout, 1995). With 73% of the administrators having a Bachelor's degree, it is expected that they have a deeper understanding of what needs to be acquired in so far as curriculum teaching learning materials are concerned, how to interact with and supervise teachers for the sake of enhancing students' academic performance. Higher education plays an important lesson in enhancing personal achievement in one's career. Higher college graduates contribute more than others to social wellbeing in terms of efficiency (Baum & Payer, 2005). A knowledgeable, honest and satisfied teacher will command respect and produce hard working, efficient and honest citizens (Shah, 2007).

With knowledge acquired in school management, administrators are expected to build classrooms and other physical facilities to provide space for students to enhance their academic performance. Kenya Educational Staff Institute (KESI) was a product of the Mungai Report of 1978. Currently KESI has been transformed into Kenya Educational Management Institute (KEMI) which offers In-service training to principals, deputy principals and heads of departments in schools, but does not prepare teachers aspiring to be principals. Courses are offered in 2 weeks (April, August and December) which seems to be too short (Nandwah, 2011).

School Data

The study was conducted in 52 secondary schools of which 29 were from Emuhaya Sub – County and 23 from Vihiga Sub – County. Out of these 37 were mixed day schools, 10 girls' schools and 5 boys' schools. The students' population was as shown in Table 3.

Table 3. Students’ Population

Category	Frequency (F)	Percentage (%)
Below 200	06	12
201-300	12	13
301-400	10	19
401-500	09	17
501-600	06	12
601-700	06	12
Above 701	03	05
Total	52	100

Source: Field Data, 2016

From Table 3 it can be seen that 6 (12%) schools had students’ population of below 200 students, with another 6 (12%) having between 501 – 600, and another 6 (12%) having a student population of between 601-700. Only 12 (13%) schools had a student population ranging between 201–300, and another 10 (19%) schools had a population ranging between 301 – 400 students. Further, it can be noted that 9 (17%) schools had a population of between 401- 500 students, while 3(5%) schools had a student population of above 700.

School population cuts across board where school administrators are making contribution right from schools with low population to schools with large population. Therefore, the study gives realistic data on administrators’ contribution at various levels regardless of school population. This then makes a true representation of contribution of principals in both Emuhaya and Vihiga Sub - Counties. With a high population the principal has ample financial support

from both the Ministry Of Education, Constituency Development (CDF) and parents to provide physical facilities that can enhance students’ academic performance. Extra funds received will also be used to construct needed physical facilities such as science laboratories so as to expand access, employ extra personnel such as security firms to secure that which they have acquired, and even create unauthorized boarding sections for form four students. With extra teaching learning physical facilities students are expected to perform better. On the contrary schools with low population leave administrators with tied hands because of lack of money.

Students’ academic performance in this study was measured by the mean scores obtained by the students in the 52 secondary schools’ in K.C.S.E in the year 2016. In order to establish the contribution of Administrators to students’ academic performance, empirical KCSE 2016 results were computed. The results were as shown in Table 4.

Table 4. Students’ academic performance in K.C.S.E 2016

School’s Index	Performance	Frequency (f)	Percentage (%)
1.00-2.00		00	00
2.01-3.00		11	21
3.01-4.00		25	48
4.01-5.0		08	15
5.01-6.00		04	08
6.01-7.00		03	06
7.01-8.00		00	00
8.01-9.00		01	02
Total		52	100

Source: Emuhaya and Vihiga Sub County Offices, 2017

From Table 4 it can be observed that only 4 (7.7%) schools obtained mean score of above 6.01(C Plain) implying that 48 schools had below average mean score. This raises concern given that School administrators are the custodians of school resources bestowed upon them to utilize in the enhancement of students’ academic performance. The outcome of stakeholders’ investment in education is evidenced in students’ academic performance. Poor results often cast aspersion on the kind of administration in place, hence

the need for this study to find out the efforts of administrators’ contribution to physical facilities in enhancing students’ academic performance.

Research Question

What is the contribution of school administrators to physical facilities in the enhancement of students’ academic performance?

To confirm the contribution of school administrators’ to physical facilities, administrators’ ratings on actual expenditure on construction of

computer rooms, classrooms, science laboratories, libraries, among other physical facilities were computed. The results were as shown in Table 5.

Table 5. Administrators’ Expenditure on Physical Facilities, Years 2013 -2016

Administrations’ contribution to physical facilities in Million (Kshs).	Frequency (f)	Percentage (%)
0.00- 1.00	03	06
1.10 – 2.00	01	02
2.10 – 3.00	07	13
3.10 – 4.00	06	11
4.10 – 5.00	07	13
5.10 – 6.00	05	10
6.10 – 7.00	02	04
7.10 - 8.00	07	13
8.10 – 9.00	04	08
9.10 – 10.00	06	12
Above 10.10	04	08
TOTALS	52	100

Source: Field data, 2017.

From Table 5 it can be noted that 3 (6%) administrators spent less than one million Kshs towards construction and improvement of physical facilities in their schools between years 2013 – 2016. Only 1 (2%) administrator spent between 1.10 – 2.0 million on the expansion of infrastructure in schools. Further, 7 (13%) administrators spent between 2.10 – 3.00 million. A similar 7(13%) spent between 4.10 – 5.00 million, and another 7 (13%) spent between 7.10 -8.00 million, on either construction of new physical facilities or renovation of existing ones. Similarly, 6 (11%) administrators contributed between 3.10 – 4.00 M, and 9.10 – 10.00 million Kshs respectively towards the

same. A further 4 (8%) administrators spent between 8.10–9.00 million, and a similar 4 (8%) contributed above 10.10 million respectively, towards construction of physical facilities such as classrooms. In addition, whereas 5 (10%) administrators spent between 5.10 – 6.00 million on physical facilities, another 2 (4%) spent between 6.10 – 7.00 million on the same.

To establish the contribution of administrators to physical facilities in the enhancement of students’ academic performance, the administrators’ contributions were regressed against students’ academic performance. The results were as shown in Table 6.

Table 6. Regression analysis of administrators’ contribution to physical facilities in the enhancement of students’ academic performance (n = 52).

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig.F Change
1	.563	.317	.303	1.04254	.317	23.199	1	50	.000

Predictors: (Constant) Physical facilities

From Table 6 it can be observed that school administrators’ contribution to students’ academic performance was significant through physical facilities. School administrators had a moderate, positive and significant influence on students’ academic performance (r = .563, N =52 p < 0.05) through physical facilities. Administrators’ contribution accounted for 30.3% of students’ academic performance as signified by the Adjusted R² coefficient of .303. This means that when administrators construct classrooms, science laboratories, libraries and special rooms among other physical facilities, teachers get motivated to work harder in the spaces provided to improve performance. In a new and better facility students will take more pride in their schools and

therefore also get motivated to work harder to improve performance. Administrators’ contribution is adding value as evidenced by change in statistics. This means that administrators’ contribution to structural construction has an influence on students’ academic performance. Their efforts of authorizing expenditure and ensuring that physical facilities are provided for comfort during curriculum implementation has a positive impact on students’ academic performance.

To confirm whether administrators’ contribution to physical facilities was a significant predictor of students’ academic performance, ANOVA was computed and the results were as shown in Table 7.

Table 7. ANOVA of Administrators' contribution to physical facilities in the enhancement of students' academic performance (n=52)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	25.215	1	25.215	23.199	.000
	Residual	54.345	50	1.087		
	Total	79.560	51			

Dependent variable: Student academic performance in K.C.S.E

Predictors: (Constant) Physical facilities

From Table 7 it can be observed that school administrators' contribution to physical facilities was a significant predictor of students' academic performance ($F(1, 50) = 23.199, p < 0.05$).

The study further sought to establish the actual contribution of administrators' to physical facilities. A linear regression analysis was computed as shown in Table 8.

Table 8. Linear regression analysis of administrators' contribution to physical facilities in the enhancement of students' academic performance (n = 52)

Model		Unstandardized Coefficients			T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.395	.738		.535	.595
	Physical facilities	1.044	.217	.563	4.817	.000

Dependent variable: Student academic performance in KCSE-

Regression Equation $Y = \beta_0 + \beta_1 X_1 + \dots + \beta_n X_n$

From Table 8, it is evident that for every one unit increase in administrators' contribution to physical facilities, students' academic performance improved by 1.044 units as signified by the coefficient of 1.044.

Students' academic performance = $.395 + 1.044X_1 + \dots$

Interviews findings with deputy principals revealed that, as public relation officers, the principals coordinated and mobilized stakeholders and donors in investing in school infrastructure development. Cases abound where school dormitories are named after prominent personalities who through the efforts of the principals made enormous contribution towards their construction. Similarly, new school vehicles in Emuhaya and Vihiga Sub Counties display their sources of funding, indicating how principals reached out to CDF offices which are linked to Area Members of Parliament and PTAs for funding. Observation revealed that where library and laboratory structures had not been constructed efforts by the administrators to improvise and make room in the existing classrooms was noted and created room for enhancement of learning. This finding agreed with the findings of other researchers who found out that administrators' contribution to physical facilities enhances students' academic performance (Owoeye & Yara, 2011).

DISCUSSION

School facilities should be provided so as to give the learners the best possible learning environment. Physical facilities are plant facilities provided in schools in order to facilitate teaching learning. They

include land, enough classrooms, special rooms, laboratories and libraries, provision of water, enough pit latrines, electricity, office blocks, dormitories, dining halls, among others. Excellent school facilities are basic ingredients for good educational programs and are very important for achieving the target and improving the literacy rates of a country (Khan & Iqbal, 2012, Beynon, 1997). The study concluded that there is a strong need for creating an excellent and suitable learning environment where all sorts of physical facilities were available for both the teachers and the taught. The study recommended that to improve teaching learning process, the general cleaning and good maintenance of physical facilities is required. What was not discussed was the contribution of administrators to provision of physical facilities with regard to expenditure and renovation of existing ones, an objective this study pursued.

Physical facilities give comfort to permit learners to concentrate on their studies. They are important in both school attendance and achievement (Beynon, 1997). Without good buildings and clean environment, students' comfort will be affected and this will hinder the ability of students to learn. In Latin America a study conducted by Willins (2000) a cited in Ihuoma (2008) found out that children whose schools lacked classrooms and had inadequate libraries were significantly more likely to show lower test scores and higher grade repetition than those whose schools were well equipped. Facility means the system which supports the operation of an organization to carry out its daily activities promoting growth and development.

Onyeji (2000) as cited in Research Clue (2017) identifies 3 main ones namely classrooms, libraries and laboratories. Library and books give greater assistance to both learners and teachers. In a situation where secondary school students are left with no teachers, the next port of call is the library for textbooks. As defined by Owoeye and Yara (2011) a library is a building or room in which collection of books, tapes, newspapers, periodicals are kept for people to read, study and borrow. A library supports functions of school teaching learning process and provides services and guidance to learners. In their study Owoeye and Yara (2011) focused on school facilities and academic achievement of secondary school Agriculture Science in Ekiti State, Nigeria, making their study narrow. Every state ministry in Nigeria is supposed to provide funds for establishment of libraries of in all her educational institutions, train librarians and library assistants. The present study was wide as it determined the contribution of administrators to physical facilities such as libraries in enhancement of students' academic performance in all subjects with regard to the administrators' efforts in building these facilities.

A laboratory is a room or building specifically built for teaching and demonstration of theoretical phenomena into practical terms. It is central to the teaching of sciences and the success of any science course is dependent on the laboratory provision made for it (PennState, 2015). Where laboratories are missing, schools teach biology, chemistry and physics theoretically as if they are non-science subjects without laboratories. Some schools teach with hope that they would use other schools' laboratories during examinations. According to Owoeye and Yara (2011) learning can still occur when one interacts with the environment, of which the classroom where the learner sits is the first. Students spend an average of 13000 hours of their life time in a school building (Nigaglioni, 2005, as cited in Doane, 2008). Therefore, the condition of school building has input on students' achievement. School building in poor conditions can impact education by keeping students away from the classrooms, thereby decreasing the classroom time. Classrooms should not be overcrowded to the extent that rooms originally meant for 30-40 students take between 60-80 learners (Research Clue, 2013). Overcrowded classrooms have been linked to increased levels of aggression in students, and also associated with decreased levels of students' engagement and decreased levels of learning (PennState, 2015). This study finding agrees with Research Clue (2013) which established that there was a significant difference between the academic performance of students' who attended schools where there were facilities and those whose schools did not have facilities. The study had sought to find out whether there was a relationship between school facilities and students' academic performance in public secondary schools in Somolu

Local Government Area of Lagos State, Nigeria. The study did not pursue the contribution of administrators with regard to whether they authorize expenditure for construction of these facilities, but found out that there was a significant relationship between school facilities and students' academic performance.

In his study on the relationship between school facilities and the school learning environment, Vandiver (2011) noted that quality and educational facilities were statistically significant with students' performance. In her study on the need for effective facility management in schools in Nigeria, Ihuoma (2008) concluded that school facilities give meaning to the teaching learning process. Learning process takes place in an environment structured to facilitate learning hence need for school facilities. In the Ihuoma (2008) study Knezewich (1975) emphasized that the physical needs are met through provision of safe structures and adequate sanitary facilities are contributors to students' academic performance. In a similar study, parents refused to let children attend schools where sanitation was poor. Shortage of physical facilities had an adverse effect on curriculum delivery and implementation especially lack of laboratories which led to poor performance in sciences (Chabari, 2010). Congestion due to lack of classrooms has a drawback towards teacher interaction. In their study on stakeholders' contribution to infrastructure development in enhancement of girls' academic achievement in Kenya, a case study of Siaya County, Ahawo, *et al.*, (2015) found out that parents, principals and BO contributed highly to school infrastructure development. Principals mean rating was 3.13 while the teachers' mean rating was 2.93. Stakeholders' contribution to education is one determinant of provision of quality education since school principals, deputy principals and HODs are designated as internal quality insurance officers (MOEST, 2004). The principals are the custodians of contribution made by stakeholders to schools, and their mean rating of 3.13 was more realistic. In this study, infrastructure discussed were classrooms, science rooms, libraries (well stocked), recreational facilities and boarding facilities. Although, the government provided CDF, the laboratory equipment fund, school infrastructure development fund (ROK, 2008b), the above study did not examine the contribution of administrators with regard to expenditure on the construction and improvement of existing ones, which formed the basis of this study. Thus, school infrastructure influence quality of education, hence performance.

Interviews with Chairpersons BOMs revealed that principals undertake physical construction in schools with the approval of the board. Chairpersons of boards reported thus: "Before we bought the school bus our principal had to write proposals to solicit for funds from CDF through the Area Member of Parliament and

link up with stakeholders for bank loan.” Administrators are also known to travel to the MOE headquarters in Nairobi to seek for Infrastructure Funds for school development. Deputy principals who are second in command to the administrators observed thus: “whenever principals visits TSC headquarters for staffing matters, they must visit ‘Jogoo’ House to request for special grants in form of cash for school construction.” Being the chairpersons of the tender committee boards and being appointed by the principals, the deputy principals witness the level of school administrators’ contribution to physical facilities in the enhancement of students’ academic performance. Evidence from document analysis guide showed that between years 2013 to 2016 administrators in Emuhaya and Vihiga Sub-Counties spent on average Kshs.7.57 million on the improvement and construction of physical facilities, with classrooms taking Kshs 1.78million.

CONCLUSION

School administrators’ contribution to physical facilities in the enhancement of students’ academic performance was significant, and therefore, enhanced students’ academic performance.

RECOMMENDATIONS

The Ministry of Education should consider offering all secondary schools Infrastructure Fund to enable school administrators to either construct new facilities or improve on the existing ones. This will enable them expand space for access to secondary education in light of high Form 1 intake and ultimately enhance students’ academic performance. Before a day school is granted a boarding wing, the Ministry of Education should ensure that boarding facilities are in place and that these facilities meet the statutory safety guidelines as stipulated by the same Ministry to enhance students’ academic performance.

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